



Instruction Manual
Modero G5
Configuration and Programming
X Series G5 Touch Panels



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Modero X Series ® G5 Programming

Overview

The Modero X Series® G5 line of touch panels is the next generation in touch panel design, control and functionality. Each Modero X Series G5 touch panel shares basic programming functionality with the other G5 products, whether a tabletop, portrait, or landscape panel. In order to assist programmers and developers with designing the perfect project, each Modero X Series G5 touch panel shares the following features:

- A common arrangement of *Settings* pages (page 3) that allow easy configuration of new panels into a new or existing network.
- Mutual NetLinx programming commands for the panel gestures supported by the Modero X Series G5 product line
- Mutual NetLinx programming commands for other touch panel functions (page 65).
- Ability to support applications (apps), such as a web browser or Skype, to enhance the functionality of the control surface

For more information on designing touch panel pages intended to optimize the Modero X Series G5 experience, please refer to the *TPDesign5 Operation Reference Guide* and the *G5 Considerations Guide*, both available at www.amx.com.

The Modero X-Series G5 touch panels covered in this document are listed below:

Modero X-Series G5 Touch Panels		
MXT-2001-PAN	FG5968-35	20.3" Modero X Series G5 Panoramic Tabletop Touch Panel
MXD-2001-PAN	FG5968-36	20.3" Modero X Series G5 Panoramic Wall Mount Touch Panel - Portrait
	FG5968-37	20.3" Modero X Series G5 Panoramic Wall Mount Touch Panel - Landscape
MXT-1901-PAN	FG5968-41	19.4" Modero X Series G5 Panoramic Tabletop Touch Panel
MXD-1901-PAN	FG5968-42	19.4" Modero X Series G5 Wall Touch Panel - Portrait
	FG5968-43	19.4" Modero X Series G5 Wall Touch Panel - Landscape
MXT-1001	FG5968-47	10.1" Modero X Series G5 Tabletop Touch Panel
MXD-1001	FG5968-48	10.1" Modero X Series G5 Wall Panel - Portrait
	FG5968-49	10.1" Modero X Series G5 Wall Panel - Landscape
MXT-701	FG5968-53	7" Modero X Series G5 Tabletop Touch Panel
MXD-701	FG5968-54	7" Modero X Series G5 Wall Touch Panel - Portrait
	FG5968-55	7" Modero X Series G5 Wall Touch Panel - Landscape



For information on Configuring and Programming X Series G4 touch panels, refer to the Modero G4 Configuration and Programming Guide (available at www.amx.com)

NOTE

Transitioning from G4 to G5

The G5 platform is a new operating system for Modero X Series touch panels, and existing TPDesign4 files are not compatible with G5 touch panels. A new software tool, TPDesign5, is required to design touch panel files for G5 systems, and is available for download at www.amx.com.

TPDesign5 is similar in look and feel to TPDesign4 and can be installed concurrently with TPDesign4 to enable the developer to design for both G4 and G5 systems at the same time. TPDesign5 also contains a utility called *G4Utility*, that converts existing TPD4 files to TPD5-formatted files.

While G4Utility converts the bulk of a TPD4 file to a format usable in TPD5, given the enormous variations of TPD4 files currently in the field, some tweaking of the converted TPD5 file may still be necessary afterwards.



For more information on transitioning from the G4 platform to G5, please refer to the AMX G5 Considerations white paper, available at www.amx.com.

Using the "Pipe" (|) Character

Previously, in G4, the pipe character (|) was used to create a new line.

G5 uses carriage return / line feed (\$0d,\$0a) instead.

The examples below illustrate indicating a new line (between the words "Hello" and "World") in G4 and in G5 programming:

- **G4** : "'^TXT-200,0>Hello|World'"
- **G5** : "'^TXT-200,0>Hello',**\$0d,\$0a**, 'World'"

Settings Menu

Overview

G5 panels present all configuration information via the on-board *Settings* menu. The *DEVICE*, *CONNECTIONS*, *ACCOUNTS*, and *SYSTEM* sections are password-protected. The default password is **1988**.

Accessing the Settings Menu

To access the *Settings* menu, press and hold the **Sleep/Settings** button on the panel for 3 seconds.

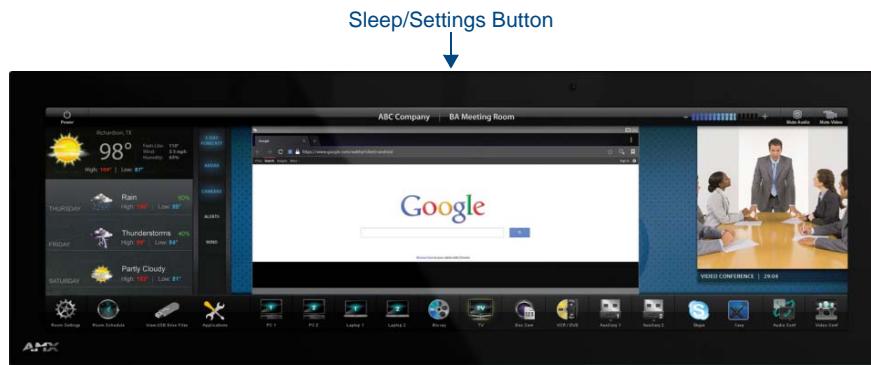


FIG. 1 Location of the Sleep/Settings button on the MXD-2001-PAN

Using AMX System Recovery

During a normal firmware upgrade, if a G5 panel is unable to boot all the way, *AMX System Recovery* can be used to try to reset system data or re-install firmware.

To initiate system recovery:

1. Power up the panel while holding the **Sleep/Settings** button (FIG. 1).
2. Release the button 3 seconds after seeing the AMX boot logo (FIG. 2).



FIG. 2 Modero X Series boot logo

3. Wait a few seconds for recovery mode to begin.
 4. A text screen titled "AMX System Recovery" is displayed, presenting the following options:
 - Reboot Device
 - Factory Data Reset
 - Revert to Factory Firmware
 - Install Firmware from USB
 5. Navigate the menu options by pressing the **Sleep/Settings** button.
- To select an item, press and hold the **Sleep/Settings** button for 2 or more seconds. Alternatively, if the panel has a USB keyboard plugged in at bootup, use the *Up/Down* arrows and *Enter* keys to navigate the menus.
- Select **Reboot Device** to reboot the panel.
 - Select **Factory Data Reset** and then select **Yes** on the confirmation window to erase all of the user data (settings, application data, user pages) on the panel.
 - Select **Revert to Factory Firmware** and then select **Yes** on the confirmation window for the system to extract the factory firmware (this can take a minute) and then automatically initiate a firmware upgrade as usual.

- Select **Install Firmware from USB** for a new menu to come up, where the user can navigate the files on the USB drive. Selecting the "../" entry will take the user back to the previous directory. Entries with a trailing "/" on the name are directories, and selecting a directory will bring up a new menu with the contents of that directory shown. All other entries will be ".kit" files. Selecting a KIT file and selecting **Yes** on the confirmation screen will extract the firmware (this can take a minute) and then automatically initiate a firmware upgrade as usual.



NOTE

*For more information on disabling Settings menu access through the **Sleep/Settings** button, please refer to the SYSTEM - Security section on page 46.*

Using the Settings Menu

When opened, the *Settings* menu appears in the center of the panel display. Please note that many of the pages in the menu may be longer than they initially appear. To reach additional functions on a given page, the page itself may be scrolled up and down to reveal those functions.



NOTE

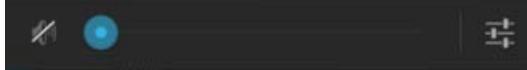
The Settings menu uses scrolling lists. Not all items on a Settings page are visible on screen at one time, and scrolling up and down to see them may be necessary. In the case of long Settings pages, a scroll bar appears momentarily when a new menu appears, and allows you to gauge current position and length of the menu.

Many of the entries in the *Settings* menu are read-only, or may be modified if information on the same or another page is changed. The current information on a page appears in white under the main category title; press the text to open the category's page (FIG. 3). If the text is grey, then the option associated with that category is currently disabled. This may be altered with changes in connectivity (connecting a USB stick to the panel, for instance) or changes to other pages within the menu.



FIG. 3 Settings Menu - Default View (INFO > Device Info)

In the main page, the following menu functions are available (these options are available for all pages in the *Settings* window):

Settings Menu options	
Configuration:  	If the lock icon is closed, you will need the correct password to make changes to any protected setup page. Press this icon and enter the Configuration password (default = 1988) to unlock the settings on this panel. Note that this will unlock the panel while the Settings is open, but is automatically locked again when the Settings window is closed.
Maximize/Minimize:  	Select this to maximize or minimize the size of the Settings menu window on the display.
Volume: 	Press to open the <i>Volume</i> window and adjust the output volume on the panel: 
Return to Previous Menu: 	Press the arrow to return to the previous menu.
Close Settings App: 	Press the "X" button to shut the <i>Settings</i> menu and return to the main display.
Adjust Window Size: 	Hold and drag the corner to adjust the size of the Settings menu window.

The main *Settings* menu (FIG. 3) provides access to all of the settings pages for G5 panels. The individual menus are separated into five categories: *INFO*, *DEVICE*, *CONNECTIONS*, *ACCOUNTS*, and *SYSTEM*.

The menu options available via the Settings window are summarized below:

Settings Menu options		
Page Name	Description	Page #
INFO (initial view)		
Device Info	Displays basic panel information, such as currently available memory and the screen resolution dimensions.	page 7
Maintenance	Provides control of basic panel functions, including rebooting or shutting down the panel.	page 8
DEVICE		
Storage	Provides access to data stored on the panel, as well as files accessible via connected USB storage devices.	page 9
Sound	Allows adjustment of volume levels and panel sounds settings.	page 16
Display	Provides controls for basic functions of the panel display, including brightness.	page 18
G5 Settings	Provides controls for page flip tracking and configuring Sleep mode.	page 21
Camera	Provides control of the panel's built-in camera.	page 23
Sensors	Allows activation and optimization of the panel's motion and light sensors.	page 24
VNC	Enables/disables and configures VNC server functionality on the panel.	page 26
SIP	Allows configuration of SIP communication settings for the panel.	page 27

Settings Window - Menu options (Cont.)		
CONNECTIONS		
Ethernet	Allows configuration of Ethernet communication settings with the panel.	page 28
NetLinx	Controls the method of connecting to a NetLinx Master.	page 30
Browser	Sets the default view mode for URLs opened in a Browser window.	page 33
Multi Preview	Configures the panel to receive signals from MXA-MP or MXA-MPL devices for video stream display.	page 35
Bluetooth	Provides the ability to pair one or more Bluetooth devices to the panel. Bluetooth functionality is only available if an (optional) MXA-BT Bluetooth USB Adapter (FG5968-19) is connected to the panel.	page 36
NFC	Controls the panel's Near Field Communications™ access, and displays the last NFC tag read by the panel.	page 37
ACCOUNTS		
Add Account	Provides the ability to configure outside accounts (such as Email and Dropbox) so that they can be used on the panel.	page 38
SYSTEM		
Date & Time	Allows setting and adjusting of time and date information on the panel.	page 39
Language & Input	Controls the language used by the Settings menu, as well as the keyboard input used for Settings menu field entries.	page 41
Security	Controls panel security, such as front button access and setting new panel passwords.	page 46
Reset and Update	Allows resetting and updating of panel settings and firmware, including installation of new firmware from an external drive.	page 47
Diagnostics	Displays the current processor temperature, provides access to panel logs, and toggles SSH functionality.	page 56

All of the pages and menus in the *Device*, *Connections*, *Accounts*, and *System* categories are password-protected.

Opening Settings pages

1. Select the appropriate page from the *Settings* menu.
2. In the *Password* keypad, enter the password and select **OK**. The default password is **1988**.

Closing the Settings menu

To close the *Settings* menu and return to the panel's user pages, select the **Close Settings App** icon at the bottom of the *Settings* window.

INFO - Device Info

The INFO - *Device Info* page (FIG. 4) displays basic panel information, such as currently available memory and the screen resolution dimensions (read-only).

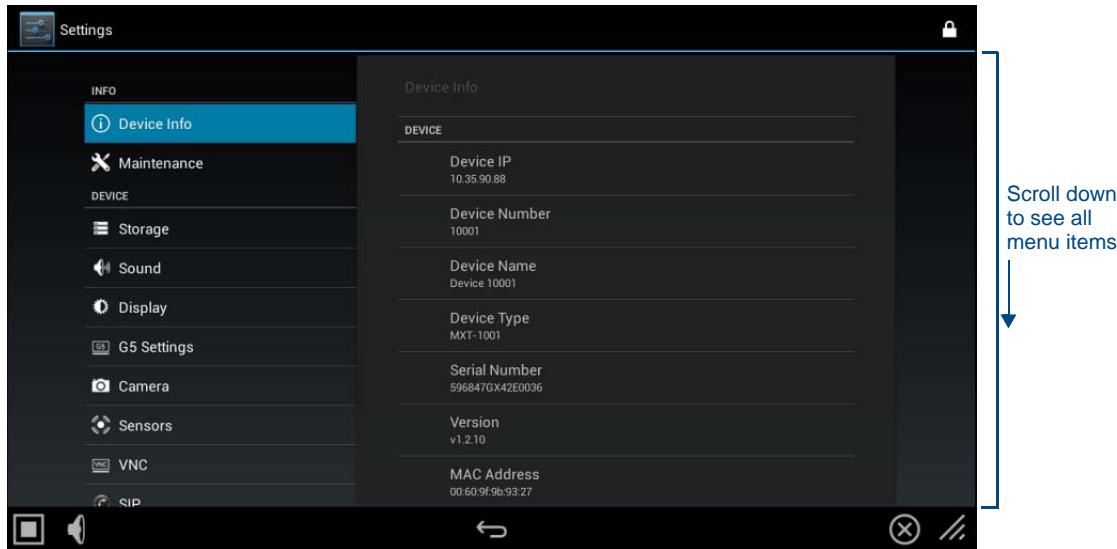


FIG. 4 INFO - Device Info page

Device Info page options	
DEVICE	
Device IP	Displays the panel's IP address.
Device Number	Displays the panel's device number.
Device Name	Displays the panel's device name.
Device Type	Displays the panel model.
Serial Number	Displays the specific serial number value assigned to the panel.
Version	Displays the current version of the panel's firmware.
MAC Address	Displays the panel's MAC address.
Bluetooth Address	Displays the panel's Bluetooth address.
Resolution	Displays the panel's screen height and width in pixels.
NETLNX MASTER	
Master IP	Displays the IP address for the panel's Master.
Master Port	Displays the port used by the panel's Master.
Master System Number	Displays the Master's system number.
Connection	Displays the panel's connection status.
MEMORY AND FILES	
Memory	Displays the amount of memory available on the panel.
File System	Displays the amount of MicroSD card memory available on the panel.
File Information	Displays information on the current main panel page.
MISC	
Up Time	Displays the time elapsed since the panel was last started.
Legal Information	Select this entry to open the <i>Legal Information</i> window, which displays information on intellectual property notices and information on copyright concerns.

INFO - Maintenance

The *INFO - Maintenance* page (FIG. 5) provides control of basic panel functions, including rebooting or shutting down the panel.

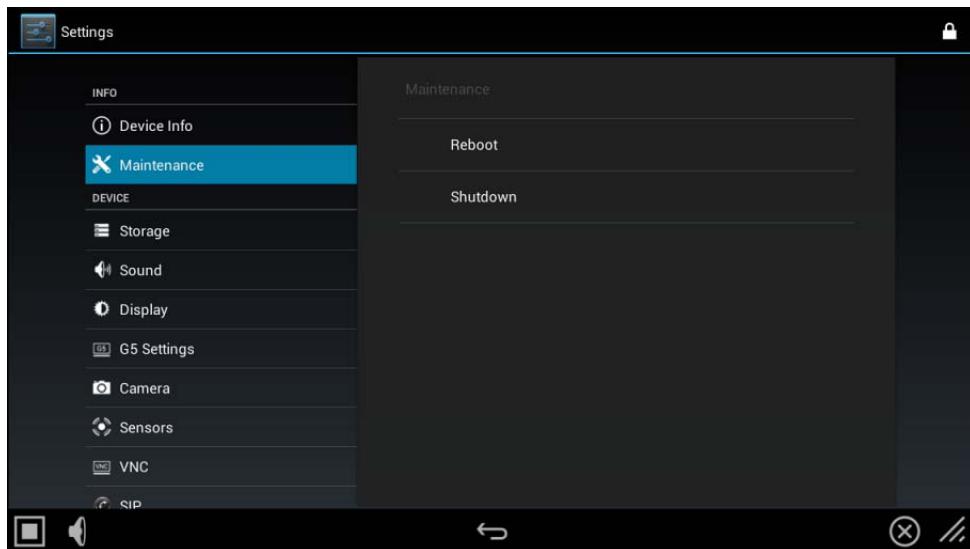


FIG. 5 Maintenance page

INFO - Maintenance page options	
Reboot:	Select this entry to open the <i>Reboot</i> window.
Shutdown:	Select this entry to open the <i>Shutdown</i> window.

Rebooting the Panel

1. In the *Maintenance* page, select **Reboot**. This opens the *Reboot* window (FIG. 6).

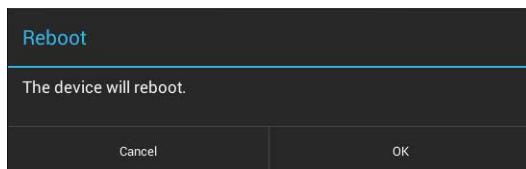


FIG. 6 Reboot window

2. Press **OK** to reboot.

Shutting Down the Panel

1. In the *Maintenance* page, select **Shutdown**. This opens the *Shutdown* window (FIG. 7):

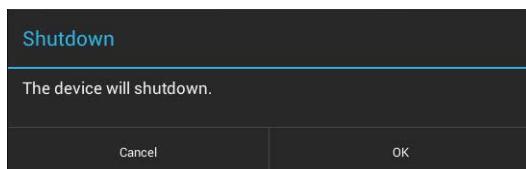


FIG. 7 Shutdown window

2. Press **OK** to shut down the panel.

DEVICE - Storage



The DEVICE pages are all password-protected. The default password is **1988**.

NOTE

The *Storage* page (FIG. 8) provides access to data stored on the panel including apps, pictures, audio files, and other files. This page also displays files accessible via connected USB storage devices, such as from hard drives or thumb drives.

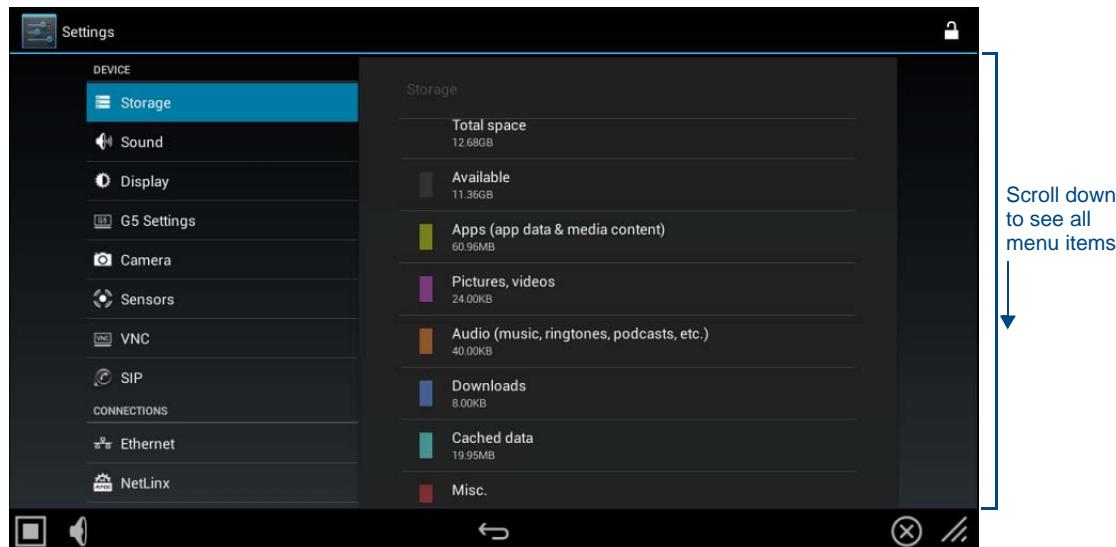


FIG. 8 Storage page

Storage page options	
INTERNAL STORAGE	
Internal Storage graph	This graph displays how much internal storage is being used compared to what is available, and which file categories are using that storage. Note that this graph is color-coded to indicate how much storage is being used by each storage type (described below).
Total Space	The total amount of storage space on the panel.
Available	The total amount of storage that may be used for apps and other files on the panel.
Apps (app data & media content)	The total amount of storage currently being used for apps and related files on the panel. Note that Apps are installed via TPDesign5, and cannot be added or removed via the panel.
Pictures, Videos	The total amount of storage currently being used for picture and video files on the panel. See the <i>Internal Storage</i> section on page 10 for details.
Audio (music, ringtones, podcasts, etc.)	The total amount of storage currently being used for audio files (such as music, ring tones, and podcasts) on the panel. Select this entry to open the <i>Choose Music Track</i> window. See the <i>Internal Storage: Audio</i> section on page 13 for details.
Downloads	The total amount of storage currently being used for downloaded files (such as text files or spreadsheets) on the panel. Select this entry to open the <i>Downloads</i> window. See the <i>Internal Storage: Downloads</i> section on page 14 for details.
Cached Data	The total amount of storage currently being used for cached data on the panel. Select this entry to clear the cache. See the <i>Internal Storage: Cached Data</i> section on page 14 for details.
Misc.	The total amount of storage currently being used for files not matching the previous categories on the panel. Select this entry to open the <i>Misc Files</i> window.
USB STORAGE	
Mount USB Storage	This option only appears if no USB data storage is connected to the panel.
USB Storage Graph	This graph displays the total used storage in a connected USB storage device versus the total amount available. This graph only appears if a USB storage device is connected to the panel.

Storage page options (Cont.)**USB STORAGE (Cont.)**

Total Space	The total amount of used storage on the connected USB storage device.
Available	The total amount of available storage on the connected USB storage device.
Unmount Shared Storage	Select this option to allow safe removal of any USB data storage device connected to the panel.

Internal Storage

To view all picture and video files stored either on the panel or on connected USB storage media, select *Pictures, Videos* on the *Storage* page to open the *Pictures/Video* window. This window displays all folders containing graphics or video files accessible by the panel, in alphabetical order. With a USB storage device connected to the panel, the initial view is of the "udisk" album (FIG. 9):

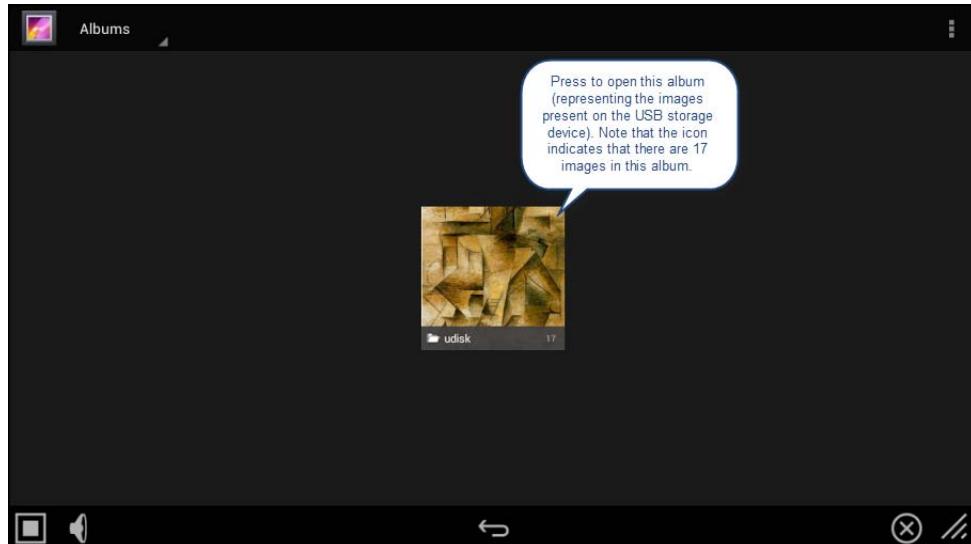


FIG. 9 Storage page - Udisk album icon

Press any album icon to view the images in that album (FIG. 10):

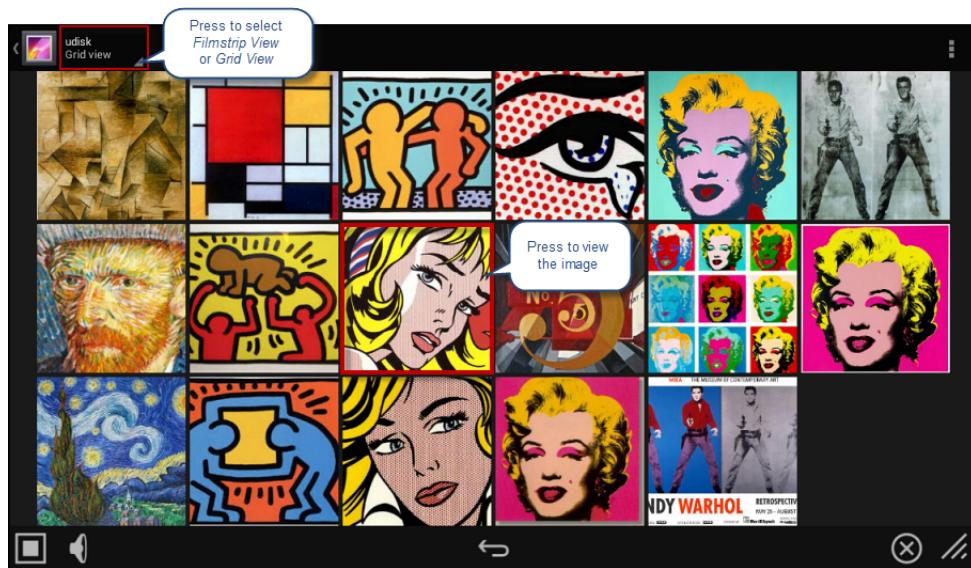


FIG. 10 Storage page - Image selected for display

Use the View Options menu (in the upper-left corner of the page) to select either *Filmstrip View* or *Grid View* (FIG. 11). The default setting is *Grid View*.

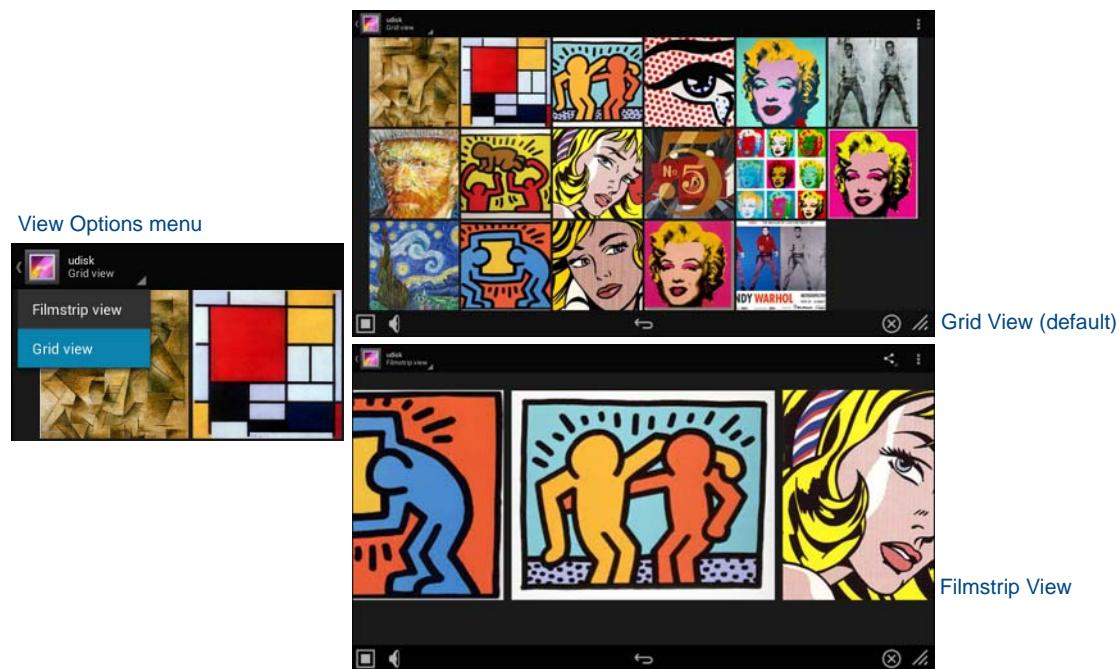


FIG. 11 Storage page (Pictures, video) - View options menu

Press any item in the album view to display a full-screen version of the image or video (FIG. 12):

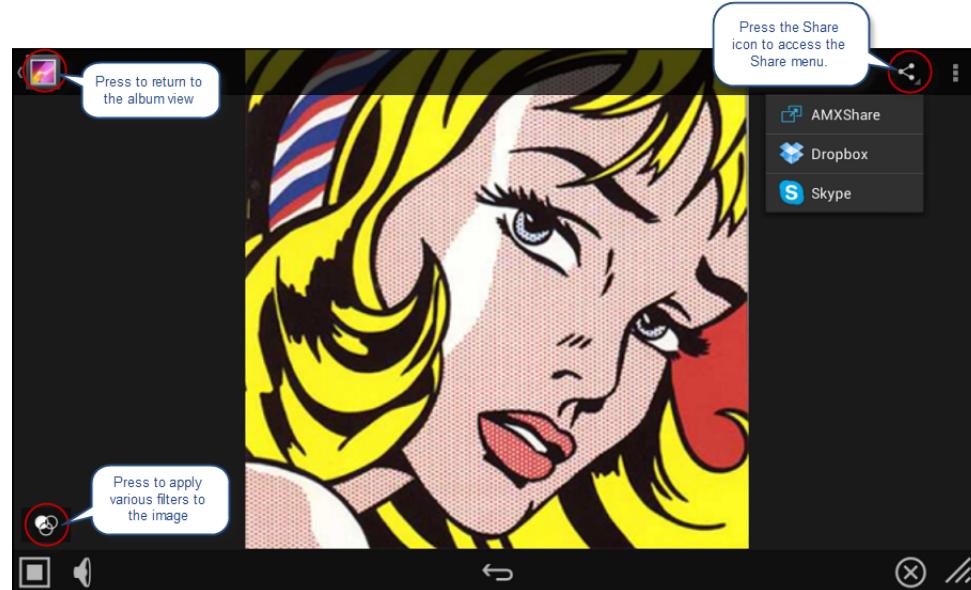


FIG. 12 Storage page - Image Displayed

Note the additional options in this view: *Share* and *Edit*.

Share

Press the *Share* icon in the upper-right of this page to open the Share options menu shown in FIG. 12. Select an application with which this image will be shared:

- **Dropbox:** Select to share the selected image or video via Dropbox.
- **Skype:** Select to share the selected image or video via Skype.

Note that the *Share* option is always present in the Filmstrip view (see FIG. 11). In Filmstrip view, the image in the center of the window is the image that will be shared.

Edit options (Pictures only)

Press the *Edit* icon in the upper-right of this page to open the Edit options menu shown in FIG. 13. These options are available for images, not videos:

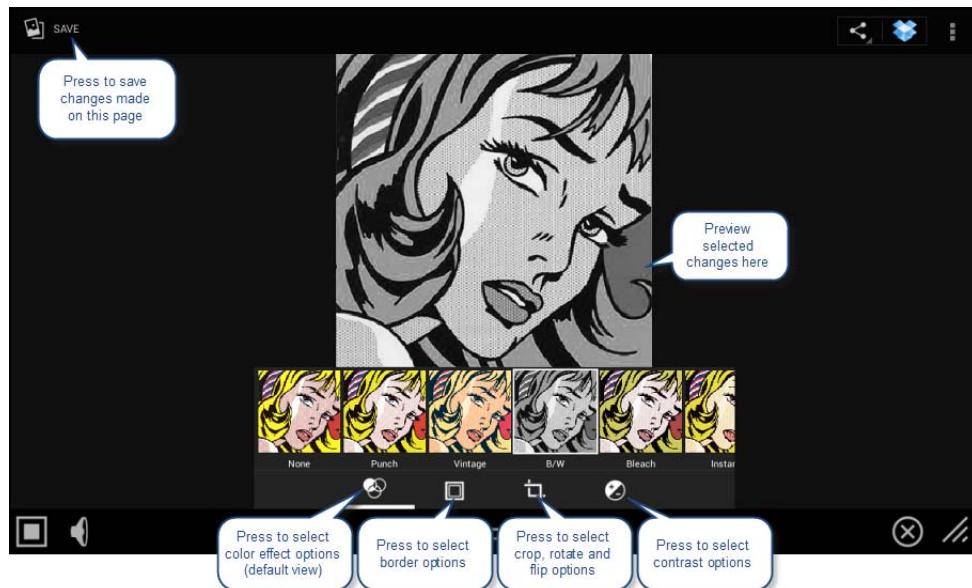


FIG. 13 Storage page - Image Edit options



To close a picture or video file and return to the album view, touch the panel display to display the Album icon in the upper left corner. Select the icon to return to the main album. Alternately, select the Return to Previous Page icon at the bottom of the page.

Pictures, videos: View Filter

Use the *View Filter* menu at the top left of the page to filter the images shown, based on metadata tags (*Locations*, *Times*, *People* or *Tags*) contained in the image or video files (FIG. 14):

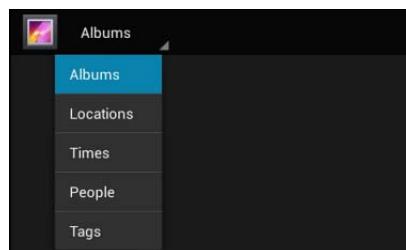


FIG. 14 View Filter menu

By default, the filter is set to *Albums* - this will show all albums detected on the panel or connected USB storage device. To return to the *Storage* page, select the *Return to Previous Page* icon at the bottom of the window.

Internal Storage: Audio

To access all audio files either stored on the panel, stored on USB storage media or stored in an individual Dropbox account, select the *Audio* entry on the *Storage* page to open the *Audio Access Options* window (FIG. 15).

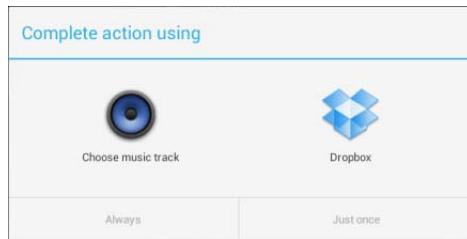


FIG. 15 Audio Access Options

Choose the location of the file: Select *Choose Music Track* if the file is accessible via internal storage or USB; select *Dropbox* if the file is accessible via a Dropbox account.



Before attempting to access a file on a Dropbox account, you must first open the Dropbox app on the panel and log in.

After selecting the option, either select **Always** to access files in this way every time the *Audio* option is selected, or select **Just once** to give both options every time.

Select *Choose music track* to open the *Choose Music Track* window (FIG. 16). This window lists all music tracks accessible by the panel, indicating the title, artist, location and track time for each.

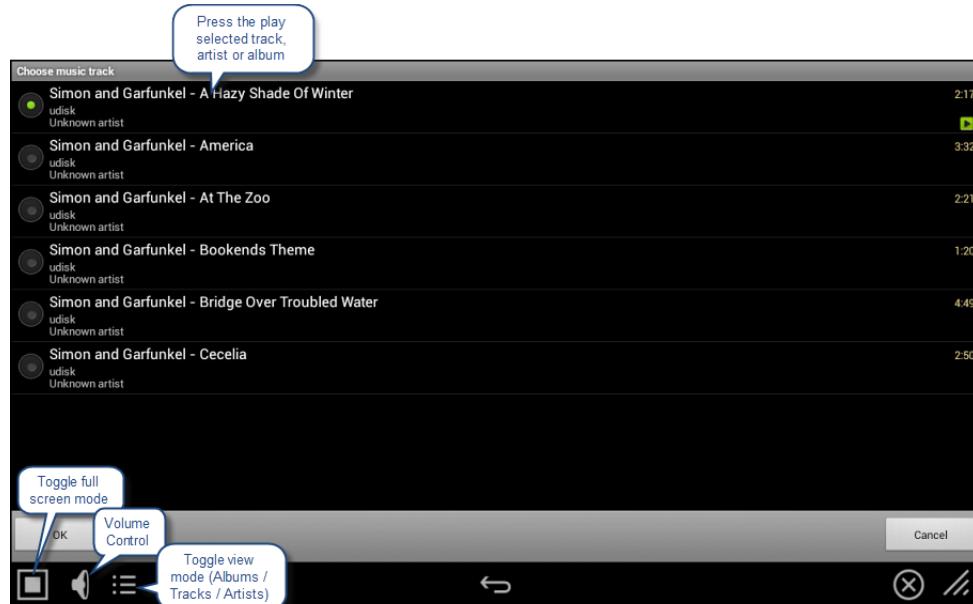


FIG. 16 Choose Music Track window

Press any track to begin playback. Note that during playback, the track icon (left side) is highlighted in green, and the green Play icon is displayed over the track time (on the right). Press the track again to stop playback. Press OK to return to the Storage page.

Internal Storage: Downloads

From the *Storage* page, select *Downloads* to display all files downloaded to the panel. This opens the *Downloads* window. Select a downloaded file in the window to open it.

To close the *Downloads* window, touch the display screen anywhere outside of the window.

Internal Storage: Cached Data

Under *Internal Storage*, the *Cached Data* option indicates the amount of data currently in the panel's memory cache for all apps.

To clear the cache, press *Cached Data*. The panel will prompt you to verify this action before clearing the cache (FIG. 17):

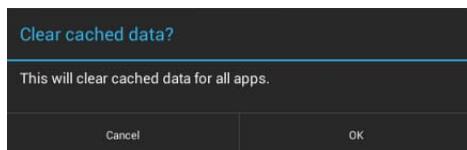


FIG. 17 Clear Cached Data prompt

Select **Cancel** to return to the *Storage* page, or select **OK** to clear the cached data for all apps on the panel.

Internal Storage: Misc

Under *Internal Storage*, the *Misc.* option indicates the amount of memory allocated files and applications that do not fit previous sections. Press *Misc.* to view the files in the *Misc files* window (FIG. 18):

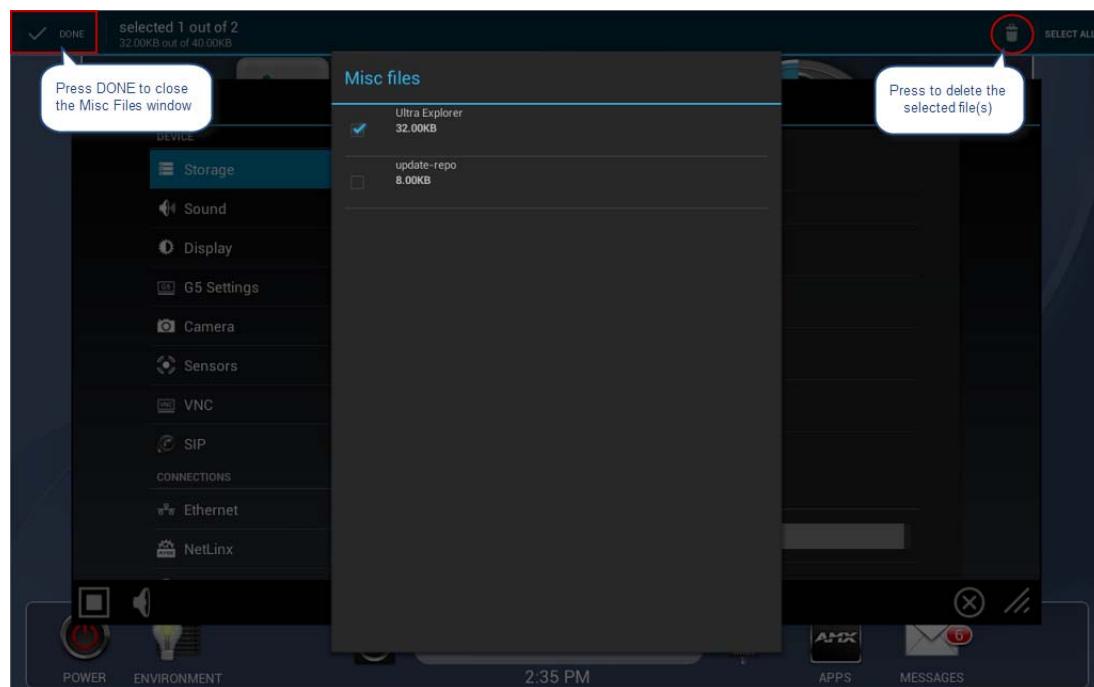


FIG. 18 Misc files window

Note that when one or more files are selected in this window, additional options are made available across the top of the page:

- Press the **Delete** icon (upper-right) to delete the selected files from the panel.
- Press **Done** to close the *Misc files* window and return to the *Storage* page. Alternatively, touch anywhere outside the *Misc files* window to close it.

USB Storage

In addition to its internal storage capabilities, G5 panels also have the ability to access files in USB-enabled external storage options, such as thumb drives and external hard drives. The status of USB storage is indicated in the *USB STORAGE* section of the *Storage* page.

- If no USB storage option is connected to the panel, this section will read "*Insert USB storage for mounting*".
- If a USB storage option is connected to the panel, the USB Storage section will display the panel's total used space and total available space, as well as give the option to unmount the storage device (FIG. 19).

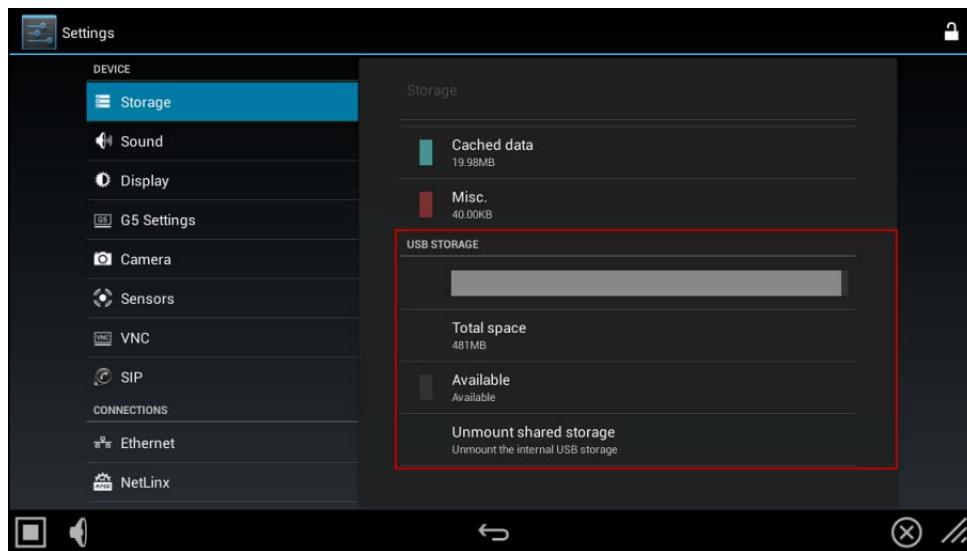


FIG. 19 USB Storage

Unmounting a USB Storage Device

1. On the *Storage* page, select the *Unmount Shared Storage* option .
2. This opens the *Unmount USB storage?* window (FIG. 19):

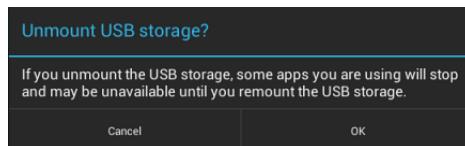


FIG. 20 Unmount USB Storage prompt

3. Select **OK** to unmount the storage device (or **Cancel** to return to the *Storage* page).

If the storage device has been unmounted from the panel but is still physically connected, the only option in the USB Storage section will be *Mount USB storage*. Press this option to remount the storage device to the panel.

DEVICE - Sound

The *Sound* page (FIG. 21) allows adjustment of volume levels and panel sounds settings.

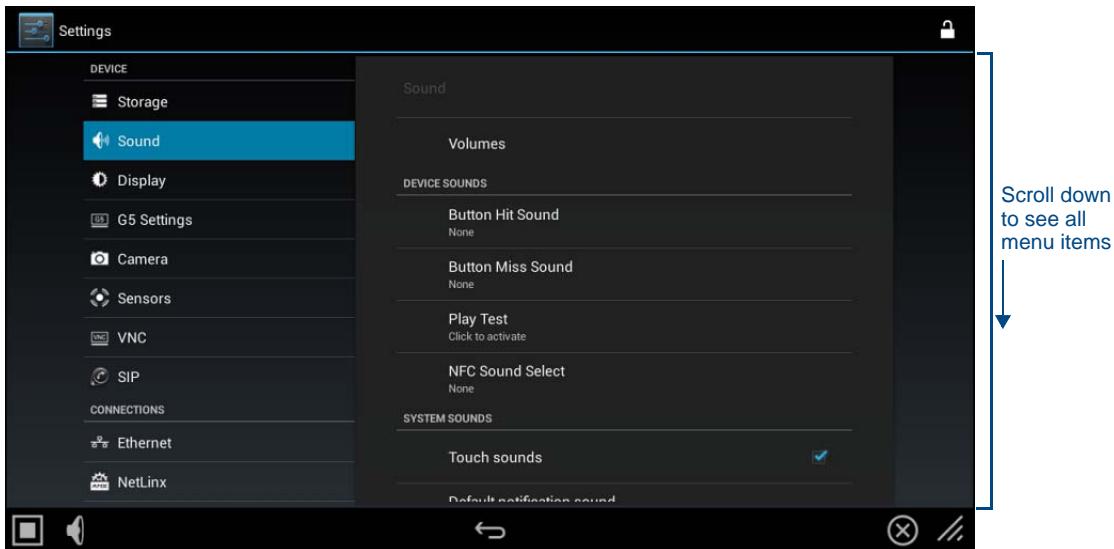


FIG. 21 DEVICE - Sound page

Sound page options	
Volumes	Press to open the <i>Volumes</i> window, which provides options to adjust volume for Music, video, games and other media as well as Notifications and Alarms. See the <i>Adjusting Volumes</i> section on page 16 for details.
DEVICE SOUNDS	
Button Hit Sound	Displays the information on the sound file associated with the Button Hit Sound function. See the <i>Selecting a Button Hit, Button Miss and NFC Notifications Sounds</i> section on page 17 for details.
Button Miss Sound	Displays the information on the sound file associated with the Button Miss Sound function. See the <i>Selecting a Button Hit, Button Miss and NFC Notifications Sounds</i> section on page 17 for details.
Play Test	Select this entry to test the audio output by playing a preselected sound.
NFC Sound Select	Displays the information on the sound file associated with the NFC Sound function. See the <i>Selecting a Button Hit, Button Miss and NFC Notifications Sounds</i> section on page 17 for details. Note: For more information on NFC functionality, refer to the CONNECTIONS - NFC section on page 37.
SYSTEM SOUNDS	
Touch Sounds	Select this entry to enable a notification sound every time the panel display is touched.
Default Notification Sound:	Select this entry to choose a default notification sound from the menu provided. See <i>Selecting a Default Notification Sound</i> section on page 17.
Audio:	Displays the current audio options. The current and only option is "Internal Audio".

Adjusting Volumes

In the *Sound* page, select the *Volumes* option to open the *Volumes* window (FIG. 22 on page 17).

- To adjust the panel's media volume, slide the *Music, video, games, & other media* slide bar pointer to your preferred level. To mute the panel, move the slide bar pointer all the way to the left; the speaker icon on the left of the slide bar will glow red and feature a bar across it.
- To adjust the volume of notifications, slide the *Notifications* slide bar pointer to your preferred level. If the *Music, video, games, & other media* slide bar is set to mute, the *Notifications* slide bar will also be muted.
- To adjust the volume of alarms, slide the *Alarms* slide bar pointer to your preferred level. The *Alarms* volume will NOT be muted if the other slide bars are set to mute.
- When finished adjusting volumes in this window, press **OK** to close the window.

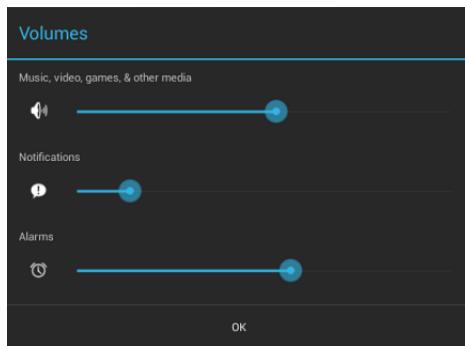


FIG. 22 Volumes window

Selecting a Button Hit, Button Miss and NFC Notifications Sounds

To select a particular sound to coincide with a button being pressed in a panel page:

1. In the *Sound* page,
 - Select **Button Hit Sound** to select a sound to coincide with a button being *pressed* via the *Button Hit Sound* window (FIG. 23);
 - Select **Button Miss Sound** to select a sound to coincide with a button being *missed* via the *Button Miss Sound* window (FIG. 23);
 - Select **NFC Sound Select** to select a sound to coincide with an NFC device being detected by the panel via the *NFC Sound Select* window (FIG. 23);

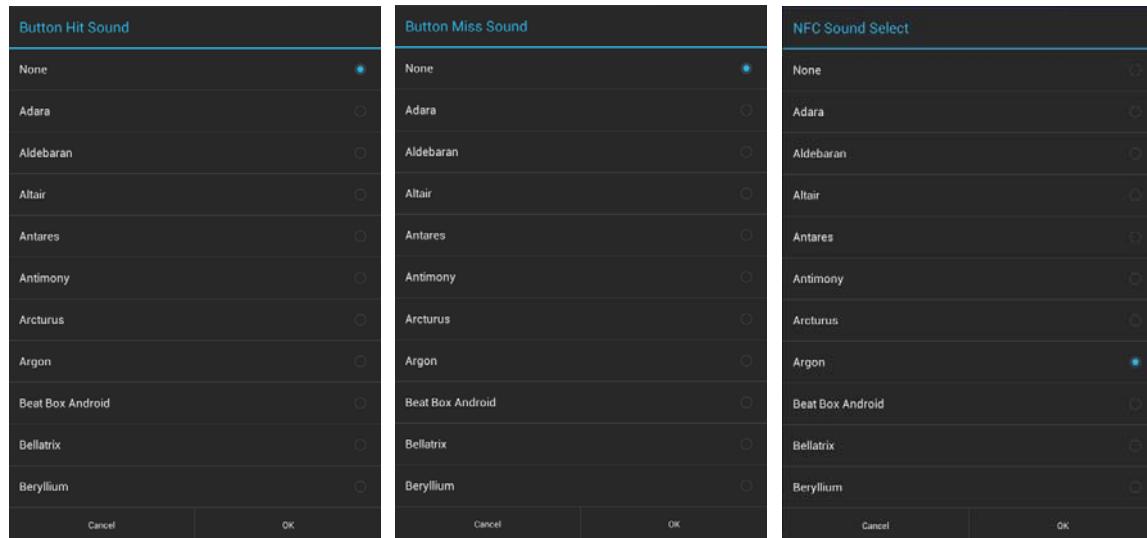


FIG. 23 Button Hit Sound, Button Miss Sound and NFC Sound Select windows

2. Choose a sound from the presented list: selecting a new sound will play it once. The sound will only be audible if the *Media* slide bar in *Volumes* is not muted.
3. Once you select the preferred sound, press **OK** to save it. The sound's name will now appear under the category in the *Sound* page.
4. If you wish to return to the *Sound* page without making any changes, press *Cancel*.

Selecting a Default Notification Sound

To select a particular sound to be the default notification sound for all panel functions:

1. In the *Sound* page, under SYSTEM SOUNDS, enable the *Touch Sounds* option
2. Select *Default notification sound*. This opens the *Default notification sound* window.
3. Choose a sound from the presented list: selecting a new sound will play it once. The sound will only be audible if the *Notifications* slide bar in *Volumes* is not muted.

- Once you select the preferred sound, press **OK** to save it. If you wish to return to the *Sound* page without making any changes, press *Cancel*.

DEVICE - Display

The *Display* page (FIG. 24) controls the basic functions of the panel display, including the panel brightness.



FIG. 24 DEVICE - Display page

Display page options	
Brightness:	Sets the display brightness and contrast levels of the panel. See <i>Adjusting Panel Brightness</i> on page 18 for details.
Display Timeout:	Indicates the length of time that the panel can remain idle before the display automatically powers down. Select the Display Timeout setting. Range = 15, 30 seconds, 1, 5, 10, 30 minutes, 1, 2 hours. Set the timeout value to <i>None</i> to disable Display Timeout mode. See the <i>Adjusting Display Timeout</i> on page 19 for details.
Font Size:	Sets the size of the font used in the Settings menu. See <i>Selecting the Font Size</i> on page 19 for details.
Calibration Test:	Select this to open the <i>Calibration Test</i> page. See <i>Calibration Test</i> on page 20 for details.

Adjusting Panel Brightness

In the *Display* page, select **Brightness** to open the *Brightness* window (FIG. 25).

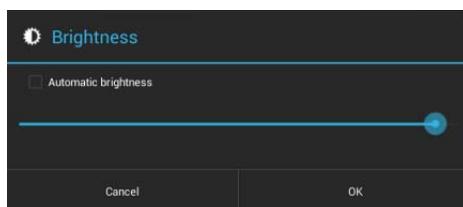


FIG. 25 Brightness window

Use the slider bar for manual adjustment of the panel's display brightness.

Select **Automatic brightness** to make automatic adjustments to brightness based on ambient light in the vicinity.

Press **OK** to save changes and close this window (or select **Cancel** to return to the *Display* page without saving any changes).

Adjusting Display Timeout

In the *Display* page, select **Display Timeout** to open the *Display Timeout* window (FIG. 26).

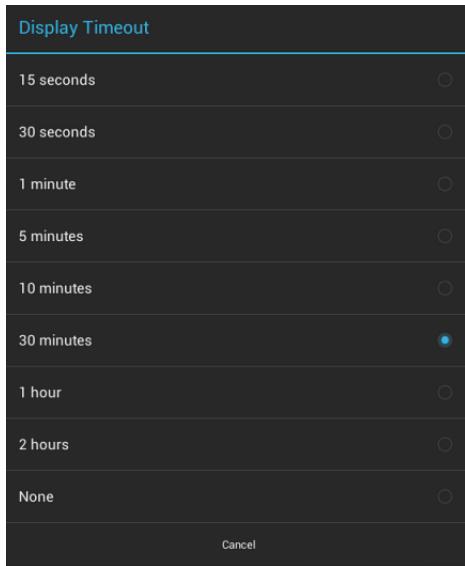


FIG. 26 Display Timeout menu

Select the time period that will pass before the panel enters sleep mode, or select *None* to keep the panel from shutting down its display. The default setting is *30 Minutes*.

Press **OK** to save changes and close this window (or select **Cancel** to return to the *Display* page without saving any changes).

Selecting the Font Size

In the *Display* page, select **Font size** to open the *Font Size* window (FIG. 27).

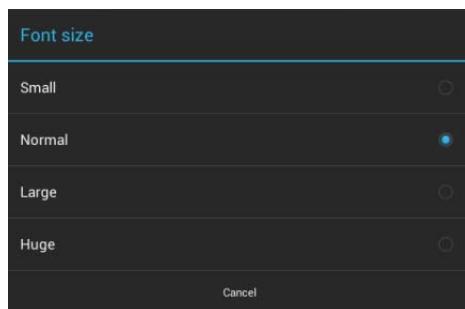


FIG. 27 Font Size menu

Select the desired size for the font used in the Settings menu via this window. The default setting is *Normal*.

Changing this setting requires re-entry of the password in order to confirm your changes. If you wish to return to the *Display* page without saving any changes, select *Cancel* at the bottom of the window.

Calibration Test

Select **Calibration Test** to open the *Calibration Test* page (FIG. 28):

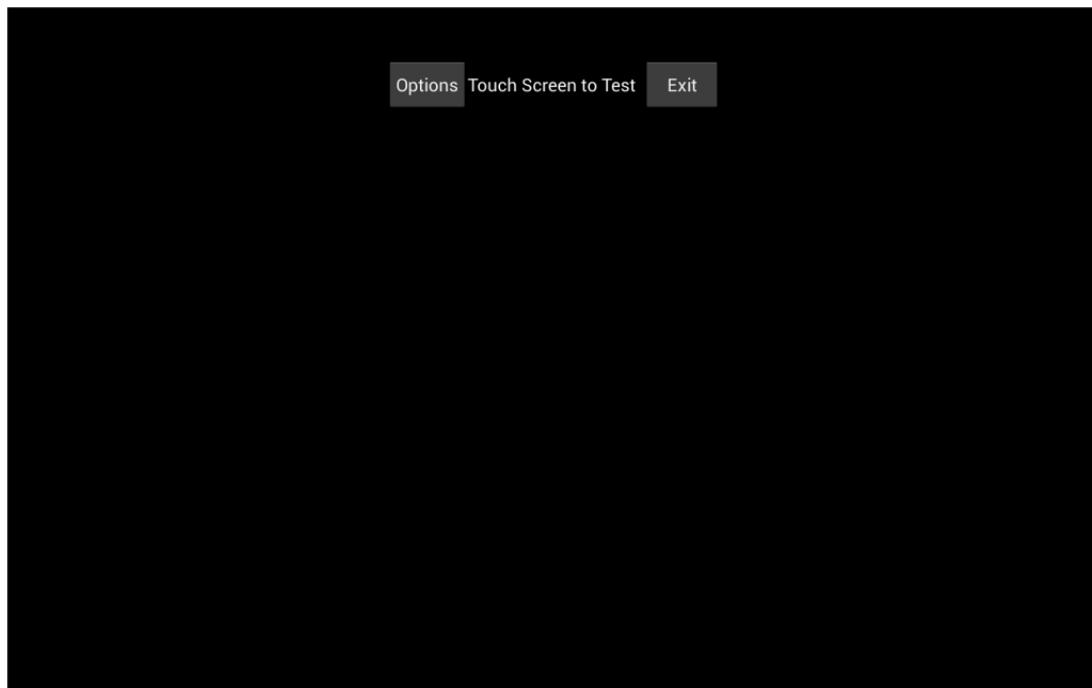


FIG. 28 Calibration Test menu

G5 panels are self-calibrated on startup. The *Calibration Test* page may be used to verify the accuracy of that calibration.



NOTE

In order to ensure a correct calibration upon starting, the panel display should not be touched while the panel is booting.

To run a calibration test on the touch panel:

1. In the *Settings* menu, select *Display*.
2. In the *Display* page, select *Calibration Test*.
3. Touch the screen to test the calibration.
4. For options when testing the calibration of the touch panel, select **Options** to open the *Calibration Test Options* window (FIG. 29).
 - Press **Fade** to cause the cursor to fade away after touching, or press it again to retain all touches on the display screen.
 - Press **Clear** to clear the memory of previous touches. When finished, select **Exit** to return to the *Calibration Test* page.

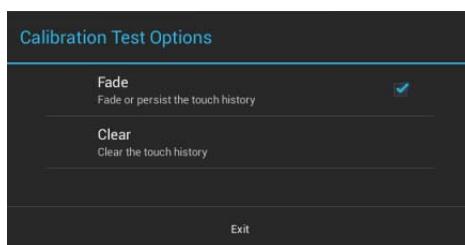


FIG. 29 Calibration Test Options window

5. When finished with the calibration test, select **Exit** to return to the *Display* page.

DEVICE - G5 Settings

The *G5 Settings* page (FIG. 30) controls both the panel's transmission of page flip tracking to the Master and the panel's active duration before going into *Sleep* mode.

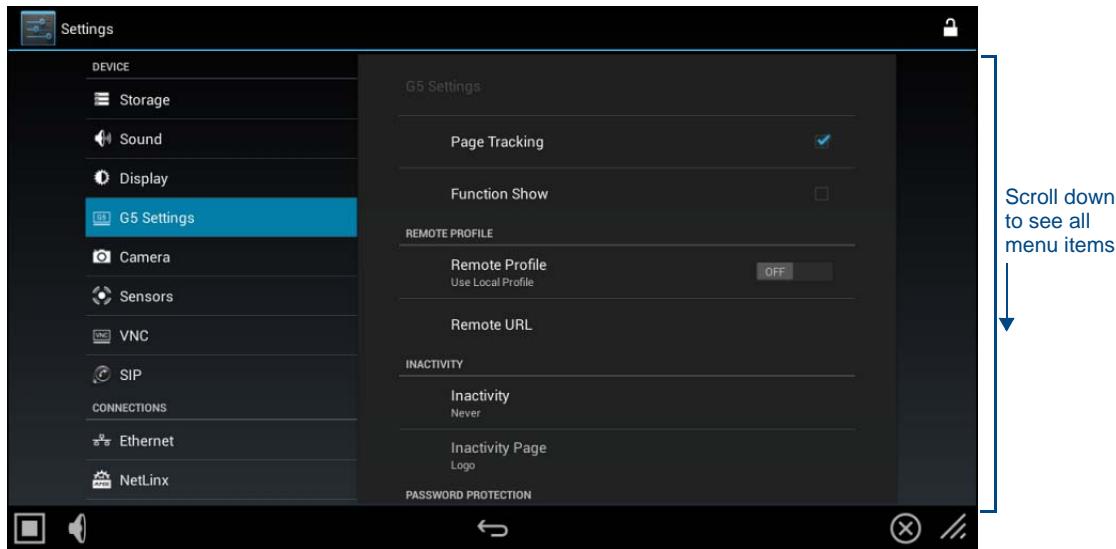


FIG. 30 G5 Settings page

G5 Settings page options	
Page Tracking:	Press to enable or disable the panel sending page flip tracking to the Master. Default = <i>disabled</i> .
Function Show	Press to display the address, channel, and level information associated with each button on the panel. Default = <i>disabled</i> .
REMOTE PROFILE	
Remote Profile	Press On to enable Remote Profiles. Note that turning Remote Profiles On enables the <i>Remote URL</i> option.
Remote URL	Enter the URL of the desired remote profile: press this field to access an on-screen keyboard. Refer to <i>Setting a Remote Profile</i> section on page 21 for details.
INACTIVITY	
Inactivity:	Select this to open the <i>Inactivity</i> window and control the maximum time the panel will remain inactive before going into Sleep mode. Refer to <i>Setting an Inactivity Time Period and Page Flip</i> section on page 22 for details.
Inactivity Page:	Lists the TPDesign5 page displayed when the panel goes to sleep. Refer to <i>Setting an Inactivity Time Period and Page Flip</i> section on page 22 for details.
PASSWORD PROTECTION	
Password 1-4	These options provide the option of assigning passwords to the secured Settings pages. Refer to <i>Setting Password Protection</i> section on page 22 for details.

Setting a Remote Profile

1. In the *G5 Settings* page, press **Remote Profile** to toggle the option *ON*.
2. Press **Remote URL** to enter the URL of the remote profile to use via the on-screen keyboard (FIG. 31):

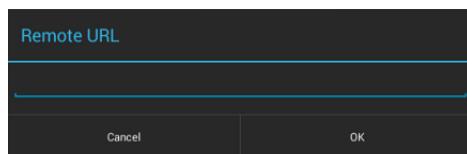


FIG. 31 Remote URL window

3. Press **OK** to save changes and close this window.

Setting an Inactivity Time Period and Page Flip

- In the G5 Settings page, press **Inactivity** to open the *Inactivity* window (FIG. 32):

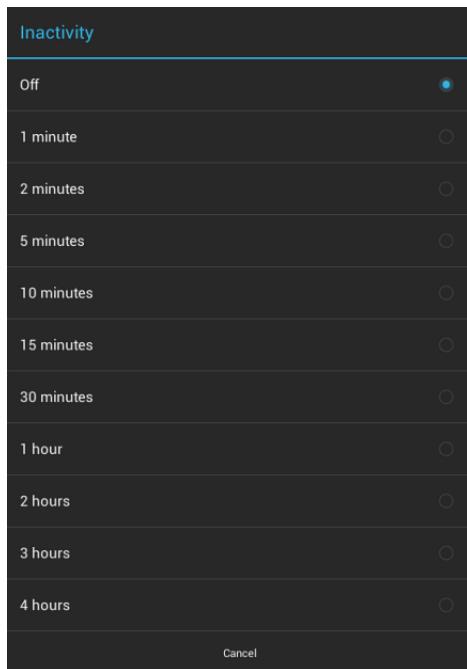


FIG. 32 Inactivity window

- Select the amount time that will be allowed to pass before the panel enters into sleep mode. Select **Off** to disable the inactivity timer. The default setting is *1 hour*.

Setting Password Protection

The options under PASSWORD PROTECTION provide the ability to assign alphanumeric values to particular password sets (FIG. 33):

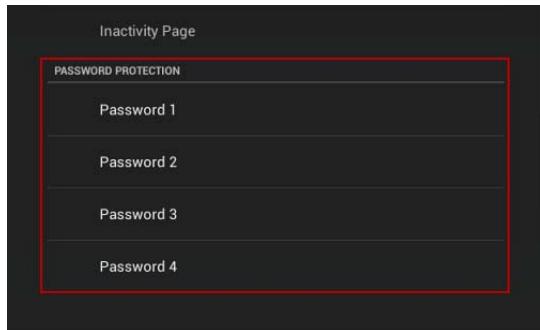


FIG. 33 G5 Settings page - PASSWORD PROTECTION options (Password 1-4)

- In the G5 Settings page, under *PASSWORD PROTECTION*, press **Password 1** to open the *Password 1* window to enter a new alphanumeric password via the on-screen keyboard (FIG. 34):

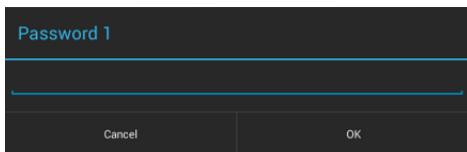


FIG. 34 Password 1 window

- Press **OK** to save changes (or press *Cancel* to close this window without saving changes).
- Press **Password 2**, **Password 3** and **Password 4** to set Passwords 2-4 (press **OK** to save each).

DEVICE - Camera

The *Camera* page (FIG. 35) controls the output from the panel's built-in camera.

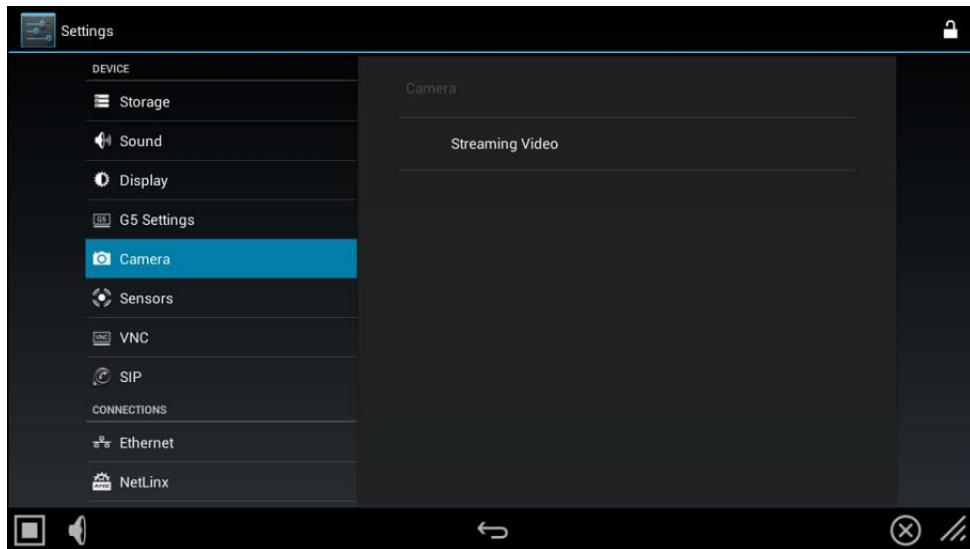


FIG. 35 Camera page

Camera page options	
Streaming Video	Opens the Streaming Video window.



NOTE

When the camera is enabled, an LED next to the camera lights (on the front panel) to indicate that it is on.

Streaming Video

The *Streaming Video* window (FIG. 36) is used to preview video sources, as well as preview input from the panel's camera.

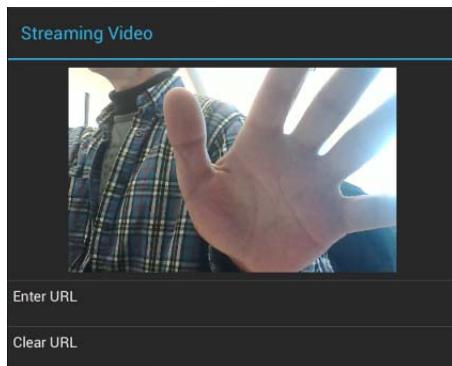


FIG. 36 Streaming Video window

The *Streaming Video* page may also be used to preview other video sources, such as those coming through an MXA-MP or MXA-MPL.

Streaming Video Page options	
Enter URL:	Select this to enter the URL for the video stream to be displayed. The default is the panel's camera, if applicable.
Clear URL:	Select this to clear the current streaming video URL being displayed.

Entering a Streaming Video URL

To enter a URL for a remote video stream source:

- From the *Streaming Video* page, select *Enter URL* to open the *Enter URL* window (FIG. 37).

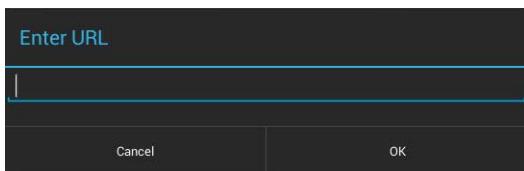


FIG. 37 Enter URL window

- Enter the URL for the video feed and press **OK**.

- If the feed format is supported and visible, the video feed will now appear in the *Streaming Video* page window.

Clearing the Current Streaming Video URL

Press **Clear URL** in the *Streaming Video* window to clear the current URL for a remote streaming video source.

To close the *Streaming Video* window, touch anywhere outside of the window.

DEVICE - Sensors

The *Sensors* page (FIG. 38) allows activation and optimization of the panel's motion and light sensors.

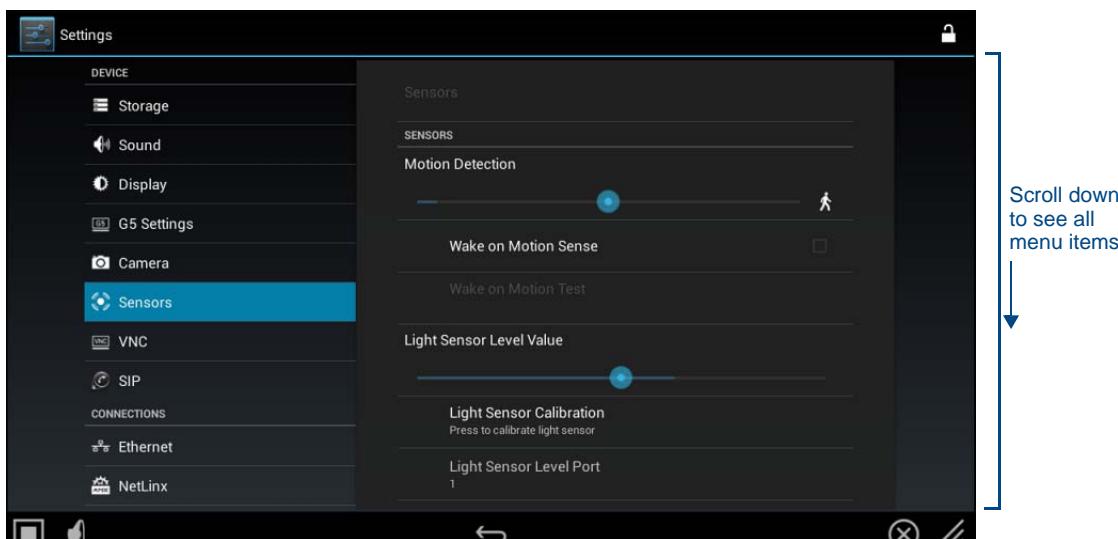


FIG. 38 Sensors page

Sensors page options	
Motion Detection	<ul style="list-style-type: none"> The blue bar within the slide bar shows the current motion sensor reading. The slide bar sets the motion sensor threshold. The threshold controls when a motion sensor channel is on. The "walk" icon shows bars on either side when the threshold is crossed (FIG. 38).
Wake on Motion Sense:	Press this checkbox to wake up the panel if any motion detected crosses the threshold set by the Motion Detection slide bar.
Wake on Motion Test:	This selection only be enabled if <i>Wake Panel On Motion Sense</i> is enabled. Pressing the test button will initiate a test mode where the display will go to sleep and wait for motion to turn it on. It can be used to test your current Motion Detection threshold value.

Sensors page options (Cont.)	
Light Sensor Level Value	<ul style="list-style-type: none"> The blue bar within the slide bar displays the current light sensor reading. The slide bar indicates the light sensor threshold. The threshold controls when a Light Sensor Channel Code press will be generated.
Light Sensor Calibration:	Press to perform a calibration on the light sensor. See the <i>Calibrating the Light Sensor</i> section on page 25 for details.
Light Sensor Level Port:	Displays the current level port being used by the light sensor (read-only). Default = 1.
Light Sensor Level Number:	Displays the current level being used by the light sensor (read-only). Default = 0.
Light Sensor Channel Port:	Displays the current channel port being used by the light sensor (read-only). Default = 1.
Light Sensor Channel Number:	Displays the current channel being used by the light sensor (read-only). Default = 0.
Motion Sensor Channel Port:	Displays the current channel port being used by the motion sensor (read-only). Default = 1.
Motion Sensor Channel Number:	Displays the current channel being used by the motion sensor (read-only). Default = 0.
Sensor Version:	Displays the current sensor version, if applicable (read-only).



NOTE

Light and motion sensor ports, levels, and channels are configured in TPDesign 5. For more information on configuring light and motion sensors, please refer to the TPDesign 5 Operation/Reference Guide, available at www.amx.com.

Calibrating the Light Sensor

When the panel is installed for the first time, the light sensor should be calibrated to the room's maximum ambient light condition. This calibration setting will be saved until the panel's system settings are reset.

To calibrate the light sensor from the *Settings* pages:

- From the *Sensor Settings* page, press **Light Sensor Calibration**.
- Allow the panel 10 seconds to calibrate the room's ambient light level. The indicator next to the button will show a rotating circle while calibration is in progress.

DEVICE - VNC

An on-board VNC (Virtual Network Computing) server allows the panel to connect to any remote PC running a VNC client. Once connected, the client can view and control the panel remotely. The options on the VNC page (FIG. 39) allow you to enable or disable VNC server functionality.

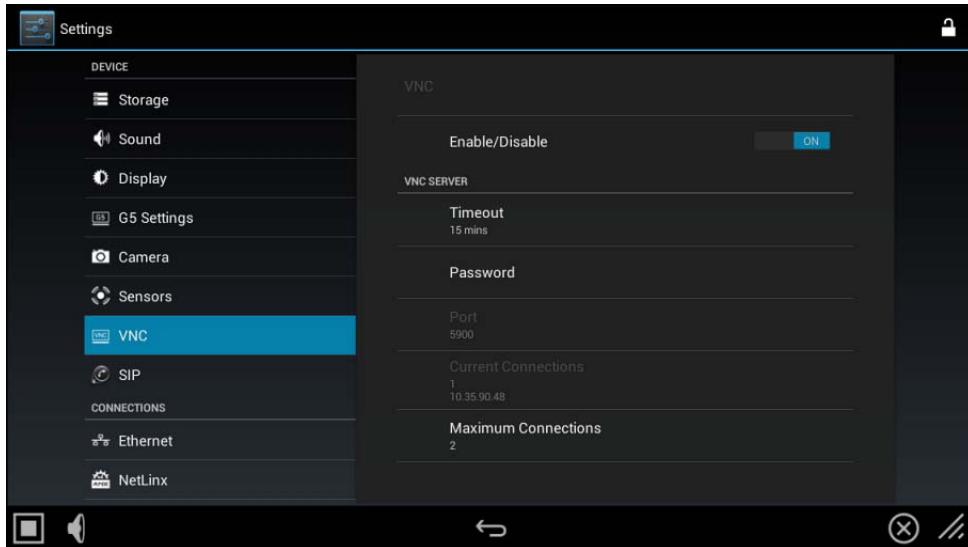


FIG. 39 VNC page

VNC page options	
Enable/Disable:	The Enable/Disable button toggles between the two VNC settings: <ul style="list-style-type: none">Disable - deactivates the VNC server on the panel.Enable - activates the VNC server on the panel.
VNC SERVER	
Timeout:	Sets the length of time (in minutes) that the panel can remain idle, detecting no cursor movements, before the VNC session is terminated. (default = 15 minutes).
Password:	Use this field to enter the VNC Authentication session password required for VNC access to the panel.
Port:	Use this field to enter the number of the port used by the VNC Web Server. Note that this field is enabled only while VNC is disabled (default = 5900).
Current Connections:	Displays the number of users currently connected to this panel via VNC (read-only).
Maximum Connections:	Displays the maximum number of users that can be simultaneously connected to this panel via VNC. Press this field to increase the number allowed to connect to this panel. (default = 2).



The VNC server takes snapshots of the display buffer and only sends them via VNC at a low frame rate.

Enabling VNC

In the VNC page, press **Enable/Disable** to toggle VNC to **ON** (the default setting is OFF).

Configuring VNC Access

In the VNC page, use the options under VNC SERVER to configure various aspects of VNC Access on the panel:

- Press **Timeout** to specify a timeout period for VNC connections, in the *Timeout* window. Press **OK** to save changes.
- Press **Password** to assign the password to be required to establish a VNC connection, in the *Password* window. By default, no VNC password is set. Press **OK** to save changes.

- Press **Port** to specify the port to be used by the VNC Web Server, in the *Port* window. This option is not available if VNC is currently enabled. Press **OK** to save changes.
- Press **Maximum Connections** to set the maximum number of users that can be simultaneously connected to this panel via VNC. Press **OK** to save changes.

DEVICE - SIP

G5 panels are available to participate in G4 intercom operations. This includes point to point, and point to multi-point sessions using the standard ^ICS, ^ICM, and ^ICE commands.

- Videocom is not available at this time. Skype should be used for video communications.
- No configuration is necessary for intercom operation. All config is done via send commands.

The *SIP* page (FIG. 40) controls the configuration of settings for SIP communication with the panel.

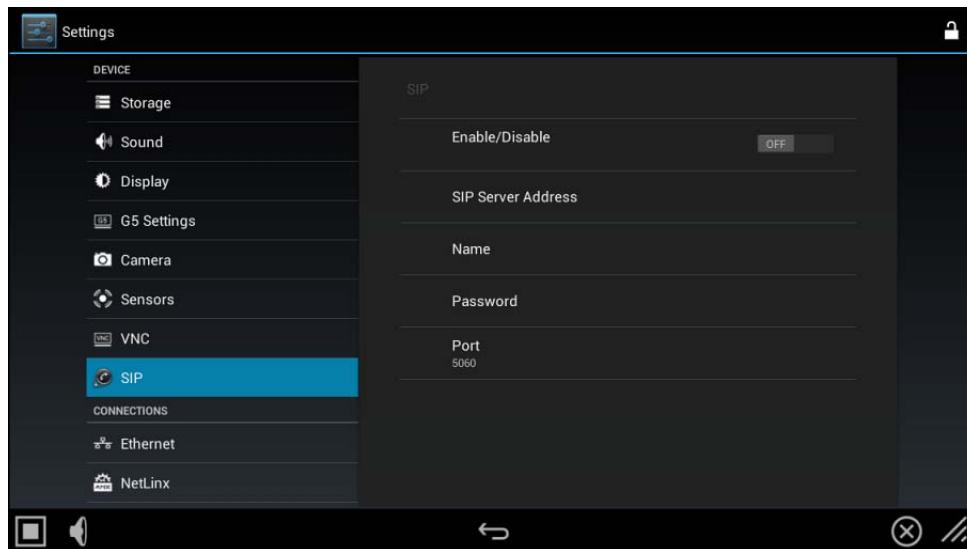


FIG. 40 SIP page

SIP page options	
Enable/Disable	Controls connection to the SIP server: When enabled, the panel will attempt to connect to the provide IP address. SIP will automatically be disabled if the panel is unable to connect to the gateway.
SIP Server Address	Enter the IP address of the SIP gateway in this text field.
Name	Enter the Username/extension for this panel.
Password	Enter the User defined password for this user/extension.
Port	Enter the IP port to communicate over (default = 5060).



Additionally, SIP can be configured via send commands using the same commands from G4.

Custom Ringtones

G5 supports custom ringtones and ringback tones.

- To include a custom *ringtone*, simply add the file **ringer_XXX.wav** to your TPD project. When G5 receives an incoming call, it will check if there is a *sound ringer_XXX.wav* defined in the project and play that as the ring tone. If no such file exists, then the default ringtone is used.
- To use a custom *ringback* (when making an outgoing call) tone, include the file **ringback.wav** in your TPD project.



Ringtones set in the contacts app are not used by G5 at this time.

CONNECTIONS - Ethernet

The *Ethernet* page (FIG. 41) controls the configuration of settings for Ethernet communication with the panel.

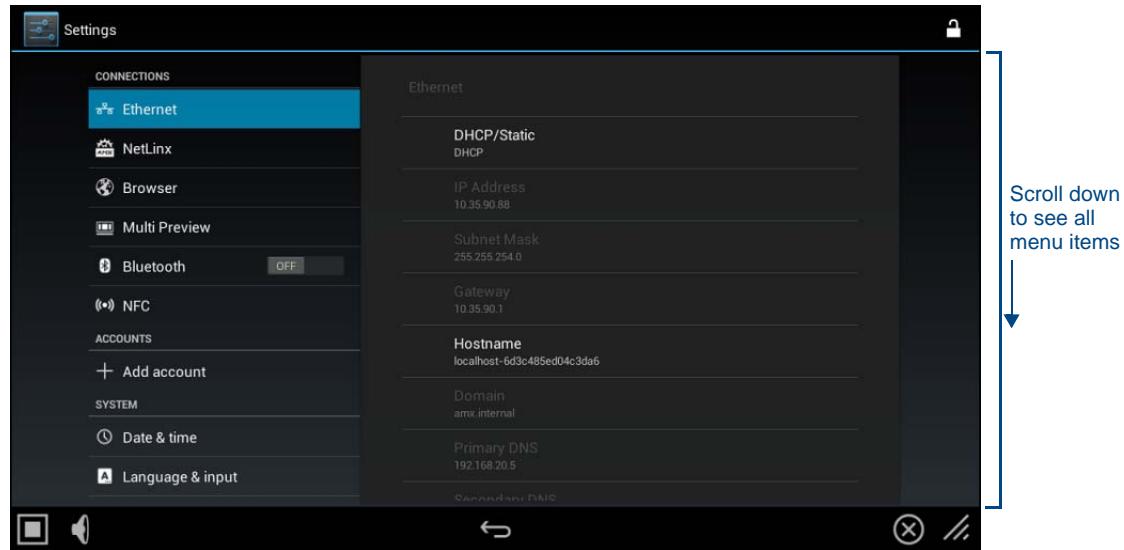


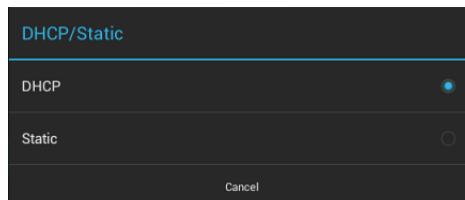
FIG. 41 Ethernet page

Ethernet page options	
DHCP/Static:	Sets the panel to either DHCP or Static communication modes. <ul style="list-style-type: none"> <i>DHCP</i> is an IP Address assigned to the panel by a DHCP server. If DHCP is selected, the other <i>Network Connection</i> fields are disabled (see below). <i>Static IP</i> is a permanent IP Address assigned to the panel. If Static IP is selected, the other <i>Network Connection</i> fields are enabled.
IP Address:	Displays the IP address for this panel. If DHCP is enabled, this field will be greyed out.
Subnet Mask:	Displays the subnetwork for this panel. If DHCP is enabled, this field will be greyed out.
Gateway:	Displays the gateway address for this panel. If DHCP is enabled, this field will be greyed out.
Hostname:	Displays the hostname for this panel.
Domain:	Displays a name to the panel for DNS look-up. If DHCP is enabled, this field will be greyed out.
Primary DNS:	Displays the address of the primary DNS server used by this panel for host name lookups. If DHCP is enabled, this field will be greyed out.
Secondary DNS:	Displays the secondary DNS address for this panel. If DHCP is enabled, this field will be greyed out.
MAC Address:	This unique address identifies the Ethernet connection in the panel (read-only).

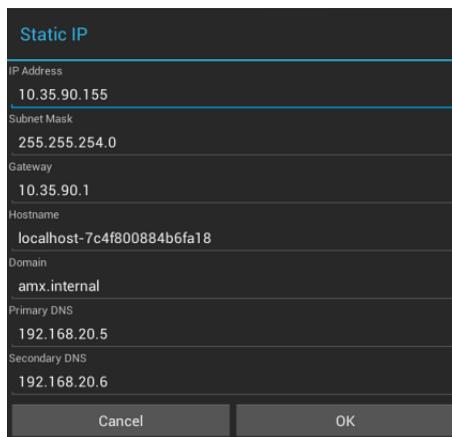
Setting Static IP Information

When using *DHCP* settings for a panel, the DHCP server will automatically populate almost all of the *Ethernet* page fields, with the exception of *Hostname*. When setting the panel for *Static*, however, this information must be entered manually. To enter the network connection information:

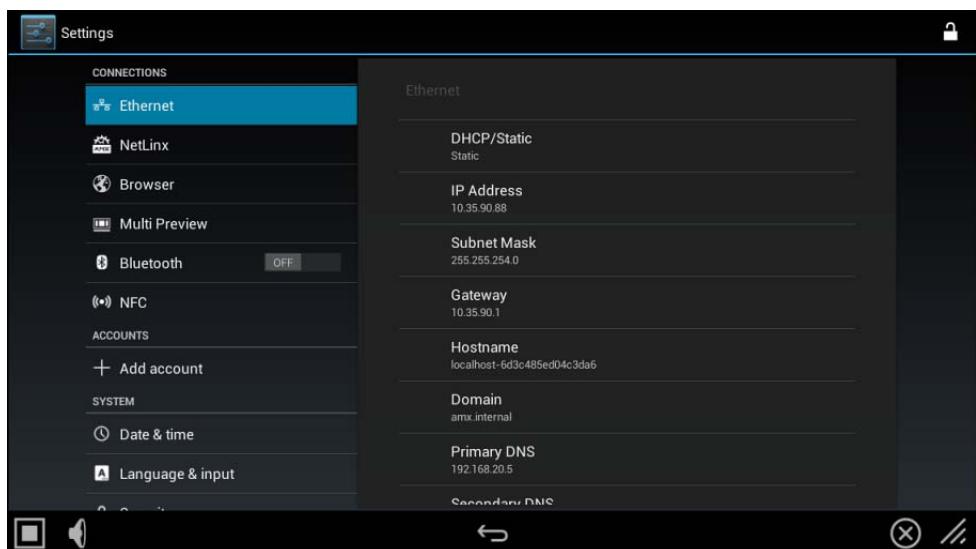
1. Press *DHCP/Static* to access the *DHCP/Static* options window (FIG. 42):

**FIG. 42** DHCP/Static window

2. Press **Static** to select to use Static IP information, and open the *Static IP* window (FIG. 43).

**FIG. 43** Static IP window

3. Press any field in this window to open the *on-screen* keypad.
4. Enter the information for each field presented.
 - If the field accepts alphanumeric characters, a keyboard opens instead.
 - Press **Next** (in the on-screen keypad) to proceed to the next field.
5. When complete, press **OK** to save changes and return to the *Static IP* window. The new connection information is presented in the *Ethernet* page (FIG. 44):

**FIG. 44** Ethernet page - indicating Static IP connection information

Entering a New Hostname

In order to facilitate DNS lookup of the panel, you should set a new hostname for the panel.

To add a new hostname, or to change an existing one:

- From the *Ethernet* page, select *Hostname* to open the *Hostname* window (FIG. 45).

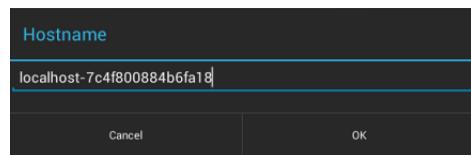


FIG. 45 Hostname window

- Enter the new hostname and press **OK**.

The new hostname will now appear in the *Hostname* field.

CONNECTIONS - NetLinx

The *NetLinx* page (FIG. 46) controls the method of connecting to a NetLinx Master.

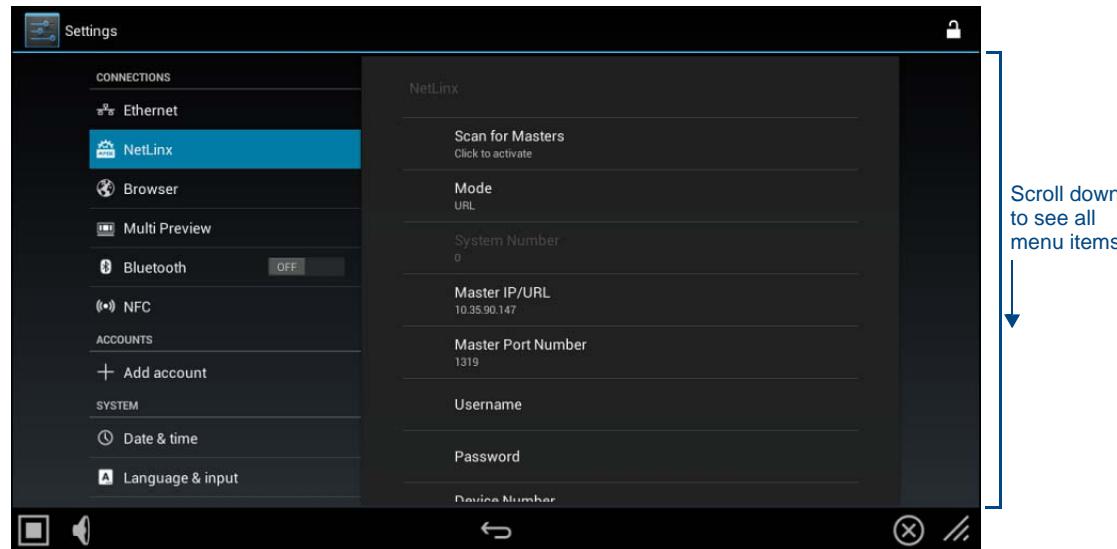


FIG. 46 NetLinx page

NetLinx page options	
Scan for Masters	Press to scan for NetLinx masters on the network, via the <i>Master Connection</i> window. See <i>Scanning for Masters</i> on page 31 for details.
Mode	Cycles between the connection modes: <i>URL</i> , <i>Listen</i> , and <i>Auto</i> . <ul style="list-style-type: none"> URL - Enter the IP/URL, Master Port Number, and username/password (if used) on the Master. The System Number field is read-only - the panel obtains this information from the Master. Listen - Add the panel address into the URL List in NetLinx Studio and set the connection mode to Listen. This mode allows the panel to "listen" for the Master's communication signals. The System Number and Master IP/URL fields are read-only. Auto - Enter the System Number and a username/password (if applicable). Use this mode when both the panel and the NetLinx Master are on the same Subnet. The Master IP/URL field is read-only.
System Number	Allows entry of a system number. Default value is 0 (zero). Note: Available in Auto Mode Only - disabled when URL or Listen is selected.
Master IP/URL	Sets the Master IP or URL of the NetLinx Master. Note: Available in URL Only - disabled when Listen or Auto is selected.
Master/Port Number	Allows entry of the port number used with the NetLinx Master. Default = 1319.
Username	If the target Master has been previously secured, enter the alpha-numeric string (into each field) assigned to a preconfigured user profile on the Master. This profile should have the predefined level of access/configuration rights.

NetLinx page options		
Password	If the target Master has been previously secured, enter the alpha-numeric string (into each field) assigned to a preconfigured user profile on the Master. This profile should have the predefined level of access/configuration rights.	
Device Number	Displays the panel's device number and allows entry of a new one.	
Device Name	Displays the panel's device name and allows entry of a new one.	
Connection Status	Displays the panel's connection status to the Master.	

Scanning for Masters

Use the *Scan For Masters* feature to quickly and easily identify all of the available NetLinx Masters on the network.

The site survey on this page passively listens to network traffic and presents all the compatible Masters for easy selection. Selecting the desired Master automatically updates the Master connection and makes an automatic connection.

1. In the *NetLinx* page, press **Scan For Masters** to begin listening for NetLinx masters and open the *Master Connection* window (FIG. 47):

Master Connection		
1 NX-3200	00:60:9F:9B:D7:86:	10.35.90.106 AMXM9BD786
1 NX-108	00:60:9F:9C:0D:D2:	10.35.90.54 AMXM9C0DD2
1 DVX-3150HD-T	00:60:9F:97:A5:E2:	10.35.90.44 AMXM97A5E2
1 DVX-3150HD-T	00:60:9F:00:00:00:	10.35.90.116 AMXM97A5E2
1 NX-1200	00:60:9F:9B:D6:F2:	10.35.90.198 AMXM9BD6F2
88 NX-1200	00:60:9F:9B:CF:6F:	10.35.90.97 IG88
12 DVX-2155HD-T	00:60:9F:96:F8:A1:	10.35.90.57 AMXM96F8A1
4565 NX-1200	00:60:9F:9B:85:95:	10.35.90.17 nathanNX1200
1 NX-3200	00:60:9F:9B:D0:77:	10.35.90.225 AMXM9BD077
1 DVX-2155HD-T	00:60:9F:96:F5:20:	10.35.90.15 AMXM96F520
1 DVX-3150HD-SP	00:60:9F:97:AA:F1:	10.35.90.220 DVXC17
1 NI-3100	00:60:9F:FF:FF:FF:	10.35.90.18 miMaster

FIG. 47 Master Connection window

2. Select the NetLinx Master for this panel.
3. The *NetLinx* page will automatically display the connection information on the selected Master.

Changing the Master Connection Mode

To select the Master Connection mode (*URL*, *Listen*, or *Auto*):

1. In the *NetLinx* page, press **Mode** to open the Mode Options sub-menu (FIG. 48):



FIG. 48 NetLinx page - Mode Options sub-menu

2. Select the desired NetLinx mode.
3. When finished, press **OK** to return to the *NetLinx* page.

Changing the Master IP/URL

To change the IP address or URL for the chosen Master:

1. In the *NetLinx* page, press **Master IP/URL** to open the *NetLinx* window and on-screen keyboard.
2. Enter the IP address or the URL.
3. Press the double-down arrow key at the bottom right of the on-screen keyboard to close the keyboard.
4. The new IP address/URL is now displayed in the *Master IP/URL* field.
5. Press **OK** to save the changes and return to the *NetLinx* page.

Changing the Master Port Number

To change the Master Port Number from its default:

1. In the *NetLinx* page, press **Master Port Number** to open the *NetLinx* window and on-screen keyboard.
2. Enter the new Master Port Number.
3. Press the double-down arrow key at the bottom right of the on-screen keyboard to close the keyboard.
4. The new Port Number is now displayed in the *Master Port Number* field.
5. Press **OK** to save the changes and return to the *NetLinx* page.

Changing the Master Username

1. In the *NetLinx* page, press the *Username* field to open the *NetLinx* window and on-screen keyboard.
2. Enter the new username.
3. Press the double-down arrow key at the bottom right of the on-screen keyboard to close the keyboard.
4. The new Username is now displayed in the *Username* field.
5. Press **OK** to save the changes and return to the *NetLinx* page.

Changing the Master Password

1. In the *NetLinx* page, press **Password** to open the *NetLinx* window and on-screen keyboard.
2. Enter the new password.
3. Press the double-down arrow key at the bottom right of the on-screen keyboard to close the keyboard.
4. The new Password is now displayed in the *Password* field.

5. Press **OK** to close the *NetLinx* window and return to the *NetLinx* page.

Changing the Device Number and Device Name

1. In the *NetLinx* page, press the *Device Number* field to open the *NetLinx* window and on-screen keypad.
2. Enter a new Device Number.
3. Press **Next**, to select *Device Name* in the *NetLinx* page and open the n-screen keyboard.
4. Enter a new Device Name.
5. Press **Done** to close the keypad and keyboard.
6. The new Device Number and Device Name are now displayed in the *Device Number* and *Device Name* fields.
7. Press **OK** to save changes and close the *NetLinx* window and return to the *NetLinx* page.

CONNECTIONS - Browser

Use TPDesign5 to add "application windows" to the panel. There are many different types of application windows that can be added to the panel file. One of them is "Browser", which opens a web browser window on the panel.



NOTE

Refer to the TPDesign5 online help for details on adding Application Windows to your touch panel project.

The options in the *Browser* page of the Settings menu (FIG. 49) allow you to specify the *default view mode* for specific URLs, when they are opened in a "Browser" application window. The view mode options are "desktop" and "mobile", and the default mode is "mobile".

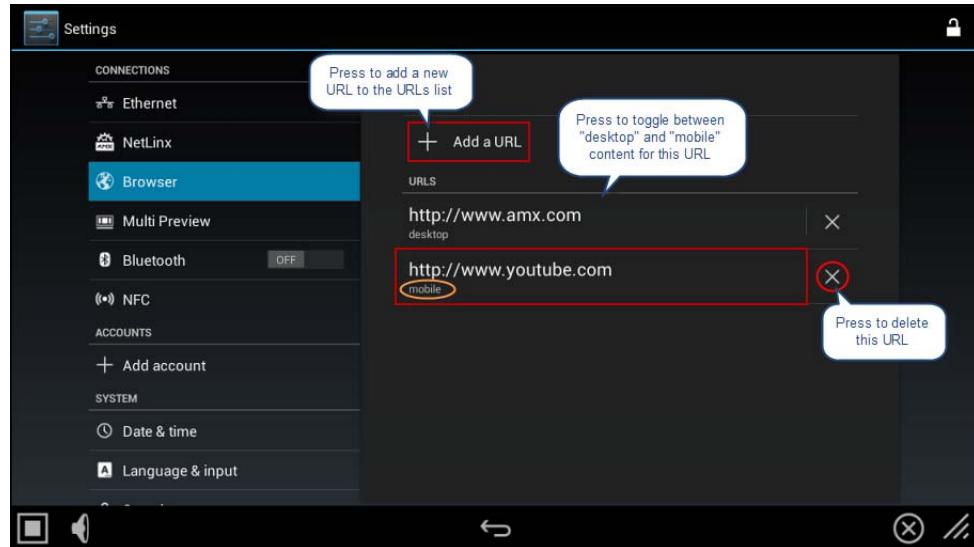


FIG. 49 Browser page

Browser page options	
Add a URL	Select to add a URL to the URL list. This selection opens the <i>Enter URL</i> window (FIG. 50). Enter the URL and de-select the <i>Use desktop version</i> option to request 'mobile' content for the URL. By default, this option is selected.
URLs	This list provides the ability to request either 'desktop' or 'mobile' content for each URL in the list. This selection is made when a URL is added to the list (see below).

Adding a URL to the URLs List

- From the *Browser* page, press *Add a url* (see FIG. 49 on page 33) to open the *Enter URL* window (FIG. 50):

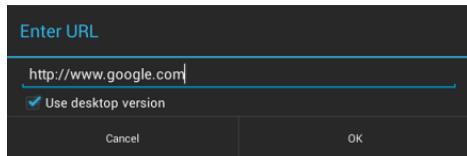


FIG. 50 Enter URL window

- Enter the URL in the text field.
- By default, the *Use desktop content* option is selected; de-select this option to request 'mobile' content for the URL.
- Press **OK** to close the *Enter URL* window and return to the *Browser* page. The new URL is indicated in the URLs list.

Once a URL has been added to the URLs list, the view mode setting (*desktop* or *mobile*) for that website can be specified:

Switching Between Desktop and Mobile Content

To toggle the 'desktop' or 'mobile' setting for any URL in the list, simply press a URL in the list (see FIG. 49 on page 33). The current content setting is indicated beneath each URL in the list (FIG. 51):

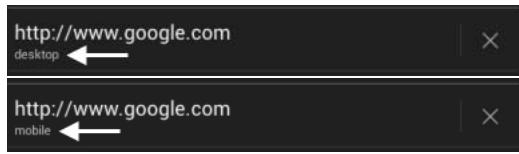


FIG. 51 URL list - desktop/mobile content

Deleting a URL from the URL's List

Press the **X** icon to delete any URL from the list. Note that if a website that is *not* represented in the URLs list is opened on the panel, it will always open in the *Mobile* (default) view mode.



Refer to the *TPDesign5* online help for details on adding Application Windows (including Browser windows) to your touch panel project.

CONNECTIONS - Multi Preview

To use the MXA-MP Multi Preview or MXA-MPL Multi Preview Live devices for video stream display, the panel to which it is connected must be configured to receive its signals. If a Multi Preview device is not connected to the panel's network, all fields but the **Enable** button will be empty.



FIG. 52 Multi Preview page

Multi Preview page options	
Enable:	Press to enable the panel to receive information from the Multi Preview device.
Version:	Displays the current firmware version on the Multi Preview device.
Serial Number:	Displays the serial number of the Multi Preview.
MAC Address:	Displays the MAC address of the Multi Preview
Input Information:	Displays the video format and resolution coming from the video input port.
Stream Information:	This feature is currently disabled.



NOTE

For more information on operation and configuration of an MXA-MP or MXA-MPL, refer to the MXA-MP/MPL Operation Reference Guide, available at www.amx.com.

Configuring the Panel To Accept Multi Preview Signals

1. In the *Multi Preview* page, press the **Enable** button to enable the panel to receive information from the Multi Preview device.
2. If a Multi Preview device is connected, the remaining information on the *Multi Preview* page will self-populate as the panel receives that information from the Multi Preview device.



NOTE

If the Multi Preview device is not connected to the panel, any attempts at enabling the device will fail, and the Multi Preview page will be blank other than the **Enable** button.

If an MXA-MP or MPL is not connected to the panel, the **Enable** button MUST be disabled to prevent network conflicts.

CONNECTIONS - Bluetooth

The *Bluetooth* page provides the ability to pair one or more Bluetooth devices to the panel (FIG. 53):

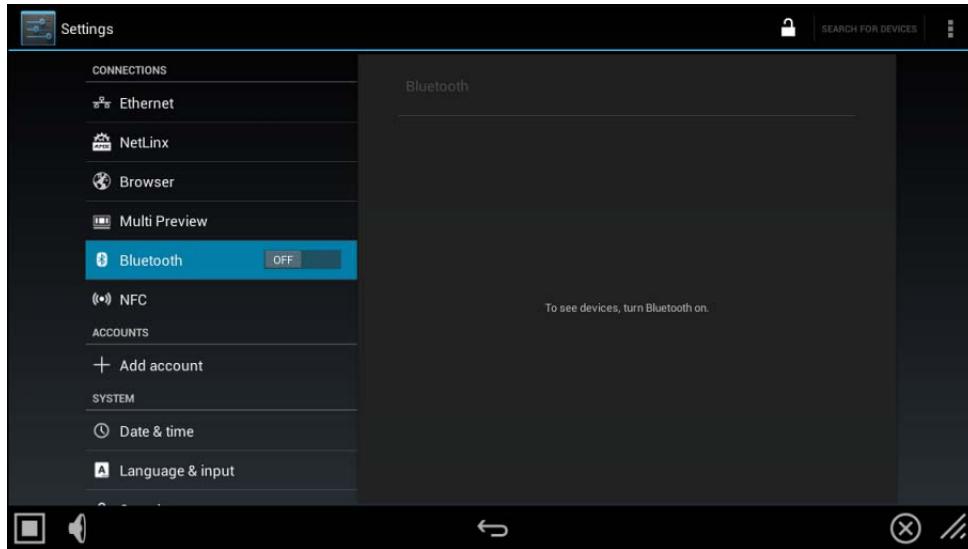


FIG. 53 Bluetooth page



NOTE

Bluetooth functionality is only available if an (optional) MXA-BT Bluetooth USB Adapter (FG5968-19) is connected to the panel.

To listen for Bluetooth devices:

1. Press the **Bluetooth** menu item to toggle the function ON.
All Bluetooth devices detected are listed in the Bluetooth window.
2. Press a device in the list to pair it with the panel.

CONNECTIONS - NFC

The NFC page controls the panel's Near Field Communications™ (NFC) access, as well as displaying the last NFC tag read by the panel (FIG. 54).

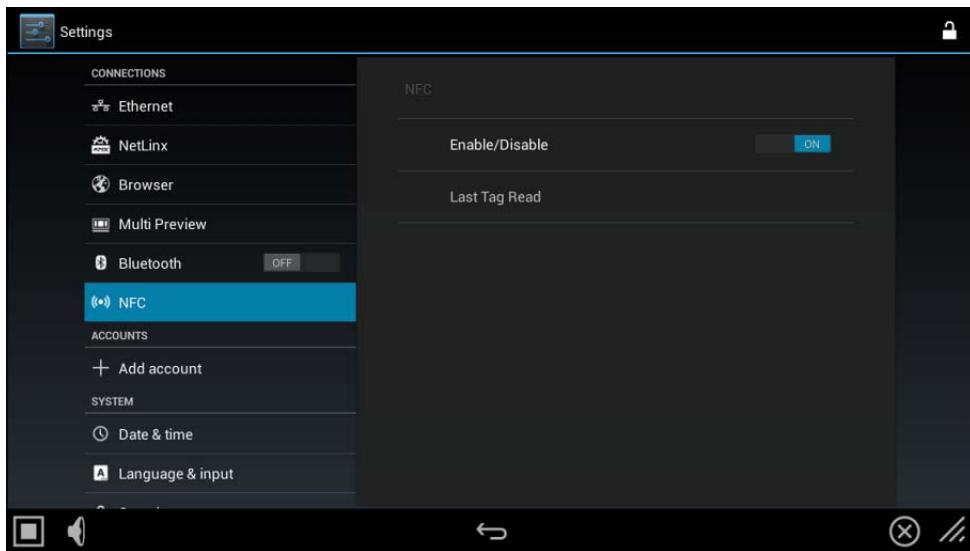


FIG. 54 NFC page

NFC page options	
Enable/Disable:	Press to enable or disable NFC functionality.
Last Tag Read:	Displays the last-read NFC tag ID.



NOTE

For more information on the NFC capabilities of your panel, please refer to the Operation Reference Guide to the panel in question. These Operation Reference Guides are available at www.amx.com.

NFC Commands

Custom Events for NFC	
NFC Read tag custom event	<p>Reported to the master when the panel reads an NFC Tag.</p> <p>Custom event type - 700 ID - 1 Flag - 0 Value1 - Tag Type Value2 - Data Type Value3 - Length of data in the Text field Text - NFC Data (of type specified by Value2)</p> <p>Where Tag Type is:</p> <ul style="list-style-type: none"> 1 = ISO 15693 2 = ISO 14443A 3 = ISO 14443B 4 = FeliCa (currently not supported) <p>Data Type is:</p> <ul style="list-style-type: none"> 0 = custom.text field contains the NFC UID (as a text string) 1 = custom.text contains NFC data (currently not supported)

Custom Events for NFC (Cont.)

Streaming video custom event	Indicates streaming video status changes. Start and stop stream based events are sent to the master in the form of custom events. The eventID 768 is sent to port 1 on the master. The fields are: CUSTOM.TYPE = EVENTID = 768 CUSTOM.ID = ADDRESS = 0 CUSTOM.FLAG = Start(1), Stop(2), Error(8) CUSTOM.VALUE1 = Number of starts (or stops or errors) CUSTOM.VALUE2 = Address of button/stream CUSTOM.VALUE3 = Port of button/stream CUSTOM.TEXT = stream URL
-------------------------------------	---

ACCOUNTS - Add an Account

G5 panels allow access to outside accounts, such as corporate and personal Email and Dropbox. These must be configured through the *Add an Account* section (FIG. 55) before they can be used with the panel.

Under ACCOUNTS, press **Add account** to open the *Add an account* window (FIG. 55):

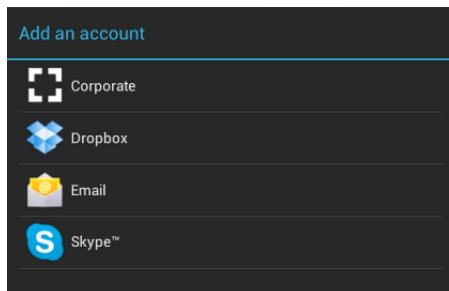


FIG. 55 Add an Account window

Add an Account options

Corporate:	Opens a window to enter an Email address through Microsoft Exchange.
Dropbox:	Opens a window to enter existing Dropbox information or to open a new account.
Email:	Opens a window to enter an Email address through an available account.
Skype:	Opens a window to enter a Skype account.

Adding an Account

1. In the *Settings* menu, select *Add an Account*.
2. In the *Add an Account* window, select the type of account you wish to add to the panel: corporate Email, Dropbox, personal Email, or Skype.
3. Follow the instructions in each window for each account.



FIG. 56 Example account windows

SYSTEM - Date & Time

The *Date & Time* page (FIG. 57) allows setting and adjusting the time and date information on the panel.

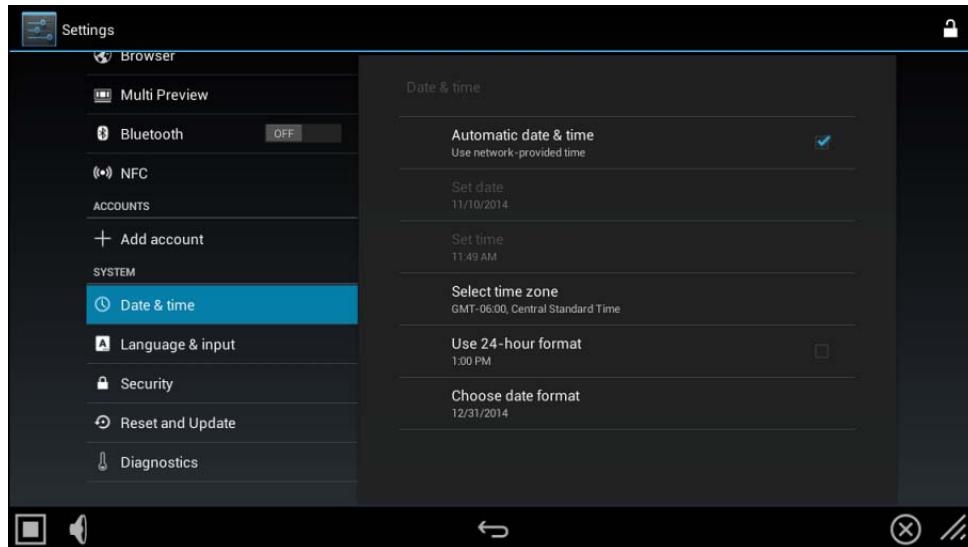


FIG. 57 Date & Time page

Date & Time page options	
Automatic Date & Time:	When checked, this option retrieves time/date information from NTP.
Set Date:	Use the <i>Set Date</i> window (FIG. 58) to set the current day, month, and year.
Set Time:	Use the <i>Select Time Zone</i> window (FIG. 59) to select the current time.
Select Time Zone:	Use the <i>Select Time Zone</i> window (FIG. 60) to select the current time zone.
Use 24-Hour Format:	When checked, this option always displays the time in 24-hour format.
Choose Date Format:	Use the <i>Choose Date Format</i> window (FIG. 61) to select the desired date format.

The current date and time may be retrieved from NTP or it may be updated manually.

Retrieving the Date and Time From NTP

1. In the *Date & Time* page, press **Automatic Date & Time**. Note that this option is selected by default.
2. Make sure that the checkbox is selected.
3. The date and time will be updated automatically by NTP.

Manually Setting the Date

1. If *Automatic Date & Time* is enabled, de-select the field to disable it.
2. Press **Set Date** to open the *Set Date* window (FIG. 58).

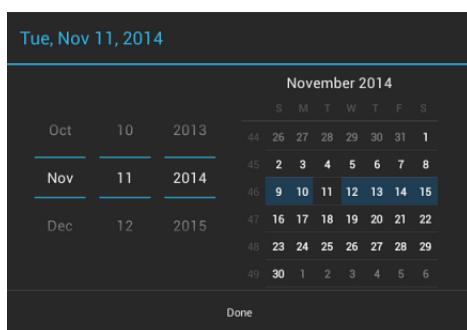


FIG. 58 Set Date window

3. Select the date, either by pressing and dragging on the fields on the left or by pressing the date in the calendar.
4. Press **Done** to save changes and close this window.

Manually Setting the Time

1. If *Automatic Date & Time* is enabled, de-select the field to disable it.
2. Press **Set Time** to open the *Set Time* window (FIG. 59).

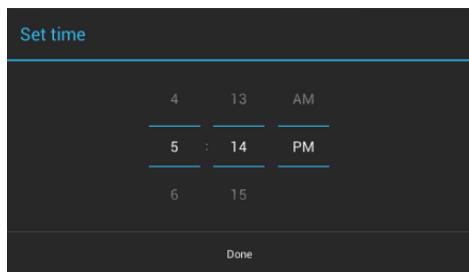


FIG. 59 Set Time window

3. Select the date by pressing and dragging on the fields in the center.
4. Press **Done** to save changes and close this window.

Manually Setting the Time Zone

1. Press **Select Time Zone** to open the *Select Time Zone* window (FIG. 60).

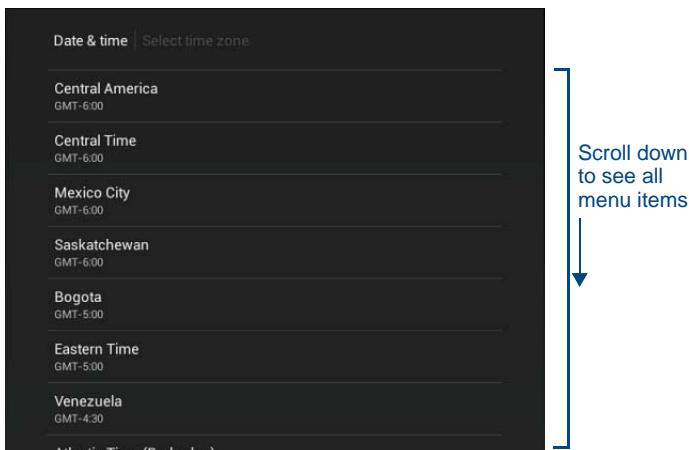


FIG. 60 Select Time Zone window

2. Select the time zone desired. The window will automatically close and return to the *Date & Time* page.

Specifying a Date Format

1. Press **Choose Date Format** to open the *Choose date format* window (FIG. 61).

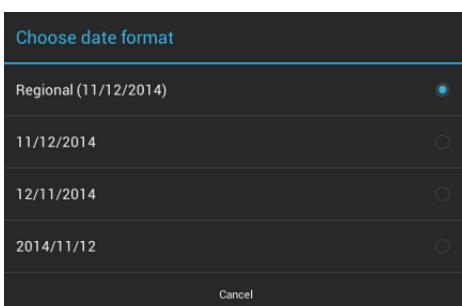


FIG. 61 Choose Date Format window

2. Select the desired date format. The window will automatically close and return to the *Date & Time* page.

SYSTEM - Language & Input

The *Language & Input* page (FIG. 62) controls the language used by the *Settings* menu, as well as the keyboard input used for *Settings* menu field entries.

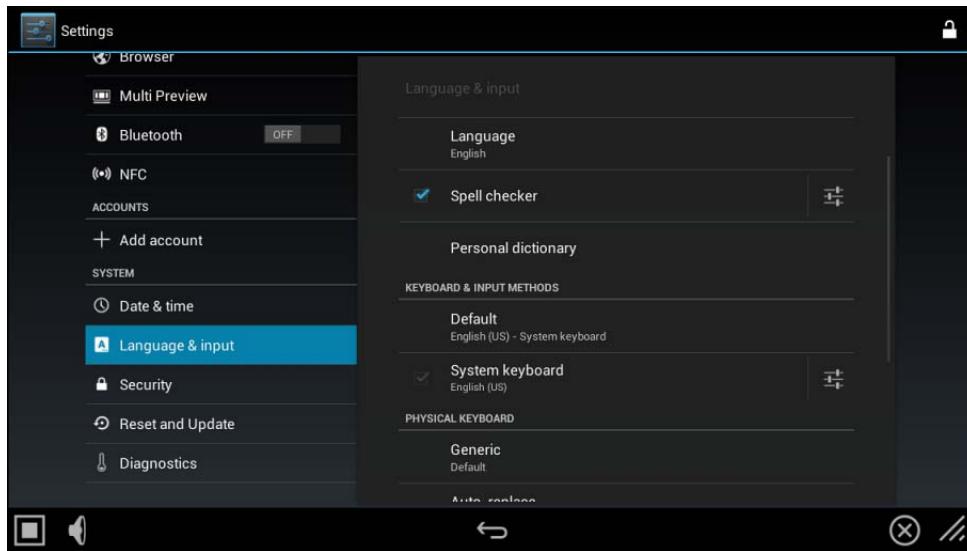


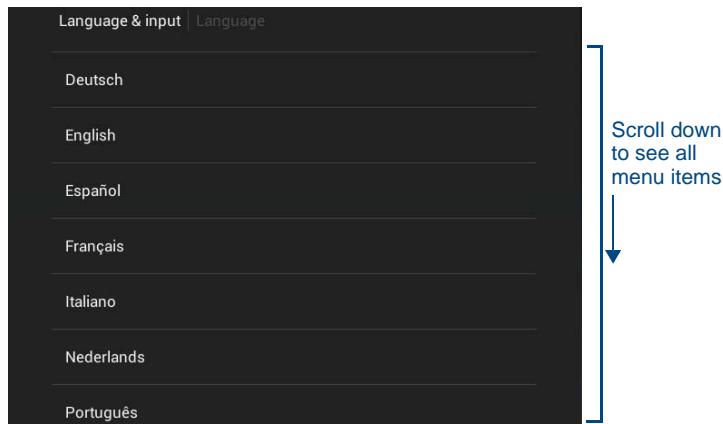
FIG. 62 Language & Input page

Language & Input page options	
Language:	Select a language for the <i>Settings</i> menu. Refer to <i>Selecting the Panel's Language</i> on page 41 for details.
Spell Checker:	Enable this option to include an automatic spell checker in all <i>Settings</i> menu fields.
Personal Dictionary:	Lists all words saved in the panel's personal dictionary file. Refer to the <i>Personal Dictionary</i> section on page 42 for details.
KEYBOARD & INPUT METHODS	
Default:	Specify the default system keyboard. Refer to <i>Changing Input Methods</i> on page 43 for details.
System Keyboard:	Choose the keyboard matching the selected panel language, or another language-format keyboard. Refer to <i>Changing Input Methods</i> on page 43 for details.
PHYSICAL KEYBOARD	
Generic:	Selects the format for a physical keyboard connected to the panel.
Auto-Replace:	Select this for automatic correction of commonly mistyped words.
Auto-Capitalization:	Select this for automatic capitalization of the first word in a sentence.
Auto-Punctuate:	Select this for automatic addition of a period when the space key is pressed twice.
MOUSE/TRACKPAD	
Pointer Speed:	Provides the ability to adjust the speed of the cursor on the panel. Refer to <i>Changing the Pointer Speed</i> on page 45 for details.

Selecting the Panel's Language

The default language for G5 panels is *English*, but this may be changed at any time through the *Language & Input* page. To change the panel's language:

1. In the *Language & Input* page, press **Language** to open the *Language* window (FIG. 63).

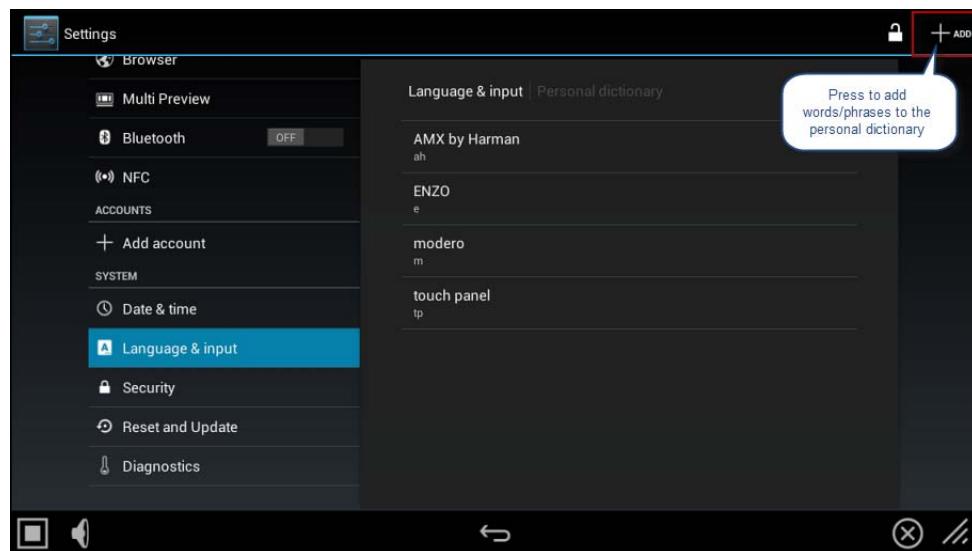
**FIG. 63** Language Selection window

2. Choose a language from the list shown. To return to the default language without making any changes, select *Language & input* at the top of the window to close the window.

Personal Dictionary

Modero X Series G5 panels have automatic spell-checking capabilities, but additional regularly used words may be added to the panel's personal dictionary. To add new words or phrases to the personal dictionary:

1. In the *Language & Input* page, press **Personal dictionary** to open the *Personal Dictionary* window (FIG. 64).

**FIG. 64** Personal Dictionary window

2. Press the *Add* button in the upper right hand corner of the page to open the *Personal dictionary entry* window (FIG. 65):

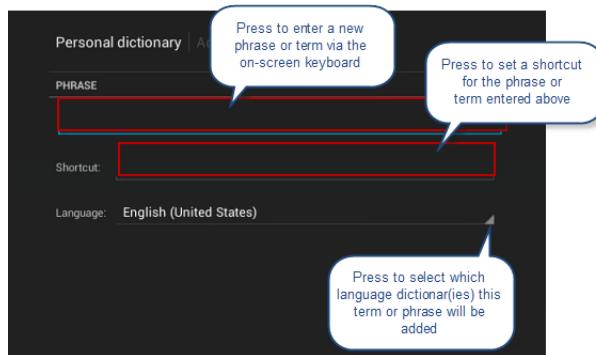


FIG. 65 Personal Dictionary (entry) window

3. Select the blue line to open the *Personal Dictionary* keyboard and enter the word or phrase.
 - To add a shortcut for long or complex words, enter it in the *Shortcut* field.
 - If the word you add is in a language other than English, select the arrow in the lower right corner of the window to open the *Language* menu. This gives you the option of adding the word to the English dictionary, a dictionary for a language other than English, or for use across all languages. The *Language* page will automatically close after the language is selected.
 - To delete a word or phrase, select it in the *Personal dictionary* window and then press **Delete** in the upper right hand corner of the *Settings* menu (FIG. 66):

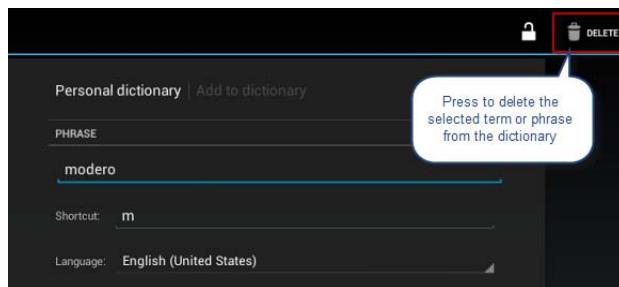


FIG. 66 Personal Dictionary (entry) window - DELETE

Changing Input Methods

While a standard English keyboard is the default input language, you may also change the input method, such as choosing a Dvorak keyboard. To change the keyboard layout:

1. In the *Language & Input* page, under *KEYBOARD & INPUT METHODS*, press **Default** to open the *Choose Input Method* window (FIG. 67):

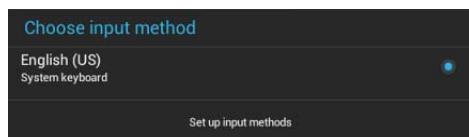
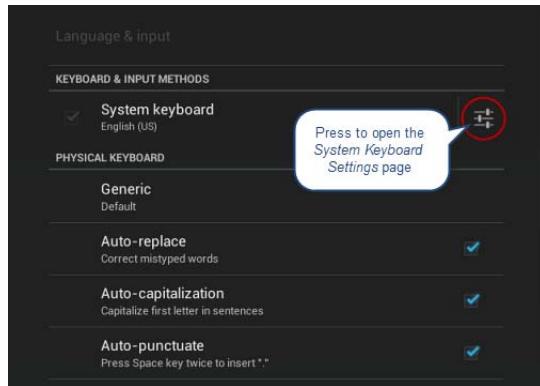


FIG. 67 Choose Input Method window

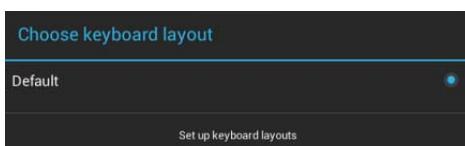
2. Press **Set up input methods** to open the *Keyboard Options* window (FIG. 68).

**FIG. 68** Keyboard Options window

3. Press the **Settings icon** next to *System keyboard* to access the *System Keyboard Settings* page (FIG. 69):

**FIG. 69** System Keyboard Settings page

4. Edit these settings as desired, and press the return icon to close this page and return to the *Keyboard Options* window.
5. Under PHYSICAL KEYBOARD, press **Generic** to open the *Choose Keyboard Layout* window (FIG. 70):

**FIG. 70** Choose Keyboard Layout window

6. Press **Set up keyboard layouts** to open the *Keyboard Layout* window (FIG. 71):

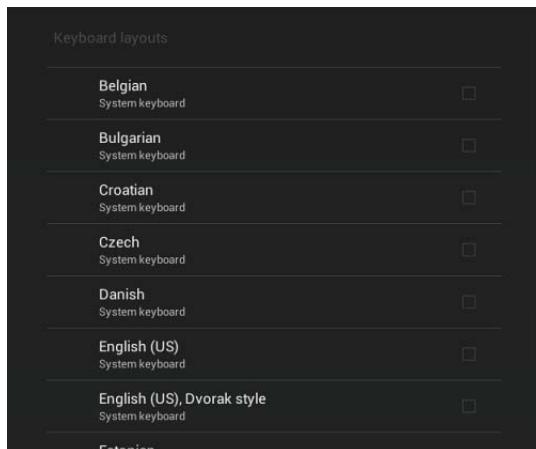


FIG. 71 Keyboard Layout window

7. Select the keyboard layouts that should be available for selection.
8. Press the return icon to close the *Keyboard Layouts* window and open the *Choose Keyboard Layout* window (FIG. 72):



FIG. 72 Keyboard Layout window

9. Select the desired layout.

Changing the Pointer Speed

1. Under MOUSE/TRACKPAD, press **Pointer Speed** to open the Pointer Speed window (FIG. 73):

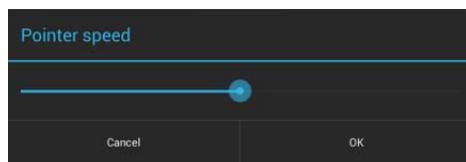


FIG. 73 Pointer Speed window

2. Use the slide bar to choose the preferred speed.
3. Press **OK** to save changes and close this window.

SYSTEM - Security

The *Security* page (FIG. 74) controls panel security, such as front button access and setting new passwords.

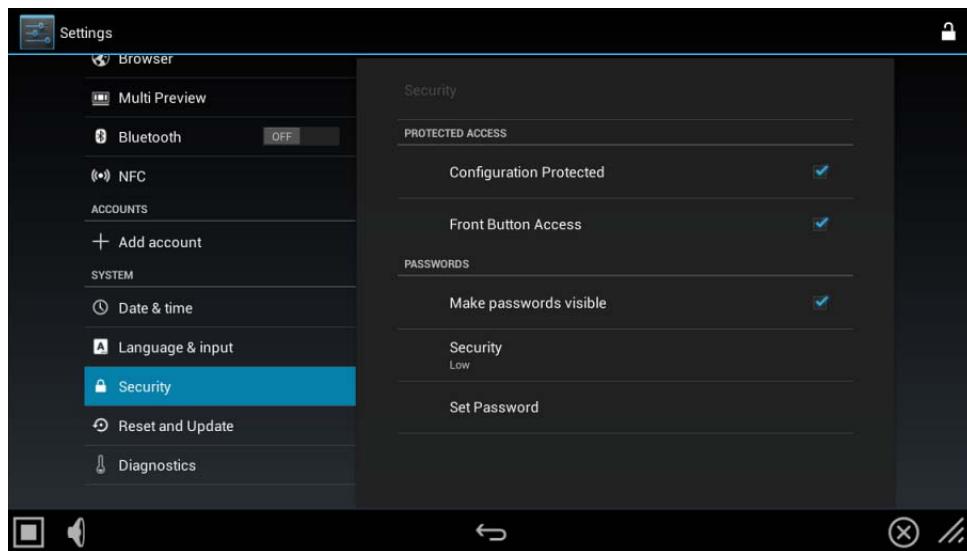


FIG. 74 Security page

Security page options	
PROTECTED ACCESS	
Configuration Protected:	Select this checkbox to protect the pages within the <i>Settings</i> menu from access without a password.
Front Button Access:	Select this checkbox to enable or disable the ability to access the pages within the <i>Settings</i> menu from the Sleep/Settings button (FIG. 1). Note: If Sleep/Settings button access is disabled, the Settings menu can be accessed through the splash page, as shown in the Accessing the Settings Menu section on page 3. The Settings menu may also be accessed via send command or a preconfigured setup button on panel pages.
PASSWORDS	
Make Passwords Visible:	Select this option to allow you to see the number of characters in a password, and to see, briefly, the character just typed in clear text for verification.
Security:	Select this option to open the <i>Security</i> window (FIG. 76).
Set Password:	Select this option to open the <i>Enter Password</i> window (FIG. 75).

Changing a Previously Established Password

1. In the *Security* page, select *Set Password*. This opens the *Enter Password* window (FIG. 75).

The screenshot shows the 'Enter Password' window with three text input fields: 'Enter Password:', 'Enter Password Again:', and a third field below them. At the bottom are 'Cancel' and 'OK' buttons.

FIG. 75 Enter Password window

2. Enter the new alphanumeric password.
3. Press **OK** when complete.

Viewing the Current Security Level

- In the *Security* page, select *Security*. This opens the *Security* window (FIG. 76).

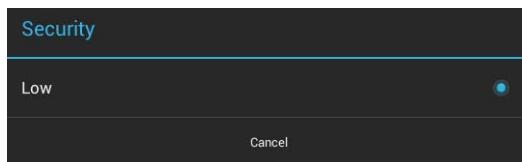


FIG. 76 Security window

- Select the level of security you wish for the panel. (At this time, *Low* is the only option.)
The *Security* window will automatically close and return to the *Security* page.

SYSTEM - Reset and Update

The *Reset and Update* page (FIG. 77) allows resetting and updating of panel settings and firmware, including installation of new firmware from an external drive.

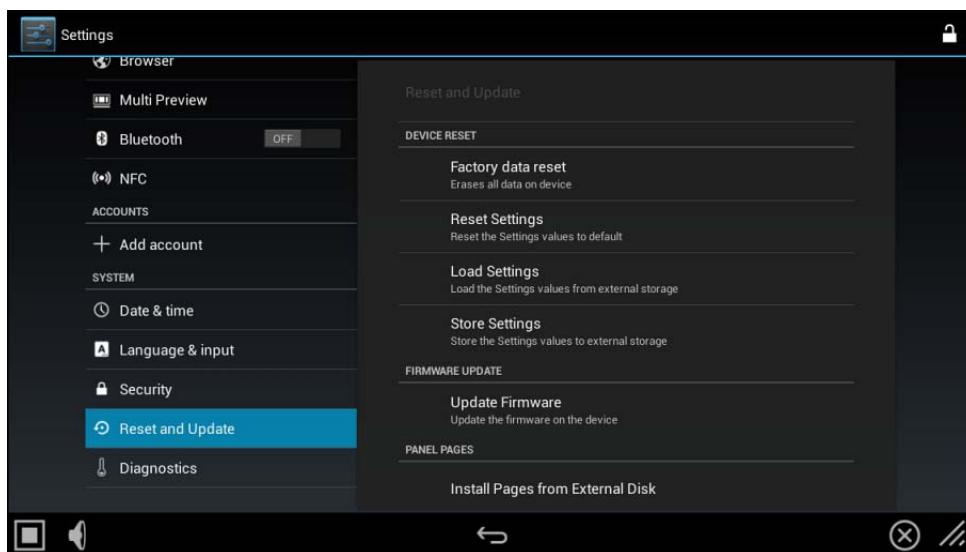


FIG. 77 Reset and Update page

Reset and Update page options	
DEVICE RESET	
Factory Data Reset	Erases all data on the panel and resets the panel back to it's factory default settings. See <i>Factory Data Reset</i> on page 48 for details.
Reset Settings	Select to revert the panel back to its default settings, but does not erase all data from the panel.
Load Settings	Select to load a saved settings configuration file (*.acfg).
Store Settings	Select to save the current settings configuration file at the root of the connected USB drive.
FIRMWARE UPDATE	
Update Firmware	Select this to open the <i>Firmware Update</i> window (FIG. 84).
PANEL PAGES	
Install Pages From External Disk	Select this to open the <i>TPDesign5 File Browser</i> window (FIG. 88).
Remove User Pages	Select this to remove all previously loaded user pages from the panel.

Factory Data Reset

To reset the panel to its factory defaults and remove all data stored in the panel (including user pages):

- Under **DEVICE RESET**, press **Factory Data Reset** to open the *Factory Data Reset* window (FIG. 78).

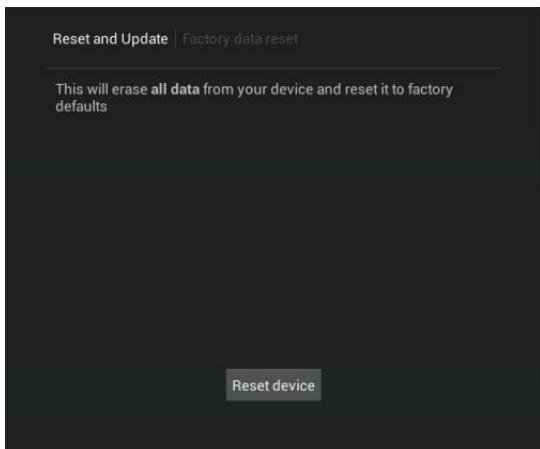


FIG. 78 Factory Data Reset window

To return to the *Reset and Update* page without making any changes, press the return icon.

- To erase all data from the panel, press **Reset Device**.

Reset Settings

To reset the Settings values to their default values:

- Under **DEVICE RESET**, press **Reset Settings**.
- The panel will prompt you to verify this action (FIG. 79):

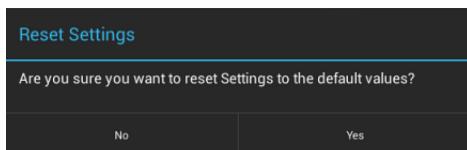


FIG. 79 Reset Settings prompt window

- Press **Yes** to proceed.

Storing and Loading Settings Configuration Files

G5 panels have many settings. - the **Store Settings** and **Load Settings** options on the *Reset and Update* page provide the ability to store and load these settings to and from a Settings Configuration File (*.acfg). Use cases include:

- Backing up final system settings
- Create settings configuration files ahead of time to help with large deployments of panels.

Storing the Current Settings

- In the *Reset and Update* page, press **Store Settings** to open the *Store Settings* window (FIG. 80):

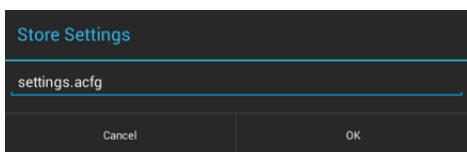


FIG. 80 Store Settings window

- Enter a unique file name for this settings configuration file (default = "settings.acfg").

The UI will check for a valid config filename as it's being entered. Invalid entries will not be saved.

- Press **OK** to save the file at the root of the USB drive.

If the filename exists, the app will prompt you to verify overwriting the file.

Loading Settings

Configurations can be loaded from a file on the file system or from a URL:

1. In the *Reset and Update* page, press **Load Settings** to open the *Setting Config File Browser* window (FIG. 81):

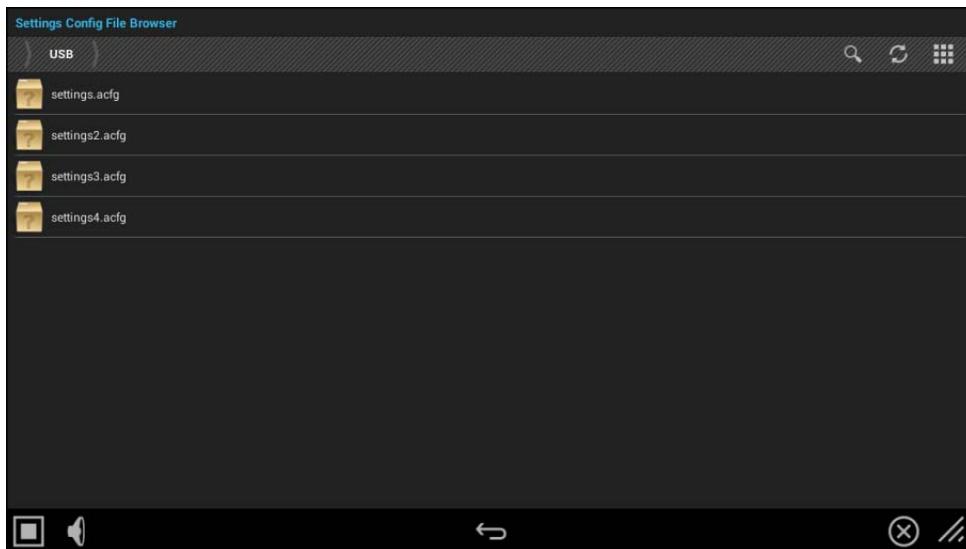


FIG. 81 Setting Config File Browser window

2. This window lists all settings configuration (*.acfg) files present on the USB Storage media.
3. Select the desired settings configuration file.
4. The panel will prompt you to verify this action (FIG. 82):

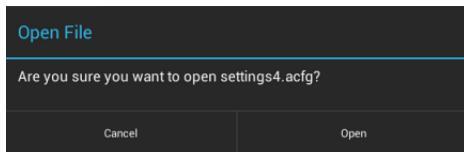


FIG. 82 Open File window

Valid Values

The following table outlines all the supported keys and their valid values.



A configuration file does not necessarily have to have all the keys listed. The Settings value will not be modified if it's not listed in the file.

- Some keys are ignored depending on other settings. For example, if Ethernet is in DHCP mode, most static IP settings are ignored.
- Also some username/passwords are stored as encrypted strings. The user will not be able to modify these values as clear text since they are encrypted.

Valid Values			
Netlinx Keys	Product	Valid Values	Notes
master_mode	All	url, listen, auto	
master_system_number	All	1 to 65535	Auto mode only
master_ip	All	Hostname or IP address	URL mode only
master_port	All	1 to 65535	URL mode only
master_username	All	Encrypted string, not clear text	User can get the encrypted string from a saved config.
master_password	All	Encrypted string, not clear text	
master_device_number	All	0 to 32385	
master_device_name	All	Name of device	

Ethernet Keys	Product	Valid Values	Notes
ethernet_ip_mode	All	dhcp, static	
ethernet_ip	All	Panel IP address	Static mode only
ethernet_subnet	All	Subnet address	Static mode only
ethernet_gateway	All	Gateway address	Static mode only
ethernet_hostname	All	Panel Hostname	
ethernet_domain	All	Domain	Static mode only
ethernet_primary_dns	All	Primary DNS server address	Static mode only
ethernet_secondary_dns	All	Secondary DNS server address	Static mode only

Security Keys	Product	Valid Values	Notes
security_ssh	All	true, false	
security_protected	All	true, false	
security_front_button_access	All	true, false	
security_security_mode	All	Low	
security_protected_password	All	Encrypted string, not clear text	User can get the encrypted string from a saved config.
security_show_password	All	true, false	

Valid Values (Cont.)

VNC Server Keys	Product	Valid Values	Notes
vnc_enable	ModeroX	true, false	
vnc_timeout	ModeroX	0 to 65535	
vnc_password	ModeroX	Encrypted string, not clear text	User can get the encrypted string from a saved config.
vnc_port	ModeroX	1 to 65535	
vnc_max_conn	ModeroX	1 to 4	

Multi Preview Keys	Product	Valid Values	Notes
device_mp	ModeroX	true, false	

NFC Keys	Product	Valid Values	Notes
device_nfc	ModeroX	true, false	

Sensor Keys	Product	Valid Values	Notes
sensor_motion_thresh	ModeroX	0 to 100	
sensor_motion_wakeon	ModeroX	true, false	
sensor_light_thresh	ModeroX	0 to 100	
sensor_light_calibration	ModeroX	0 to 256	This is difficult to set manually. User should calibrate in Settings and then retrieved from a saved config.

SIP Keys	Product	Valid Values	Notes
sip_enable	ModeroX	true, false	
sip_proxyaddr	ModeroX	Hostname or IP address	
sip_username	ModeroX	Encrypted string, not clear text	User can get the encrypted string from a saved config.
sip_password	ModeroX	Encrypted string, not clear text	User can get the encrypted string from a saved config.
sip_port	ModeroX	1 to 65535	

G5 Keys	Product	Valid Values	Notes
g5_remote_profile_enable	ModeroX	true, false	
g5_remote_profile_url	ModeroX	Valid URL	
g5_function_show_enable	ModeroX	true, false	

Browser URL Keys	Product	Valid Values	Notes
browser_url_xx	All	<mobile desktop>, <url>	Replace "xx" with a unique number to create a list of multiple url keys. The value is a comma separated list of browser type (mobile or desktop) and then the url to bind with that type.

Display Keys	Product	Valid Values	Notes
display_timeout	All	0, 15, 30, 60, 300, 600, 1800, 3600, 7200	Display timeout values are in seconds

Resetting the Panel Settings to Factory Defaults

- From the *Reset and Update* page, select **Reset Settings** to open the *Reset Settings* window (FIG. 83).

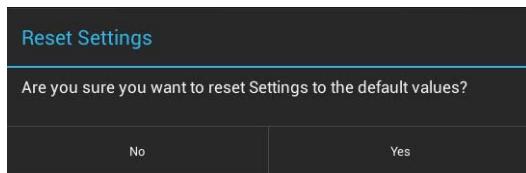


FIG. 83 Reset Settings window

- To reset the panel's settings to factory defaults, press **Yes**. To return to the *Reset and Update* page without saving any changes, press **No**.

Resetting to Factory-Installed Firmware

In certain circumstances, it may be necessary to uninstall the current firmware on a panel and return it to the original factory default firmware. To reset the panel to its original factory firmware:

- From the *Reset and Update* page, select *Update Firmware* to open the *Firmware Update* window (FIG. 84).



FIG. 84 Firmware Update window

- From the *Firmware Update* window, select the *Revert to Factory Firmware Version* option.
- A *Revert to Factory Firmware Version* window appears, asking "Are you sure you want to install?", with the version "Factory Firmware" listed below (FIG. 85).

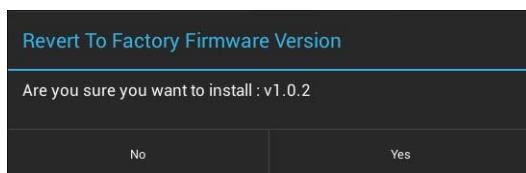


FIG. 85 Revert to Factory Firmware Version window

- Select **Yes** to install the factory firmware and **No** to return to the *Firmware Update* page.
- If you choose **Yes**, the panel will reboot and restart with the factory default firmware.



Resetting the panel to its original factory firmware will remove all previous changes to the Settings menu.

Installing Previous Firmware

In certain circumstances, it may be necessary to revert to a previously installed version of the panel firmware. To reset the panel to its previously installed firmware via the *Settings* menu:

1. From the *Firmware Update* window, select *Revert to Previous Firmware Version*. If no previous version is available, this field is greyed out.
2. A System Message window appears, asking “Are you sure you want to install the following firmware?”, with the previous firmware version listed below.
3. Select **Yes** to install the previous firmware version and **No** to return to the *Install Firmware* page.
4. If you choose **Yes**, the panel will reboot and restart with the previously installed firmware.

Installing New Firmware From An External USB Stick

To install new firmware to the panel from an external disk via the *Settings* menu:

1. Download the latest G5 panel firmware from www.amx.com and save it to a USB stick or other external drive with USB capability.



The firmware can be saved at the root directory, or be saved in a folder in the USB stick directory. The folder name is not case sensitive.

2. Insert the USB stick into an available USB port. This may require disassembling wall-mounted panels to access the USB ports if a USB extension was not already installed.
3. From the *Firmware Update* window, select *Install Firmware from USB* to open the *KIT File Browser* window (FIG. 86).



FIG. 86 KIT File Browser window

4. Select the KIT file to be installed.
5. The panel will upload the new firmware (FIG. 87) and then reboot.



FIG. 87 Update Progress display



For more information on updating firmware for your panel, particularly concerning the format and the directory placement of the firmware upgrade, please refer to the Upgrading Firmware section of the panel's Operation Reference Guide. The Operation Reference Guides for the Modero X Series G5 touch panels are available at www.amx.com.

Installing Panel Pages From an External Disk

TPDesign5 page files (*.tp5) may be loaded onto a panel, both via TPDesign5 and through files saved to a USB-enabled external drive. To load TP5 pages via USB:

1. Download the panel pages and save them to a USB stick or other external drive with USB capability.
2. Insert the USB stick into an available USB port on the panel.
3. In the *Reset & Update* window, press **Install Pages from External Disk** to open the *TP5 File Browser* window. All TP5 files found on the USB drive are listed (FIG. 88):

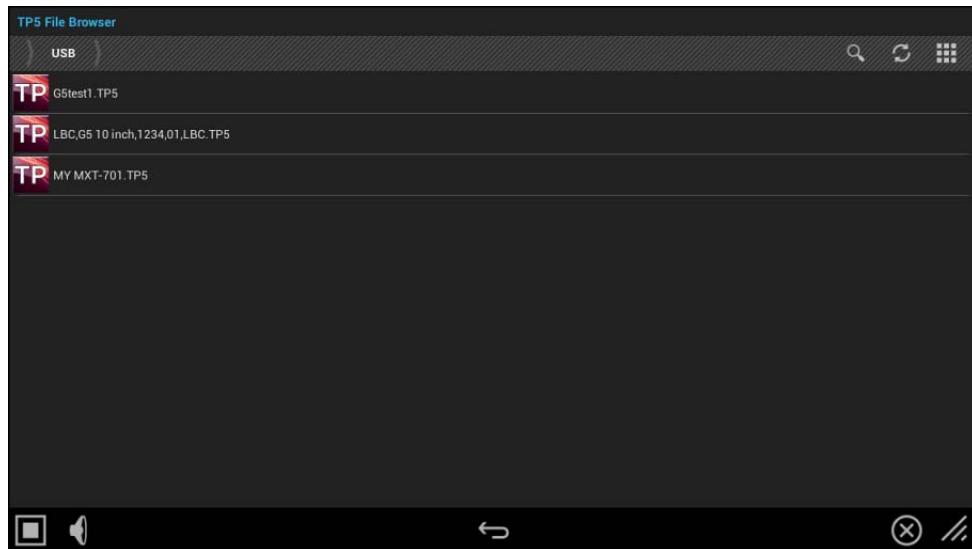


FIG. 88 TPDesign5 File Browser window

4. Press the TP5 file to load on the panel.
5. The panel will prompt you to verify this action (FIG. 89):

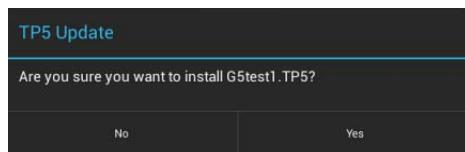


FIG. 89 TP5 Update prompt

6. Press **Yes** to load the selected TP5 project on the panel.

Removing User Pages From the Panel

To remove user pages from the panel:

1. In the *Reset and Update* page, press **Remove User Pages** to open the *Remove User Pages* window (FIG. 90).

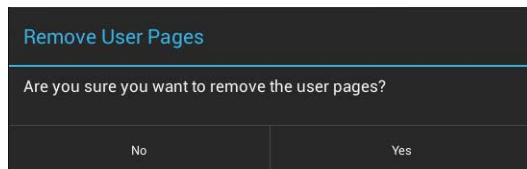


FIG. 90 Remove User Pages prompt

2. Press **Yes** to remove the user pages from the panel.

At this point, the panel will indicate that there are no device pages installed (FIG. 91):

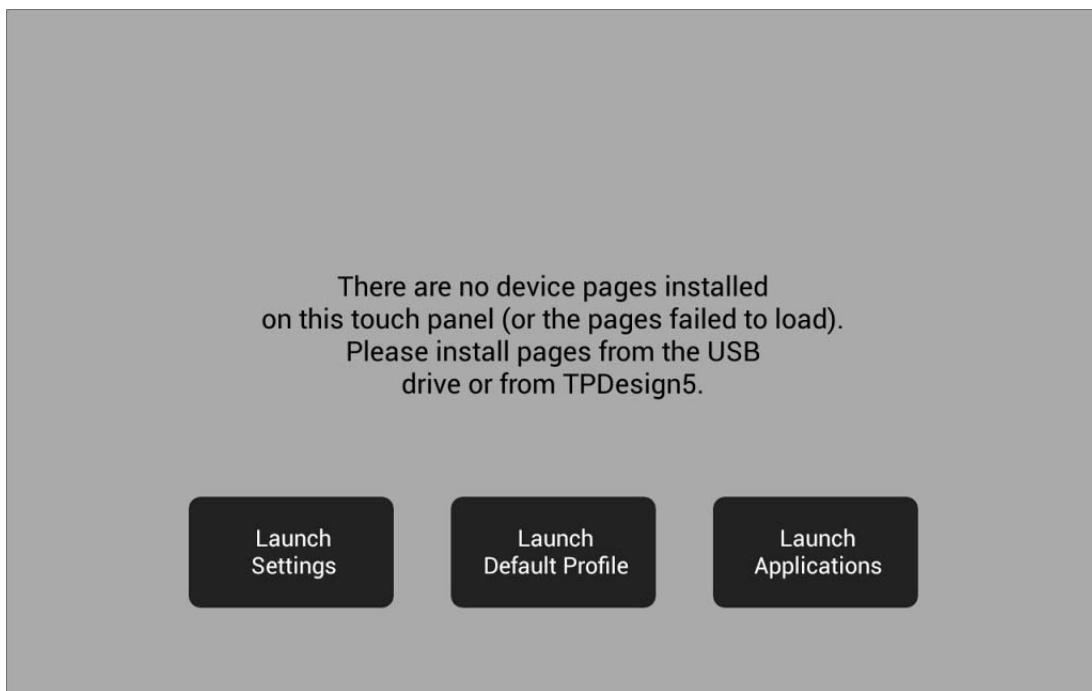


FIG. 91 No Device Pages Installed window

Press one of the options presented on this page to proceed:

- **Launch Settings:** Press to invoke the Setting menu. Use this option to navigate to the SYSTEM > Reset & Update window to use the *Install Pages from External Disk* option to load pages via a TP5 file (see *Installing Panel Pages From an External Disk* on page 54).
- **Launch Default Profile:** Press to launch the default panel profile.
- **Launch Applications:** Press to invoke the *Available Apps* window, which provides shortcuts to all Apps loaded on the panel (FIG. 92):

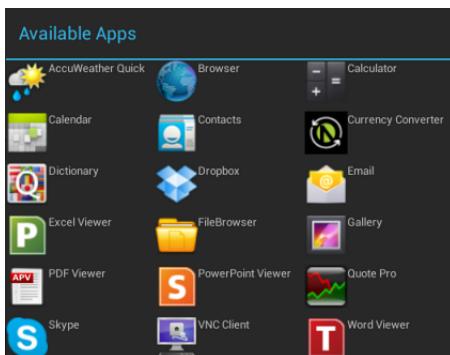


FIG. 92 Available Apps window,

SYSTEM - Diagnostics

The *Diagnostics* page (FIG. 93) displays the current processor temperature, provides access to panel logs, and toggles SSH functionality.



FIG. 93 Diagnostics page

Diagnostics page options	
Temperature	Displays the current temperature of the panel in Celsius.
Logs	Select this option to display the panel logs (FIG. 94).
SSH	Select this option to enable or disable the SSH server on this panel.

The *Logs* window (FIG. 94) chronicles all previous connections between the panel and the network. To access the *Logs* window, select *Logs* in the *Diagnostics* page.

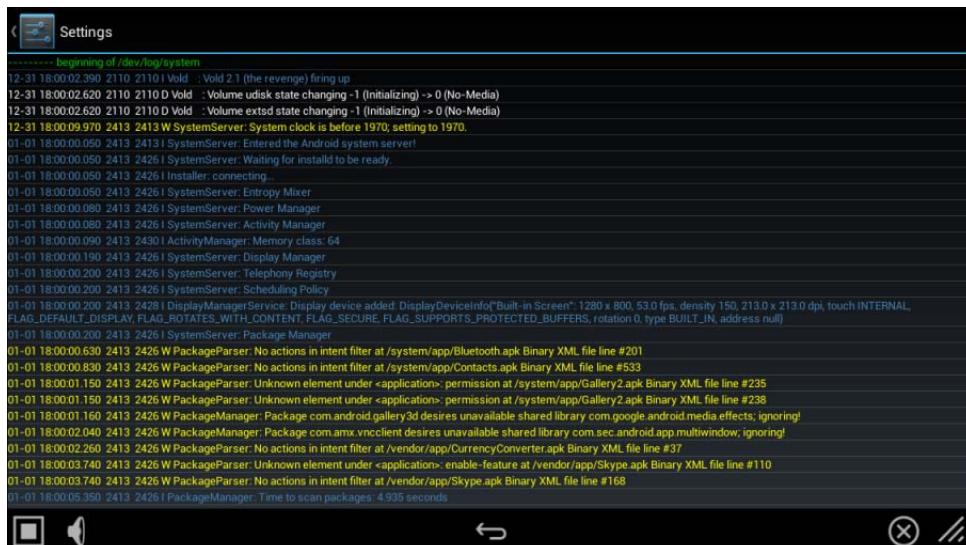


FIG. 94 Logs window

Gestures

Overview

You can program Modero X Series touch panels, using the commands in this section, to perform a wide variety of operations using Send Commands and variable text commands.

A device must first be defined in the NetLinx programming language with values for the Device: Port: System (in all programming examples - *Panel* is used in place of these values and represents all Modero panels).



WARNING

Verify you are using the latest NetLinx Master and Modero firmware, as well as the latest version of NetLinx Studio and TPD5.



NOTE

For more information on gestures and on designing touch panel pages, please refer to the TPDesign 5 online help, available at www.amx.com.

Touch Gesture Recognition

Gesturing refers to the act of moving a finger or stylus across the overlay and having the panel recognize and process this motion as a gesture.

In G5, gesture events are assigned as individual buttons or pages. In addition, a gesture velocity is calculated and transmitted to the master along with the gesture type itself in a custom event message. Nothing will be processed if the button associated with this gesture has no gesture event operations programmed, is disabled, or has no values programmed for address, channel, level, string output or command output. The custom event, however, is always transmitted.

The following gesture types are supported:

1. Swipe up
2. Swipe down
3. Swipe right
4. Swipe left
5. Double-tap
6. 2 Finger Swipe Up
7. 2 Finger Swipe Down
8. 2 Finger Swipe Right
9. 2 Finger Swipe Left

Gesture Velocity

A gesture “velocity” is calculated to represent the speed of the gesture. This is done by measuring the time from when the user first presses the screen until the user releases. The following simplified velocities are supported and transferred to the master in the custom event message:

1. Fast
2. Normal
3. Slow

A precise velocity is sent in the custom event message which represents the velocity in terms of pixels per second for slides and circles. For a double tap, this value is the total time in milliseconds from the first press to the second release.

Gesture Prioritization

It is important to prioritize the operation of the presses, moves and releases of the user to avoid confusion over what the user intended. The following process is used to determine what the user meant whenever a gesture operation is defined globally or for this page.

Gesture Prioritization	
The user presses outside of a button or slider and moves before releasing.	The firmware will always try to recognize a gesture as long as the user moves at least 20 pixels before the release occurs.
The user presses inside of a slider and moves before releasing.	This will always be processed as a slider operation and no attempt will be made to recognize a gesture.
The user moves a movable popup page.	This will always be processed as a popup page move and not a gesture.
The user presses on a button and then moves.	In this case, the press will not be sent for the first 0.15 second. If the user has moved at least 60 pixels by this time, then a button press/release will not be processed, but this will be processed as a gesture. At 0.15 second, the button press is processed and once the user releases, the release is processed and no gesture recognition is attempted. To be clear, it is not necessary for the user to move off of a button to be considered a gesture, but to move at least 60 pixels in that first 0.15 of a second.
The user double taps on a button or slider.	This will not be recognized as a gesture. This would be considered two quick press/release operations on the button or slider.
The user double taps outside of a button or slider.	This will be registered as a gesture.

Gesture VNC/Mouse Support

Gestures are recognized whether or not the user is using a finger or stylus on the panel's screen overlay, a mouse on a VNC connection, or a mouse connected to the local USB port on the panel.

Gesture Custom Event

Whenever a gesture is recognized and processed a custom event is also sent to the master. The following values describe this event:

```
CUSTOM_EVENT ADDRESS is 1
CUSTOM_EVENT EVENTID is 600
Custom.Value1 is the gesture number
Custom.Value2 is the simplified gesture velocity
Custom.Value3 is the precise gesture velocity
```

Gesture numbers

1. Swipe up
2. Swipe down
3. Swipe right
4. Swipe left
5. Circle (not used)
6. CCW Circle (not used)
7. Double-Tap
8. 2 Finger Swipe up
9. 2 Finger Swipe down
10. 2 Finger Swipe right
11. 2 Finger Swipe left

Simplified gesture velocity values

1. Fast
2. Normal
3. Slow

Precise gesture velocity

1. For slides and circles, this represents pixels per second.
2. For double taps, this is the time in milliseconds from the first press to the second release.

Enabling or Disabling the Gesture Custom Event

By default, a gesture custom event is sent to the master each time that a gesture is recognized. The ^GCE Send Command has been added to allow disabling and re-enabling of this capability.



NOTE

The value sent is not retained and gesture custom events will be enabled each time the panel restarts.

MXA-MP and MXA-MPL Programming

Overview

The MXA-MP Modero X Series Multi Preview and MXA-MPL Multi Preview Live are touch panel accessories that display still images or an HD digital video stream on Modero X Series touch panels. The MXA-MP accepts analog or digital video inputs and converts them into up to 10 regularly refreshed JPEG preview images. The MXA-MPL accepts analog or digital video inputs over HDMI and converts them to a video stream. Both devices make it easy for users to identify quickly what is currently being displayed by up to 10 source devices.



WARNING Verify you are using the latest NetLinx Master and Modero firmware, as well as the latest version of NetLinx Studio and TPD5.

NOTE For more information on the MXA-MP and MXA-MPL, such as firmware upgrades, please refer to the MXA-MP/MPL Operation Reference Guide, available at www.amx.com.

Configuring the Touch Panel

After physically connecting the device to the local network, and connecting the Modero X Series touch panel to the device, enable the device through the touch panel's *Multi Preview* page (FIG. 95). For more information on the *Multi Preview* menu, please refer to the *CONNECTIONS - Multi Preview* section on page 35.

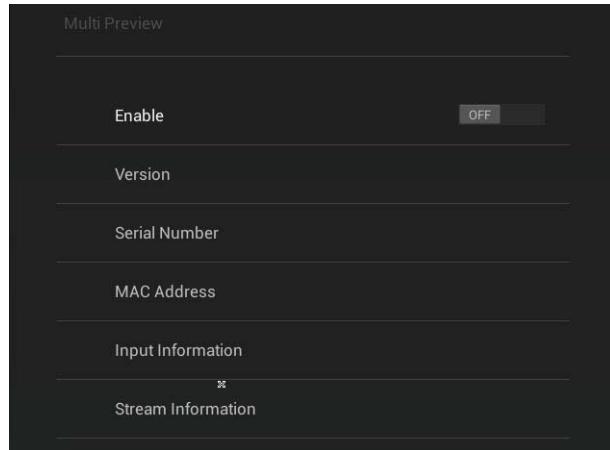


FIG. 95 Multi Preview menu

Stand-Alone Images and Video Feeds

Adding a Preview Image to a Touch Panel Page

As an example of how to add a simple JPEG preview image to a touch panel page in TPDesign 5:

1. From the main TPDesign 5 menu, select **Panel / Resource Manager** and select the **Dynamic Images** tab.
2. Select a JPEG image in the project. In this example, call it *MXA_MP*.
3. In the *Select Resource* window (FIG. 96), add a new resource. In the example,
 - *Protocol*: HTTP
 - *Host*: mxamp
 - *Path*: snapit
 - *File*: slot1.jpg

In this example, make sure to use at least a 2-second Refresh Rate.

4. When finished, click **OK** to close the *Select Resource* window.

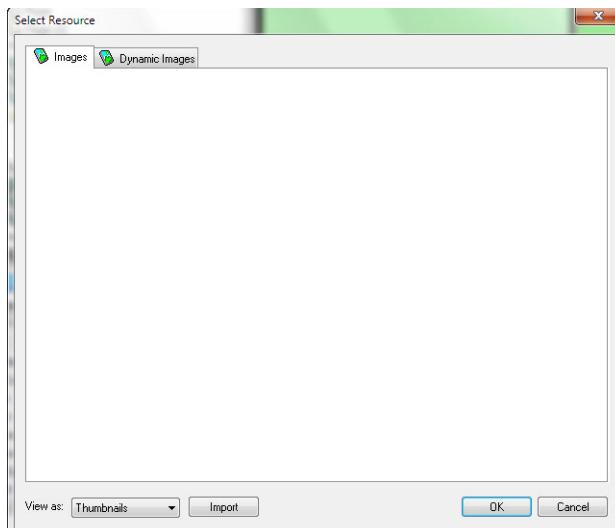


FIG. 96 Edit Dynamic Image window

5. After adding the Dynamic Image, assign the image as a Bitmap to a button on a touch panel page.

Adding a Live Motion Stream To A Touch Panel Page via an MXA-MPL

To add a live motion stream to a touch panel page via an MXA-MPL:

1. In the touch panel page, draw a button to be the video window.
2. In *Button States*, select *MXA-MPL* as the video fill (FIG. 97).

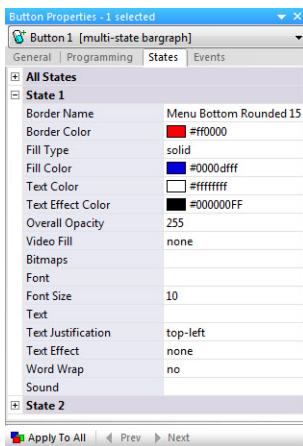


FIG. 97 Button Properties

When using the MXA-MPL for displaying live motion streams, make sure to use the supported resolutions with the video input type:

Supported Resolution/Signal Type Commands	
HDMI:	<pre>SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=hdmi,640x480p@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=hdmi,800x600p@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=hdmi,1024x768p@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=hdmi,1280x720p@30'"</pre>
DVI:	<pre>SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=dvi,640x480p@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=dvi,800x600p@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=dvi,1024x768p@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=dvi,1280x720p@30'"</pre>
RGB/Graphics:	<pre>SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=vga,640x480p@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=svga,800x600p@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=xga,1024x768p@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=wxga,1280x768p@30'"</pre>
Component:	<pre>SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=component,720x480i@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=component,720x480p@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=component,720x576i@30'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=component,720x576p@25'"</pre>
SVIDEO:	<pre>SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=svideo,ntsc'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=svideo,pal-bghid'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=svideo,pal-m'"</pre>
Composite:	<pre>SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=composite,ntsc'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=composite,pal-bghid'" SEND_COMMAND 10001:1:0, "'^SLT-1,videomode=composite,pal-m'"</pre>



When using the MXA-MPL for displaying live motion streams, make sure to use the supported resolutions with the video input type. While the MXA-MPL is capable of supporting up to 60 Hz, the Modero X G5 panels that use MXA-MPL only support 25-30 Hz.

Code-Driven Buttons and Video Feeds

Example code is available from AMX to assist with developing individual solutions for producing dynamic buttons and/or video feeds. From either the MXA-MP or MXA-MPL product pages on www.amx.com, select the AMX Device Modules link on the right side of the page. This example code is open source and may be modified to function with any source capable of providing the specified resolution and signal type.

Programming - Send Commands

Overview

You can program Modero X Series touch panels, using the commands in this section, to perform a wide variety of operations using Send Commands and variable text commands.

A device must first be defined in the NetLinx programming language with values for the Device: Port: System (in all programming examples - *Panel* is used in place of these values and represents all Modero panels).



WARNING

Verify you are using the latest NetLinx Master and Modero X Series firmware, as well as the latest version of NetLinx Studio and TPD5.

The Send Commands described in this document are *case-insensitive*.

Panel Send Commands

Panel Commands	
^ABP	<p>Single Beep Command. Output a single beep. Syntax: '^ABP' Variable: None Example: SEND COMMAND Panel, '^ABP'</p>
^ADB	<p>Double Beep Command. Output a double beep. Syntax: '^ADB' Variable: None Example: SEND COMMAND Panel, '^ADB'</p>
^BRT	<p>Panel Brightness Command. Set the panel brightness. Syntax: "'^BRT-<brightness level>'" Variable: brightness level = 0 - 100. Example: SEND COMMAND Panel, "'^BRT-70'" Sets the brightness level to 70</p>

Panel Commands (Cont.)	
?BRT	<p>Query Brightness Command.</p> <p>Query panel brightness.</p> <p>Syntax:</p> <pre>"'?BRT'"</pre> <p>Variable: None</p> <p>Example:</p> <pre>SEND_COMMAND Panel, "'?BRT'"</pre> <p>Gets the current brightness value. The response returned is a custom event with the following syntax:</p> <pre>Custom.ID = 0 Custom.Type = 1303 Custom.Flag = 0 Custom.Value1 = brightness value Custom.Value2 = 0 Custom.Value3 = 0 Custom.Text = String that represents the brightness value</pre> <p>Example response:</p> <pre>Custom.ID = 0 Custom.Type = 1303 Custom.Flag = 0 Custom.Value1 = 70 Custom.Value2 = 0 Custom.Value3 = 0 Custom.Text = 70</pre>
^CPR	<p>Cache Purge Command.</p> <p>Purge the image cache.</p> <p>Syntax:</p> <pre>"'^CPR'"</pre> <p>Variables: None.</p> <p>Example:</p> <pre>SEND_COMMAND Panel, "'^CPR'"</pre> <p>Purge the image cache.</p>
^DMM	<p>Panel Streaming Audio/Video Mute Command.</p> <p>Syntax:</p> <pre>"'^DMM-<audioMute>,<videoMute>,<url>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> audioMute = mute/unmute the audio for <url> • 0: Unmute • 1: Mute <p>videoMute = mute/unmute the video for URL (not implemented at this time)</p> <ul style="list-style-type: none"> • 0: Unmute • 1: Mute <p>url = a valid ^SDM url that is already in the playing state.</p> <p>Examples:</p> <pre>SEND_COMMAND Panel, "'^DMM-1,0,udp://224.1.1.1:1234'"</pre> <p>Mute audio, unmute video for UDP stream server 224.1.1.1 port 1234.</p> <pre>SEND_COMMAND Panel, "'^DMM-0,0,udp://224.1.1.1:1234'"</pre> <p>Unmute audio, unmute video for UDP stream server 224.1.1.1 port 1234.</p>

Panel Commands (Cont.)	
^GCE	<p>Set Gesture Custom Event.</p> <p>Sets whether or not the panel sends a custom event to the master whenever a gesture is detected.</p> <p>Syntax: " !^GCE-ON!" or " !^GCE-OFF!"</p> <p>Variables: None</p> <p>Note: This setting is not retained and the default is to always NOT send the events. To enable sending the event, the value after the dash can be "on", "ON", or "1". Anything else will disable sending custom events.</p> <p>Examples:</p> <pre>SEND_COMMAND Panel, " !^GCE-on" Enables gesture custom event reporting to the master. SEND_COMMAND Panel, " !^GCE-0" Disables gesture custom event reporting to the master.</pre>
?MAC	<p>Query Panel MAC Address.</p> <p>Query the MAC Address of the panel.</p> <p>Syntax: " !?MAC"</p> <p>Variables: None</p> <p>Example:</p> <pre>SEND_COMMAND Panel, '?MAC' Get the panel's MAC Address. The response returned is a custom event with the following syntax: Custom.ID = 0 Custom.Type = 1315 Custom.Flag = 0 Custom.Value1 = 0 Custom.Value2 = 0 Custom.Value3 = 0 Custom.Text = String that represents the MAC Address</pre> <p>Example response:</p> <pre>Custom.ID = 0 Custom.Type = 1315 Custom.Flag = 0 Custom.Value1 = 0 Custom.Value2 = 0 Custom.Value3 = 0 Custom.Text = 00:60:9f:90:00:01</pre>
^MUT	<p>Panel Volume Mute.</p> <p>Mute or unmute a panel volume.</p> <p>Syntax: " !^MUT-<mute/unmute 1 0>"</p> <p>Variables:</p> <p>Mute/unmute is 1 for mute and 0 for unmute.</p> <p>Custom.Value2 = 0 Custom.Value3 = 0 Custom.Text = String that represents the mute status (0 or 1)</p> <p>Example response for muted status:</p> <pre>Custom.ID = 0 Custom.Type = 1305 Custom.Flag = 0 Custom.Value1 = 1 Custom.Value2 = 0 Custom.Value3 = 0 Custom.Text = 1</pre>

Panel Commands (Cont.)	
?MUT	<p>Query Panel Mute Status. Query the mute status of the panel.</p> <p>Syntax: " '! ?MUT ! "</p> <p>Variables: None</p> <p>Example: SEND_COMMAND Panel, " '! ?MUT ! " Get the panel's mute status. The response returned is a custom event with the following syntax:</p> <ul style="list-style-type: none"> Custom.ID = 0 Custom.Type = 1305 Custom.Flag = 0 Custom.Value1 = mute status (0 unmuted or 1 for muted) Custom.Value2 = 0 Custom.Value3 = 0 Custom.Text = String that represents the mute status (0 or 1) <p>Example response for muted status:</p> <ul style="list-style-type: none"> Custom.ID = 0 Custom.Type = 1305 Custom.Flag = 0 Custom.Value1 = 1 Custom.Value2 = 0 Custom.Value3 = 0 Custom.Text = 1
^RSS	<p>Reset System Settings Command. Reset Settings to factory default.</p> <p>Syntax: " '! ^RSS ! "</p> <p>Variables: None</p> <p>Example: SEND_COMMAND Panel, " '! ^RSS ! " Reset the panel to factory default settings.</p>
^SLP	<p>Panel Sleep Command. Place the panel in sleep state. Sleep state turns the display off.</p> <p>Syntax: " '! ^SLP ! "</p> <p>Variables: None</p> <p>Example: SEND_COMMAND Panel, " '! ^SLP ! " Sends the panel to the sleep (display off)</p>

Panel Commands (Cont.)

^SLT	<p>Video Slot Command (aka MultiPreview Command)</p> <p>Syntax:</p> <pre>"'^SLT-<device>,<subcommand>'"</pre> <p>Variables:</p> <p>device = 1 (Device is always 1 for the MXA-MP and MXA-MPL, the only device type currently supported by Modero X Series panels)</p> <p>SubCommands = reboot, start, stop, videomode, audiovideoenable, videoinput</p> <p>^SLT-1,reboot=<current(default),previous,factory></p> <p>Slot command to reboot the MXA-MP or MXA-MPL. If previous or factory is specified, the MXA-MP/MPL will revert its firmware to either the previously loaded version or the factory installed version, respectively.</p> <p>''^SLT-1,start=<audio,video,both>''</p> <p>MXA-MPL Start stream - Tells the Breakout Box to start streaming audio, video or both.</p> <p>''^SLT-1,stop''</p> <p>MXA-MPL Stop stream - Tells the MXA-MPL to stop streaming.</p> <p>''^SLT-1,videomode=<format>,<resolution>''</p> <p>Note: When using HDMI sources, use the DIGITAL source, but with DVI and other formats, use the ANALOG source. Set format, resolution and rate for MXA-MPL</p> <p>video format = <hdmi dvi></p> <p>Resolution = <horizontal>x<vertical><i p>@<rate></p> <p>''^SLT-1,audiovideoenable=<video(default) audio both>''</p> <p>MXA-MPL Video enable command - Sets the option to enable video on subsequent streams from the MXA-MPL.</p> <p>Note: This does not work immediately; it will take effect on the next Stream start. It can still be overridden in the "^\SLT-1,start" command.</p> <p>''^SLT-1,videoinput=<on off>''</p> <p>Turn on/off the video input to the MXA-MP/MPL.</p> <p>Examples:</p> <pre>SEND_COMMAND Panel, "'^SLT-1,start=both'"</pre> <p>Start both the audio and video streams.</p> <pre>SEND_COMMAND Panel, "'^SLT-1,stop'"</pre> <p>Stop the current stream.</p>
-------------	---

Panel Commands (Cont.)	
?SLT	<p>Query Video Slot Command (aka Query MultiPreview).</p> <p>Query the value of any status field reported by the MXA-MP/L, such as version, serial number, MAC address, inputInfo, streamInfo, and type.</p> <p>Syntax:</p> <pre>"! ?SLT-1,querystatus=<statusField>,[id]!"</pre> <p>Response is a custom event as follows:</p> <p>Variables:</p> <ul style="list-style-type: none"> statusField = the option to get status on. Supported options are: version, serialNo, macAddress, inputInfo, streamInfo, type, temperature id = optional ID value to be placed in response so that responses can be matched to queries. If no ID is present, ID is set to 0 in the response. <p>The response returned is a custom event with the following syntax:</p> <ul style="list-style-type: none"> Custom.ID = 0 Custom.Type = 770 Custom.Flag = 0 Custom.Value1 = ID specified in command or 0 if none specified Custom.Value2 = 0 Custom.Value3 = 0 Custom.Text = String that represents the status <p>Examples:</p> <pre>SEND_COMMAND Panel, "? SLT-1,querystatus=type,101!"</pre> <p>The following custom event values would be received from the panel if an MXA-MPL is connected:</p> <ul style="list-style-type: none"> CUSTOM.TYPE = 770 CUSTOM.ID = 0 CUSTOM.FLAG = 0 CUSTOM.VALUE1 = 101 (Optional ID in request) CUSTOM.VALUE2 = 0 CUSTOM.VALUE3 = 0 CUSTOM.TEXT = MXA-MPL (If an MXA-MPL is connected. For an MXA-MP, the text would be "MXA-MP")
^SOU	<p>Play Sound Command.</p> <p>Plays a specified sound file.</p> <p>Syntax:</p> <pre>"! ^SOU-<sound name>!"</pre> <p>Variables:</p> <ul style="list-style-type: none"> sound name = Name of the sound file. Supported sound file formats are: WAV & MP3. <p>Example:</p> <pre>SEND COMMAND Panel, "^SOU-Music.wav"</pre> <p>Plays the 'Music.wav' file.</p>
^SSL	<p>Set the Sleep String Command.</p> <p>Set the content of the string that is sent to the master when the panel goes to sleep (display off).</p> <p>Syntax:</p> <pre>"! ^SSL-<sleep string>!"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Sleep string = The string sent to the master when the panel goes to sleep. <p>Example:</p> <pre>SEND COMMAND Panel, "^SSL-Sleeping..."</pre> <p>Sets the sleep string to 'Sleeping...'.</p>
^STP	<p>Open the Settings Applications.</p> <p>Syntax:</p> <pre>"! ^STP!"</pre> <p>Variables: None</p> <p>Example:</p> <pre>SEND COMMAND Panel, "^STP!"</pre> <p>Sends the panel to the Setup Page.</p>

Panel Commands (Cont.)	
^SWK	<p>Set the Wake String Command.</p> <p>Set the content of the string that is sent to the master when the panel wakes up from sleep (display on).</p> <p>Syntax: "!^SWK-<wake string>"</p> <p>Variables:</p> <p>Wake string = The string sent to the master when the panel wakes up from sleep.</p> <p>Example: SEND COMMAND Panel, "!^SWK-Wakeing Up..." Sets the sleep string to 'Waking Up...'.</p>
^TPF	<p>Turn Off Page Tracking Command.</p> <p>This command turns off page tracking.</p> <p>Syntax: "!^TPF"</p> <p>Variables: None</p> <p>Example: SEND COMMAND Panel, "!^TPF"</p>
^TPN	<p>Turn On Page Tracking Command.</p> <p>This command turns on page tracking, whereby when the page or popups change, a string is sent to the Master. This string may be captured with a CREATE_BUFFER command for one panel and sent directly to another panel.</p> <p>Syntax: "!^TPN"</p> <p>Variables: None</p> <p>Example: SEND COMMAND Panel, "!^TPN"</p>
^VOL	<p>Set Volume Command.</p> <p>Set the [specified] volume.</p> <p>Syntax: "!^VOL,<level>[,<type>]"</p> <p>Variables:</p> <p>Level is the volume level from 0-100. The level will be scaled according to the platforms abilities.</p> <p>Type (option) Change the volume of the given type</p> <ul style="list-style-type: none"> 0 = Master volume (change all volumes simultaneously). Used by default if no type is specified. This is not really a real volume, but instead is a virtual value that changes all other volume type concurrently. 10 = Alarm Volume 11 = Call Volume 12 = Media Volume 13 = Notification Volume 44 = Display the volume dialog (level is ignored) <p>Note: the platform dialog sliders will NOT update if they are displayed when the command is received. They are accurate, however, if displayed after receiving the command.</p> <p>Examples:</p> <pre>SEND_COMMAND Panel, "!^VOL,50" Sets the master volume to 50. SEND_COMMAND Panel, "!^VOL,50,0" Sets the master volume to 50. SEND_COMMAND Panel, "!^VOL,50,12" Sets the media volume to 50. SEND_COMMAND Panel, "!^VOL,0,44" Display the volume dialog.</pre>

Panel Commands (Cont.)	
?VOL	<p>Query Volume Command.</p> <p>Query the volume.</p> <p>Syntax:</p> <pre>"'?VOL[,<type>]'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Type (option) Get the volume of the given type 0 = Master volume. Used by default if no type is specified. Since Master volume is not a real volume, the value returned will actually be the Media Volume Value. 10 = Alarm Volume 11 = Call Volume 12 = Media Volume 13 = Notification Volume <p>The response returned is a custom event with the following syntax:</p> <pre>Custom.ID = 0 Custom.Type = 1306 Custom.Flag = 0 Custom.Value1 = volume level Custom.Value2 = volume type Custom.Value3 = 0 Custom.Text = String containing 'type=level'</pre> <p>Examples:</p> <pre>SEND_COMMAND Panel,"'?VOL' Query the Master volume. Response would be similar to: Custom.ID = 0 Custom.Type = 1306 Custom.Flag = 0 Custom.Value1 = 80 Custom.Value2 = 0 Custom.Value3 = 0 Custom.Text = 'Master=80' SEND_COMMAND Panel,"'?VOL,12' Query the Media volume. Response would be similar to: Custom.ID = 0 Custom.Type = 1306 Custom.Flag = 0 Custom.Value1 = 72 Custom.Value2 = 12 Custom.Value3 = 0 Custom.Text = 'Media=72' SEND_COMMAND Panel,"'?VOL,10' Query the Alarm volume. Response would be similar to: Custom.ID = 0 Custom.Type = 1306 Custom.Flag = 0 Custom.Value1 = 20 Custom.Value2 = 10 Custom.Value3 = 0 Custom.Text = 'Alarm=20'</pre>
^WKE	<p>Panel Wakeup Command.</p> <p>Place the panel in wake state. Wake state turns the display on.</p> <p>Syntax:</p> <pre>"'^WKE'"</pre> <p>Variables: None</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"'^WKE" Wakes the panel from sleep (turn display on)</pre>

Panel Commands (Cont.)	
SHUTDOWN	<p>Power Off the Panel Command.</p> <p>Receipt of this command will cause the panel to power off.</p> <p>Example:</p> <pre>SEND_COMMAND Panel, "'SHUTDOWN'"</pre>
WEBU	<p>Update Firmware from URL Command.</p> <p>This command tells the panel to retrieve a firmware kit file from the included URL and update to the firmware included in that kit file.</p> <p>Syntax:</p> <pre>"'WEBU-<url>'"</pre> <p>Variable:</p> <p>url = URL to the kit file. Support protocols are HTTP only at this time.</p> <p>Example:</p> <pre>SEND_COMMAND PANEL, "'WEBU,http://file.server/MODEROX-G5-firmware.kit'"</pre> <p>Download and install the MODEROX-G5-firmware.kit file from the HTTP server file.server.</p>

Page Commands

Page Commands are case-insensitive.

Page Commands	
^PGE	<p>Page Flip Command.</p> <p>Flips to a page with a specified page name. If the page is currently active, it will not redraw the page.</p> <p>Syntax:</p> <pre>"'^PGE-<page name>'"</pre> <p>Variable:</p> <p>page name = Name of the page to be displayed. If left blank, the page flips back to the previous page.</p> <p>Examples:</p> <pre>SEND_COMMAND Panel, "'^PGE-Page1'"</pre> <p>Flips to page1.</p> <pre>SEND_COMMAND Panel, "'^PGE-'"</pre> <p>Flips to the previous page.</p>
^PPA	<p>Close All Popups Command.</p> <p>Close all popups on a specified page.</p> <p>Syntax:</p> <pre>"'@PPA-<page name>'"</pre> <p>Variable:</p> <p>page name = Name of the page to close all popups on. If no name is specified, then the current page will have all popups closed.</p> <p>Example:</p> <pre>SEND_COMMAND Panel, "'^PPA-Page1'"</pre> <p>Close all pop-ups on Page1.</p>

Page Commands (Cont.)	
^PPF	<p>Popup Page Off Command.</p> <p>Detach a popup from a page. If the page name is empty, the current page is used. If the popup page is part of a group, the whole group is deactivated. This command works in the same way as the 'Hide Popup' command in TPDesign 5.</p> <p>Syntax:</p> <pre>"'^PPF-<popup page name>;<page name>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> popup page name = Name of the popup page. page name = Name of the page the popup is displayed On. If not specified the popup is detached from the current page. <p>Examples:</p> <pre>SEND_COMMAND Panel,"'^PPF-Popup1;Main'"</pre> <p>Detach the popup 'Popup1' from page 'Main'. <pre>SEND_COMMAND Panel,"'^PPF-Popup1'"</pre> <p>Detach the popup page 'Popup1' from the current page. </p></p>
^PPG	<p>Toggle a Popup Page.</p> <p>Toggle a specific popup page. If the page name is empty, the current page is used. Toggling refers to the activating/deactivating (On/Off) of a popup page. This command works in the same way as the 'Toggle Popup' command in TPDesign 5.</p> <p>Syntax:</p> <pre>"'^PPG-<popup page name>;<page name>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> popup page name = Name of the popup page. page name = Name of the page the popup is toggled on. If not specified the popup is toggled on the current page. <p>Examples:</p> <pre>SEND_COMMAND Panel,"'^PPG-Popup1;Main'"</pre> <p>Toggles the popup page 'Popup1' on the 'Main' page from one state to another (On/Off). <pre>SEND_COMMAND Panel,"'^PPG-Popup1'"</pre> <p>Toggles the popup page 'Popup1' on the current page from one state to another (On/Off). </p></p>
^PPK	<p>Kill Popup Page Command.</p> <p>Kill a specific popup page from all pages. Kill refers to the deactivating (Off) of a popup window from all pages. If the pop-up page is part of a group, the whole group is deactivated. This command works in the same way as the 'Clear Group' command in TPDesign 5.</p> <p>Syntax:</p> <pre>"'^PPK-<popup page name>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> popup page name = Name of the popup page. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^PPK-Popup1'"</pre> <p>Kills the popup page 'Popup1' on all pages. </p>

Page Commands (Cont.)

^PPN	<p>Popup Page On Command.</p> <p>Attach a specific popup page to launch on either a specified page or the current page. If the page name is empty, the current page is used. If the popup page is already on, do not re-draw it. This command works in the same way as the 'Show Popup' command in TPDesign 5.</p> <p>Syntax:</p> <pre>"'^PPN-<popup page name>;<page name>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> popup page name = Name of the popup page. page name = Name of the page the popup is displayed on. If the page name is not specified the current page is used. <p>Examples:</p> <pre>SEND_COMMAND Panel, "'^PPN-Popup1;Main'"</pre> <p>Activates 'Popup1' on the 'Main' page.</p> <pre>SEND_COMMAND Panel, "'^PPN-Popup1'"</pre> <p>Activates the popup page 'Popup1' on the current page.</p>
^PPT	<p>Popup Timeout Command.</p> <p>Set the popup to close after timeout.</p> <p>Syntax:</p> <pre>"'^PPT-<popup page name>;<timeout>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Popup page name - the name of the popup to apply the timeout to. Popup must be visible on screen in order to apply timeout Timeout - the time in tenths of seconds (10 = 1 second) or 0 to cancel timeout. Successive calls to timeout will reset the timeout. A timeout of 0 cancels the timeout and the popup stays open. <p>Example:</p> <pre>SEND_COMMAND Panel, "'^PPT-MyPopup;150'"</pre> <p>Close MyPopup after 15 seconds.</p>
^PPX	<p>Close All Popup Pages Command.</p> <p>Close all popups on all pages. This command works in the same way as the 'Clear All' command in TPDesign5.</p> <p>Syntax:</p> <pre>"'^PPX'"</pre> <p>Variables: None</p> <p>Example:</p> <pre>SEND_COMMAND Panel, "'^PPX'"</pre> <p>Close all popups on all pages.</p>

Collapsible Popup Send Commands

Collapsible Popup Send Commands are new to the Modero X G5 touch panels, and support the operation of collapsible popups.

Please note that collapsible popup send commands do not automatically show the popup on the target page. The popup must be first shown with a standard show command. This applies even when the collapsible popup is a member of a popup group. For all of these commands, if the target page is blank, the current page is used. If the named popup is not collapsible, the commands are ignored.

Collapsible Popup Send Commands	
^PCL	<p>Collapse Collapsible Popup Command. Moves the named closeable popup to the collapsed position.</p> <p>Syntax :</p> <pre>"'^PCL-<popup name>;<optional target page>'"</pre> <p>Variables :</p> <ul style="list-style-type: none"> Popup name = the name of the popup to collapse Target page = name of the page hosting the popup to affect the change upon. If target page is not specified, the command is applied to the current page. <p>Examples :</p> <pre>SEND_COMMAND Panel,"^PCL-Contacts" Collapse the Contacts popup on the current page.</pre> <pre>SEND_COMMAND Panel,"^PCL-Contacts;Teleconference Control" Collapse the Contacts popup on the Teleconference Control page.</pre>
^PCT	<p>Collapsible Popup Custom Toggle Command.</p> <p>This is an advanced "toggle" command for collapsible popups, working with a comma-separated list of commands. This list is parsed and a command table is created. Based on the current state of the collapsible popup, the correct command is executed.</p> <p>Note: The previously parsed list is saved and is only parsed again if the command string differs for this popup.</p> <p>Syntax :</p> <pre>"'^PCT-<popup>,<custom toggle commands>;<optional target page>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Popup = popup name Custom toggle commands = a comma separated list of commands. This list is parsed and a command table is created. The state letters are as follows: <ul style="list-style-type: none"> o - open c - collapsed d - dynamic, followed by an integer indicating the offset. * - wildcard, always last in the list <p>Before and after states are separated by -> characters.</p> <p>Target page = name of the page hosting the popup to affect the change upon. If target page is not specified, the command is applied to the current page.</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"^PCT-RightSlider,c->o,o->d100,*->c" The RightSlider open if collapsed, move to d100 if open, and collapse otherwise.</pre>

Collapsible Popup Send Commands (Cont.)	
^PDO	<p>Collapsed Popup Dynamic Offset Command.</p> <p>Moves the collapsible popup to a specific offset position relative to the collapsed direction configured for the popup. This allows other positions besides open and collapsed.</p> <p>Syntax:</p> <pre>"'^PDO-<popup name>,<offset>;<optional target page>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Popup name = name of the popup to affect offset = number of pixels to offset (hide). <p><offset> is constrained as follows: 0 <= offset <= collapsed offset</p> <p>Target page = name of the page hosting the popup to affect the change upon. If target page is not specified, the command is applied to the current page.</p> <p>Examples:</p> <pre>"'^PDO-RightSlider,66'"</pre> <p>Move popup named RightSlider to an offset position of 66 on the current page. <pre>"'^PDO-RightSlider,66;Media Controls'"</pre> <p>Move popup named RightSlider to an offset position of 66 on the Media Controls page.</p> </p>
^POP	<p>Open Collapsible Popup Command.</p> <p>Moves the named collapsible popup to the open position.</p> <p>Syntax:</p> <pre>"'^POP-<popup> ;<optional target page>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Popup = the name of the popup to collapse <p>Target page = name of the page hosting the popup to affect the change upon. If target page is not specified, the command is applied to the current page.</p> <p>Examples :</p> <pre>SEND_COMMAND Panel, "'^POP-Contacts'"</pre> <p>Open the Contacts popup on the current page. <pre>SEND_COMMAND Panel, "'^POP-Contacts;Teleconference Control'"</pre> <p>Open the Contacts popup on the Teleconference Control page.</p> </p>
^PTC	<p>Toggle Collapsible Popup Collapsed Command.</p> <p>Toggles the named collapsible popup between the open and collapsed positions. More specifically, if the popup is not fully collapsed, it is collapsed.</p> <p>Syntax:</p> <pre>"'^PTC-<popup> ;<optional target page>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Popup = the name of the popup to toggle <p>Target page = name of the page hosting the popup to affect the change upon. If target page is not specified, the command is applied to the current page.</p> <p>Examples :</p> <pre>SEND_COMMAND Panel, "'^PTC-Contacts'"</pre> <p>Toggle the Contacts popup collapsed on the current page. <pre>SEND_COMMAND Panel, "'^PTC-Contacts;Teleconference Control'"</pre> <p>Toggle the Contacts popup collapsed on the Teleconference Control page.</p> </p>

Collapsible Popup Send Commands (Cont.)	
^PTO	<p>Toggle Collapsed Popup Open Command.</p> <p>Toggles the named collapsible popup between the open and collapsed positions. More specifically, if the popup is not fully open, it is opened.</p> <p>Syntax :</p> <pre>"'^PTO-<popup>;<optional target page>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Popup = the name of the popup to toggle Target page = name of the page hosting the popup to affect the change upon. If target page is not specified, the command is applied to the current page. <p>Examples :</p> <pre>SEND_COMMAND Panel, "'^PTO-Contacts'"</pre> <p>Toggle the Contacts popup open on the current page. <pre>SEND_COMMAND Panel, "'^PTO-Contacts;Teleconference Control'"</pre> <p>Toggle the Contacts popup open on the Teleconference Control page.</p> </p>

Button Send Commands

Button Commands																																											
^ANI	<p>Multistate Button Animation Command</p> <p>Syntax:</p> <pre>"'^ANI-<vt addr range>,<start state>,<end state>,<time>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. start state = Beginning of button state (0= current state). end state = End of button state. time = In 1/10 second intervals. 																																										
^AFP	<p>Flip to specified page using the named animation.</p> <p>Syntax:</p> <pre>"'^AFP-<page name>,<animation>,<origin>,<duration>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Page Name: If the page name is blank, flip the to the previous page Animation: If blank/invalid, the default animation is fade. 																																										
	<table border="1"> <thead> <tr> <th>Animation Name</th><th>Command Syntax* (see note below)</th><th>Origin(s)</th><th>Default Origin</th></tr> </thead> <tbody> <tr> <td>Center Door Fade</td><td>cntrdrfade, centerdoorfade, or center door fade</td><td>top(2), bottom(3), left(4), right(5)</td><td>right(5)</td></tr> <tr> <td>Door Fade</td><td>doorfade, door fade, or door</td><td>top(2), bottom(3), left(4), right(5)</td><td>right(5)</td></tr> <tr> <td>Fade</td><td>fade</td><td>center(1)</td><td>center(1)</td></tr> <tr> <td>Slide</td><td>slide</td><td>top(2), bottom(3), left(4), right(5)</td><td>right(5)</td></tr> <tr> <td>Slide Bounce</td><td>sldbounce, slidebounce, or slide bounce</td><td>top(2), bottom(3), left(4), right(5)</td><td>right(5)</td></tr> <tr> <td>Spin In</td><td>spinin or spin in</td><td>center(1)</td><td>center(1)</td></tr> <tr> <td>Spin Out</td><td>spinout or spin out</td><td>center(1)</td><td>center(1)</td></tr> <tr> <td>Zoom In</td><td>zoomin or zoom in</td><td>center(1)</td><td>center(1)</td></tr> <tr> <td>Zoom Out</td><td>zoomout or zoom out</td><td>center(1)</td><td>center(1)</td></tr> </tbody> </table> <p>* Note: Multiple aliases for the transition name command syntax are allowed to maintain backwards compatibility with G4.</p>			Animation Name	Command Syntax* (see note below)	Origin(s)	Default Origin	Center Door Fade	cntrdrfade, centerdoorfade, or center door fade	top(2), bottom(3), left(4), right(5)	right(5)	Door Fade	doorfade, door fade, or door	top(2), bottom(3), left(4), right(5)	right(5)	Fade	fade	center(1)	center(1)	Slide	slide	top(2), bottom(3), left(4), right(5)	right(5)	Slide Bounce	sldbounce, slidebounce, or slide bounce	top(2), bottom(3), left(4), right(5)	right(5)	Spin In	spinin or spin in	center(1)	center(1)	Spin Out	spinout or spin out	center(1)	center(1)	Zoom In	zoomin or zoom in	center(1)	center(1)	Zoom Out	zoomout or zoom out	center(1)	center(1)
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	<p>Duration: Transition time in 10ths of a second. Range is 3-30 with 15 (1.5 seconds) as the default</p> <p>Examples:</p> <pre>SEND COMMAND Panel,"'^AFP-NextPage,slide,4,5'"</pre> <p>Flip to <i>NextPage</i> sliding from the left for half a second.</p> <pre>SEND COMMAND Panel,"'^AFP-,centerdoorfade,2,10'"</pre> <p>Flip to <i>NextPage</i> center door fade from the top for a second.</p>																																										

Button Commands (Cont.)	
^APF	<p>Add page flip action.</p> <p>Add page flip action to a button. This command installs a page flip command to the Button Release event action.</p> <p>Syntax:</p> <pre>"'^APF-<vt addr range>,<page flip action>,<page name> [,<animation>,<origin>,[duration]]'"</pre> <p>Variables:</p> <p>variable text address range = 1 - 4000.</p> <p>page flip action = (see the following):</p> <ul style="list-style-type: none"> Stan[stdPage] - flip to standard page StanAni - flip to standard page with animation PrevAni - flip to previous page with animation Prev[iousPage] - flip to previous page Show[Popup] - Show popup page Hide[Popup] - Hide popup page Togg[lePopup] - toggle popup state ClearGroup - clear popup page group from all pages ClearPage - clear all popup pages from a page with the specified page name ClearAll - Clear all popup pages from all pages <p>Page Name: 1 - 50 ASCII characters.</p> <p>Animation: See the ^AFP command (page 79) for details.</p> <p>Origin: See the ^AFP command (page 79) for details.</p> <p>Duration: Transition time in 10ths of a second. Range is 3-30 with 15 (1.5 seconds) as the default</p> <p>Example:</p> <pre>SEND COMMAND Panel,"^APF-400,StanAni,Main Page,ZoomIn,30"</pre> <p>Add animated page flip action to button 400 to flip to Main Page using zoom in for 3 seconds.</p>
^BSF	<p>Button Focus Command.</p> <p>Note: Select one button at a time (single variable text address). Do not assign a variable text address range to set focus to multiple buttons. Only one variable text address can be in focus at a time.</p> <p>Syntax:</p> <pre>"'^BSF-<vt addr range>,<selection value>'"</pre> <p>Variable:</p> <p>variable text address range = 1 - 4000.</p> <p>selection value = Unselect = 0 and select = 1.</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"^BSF-500,1"</pre> <p>Sets the focus to the text area of the button.</p>
^BSM	<p>Button Submit Text Command.</p> <p>This command causes the text areas to send their text as strings to the NetLinx Master.</p> <p>Syntax:</p> <pre>"'^BSM-<vt addr range>'"</pre> <p>Variable:</p> <p>variable text address range = 1 - 4000.</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"^BSM-500"</pre> <p>Returns a String of format "<button name>-<text>". The string is returned on the port a ^BIT command was received on, or if that has not occurred, is sent on the address port.</p>

Button Commands (Cont.)	
^CPF	<p>Clear Page Flip Command.</p> <p>Clear all page flips from a button. This only clears PageFlip actions from the Button Release event action.</p> <p>Syntax:</p> <pre>"'^CPF-<variable text address range>'"</pre> <p>Variable:</p> <p>variable text address range = 1 - 4000.</p> <p>Example:</p> <pre>SEND_COMMAND Panel, '^CPF-500'"</pre> <p>Clear all page flip actions from button address 500 RELEASE event action list.</p>
^GLH	<p>Set Bargraph High Range Command</p> <p>Syntax:</p> <pre>"'^GLH-<vt addr range>,<bargraph hi>'"</pre> <p>Sets the bargraph max range to <bargraph hi>. This does NOT affect the LEVEL value (if any) associated with this bargraph.</p> <p>Variables:</p> <p>Variable text address range = 1 - 4000.</p> <p>Bargraph hi is the new high value. It must be larger than the current low value.</p> <p>Example:</p> <pre>SEND_COMMAND Panel, '^GLH-100,128'"</pre> <p>Set the max bargraph value to 128.</p>
^GLL	<p>Set Bargraph Low Range Command</p> <p>Syntax:</p> <pre>"'^GLL-<vt addr range>,<bargraph low>'"</pre> <p>Sets the bargraph min range to <bargraph low>. This does NOT affect the LEVEL value (if any) associated with this bargraph.</p> <p>Variables:</p> <p>Variable text address range = 1 - 4000.</p> <p>Bargraph low is the new low value. It must be smaller than the current high value.</p> <p>Example:</p> <pre>SEND_COMMAND Panel, '^GLL-100,64'"</pre> <p>Set the min bargraph value to 64.</p>
^ENA	<p>Button Enable Command. Enable or disable buttons with a set variable text range.</p> <p>Syntax:</p> <pre>"'^ENA-<vt addr range>,<command value>'"</pre> <p>Variable:</p> <p>variable text address range = 1 - 4000.</p> <p>command value = (0= disable, 1= enable)</p> <p>Example:</p> <pre>SEND_COMMAND Panel, '^ENA-500.504&510.515,0'"</pre> <p>Disables button pushes on buttons with variable text range 500-504 & 510-515.</p>

Button Commands (Cont.)	
^SCE	<p>Subpage Custom Event Command. Configures subpage custom events.</p> <p>This command can be used to enable or disable the transmission of custom events to the master whenever certain operations occur. For example, the system programmer may want to be notified whenever a subpage enters the anchor position.</p> <p>The notification mechanism is a custom event. The ^SCE command takes the form of a vt addr range specifying one or more subpage viewer buttons followed by a comma separated list of custom event numbers. If the number is 0 or blank for a given event type then no custom event will be transmitted when that event occurs. If a number is specified, then it is used as the EVENTID value for the custom event. The range of 32001 to 65535 has been reserved in the panel for user custom event numbers. A different value could be used but might collide with other AMX event numbers. Event configuration is not permanent and all event numbers revert to the default of 0 when the panel restarts.</p> <p>Syntax:</p> <pre>"'^SCE-<vt addr range>,<optional anchor event num>,<optional onscreen event num>,<optional offscreen event num>,<optional reorder event num>!"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. Anchor event number = 0 for no event or a value from 32001 to 65535. Onscreen event number = 0 for no event or a value from 32001 to 65535. Offscreen event number = 0 for no event or a value from 32001 to 65535. Reorder event number = 0 for no event or a value from 32001 to 65535. <p>The events are:</p> <ul style="list-style-type: none"> Anchor - a new subpage has docked in the anchor position. Onscreen - a docking operation has been completed and the subpages in the list are now onscreen. This list will include the anchor along with any subpages that may be partially onscreen. Offscreen - a docking operation has been completed and the subpages in the list are now offscreen. Reorder - the user has reordered the subpages in the set and the list contains all subpages in the new order without regard to onscreen or offscreen state. <p>In response to any or all of the above events, the panel will create a string which is a list of subpage names separated by a pipe () character. The string for the anchor event is a single subpage name. If this string is too long to be transmitted in a single custom event, then multiple custom events will be created and transmitted.</p> <p>If defined, the events are sent in this order when a docking operation completes on a given viewer button: anchor, onscreen, offscreen.</p> <p>If reorder is defined and occurs, it is sent first: reorder, anchor, onscreen, offscreen.</p> <p>The format of the custom event transmitted to the master is as follows:</p> <ul style="list-style-type: none"> CUSTOM.TYPE = EVENTID = the non-zero event number in the ^SCE command CUSTOM.ID = ADDRESS = the address of the viewer button which generated the event CUSTOM.FLAG = 0 CUSTOM.VALUE1 = which one of possible multiple events this is (1 based) CUSTOM.VALUE2 = total number of events needed to send the entire string CUSTOM.VALUE3 = the total size of the original string in bytes CUSTOM.TEXT = pipe character separated list of subpage names <p>Example:</p> <pre>SEND_COMMAND Panel, "'^SCE-200,32001,0,0,0!"</pre> <p>If the subpage named TV_Favorite_SyFy enters the anchor position on a subpage viewer button with an address of 200, the following event would be transmitted to the master when the user had sent this command to the panel:</p> <pre>CUSTOM.TYPE = EVENTID = 32001 CUSTOM.ID = ADDRESS = 200 CUSTOM.FLAG = 0 CUSTOM.VALUE1 = 1 CUSTOM.VALUE2 = 1 CUSTOM.VALUE3 = 16 CUSTOM.TEXT = TV_Favorite_SyFy</pre>

Button Commands (Cont.)	
?SCE	<p>Query Subpage Custom Event Numbers Command.</p> <p>Query the assigned subpage custom event numbers for a subpage viewer button. A series of custom events for the subpage viewer button may be sent as a response.</p> <p>Syntax:</p> <pre>"'?SCE-<vt addr range>'"</pre> <p>Variables:</p> <p>variable text address range = 1 - 4000.</p> <p>The format of the custom event transmitted to the master is as follows:</p> <ul style="list-style-type: none"> CUSTOM.TYPE = EVENTID = the non-zero event number in the ^SCE command CUSTOM.ID = ADDRESS = the address of the viewer button which generated the event CUSTOM.FLAG = 0 CUSTOM.VALUE1 = which one of possible multiple events this is (1 based) CUSTOM.VALUE2 = total number of events needed to send the entire string CUSTOM.VALUE3 = the total size of the original string in bytes CUSTOM.TEXT = pipe character separated list of subpage names <p>Example:</p> <p>(Assuming the previous command, '^SCE-200,32001,0,0,0', has been sent...)</p> <pre>SEND_COMMAND Panel, "'?SCE-200'"</pre> <p>If the subpage named TV_Favorite_SyFy enters is in the anchor position on a subpage viewer button with an address of 200, the following event would be transmitted to the master when the user had sent this command to the panel:</p> <pre>CUSTOM.TYPE = EVENTID = 32001 CUSTOM.ID = ADDRESS = 200 CUSTOM.FLAG = 0 CUSTOM.VALUE1 = 1 CUSTOM.VALUE2 = 1 CUSTOM.VALUE3 = 16 CUSTOM.TEXT = TV_Favorite_SyFy</pre>
^SDR	<p>Enabling subpage dynamic reordering. This command can be used to enable or disable dynamic reordering for a given viewer button or set of viewer buttons. It can also be used to set the amount of time to wait before initiating the single finger reorder time.</p> <p>Syntax:</p> <pre>"'^SDR-<vt addr range>,<enable state>,<optional hold time>'"</pre> <p>Variables:</p> <p>enable state - This value can be either "on" or "ON" or "1" to enable dynamic reordering for the specified viewer button(s). Any other value will disable dynamic reordering for the specified viewer button(s).</p> <p>hold time - This value is in tenths of a second. The value will be rounded up to the next highest quarter of a second. This is the amount of time that the user must press and hold a subpage with a single finger to trigger a dynamic reordering operation.</p>
^SHA	<p>Subpage Hide All Command.</p> <p>Hide all subpages in a subpage viewer button.</p> <p>Syntax:</p> <pre>"'^SHA-<vt addr range>'"</pre> <p>Variables:</p> <p>variable text address range = 1 - 4000.</p> <p>Example:</p> <pre>SEND_COMMAND Panel, "'^SHA-200'"</pre> <p>Remove all subpages from subpage viewer button with address 200.</p>

Button Commands (Cont.)	
^SHD	<p>Subpage Hide Command.</p> <p>This command will hide the named subpage and relocate the surrounding subpages as necessary to close the gap. If the subpage to be hidden is currently offscreen then it is removed without any other motion on the subpage viewer button.</p> <p>Syntax:</p> <pre>"'^SHD-<vt addr range>,<name>,<optional time>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. name = name of subpage to hide. If name is __all, then all subpages are hidden. time - Can range from 0 to 30 and represents tenths of a second. This is the amount of time used to move the subpages around when subpages are hidden from a button. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^SHD-200,menu1,10'"</pre> <p>Remove the menu1 subpage from subpage viewer button with address 200 over one second.</p>
^SHO	<p>Button Show/Hide Command. Show or hide a button with a set variable text range.</p> <p>Syntax:</p> <pre>"'^SHO-<vt addr range>,<command value>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. command value = (0= hide, 1= show). <p>Example:</p> <pre>SEND_COMMAND Panel,"'^SHO-500.504&510.515,0'"</pre> <p>Hides buttons with variable text address range 500-504 & 510-515.</p>
^SPD	<p>Subpage Padding Command.</p> <p>Set the padding between subpages on a subpage viewer button.</p> <p>Syntax:</p> <pre>"'^SPD-<vt addr range>,<padding>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. Padding = percentage from 0 to 100 of the first subpage in a set to set as a padding between subpages. For a horizontal subpage viewer button it is a percentage of the width and for a vertical subpage viewer button it is a percentage of the height. <p>Example:</p> <pre>SEND_COMMAND Panel, " '^SPD-400,10'"</pre> <p>Set the padding between subpages in the set to 10% of the dimension of the first subpage in the set.</p>

Button Commands (Cont.)	
^SSH	<p>Subpage Show Command.</p> <p>This command will perform one of three different operations based on the following conditions:</p> <ol style="list-style-type: none"> 1. If the named subpage is hidden in the set associated with the viewer button it will be shown in the anchor position. 2. If the named subpage is not present in the set it will be added to the set and shown in the anchor position. 3. If the named subpage is already present in the set and is not hidden, then the viewer button will move it to the anchor position. The anchor position is the location on the subpage viewer button specified by its weighting. This will either be left, center or right for horizontal subpage viewer buttons or top, center or bottom for vertical subpage viewer buttons. Surrounding subpages are relocated on the viewer button as needed to accommodate the described operations. <p>Syntax:</p> <pre>"'^SSH-<vt addr range>,<name>,<optional position>,<optional time>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> vt addr range - Specifies the address(es) of the subpage viewer button to be modified. name - Specifies the name of the subpage to be shown or added. position - Specifies where to add (or show) the named subpage in the set with 0 representing the beginning of the set. If this value is left out (or set to 65535) then the weighting value for the viewer button is used to place the new subpage, i.e. left/top, center or right/bottom. When using the weighting locations, set insertion positions can vary based on the current onscreen locations of existing subpages. time - Can range from 0 to 30 and represents tenths of a second. This is the amount of time used to move the subpages around when subpages are added or removed from a button. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^SSH-400,media1,0,10'"</pre> <p>Add or show the media1 subpage in the anchor position over one second.</p>
^STG	<p>Subpage Toggle Command.</p> <p>If the named subpage is hidden, then this command activates a subpage show command. If the named subpage is present, then a subpage hide command is activated.</p> <p>Syntax:</p> <pre>"'^STG-<vt addr range>,<name>,<optional position>,<optional time>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> vt addr range - Specifies the address(es) of the subpage viewer button to be modified. name - Specifies the name of the subpage to be shown or added. position - Specifies where to show the named subpage in the set with 0 representing the beginning of the set. If this value is left out (or set to 65535) then the weighting value for the viewer button is used to place the new subpage, i.e. left/top, center or right/bottom. When using the weighting locations, set insertion positions can vary based on the current onscreen locations of existing subpages. If the subpage is being hidden this parameter is ignored. time - Can range from 0 to 30 and represents tenths of a second. This is the amount of time used to move the subpages around when subpages are added or removed from a button. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^STG-400,media1,0,10'"</pre> <p>Show or hide the media1 subpage over one second.</p>

Button State Commands

Button State Commands	
^BAT	<p>Append Text to State Command.</p> <p>Append non-unicode text.</p> <p>Syntax:</p> <pre>"'^BAT-<vt addr range>,<button states range>,<new text>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for general buttons 1 = Off state and 2 = On state). new text = ASCII characters. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BAT-520,1,Enter City'"</pre> <p>Appends the text 'Enter City' to the button's OFF state.</p>
^BAU	<p>Append Unicode Text to State Command.</p> <p>Append unicode text. Same format as ^UNI.</p> <p>Syntax:</p> <pre>"'^BAU-<vt addr range>,<button states range>,<unicode text>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). unicode text = Unicode characters must be entered in Hex format. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BAU-520,1,00770062'"</pre> <p>Appends Unicode text "00770062" ('wb') to the button's OFF state.</p>

Button State Commands (Cont.)

^BBR	<p>Button State Bitmap Resource Command. Assign a resource to those buttons with a defined address range.</p> <p>Syntax:</p> <pre>"'^BBR-<vt addr range>,<button states range>,<resource name>,[bitmap index], [optional justification]'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). name of resource = ASCII characters. <p>Optional bitmap index = 1 - 5, the state bitmap index to assign the resource. If not present, will place the referenced resource in index 1. The indexes are defined as:</p> <ul style="list-style-type: none"> 0 - Chameleon Image (if present) 1 - Bitmap 1 2 - Bitmap 2 3 - Bitmap 3 4 - Bitmap 4 5 - Bitmap 5 <p>Optional justification = 0-10 where:</p> <ul style="list-style-type: none"> 0 - Absolute position 1 - top left 2 - top center 3 - top right 4 - middle left 5 - middle center 6 - middle right 7 - bottom left 8 - bottom center 9 - bottom right 10 - scale to fit. <p>If absolute justification is set, the next two parameters are the X and Y offset of the bitmap for the referenced index. If no justification is specified, the current justification is used.</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BBR-500.504&510.515,1,image_xray'"</pre> <p>Sets the OFF state picture for the buttons with variable text ranges of 500-504 & 510-515.</p>
^BCB	<p>Set Border Color Command.</p> <p>Set the border color to the specified color.</p> <p>Only if the specified border color is not the same as the current color.</p> <p>Syntax:</p> <pre>"'^BCB-<vt addr range>,<button states range>,<color value>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons, 1 = Off state and 2 = On state). color value = Refer to <i>RGB Triplets and Names For Basic 88 Colors</i> on page 121 for more information. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BCB-500.504&510,1,12'"</pre> <p>Sets the Off state border color to 12 (Yellow). Colors can be set by Color Numbers, Color name, R,G,B, alpha colors (RRGGBBAA) and R, G & B colors values (RRGGBB).</p>

Button State Commands (Cont.)	
?BCB	<p>Get Border Color Command. Get the current border color.</p> <p>Syntax:</p> <pre>"'?BCB-<vt addr range>,<button states range>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons, 1 = Off state and 2 = On state). custom event type 1011: Flag - zero Value1 - Button state number Value2 - Actual length of string (should be 9) Value3 - Zero Text - Hex encoded color value (ex: #000000FF) Text length - Color name length (should be 9) <p>Example:</p> <pre>SEND COMMAND Panel,"'?BCB-529,1'"</pre> <p>Gets the button 'OFF state' border color. information.</p> <p>The result sent to the Master would be:</p> <pre>ButtonGet Id = 529 Type = 1011 Flag = 0 VALUE1 = 1 VALUE2 = 9 VALUE3 = 0 TEXT = #222222FF TEXT LENGTH = 9</pre>
^BCF	<p>Background Color Fill Command. Set the background color fill to specified color in state(s)</p> <p>Syntax:</p> <pre>"'^BCF-<vt addr range>,<button state range>,<color value>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Variable text addr range = 1-4000 button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). color value - Refer to <i>RGB Triplets and Names For Basic 88 Colors</i> on page 121 for more information. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BCF-500.504&510.515,1,Blue'"</pre> <p>Sets the OFF state background color fill for the buttons with variable text ranges of 500-504 & 510-515 to Blue.</p>

Button State Commands (Cont.)

?BCF	<p>Get Fill Color Command. Get the current fill color.</p> <p>Syntax:</p> <pre>"'?BCF-<vt addr range>,<button states range>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons, 1 = Off state and 2 = On state). custom event type 1012: <ul style="list-style-type: none"> Flag - Zero Value1 - Button state number Value2 - Actual length of string (should be 9) Value3 - Zero Text - Hex encoded color value (ex: #000000FF) Text length - Color name length (should be 9) <p>Example:</p> <pre>SEND COMMAND Panel,"'?BCF-529,1'" Gets the button 'OFF state' fill color information.</pre> <p>The result sent to the Master would be:</p> <pre>ButtonGet Id = 529 Type = 1012 Flag = 0 VALUE1 = 1 VALUE2 = 9 VALUE3 = 0 TEXT = #FF8000F</pre>
^BCT	<p>Set Text Color Command. Set the text color to the specified color.</p> <p>Only if the specified text color is not the same as the current color.</p> <p>Note: Color can be assigned by color name (without spaces), number or R,G,B value (RRGGBB or RRGGBBAA).</p> <p>Syntax:</p> <pre>"'^BCT-<vt addr range>,<button states range>,<color value>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons, 1 = Off state and 2 = On state). color value = Refer to <i>RGB Triplets and Names For Basic 88 Colors</i> on page 121 for more information. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BCT-500.504&510,1,12'" Sets the Off state border color to 12 (Yellow). Colors can be set by Color Numbers, Color name, R,G,B, alpha colors (RRGGBBAA) and R, G & B colors values (RRGGBB). Refer to <i>RGB Triplets and Names For Basic 88 Colors</i> on page 121 for more information.</pre>

Button State Commands (Cont.)	
?BCT	<p>Get Text Color Command. Get the current text color.</p> <p>Syntax:</p> <pre>"'?BCT-<vt addr range>,<button states range>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons, 1 = Off state and 2 = On state). custom event type 1013: Flag - Zero Value1 - Button state number Value2 - Actual length of string (should be 9) Value3 - Zero Text - Hex encoded color value (ex: #000000FF) Text length - Color name length (should be 9) <p>Example:</p> <pre>SEND COMMAND Panel,"'?BCT-529,1'"</pre> <p>Gets the button 'OFF state' text color information. The result sent to Master would be:</p> <pre>ButtonGet Id = 529 Type = 1013 Flag = 0 VALUE1 = 1 VALUE2 = 9 VALUE3 = 0 TEXT = #FFFFFFEF TEXT LENGTH = 9</pre>
?BOS	<p>Get Button State Video Fill.</p> <p>The ? BOS queries a button state and returns the video fill value, including the URL and loop count.</p> <p>Syntax:</p> <pre>"'?BOS-<vt addr range>,<button states range>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons, 1 = Off state and 2 = On state). custom event type 1017: Flag - Zero Value1 - Button state number Value2 - fill type value (0 = none, 1 = URL, 101 = MPL) Value3 - Loop Count (0 = Infinite, >0 number of times to loop) Text - Digital Video URL <p>Example:</p> <pre>SEND COMMAND Panel,"'?BOS-400,1'"</pre> <p>Gets the button with address code 'OFF state' video fill information.</p> <p>If the button state had been set to URL video fill (either in TPD5 or via ^SDM command) with a URL of udp://234.4.4.2:5678, the result sent to the Master would be:</p> <pre>ButtonGet Id = 400 Type = 1017 Flag = 0 VALUE1 = 1 (Off State) VALUE2 = 1 (URL fill type) VALUE3 = 0 (loop count = 0 which is infinite looping) TEXT = udp://234.4.4.2:5678</pre>

Button State Commands (Cont.)

^BMP	<p>Set State Bitmap Command. Assign a picture to those buttons with a defined address range.</p> <p>Syntax: <pre>"'^BMP-<vt addr range>,<button states range>,<name of bitmap/picture>, [bitmap index],[optional justification]'"</pre> </p> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). name of bitmap/picture = ASCII characters. Optional bitmap index = 0 - 5, the state bitmap index to assign the bitmap. If not present, will place the referenced bitmap in index 1. The indexes are defined as: <ul style="list-style-type: none"> 0 - Chameleon Image (if present) 1 - Bitmap 1 2 - Bitmap 2 3 - Bitmap 3 4 - Bitmap 4 5 - Bitmap 5 <p>Optional justification = 0-10 where:</p> <ul style="list-style-type: none"> 0 - Absolute position 1 - top left 2 - top center 3 - top right 4 - middle left 5 - middle center 6 - middle right 7 - bottom left 8 - bottom center 9 - bottom right 10 - scale to fit <p>If absolute justification is set, the next two parameters are the X and Y offset of the bitmap for the referenced index. If no justification is specified, the current justification is used.</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BMP-500.504&510.515,1,bitmap.png'"</pre> <p>Sets the OFF state picture for the buttons with variable text ranges of 500-504 & 510-515.</p>
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Button State Commands (Cont.)	
?BMP	<p>Query State Bitmap Command. Get the current bitmap name.</p> <p>Syntax: <pre>"'?BMP-<vt addr range>,<button states range>,[index]"</pre> </p> <p>Variables: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). Optional index = 0 - 5 The index of the bitmap to query. If not specified, the first valid bitmap is returned , but a chameleon image is excluded. The indexes are defined as: 0 - Chameleon Image (if present) 1 - Bitmap 1 2 - Bitmap 2 3 - Bitmap 3 4 - Bitmap 4 5 - Bitmap 5</p> <p>The response returned is a custom event with the following syntax:</p> <pre>Custom.ID = Button Address Code Custom.Type = 1002 Custom.Flag = 0 Custom.Value1 = Button state number Custom.Value2 = Length of Custom.Text Custom.Value3 = Index of bitmap (0-5) Custom.Text = String that represents the bitmap name</pre> <p>Example: SEND_COMMAND Panel,"'?BMP-529,1'" Gets the button "OFF state" bitmap information (index 1 since index is unspecified).</p> <p>Example response: <pre>Custom.ID = 529 Custom.Type = 1002 Custom.Flag = 0 Custom.Value1 = 1 Custom.Value2 = 9 Custom.Value3 = 1 Custom.Text = Buggs.png</pre> </p>

Button State Commands (Cont.)

^BMX	<p>Set State Bitmap Extended Command.</p> <p>Assign a set of pictures with justifications to those buttons with a defined address range.</p> <p>Syntax:</p> <pre>"'^BMX-<vt addr range>,<button states range>, <name of bitmap/picture/resource,index,justification>; <name of bitmap/picture/resource,index,justification>; <name of bitmap/picture/resource,index,justification>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). name of bitmap/picture/resource = ASCII characters. <p>Index = 0 - 5 the index to assign the bitmap/picture. The indexes are defined as:</p> <ul style="list-style-type: none"> 0 - Chameleon Image (if present) 1 - Bitmap 1 2 - Bitmap 2 3 - Bitmap 3 4 - Bitmap 4 5 - Bitmap 5 <p>Justification = 0-10 where:</p> <ul style="list-style-type: none"> 0 - Absolute position 1 - top left 2 - top center 3 - top right 4 - middle left 5 - middle center 6 - middle right 7 - bottom left 8 - bottom center 9 - bottom right 10 - scale to fit. <p>If absolute justification is set, the next two parameters are the X and Y offset of the bitmap for the referenced index.</p> <p>Example:</p> <pre>SEND_COMMAND Panel, "'^BMX-500.504&510.515,1,bitmap.png,1,5;bitmap2.png,2,0,100,50;bitmap3.png,3,1" Sets the OFF state pictures for the buttons with variable text ranges of 500-504 & 510-515 as follows: bitmap.png is assigned to index 1 and is middle center justified. bitmap2.png is assigned to index 2 and is absolute justified with an X offset of 100 and a Y offset of 50. bitmap3.png is assigned to index 3 and is top left justified.</pre>
?BMX	<p>Query State Bitmap Extended Command.</p> <p>Get the current bitmap name+ justification for one or all indexes.</p> <p>Syntax:</p> <pre>"'?BMX-<vt addr range>,<button states range>,[index]'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). <p>Optional index = 0 - 5 The index of the bitmap to query. If not specified then all valid indexes are returned. The indexes are defined as:</p> <ul style="list-style-type: none"> 0 - Chameleon Image (if present) 1 - Bitmap 1 2 - Bitmap 2 3 - Bitmap 3 4 - Bitmap 4 5 - Bitmap 5

Button State Commands (Cont.)

?BMX (Cont.)	<p>The response returned is a series of custom events (one for each valid index) with the following syntax:</p> <pre>Custom.ID = Button Address Code Custom.Type = 1018 Custom.Flag = 0 Custom.Value1 = Button state number Custom.Value2 = Length of Custom.Text Custom.Value3 = Index of bitmap (0-5) Custom.Text = String that describes the bitmap name/justification. The text looks like: "bitmapname,justification" If absolute justification is set, then the X and Y offset are appended to the description Justification values are: absolute,X,Y top-left top-center top-right middle-left middle-center middle-right bottom-left bottom-center bottom-right scale-to-fit</pre> <p>Examples:</p> <pre>SEND_COMMAND Panel, "?BMX-529,1" Gets the button 'OFF state' bitmap information (all index with a bitmap since index is unspecified).</pre> <p>Example response:</p> <pre>Custom Event 1: Custom.ID = 529 Custom.Type = 1018 Custom.Flag = 0 Custom.Value1 = 1 Custom.Value2 = 34 Custom.Value3 = 1 Custom.Text = button-background.png,scale-to-fit Custom Event 2: Custom.ID = 529 Custom.Type = 1018 Custom.Flag = 0 Custom.Value1 = 1 Custom.Value2 = 26 Custom.Value3 = 2 Custom.Text = arrow.png absolute,200,100 Custom Event 3: Custom.ID = 529 Custom.Type = 1018 Custom.Flag = 0 Custom.Value1 = 1 Custom.Value2 = 22 Custom.Value3 = 3 Custom.Text = img_icon,middle-center</pre> <p>For this case, 3 bitmaps are defined and 3 custom event s are sent as a response.</p>
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Button State Commands (Cont.)	
^BOP	<p>Button Opacity Command.</p> <p>Set the button opacity in the selected state(s)</p> <p>Syntax:</p> <pre>"'^BOP-<vt addr range>,<button state range>,<opacity>'"</pre> <p>Variables:</p> <p>Variable text addr range = 1-4000</p> <p>button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).</p> <p>opacity is an integer value from 0-255 where 0 is fully transparent and 255 is fully opaque, or #XX where the value after the # is a HEX number between 0 and FF.</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BOP-500.504&510.515,1,200'"</pre> <p>Example 2:</p> <pre>SEND_COMMAND Panel,"'^BOP-500.504&510.515,1,#C8'"</pre> <p>Both examples set the opacity of the buttons with the variable text range of 500-504 and 510-515 to 200.</p>
^BOS	<p>Button State Video Fill Command.</p> <p>Sets the button state to display either a Video or Non-Video window.</p> <p>Syntax:</p> <pre>"'^BOS-<vt addr range>,<button states range>,<video state>'"</pre> <p>Variable:</p> <p>variable text address range = 1 - 4000.</p> <p>button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons. 1 = Off state and 2 = On state.</p> <p>video state = Video Off = 0, URL Video On = 1, MPL Video On = 101.</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BOS-500,1,1'"</pre> <p>Sets the button to display video.</p>

Button State Commands (Cont.)	
?BOS	<p>Query Button State Video Fill Command.</p> <p>Get the current button state video fill.</p> <p>Syntax:</p> <pre>"'?BOS-<vt addr range>,<button states range>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). <p>The response returned is a custom event with the following syntax:</p> <ul style="list-style-type: none"> Custom.ID = Button Address Code Custom.Type = 1017 Custom.Flag = 0 Custom.Value1 = Button state number Custom.Value2 = video state Custom.Value3 = 0 Custom.Text = String that has the value of the video state <p>Examples:</p> <pre>SEND_COMMAND Panel,"'?BOS-560,1'"</pre> <p>Gets the button "OFF state" video fill.</p> <p>Example response:</p> <pre>Custom Event 1: Custom.ID = 560 Custom.Type = 1017 Custom.Flag = 0 Custom.Value1 = 1 Custom.Value2 = 1 Custom.Value3 = 0 Custom.Text = 1</pre> <p>The button state has a URL video fill.</p>
^BSP	<p>Set Button Size and Position Command. Set the button size and its position on the page.</p> <p>Syntax:</p> <pre>"'^BSP-<vt addr range>,<left>,<top>,<right>,<bottom>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. left = position of left edge of the button on the panel top = position of the top edge of the button on the panel right = position of right edge of the button on the panel bottom = position of the bottom edge of the button on the panel <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BSP-530,20,100,50,130'"</pre> <p>Makes the button with variable text address 530 appear at (20,100) and be 30px by 30px</p>
^BWW	<p>Button State Word Wrap Enable/Disable.</p> <p>Set the button word wrap feature to those buttons with a defined address range. By default, word-wrap is Off.</p> <p>Syntax:</p> <pre>"'^BWW-<vt addr range>,<button states range>,<word wrap>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). word wrap = (0=Off and 1=On). Default is Off. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^BWW-500,1,1'"</pre> <p>Sets the word wrap on for the button's Off state.</p>

Button State Commands (Cont.)	
?BWW	<p>Get Button State Word Wrap.</p> <p>Get the current word wrap flag status.</p> <p>Syntax:</p> <pre>"'?BWW-<vt addr range>,<button states range>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons, 1 = Off state and 2 = On state). <p>Response is:</p> <ul style="list-style-type: none"> custom event type 1010: Flag - Zero Value1 - Button state number Value2 - 0 = no word wrap, 1 = word wrap Value3 - Zero Text - Blank Text length - Zero <p>Example:</p> <pre>SEND COMMAND Panel,"'?BWW-529,1'"</pre> <p>Gets the button 'OFF state' word wrap flag status information.</p> <p>The result sent to the Master would be:</p> <pre>ButtonGet Id = 529 Type = 1010 Flag = 0 VALUE1 = 1 (Off State) VALUE2 = 1 (Word Wrap Enabled) VALUE3 = 0 TEXT = TEXT LENGTH = 0</pre>
^DPF	<p>Delete Page Flips Command. Delete page flips from a button release event if it already exists.</p> <p>Syntax:</p> <pre>"'^DPF-<vt addr range>,<actions>,<page name>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. actions = Stan[dardPage] - Flip to standard page Prev[iousPage] - Flip to previous page Show[Popup] - Show Popup page Hide[Popup] - Hide Popup page Togg[lePopup] - Toggle popup state ClearGroup] - Clear popup page group from all pages ClearP[age] - Clear all popup pages from a page with the specified page name ClearA[ll] - Clear all popup pages from all pages page name = name of page or popup to affect. <p>Example:</p> <pre>SEND COMMAND Panel,"'^DPF-409,Prev'"</pre> <p>Deletes the assignment of a button from flipping to a previous page.</p>

Button State Commands (Cont.)	
^ENC	<p>Set Text Encoding Method. Sets the text encoding method which is used for commands and strings sent from panel to master (the default is UTF-8).</p> <p>Syntax:</p> <pre>"' ^ENC-<Encoding>' "</pre> <p>Variable:</p> <p>Encoding:</p> <ul style="list-style-type: none"> 0: UTF-8 (default) 1: Latin-1 (ISO 8859-1) <p>Example:</p> <pre>SEND_COMMAND Panel, "'^ENC-1'"</pre> <p>Sets the encoding method used for all strings to the Master to Latin-1.</p> <p>Note: NetLinx Studio does not support UTF-8 at this time; therefore UTF-8-encoded characters cannot be copied from TPD5 and pasted in Studio. To use NetLinx Studio to send UTF-8 encoded text, byte values must be enumerated in the command.</p> <p>For example, the following command sends a UTF-8 string to the panel, consisting of ASCII, extended ASCII and Unicode (Chinese) characters:</p> <pre>"' ^UTF-3,0>Hello', \$C3,\$A2,\$C3,\$A3,\$E5,\$B0,\$E7,\$9B,\$A4,\$E3,\$83,\$87"</pre> <p>Also note that in backwards compatibility mode (i.e. when the ^TXT command is sent or when the ^ENC-1 command has been sent), ISO-8859-1 is used for character encoding/decoding, since that is what G4 panels used. ISO-8859-1 is different from the Windows-1252 character set in that characters in the range 128-159 (decimal) are non-printable control characters.</p> <p>So in response to a ?TXT query, any characters in that range (assuming the ^ENC-1 was previously sent) will be returned as AMX Hex quad-encoded values with Custom Event Flag=1, whereas the remainder of the extended ASCII range (160-255) will be returned as Latin-1-encoded characters with Custom Event Flag=0 (see the <i>ISO-8859-1 Character Encoding/Decoding table</i> on page 103):</p>
?JSB	<p>Query Bitmap Justification Command. Get the current bitmap justification.</p> <p>Syntax:</p> <pre>"'?JSB-<vt addr range>,<button states range>,[index]"</pre> <p>Variables:</p> <p>variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). Optional index = 0 - 5 The index of the bitmap to query. If not specified, the first valid bitmap is returned excluding the chameleon image. The indexes are defined as:</p> <ul style="list-style-type: none"> 0 - Chameleon Image (if present) 1 - Bitmap 1 2 - Bitmap 2 3 - Bitmap 3 4 - Bitmap 4 5 - Bitmap 5 <p>The response returned is a custom event with the following syntax:</p> <p>Custom.ID = Button Address Code Custom.Type = 1005 Custom.Flag = 0 Custom.Value1 = Button state number Custom.Value2 = Justification value</p> <p>Note: Refer to the <i>Button State Number Justification Value table</i> on page 103.</p> <p>Custom.Value3 = Index of bitmap (0-5) Custom.Text = String that represents the bitmap justification</p> <p>Note: Refer to the <i>Query Bitmap Justification Command table</i> on page 103.</p> <p>Examples:</p> <pre>SEND_COMMAND Panel, "?JSB-529,1"</pre> <p>Gets the button 'OFF state' bitmap justification (first bitmap found since index not specified).</p>

Button State Commands (Cont.)	
?JSB (Cont.)	<p>Example response:</p> <pre>Custom.ID = 529 Custom.Type = 1005 Custom.Flag = 0 Custom.Value1 = 1 Custom.Value2 = 5 Custom.Value3 = 0 Custom.Text = middle-center</pre> <p>Address 529 OFF state bitmap index 1 is middle-center (Value1 = 5).</p> <pre>SEND_COMMAND Panel,"?JSB-529,1,3"</pre> <p>Gets the button 'OFF state' bitmap justification (index 3).</p> <p>Example response:</p> <pre>Custom.ID = 529 Custom.Type = 1005 Custom.Flag = 0 Custom.Value1 = 1 Custom.Value2 = 0 Custom.Value3 = 3 Custom.Text = absolute,100,100</pre> <p>Address 529 OFF state bitmap index 3 is absolute at 100,100 (Value1 = 0)</p>
^SDL	<p>Streaming Digital Video Loop Count. This command allows a button state that has video fill to a streaming URL to set a number of times to play a video. This applies to local file video streams primarily.</p> <p>Syntax:</p> <pre>"^SDL-<Address range>,State range>,<loop count>"</pre> <p>Variables:</p> <p>variable text address range = 1 - 4000.</p> <p>button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons = Off state and 2 = On state).</p> <p>Loop count = number of times to loop a completed video.</p> <p>0 = loop indefinitely (default)</p> <p>>0 = number of times to loop.</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"^SDL-10,1&2,1"</pre> <p>Set the loop count to 1 for address 10 on and off states.</p>

Button State Commands (Cont.)	
^SDM	<p>Button State Streaming Digital Media Command.</p> <p>Starts or stops a streaming session. Stream starts if a valid URL is specified and stops if server URL string is empty or invalid. To use this command, the current page should have one visible streaming button.</p> <p>Syntax:</p> <pre>"'^SDM-<addressArray>,<stateArray>,<URL>'"</pre> <p>Variables:</p> <pre>URL = <protocol://><host name or host ip><:video port><:optional audio port></pre> <p>URL for connected MXA-MPL = UDP://169.254.11.12:5700</p> <p>Protocol could have the following values:</p> <ul style="list-style-type: none"> udp = MPEG2 transport stream over UDP http = Motion JPEG (JFIF format over MIME Multipart) [Modero X Series Panels Only] rtpmpeg2 = MPEG2 elementary stream over RTP/RTCP [Modero X Series Panels do not support] rtpmpeg4 = MPEG4 elementary stream over RTP/RTCP [Modero X Series Panels do not support] <p>If the optional audio port is not specified, video port + 2 is used for audio.</p> <p>URL for USB drive attached to the panel =</p> <pre>"'^SDM-<Address range>,<State range>,file:///udisk/path_to_video_file_on_usb_drive'"</pre> <p>The 'file:///udisk/' must be exactly as documented (there must be three '/' characters after the 'file:').</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"'^SDM-400,1,file:///udisk/Video-Clip.mp4'"</pre> <p>Example:</p> <pre>SEND_COMMAND 10001:2:0,"'^SDM-10,2,udp://234.4.0.4:5500'"</pre> <p>Sets ON state to play video on multicast address.</p> <pre>SEND_COMMAND 10001:2:0,"'^SDM-10,1,cam://local'"</pre> <p>Sets OFF state to play camera.</p> <pre>SEND_COMMAND 10001:2:0,"'^SDM-10,1,stop'"</pre> <p>Stop playing the current video.</p> <pre>SEND_COMMAND 10001:2:0,"'^SDM-10,1,'"</pre> <p>Stop playing the current video.</p> <pre>SEND_COMMAND 10001:1:0,"'^SDM-10,1,udp://169.254.11.12:5700'"</pre> <p>Start playing the current video.</p> <p>Note: When using the variable "udp," this must be in lower case.</p>
^TEC	<p>Set Text Effect Color Command.</p> <p>Set the text effect color for the specified addresses/states to the specified color.</p> <p>The Text Effect is specified by name and can be found in TPD5. You can also assign the color by name or RGB value (RRGGBB or RRGGBBAA).</p> <p>Syntax:</p> <pre>"'^TEC-<vt addr range>,<button states range>,<color value>'"</pre> <p>Variables:</p> <p>variable text address range = 1 - 4000.</p> <p>button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons, 1 = Off state and 2 = On state).</p> <p>color value = Refer to <i>RGB Triplets and Names For Basic 88 Colors</i> on page 121 for more information.</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"'^TEC-500.504&510.515,1&2,12'"</pre> <p>Sets the text effect color to Very Light Yellow on buttons with variable text 500-504 and 510-515.</p>

Button State Commands (Cont.)

?TEC	<p>Get Text Effect Color Command. Get the current text effect color.</p> <p>Syntax:</p> <pre>"'?TEC-<vt addr range>,<button states range>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons, 1 = Off state and 2 = On state). custom event type 1009: Flag - Zero Value1 - Button state number Value2 - Actual length of string (should be 9) Value3 - Zero Text - Hex encoded color value (ex: #000000FF) Text length - Color name length (should be 9) <p>Example:</p> <pre>SEND COMMAND Panel,"'?TEC-529,1'"</pre> <p>Gets the button 'OFF state' text effect color information.</p> <p>The result sent to the Master would be:</p> <pre>ButtonGet Id = 529 Type = 1009 Flag = 0 VALUE1 = 1 VALUE2 = 9 VALUE3 = 0 TEXT = #5088F2AE TEXT LENGTH = 9</pre>
^TXT	<p>Set State Text Command.</p> <p>Assign a Non-Unicode, non-UTF-8 text string to those buttons with a defined address range. Note that this command has been replaced by ^UTF, but is being kept for backwards compatibility. It supports ASCII characters, but extended ASCII (i.e. characters from 128-255) are interpreted according to the Latin-1 character set (ISO 8859-1). Unicode (i.e. characters > 255) are not supported.</p> <p>Syntax:</p> <pre>"'^TXT-<vt addr range>,<button states range>,<new text>'"</pre> <p>Variable:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). new text = new text as ASCII characters. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^TXT-500.504&510.515,1&2,Test Only'"</pre> <p>Sets the On and Off state text for buttons with the variable text ranges of 500-504 & 510-515.</p>

Button State Commands (Cont.)	
?TXT	<p>Query State Text Command.</p> <p>Syntax:</p> <pre>"'?TXT-<vt addr range>,<button states range>[,<optional index>]'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). optional index = This is used if a string was too long to get back in one command. The reply will start at this index. <p>The response returned is a custom event with the following syntax:</p> <ul style="list-style-type: none"> Custom.ID = button address Custom.Type = 1001 Custom.Flag = <ul style="list-style-type: none"> 0: Legacy Latin-1 (ISO-8859-1) encoded characters (^ENC must have previously been sent to change default encoding method) 1: Legacy AMX Hex Quad encoded Unicode characters 2: UTF-8 encoded Characters (default encoding; ASCII-compatible) Custom.Value1 = Button state number Custom.Value2 = Actual length of string Custom.Value3 = optional index Custom.Text = Text from the button, encoded with the method specified by Flag <p>Example:</p> <pre>SEND_COMMAND Panel,"'?TXT-529,1'"</pre> <p>Gets the button 'OFF state' text information.</p> <p>Example Response:</p> <pre>Custom.ID = 529 Custom.Type = 1001 Custom.Flag = 1 (non-unicode characters) Custom.Value1 = 1 (button state) Custom.Value2 = 14 (string length) Custom.Value3 = 0 (optional index) Custom.Text = This is a test (button text)</pre>
^UNI	<p>Set State Unicode Text Command. Set Unicode text. For the ^UNI command, the Unicode text is sent as ASCII-HEX nibbles.</p> <p>Note: Unicode is always represented in a HEX value. TPD generates (through the Text Enter Box dialog) unicode HEX values. Refer to the TPDesign Instruction Manual for more information. This command has been replaced by ^UTF, but is being kept for backwards compatibility.</p> <p>Syntax:</p> <pre>"'^UNI-<vt addr range>,<button states range>,<unicode text>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). unicode text = Unicode HEX value. <p>Examples:</p> <pre>SEND_COMMAND Panel,"'^UNI-500,1,0041'" Sets the button's unicode character to 'A'. SEND_COMMAND TP,"'^UNI-1,0,0041'" Send the variable text 'A' in unicode to all states of the variable text button 1, (for which the character code is 0041 Hex).</pre>

Button State Commands (Cont.)

^UTF	<p>Set State Text Command using UTF-8 (replaces the ^TXT and ^UNI commands)</p> <p>Assign a text string encoded with UTF-8 (which is ASCII-compatible) to those buttons with a defined address range. Note that this command replaces the legacy ^TXT command and the legacy ^UNI command, but text must be encoded with UTF-8. While UTF-8 is ASCII compatible, extended ASCII characters in the range 128-255 will be encoded differently based on UTF-8.</p> <p>This command also supports Unicode characters using UTF-8 (which is the encoding method used in >80% of web servers), making the old AMX Hex quad Unicode encoding obsolete (though the ^UNI command is still supported for backwards compatibility).</p> <p>Syntax:</p> <pre>"'^UTF-<vt addr range>,<button states range>,<new text>'"</pre> <p>Variable:</p> <p>variable text address range = 1 - 4000.</p> <p>Button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).</p> <p>New text = new text as ASCII characters.</p> <p>Example:</p> <pre>SEND_COMMAND Panel,"'^UTF-500.504&510.515,1&2, ASCII ExtendedASCIIÇüéåäåäç Unicode 動き始めました'"</pre> <p>Sets the On and Off state text for buttons with the variable text ranges of 500-504 & 510-515.</p>
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ISO-8859-1 Character Encoding/Decoding table

ISO-8859-1 Character Encoding/Decoding					
	Character value (decimal)	Character value (hex)	^TXT and ^UTF interchangeable	?TXT Response Flag in Backwards Compatibility Mode (^ENC-1 was sent)	?TXT Response Flag in default (UTF-8) Mode
ASCII	0-127	0x00-0x7F	Yes	0 (Latin-1)	2 (UTF-8)
Latin-1 (Windows-1252 remap range)	128-159	0x80-0x9F	No	1 (Hex-quad)	2 (UTF-8)
Latin-1	160-255	0xA0-0xFF	No	0 (Latin-1)	2 (UTF-8)
Unicode	>255	>0xFF	No	1 (Hex-quad)	2 (UTF-8)

Query Bitmap Justification Command table

Button State Number Justification Value			
Justification	Value	Justification	Value
Absolute	0	Absolute	Absolute,x-offset,y-offset
TopLeft	1	TopLeft	top-left
TopCenter	2	TopCenter	top-center
TopRight	3	TopRight	top-right
MiddleLeft	4	MiddleLeft	middle-left
MiddleCenter	5	MiddleCenter	middle-center
MiddleRight	6	MiddleRight	middle-right
BottomLeft	7	BottomLeft	bottom-left
BottomCenter	8	BottomCenter	bottom-center
BottomRight	9	BottomRight	bottom-right
Scale	10	Scale	scale-to-fit

Keyboard/Keypad Send Commands

Keyboard/Keypad Send Commands	
^AKB	<p>Show System Keyboard Command.</p> <p>Brings up system keyboard. When user presses the "Done" button, a string is returned to the master with the user-entered value. The keyboard can be removed either by the Back button or the "^AKR" command.</p> <p>Syntax:</p> <pre>"'^AKB-<initial text>;<prompt text>;<hint text>;<return prefix>;<return port>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Initial text = Pre-populated text to appear on keyboard (i.e. default) Prompt text = Descriptive header to appear above keyboard text entry box Hint Text = Hint text to appear behind the keyboard text entry box Return prefix = Prefix to the send string returned to the master. If not specified, the entered text will be preceded by "AKB-". Return port = The port number to return the response on if different than the port to which the command is sent.
^AKP	<p>Show System Keypad Command</p> <p>Brings up system keypad. When user presses the "Done" button, a string is returned to the master with the user-entered value. The keypad can be removed either by the Back button or the "^AKR" command.</p> <p>Syntax:</p> <pre>"'^AKP-<initial text>;<prompt text>;<hint text>;<return prefix>;<return port>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Initial text = Pre-populated text to appear on keypad (i.e. default) Prompt text = Descriptive header to appear above keypad text entry box Hint Text = Hint text to appear behind the keypad text entry box Return prefix = Prefix to the send string returned to the master. If not specified, the entered text will be preceded by "AKP-". Return port = The port number to return the response on if different than the port to which the command is sent.
^AKR	<p>Remove Keyboard/Keypad Command.</p> <p>This command removes any keyboard or keypad that is currently displayed. If it is a non-virtual keyboard or keypad, it is essentially an Abort, because any user-entered text is lost.</p> <p>Syntax:</p> <pre>"'^AKR'"</pre>
^PKB	<p>Show System Private Keyboard Command.</p> <p>Brings up system private keyboard (the same as the system keyboard, with typed text hidden with the '*' character). When user presses the "Done" button, a string is returned to the master with the user-entered value. The keyboard can be removed either by the Back button or the "^AKR" command.</p> <p>Syntax:</p> <pre>"'^PKB-<initial text>;<prompt text>;<hint text>;<return prefix>;<return port>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Initial text = Pre-populated text to appear on keyboard (i.e. default). Note that for the private keyboard, this text will be hidden. Prompt text = Descriptive header to appear above keyboard text entry box Hint Text = Hint text to appear behind the keyboard text entry box Return prefix = Prefix to the send string returned to the master. If not specified, the entered text will be preceded by "PKB-". Return port = The port number to return the response on if different than the port to which the command is sent.

Keyboard/Keypad Send Commands (Cont.)

^PKP	Show System Private Keypad Command. Brings up system private keypad (the same as the system keypad, with typed text hidden with the '*' character). When user presses the "Done" button, a string is returned to the master with the user-entered value. The keypad can be removed either by the Back button or the "^AKR" command (see page 104). Syntax: <pre>"'^PKP-<initial text>;<prompt text>;<hint text>;<return prefix>;<return port>'"</pre> Variables: Initial text = Pre-populated text to appear on keypad (i.e. default). Note that for the private keypad, this text will be hidden. Prompt text = Descriptive header to appear above keypad text entry box Hint Text = Hint text to appear behind the keypad text entry box Return prefix = Prefix to the send string returned to the master. If not specified, the entered text will be preceded by "PKP-". Return port = The port number to return the response on if different than the port to which the command is sent.
^EKP	Note: See also - ^TKP (system telephone keypad) on page 106. Brings up system extended keypad. Currently, the 'system extended keypad' and the 'system telephone keypad' are the same, and have all the keys that the G4 extended keypad had except the ":" key. When the user presses the "Done" button, a string is returned to the master with the user-entered value. The keypad can be removed either by the Back button or the "^AKR" command (see page 104). Syntax: <pre>"'^EKP-<initial text>;<prompt text>;<hint text>;<return prefix>;<return port>'"</pre> Variables: Initial text = Pre-populated text to appear on keypad (i.e. default) Prompt text = Descriptive header to appear above keypad text entry box Hint Text = Hint text to appear behind the keypad text entry box Return prefix = Prefix to the send string returned to the master. If not specified, the entered text will be preceded by "EKP-". Return port = The port number to return the response on if different than the port to which the command is sent.
^DKP	Show System Date/Time Keypad Command. Brings up system time/date keypad (according to parameter). When user presses the "Done" button, a string is returned to the master with the user-entered value. The keypad can be removed either by the Back button or the "^AKR" command (see page 104). Syntax: <pre>"'^DKP-<type>;<initial text>;<prompt text>;<hint text>;<return prefix>;<return port>'"</pre> Variables: Keypad type = 0: Time only, 1: Date only, 2: Time and Date Initial text = Pre-populated text to appear on keypad (i.e. default) Prompt text = Descriptive header to appear above keypad text entry box Hint Text = Hint text to appear behind the keypad text entry box Return prefix = Prefix to the send string returned to the master. If not specified, the entered text will be preceded by "DKP-". Return port = The port number to return the response on if different than the port to which the command is sent.
^VKB	Show Virtual Keyboard Command. Brings up system virtual keyboard, which is the keyboard without a designated text entry area. A Text Input button must be in focus; if not, the keyboard will not appear. The type of keyboard is determined by the Text Area currently in focus. When user presses the "Done" button, a string is returned to the master with the user-entered value. The keyboard can be removed either by the Back button or the "^AKR" command (see page 104). Syntax: <pre>"'^VKB'"</pre>

Keyboard/Keypad Send Commands (Cont.)	
^VKP	Show Virtual Keypad Command. Brings up system virtual keypad, which is the keypad without a designated text entry area. A Text Input button must be in focus; if not, the keypad will not appear. The type of keypad is determined by the Text Area currently in focus. When user presses the "Done" button, a string is returned to the master with the user-entered value. The keypad can be removed either by the Back button or the "^AKR" command (see page 104). Syntax: " ! ^VKP ! "
^BIT	Button Input Type Command. Modifies the keyboard type of the text input button(s) with given address(es). If this is sent to a button that is not a Text Input button, it has no effect. Syntax: " ! ^BIT-<address range>,<Input Type>,<return port> ! " Variables: Address Range = range of addresses that this command applies to Input Type = Input Type to Change to, as specified here: http://developer.android.com/reference/android/text/InputType.html 1: Text 2: Number (standard keypad) 3: Telephone 4: Date/Time Return port = The port number to return the response on if different than the port to which the command is sent.
^VKS	Virtual Key Stroke Command. Sends a Virtual Key Stroke to the Modero X G5 touch panel. Note: this command does not function in the same way as with G4 touch panels. Syntax: " ! ^VKS-<keycode> ! " Variable: keycode = Android key code decimal value. Note that these are not the same as in G4. Note: For the key code values, please refer to the Virtual Keystroke Command table on page 107.
^TKP	Note: See also - ^EKP (system telephone keypad) on page 105. Brings up system telephone keypad. Currently, these keypads are the same, and have all the keys that the G4 extended keypad had except the ":" key. When user presses the "Done" button, a string is returned to the master with the user-entered value. The keypad can be removed either by the Back button or the "^AKR" command (see page 104). Syntax: " ! ^TKP-<initial text>,<prompt text>,<hint text>,<return prefix>,<return port> ! " Variables: Initial text = Pre-populated text to appear on keypad (i.e. default) Prompt text = Descriptive header to appear above keypad text entry box Hint Text = Hint text to appear behind the keypad text entry box Return prefix = Prefix to the send string returned to the master. If not specified, the entered text will be preceded by "TKP-". Return port = The port number to return the response on if different than the port to which the command is sent.

Virtual Keystroke Command					
Keycode	Key	Keycode	Key	Keycode	Key
1	Soft-L	74	;	147	Numpad 3
2	Soft-R	75	Apostrophe	148	Numpad 4
3	Home	76	/	149	Numpad 5
4	Back	77	@	150	Numpad 6
5	Call	78	Num	151	Numpad 7
6	End Call	79	Headset Hook	152	Numpad 8
7	0	80	Focus	153	Numpad 9
8	1	81	+	154	Numpad /
9	2	82	Menu	155	Numpad *
10	3	83	Notification	156	Numpad -
11	4	84	Search	157	Numpad +
12	5	85	Media Play/Pause	158	Numpad .
13	6	86	Media Stop	159	Numpad ,
14	7	87	Media Next	160	Numpad Enter
15	8	88	Media Prev	161	Numpad =
16	9	89	Media Rew	162	Numpad (
17	*	90	Media FF	163	Numpad)
18	#	91	Mute	164	Volume Mute
19	DPad-U	92	Page Up	165	Info
20	DPad-D	93	Page Down	166	Chan Up
21	DPad-L	94	Pict Symbols	167	Chan Down
22	DPad-R	95	Switch Charset	168	Zoom In
23	DPad-Center	96	Button A	169	Zoom Out
24	Vol Up	97	Button B	170	TV
25	Vol Dn	98	Button C	171	Window
26	Power	99	Button X	172	Guide
27	Camera	100	Button Y	173	DVR
28	Clear	101	Button Z	174	Bookmark
29	A	102	Button L1	175	Bookmark
30	B	103	Button R1	176	Settings
31	C	104	Button L2	177	TV Power
32	D	105	Button R2	178	TV Input
33	E	106	Button Thumb L	179	STB Power
34	F	107	Button Thumb R	180	STB Input
35	G	108	Button Start	181	AVR Power
36	H	109	Button Select	182	AVR Input
37	I	110	Button Mode	183	Prog Red
38	J	111	Escape	184	Prog Green
39	K	112	Forward Delete	185	Prog Yellow
40	L	113	Ctrl-L	186	Prog Blue
41	M	114	Ctrl-R	187	App Switch
42	N	115	Caps Lock	188	Button 1
43	O	116	Scroll Lock	189	Button 2
44	P	117	Meta L	190	Button 3

Virtual Keystroke Command (Cont.)					
Keycode	Key	Keycode	Key	Keycode	Key
45	Q	118	Meta R	191	Button 4
46	R	119	Function	192	Button 5
47	S	120	SysReq / Print Screen	193	Button 6
48	T	121	Break	194	Button 7
49	U	122	Move Home	195	Button 8
50	V	123	Move End	196	Button 9
51	W	124	Insert	197	Button 10
52	X	125	Forward	198	Button 11
53	Y	126	Media Play	199	Button 12
54	Z	127	Media Pause	200	Button 13
55	,	128	Media Close	201	Button 14
56	.	129	Media Eject	202	Button 15
57	Alt-L	130	Media Record	203	Button 16
58	Alt-R	131	F1	204	Language Switch
59	Shift-L	132	F2	205	Manner Mode
60	Shift-R	133	F3	206	3D Mode
61	TAB	134	F4	207	Contacts
62	Space	135	F5	208	Calendar
63	Sym	136	F6	209	Music
64	Explorer	137	F7	210	Calculator
65	Envelope	138	F8	211	Zenkaku Hankaku
66	Enter	139	F9	212	Eisu
67	Delete	140	F10	213	Mhenkan
68	Grave	141	F11	214	Henkan
69	-	142	F12	215	Katakana Hiragana
70	_	143	Num Lock	216	Yen
71	[144	Numpad 0	217	Ro
72]	145	Numpad 1	218	Kana
73	\	146	Numpad 1	219	Assist

Resource Send Commands

Resource Send Commands	
^RAF	<p>Resource Add Command.</p> <p>Add new resources. Adds any and all resource parameters by sending embedded codes and data. Since the embedded codes are preceded by a '%' character, any '%' character contained in the URL must be escaped with a second '%' character (see example). The file name field (indicated by a %F embedded code) may contain special escape sequences as shown in the ^RAF, ^RMF - Embedded Codes table on page 112.</p> <p>Syntax:</p> <pre>"'^RAF-<resource name>,<data>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> resource name = name of the resource to add. data = Refers to the embedded codes, see the ^RAF, ^RMF - Embedded Codes on page 112. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^RAF-New Image, %P0%HAMX.COM%ALab/Test%%5Ffile%Ftest.jpg'"</pre> <p>Adds a new resource.</p> <p>The resource name is 'New Image'</p> <p>%P (protocol) is an HTTP</p> <p>%H (host name) is AMX.COM</p> <p>%A (file path) is Lab/Test_file</p> <p>%F (file name) is test.jpg.</p> <p>Note: the %%5F in the file path is actually encoded as %5F.</p>
^RMF	<p>Resource Modify Command.</p> <p>Modifies any and all resource parameters by sending embedded codes and data. Since the embedded codes are preceded by a '%' character, any '%' character contained in the URL must be escaped with a second '%' character (see example). The file name field (indicated by a %F embedded code) may contain special escape sequences as shown in the ^RAF, ^RMF - Embedded Codes table on page 112.</p> <p>Syntax:</p> <pre>"'^RMF-<resource name>,<data>'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> resource name = name of the resource to modify data = Refers to the embedded codes, see the ^RAF, ^RMF - Embedded Codes on page 112. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^RMF-Sports_Image, %ALab%%5FTest/Images%Ftest.jpg'"</pre> <p>Changes the resource 'Sports_Image' file name to 'test.jpg' and the path to 'Lab_Test/Images'.</p> <p>Note: the %%5F in the file path is actually encoded as %5F.</p>

Resource Send Commands (Cont.)	
^RFR	<p>Resource Refresh Command.</p> <p>Force a refresh of the given resource. The command will refresh when the resource is visible onscreen. If it is not onscreen, it will be deferred until it is visible to do the refresh. An optional notification option can be set to receive a custom event from the panel when the resource refresh is complete.</p> <p>Optional width and height parameters can be specified to refresh the image at a specific resolution. If width and height parameters are not specified, the resource will be refreshed at the resolution(s) of any active buttons to which it is assigned. If there are no active buttons currently assigned that resource, it will be refreshed at its native resolution adjusted by any project scale factor.</p> <p>Syntax:</p> <pre>"'^RFR-<resource name>,[notification option],[width],[height]"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Resource name = name of the resource to refresh Notification option = An optional notification option at the end of the command with the following possible values: <ul style="list-style-type: none"> On - notifications are sent whenever the named dynamic image resource is loaded/refreshed. Off - notifications are not sent (default). Once - notifications are sent one time whenever the named dynamic image resource is loaded/refreshed. Notifications are not sent on subsequent loads/refreshes. Width = Specifies the width at which the resource should be refreshed (the image will be scaled as needed). Height = Specifies the height at which the resource should be refreshed (the image will be scaled as needed). <p>Examples:</p> <pre>SEND_COMMAND Panel,"'^RFR-Sports_Image,on" Force a refresh on 'Sport_Image' when the resource is visible onscreen and enable completion notifications.</pre> <pre>SEND_COMMAND Panel,"'^RFR-Sports_Image,off" Force a refresh on 'Sport_Image' when the resource is visible onscreen and disable completion notifications.</pre> <pre>SEND_COMMAND Panel,"'^RFR-Sports_Image,once" Force a refresh on 'Sport_Image' when the resource is visible onscreen and enable a onetime completion notification.</pre> <pre>SEND_COMMAND Panel,"'^RFR-Sports_Image,once,800,600" Force a refresh on 'Sport_Image' at the resolution 800x600 when the resource is visible onscreen and enable a onetime completion notification.</pre>

Resource Send Commands (Cont.)	
^RFRP	<p>Resource Refresh Prefetch Command.</p> <p>Force a refresh of the given resource. The command will "prefetch" the resource even if it is not currently visible.</p> <p>Syntax:</p> <pre>"'^RFRP-<resource name>,[notification option],[width],[height]'"</pre> <p>Variables:</p> <ul style="list-style-type: none"> Resource name = name of the resource to refresh Notification option = An optional notification option at the end of the command with the following possible values: <ul style="list-style-type: none"> On - notifications are sent whenever the named dynamic image resource is loaded/refreshed. Off - notifications are not sent (default). Once - notifications are sent one time whenever the named dynamic image resource is loaded/refreshed. Notifications are not sent on subsequent loads/refreshes. Width = Specifies the width at which the resource should be refreshed (the image will be scaled as needed). Height = Specifies the height at which the resource should be refreshed (the image will be scaled as needed). <p>Examples:</p> <pre>SEND_COMMAND Panel,"'^RFRP-Sports_Image,on'"</pre> <p>Force a refresh on 'Sport_Image' immediately and enable completion notifications. <pre>SEND_COMMAND Panel,"'^RFRP-Sports_Image,off'"</pre> <p>Force a refresh on 'Sport_Image' immediately and disable completion notifications. <pre>SEND_COMMAND Panel,"'^RFRP-Sports_Image,once'"</pre> <p>Force a refresh on 'Sport_Image' immediately and enable a one-time completion notification. <pre>SEND_COMMAND Panel,"'^RFRP-Sports_Image,once,800,600'"</pre> <p>Force a refresh on 'Sport_Image' immediately at the resolution 800x600 and enable a onetime completion notification.</p> </p></p></p>
^RSR	<p>Resource Rate Command.</p> <p>Change the refresh rate for a given resource.</p> <p>Syntax:</p> <pre>"'^RSR-<resource name>,<refresh rate>'"</pre> <p>Variable:</p> <ul style="list-style-type: none"> resource name = name of the resource to set the refresh rate. refresh rate = Measured in seconds. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^RSR-Sports_Image,5'"</pre> <p>Sets the refresh rate to 5 seconds for the given resource ('Sports_Image').</p>
^RAF, ^RMF Embedded Codes	<p>The ^RAF and ^RMF commands add and modify any and all resource parameters by sending embedded codes and data:</p> <pre>"'^RAF-<resource name>,<data>'"</pre> <pre>"'^RMF-<resource name>,<data>'"</pre> <p>The <data> variable uses the embedded codes described in the ^RAF and ^RMF Embedded Codes table on page 112.</p> <p>Notifications are not sent on subsequent loads/refreshes.</p> <ul style="list-style-type: none"> • If the %C code is not sent as part of a ^RAF command, the notifications are set to off. • If the %C code is not sent as part of a ^RMF command, the notifications are not changed from the current setting.
Escape Sequences	<p>The ^RAF and ^RMF commands support the replacement of any special escape sequences in the filename (specified by the %F embedded code) with the corresponding data obtained from the system as outlined in the ^RAF and ^RMF Escape Sequences table on page 112</p>

^RAF and ^RMF Embedded Codes / Escape Sequences

^RAF and ^RMF Embedded Codes		
Parameter	Embedded Code	Code Description
protocol	%P <0-1>	Set protocol: either HTTP (0) or FTP (1). Note: <i>FTP is not yet supported.</i>
user	%U <user>	Set Username for authentication.
password	'%S <password>	Set Password for authentication.
host'	%H <host>	Set Host Name (fully qualified DNS or IP address).
path	%A <path>	Set directory path. The path must be a valid HTTP URL minus the protocol, host, and filename. The only exception to this is the inclusion of special escape sequences and in the case of the FTP protocol, regular expressions.
file	%F <file>	The file or program that will return the resource. The file must be a valid HTTP URL minus the protocol, host, and path. The only exception to this is the inclusion of special escape sequences and in the case of the FTP protocol, regular expressions.
refresh	%R <refresh 1-65535>	The number of seconds between refreshes in which the resource is downloaded again. Refreshing a resource causes the button displaying that resource to refresh also. The default value is 0, which means to only download the resource once for each time it comes into view (or if preserve is set, only once period). Note: <i>For Motion JPEGs, the Refresh interval should always be 0.</i>
preserve	%V <0-1>	Set the value of the preserve flag. A value of 0 (the default) means the resource should be reloaded each time it comes into view. A value of 1 means the resource should be preserved in cache after the first time it is loaded, and not reloaded each time it comes into view. This value is ignored if the Refresh interval is greater than 0.
dynamo	%D	Enable/disable Fast Dynamo. Panel will attempt to accelerate this resource in hardware. Note: <i>Fast Dynamo is not yet supported.</i>
Notification setting	%C<on,off,once>	Indicates whether a notification is required when a Dynamic Image is loaded/refreshed. The string following the %C can be: <ol style="list-style-type: none"> 1. on - notifications are sent whenever the named dynamic image resource is loaded/refreshed. 2. off - notifications are not sent (default). 3. once - notifications are sent one time whenever the named dynamic image resource is loaded/refreshed.

^RAF and ^RMF Escape Sequences			
Sequence	Panel Information	Sequence	Panel Information
\$DV	Device Number	\$AP	Address port
\$SY	System Number	\$CC	Channel code
\$IP	IP Address	\$CP	Channel port
\$HN	Host Name	\$LC	Level code
\$MC	Mac Address	\$LP	Level port
\$PX	X resolution of current panel mode/file	\$BX	X Resolution of Current button
\$PY	Y resolution of current panel mode/file	\$BY	Y Resolution of Current button
\$ST	Current state	\$BN	Name of Button
\$AC	Address code		

App Send Commands

App commands are commands that manage 3rd-party applications used by the Modero X Series G5 touch panels.:

App Send Commands	
^APC	<p>Setup alarm times to close all open applications.</p> <p>Syntax: <code>"'^APC-<enable>[, <alarm time>,...,<alarm time>]"</code></p> <p>Variables: enable = 1 to enable alarms, 0 to disable alarms. Default is 1. Alarm time = Time of day to trigger alarm in HH:mm format. Format is 24 hour values. Up to six alarm times can be set each day. Valid HH formats are 00-23. Valid mm format is 00-59. Invalid formats will parameters be disregarded. The default is one time set at 00:00 (midnight).</p> <p>Examples: <code>SEND_COMMAND Panel, '^APC-1,00:00, 08:00, 18:00'</code> Enable the application close alarms at midnight (00:00), 8:00 AM (08:00), and 6:00 PM (18:00). <code>SEND_COMMAND Panel, '^APC-0'</code> Disable application close alarms. <code>SEND_COMMAND Panel, '^APC-1'</code> Enable alarms to close applications at previous alarm times.</p>
?APC	<p>Query the values of the close applications alarms. The response is a NetLinx DATA/Command event to the master from the port the command was sent to in the format used in the ^APC command.</p> <p>Syntax: <code>"'?APC'"</code></p> <p>Variables: None.</p> <p>Examples: <code>SEND_COMMAND Panel, '?APC'</code> Response is a DATA/Command event to master from the port the ?APC command was sent on in the format of: <code>^APC-<enable>[,<alarm time>,...,<alarm time>]</code> If alarms are enabled and times set to midnight and noon, the response would be: <code>^APC-1,00:00,12:00</code></p>
^APP	<p>The browser may be launched with a specific URI via the ^APP send command.</p> <p>To accommodate the URI parameter as well as other potential future parameters, a generic parameter list can be added to the end of an ^APP command which launches a specific app (the parameter list cannot be added to the generic ^APP command that launches the app selection dialog box, or any ^APP command that specifies the "close" or "close_all" action).</p> <p>The generic list of parameters takes the form of parameter triplets: name, type, value, separated by commas:</p> <p><code>^APP-left,top[,<width>,<height>[,<>window type>]], <AppName>[,<parmList>]</code></p> <p>Launch <AppName> at position left,top with optional height x width, optional window type, and optional app-specific parameter list.</p> <p>Default height = 320, default width = 240. Default window type is 0.</p> <p>Window types are:</p> <ul style="list-style-type: none"> 0 - Floating, resizable, movable 1 - Floating, fixed size, movable 2 - Floating, fixed size, non-movable 3 - Docked left 4 - Docked right 5 - Docked top 6 - Docked bottom <p>parmList is a comma-separated list of parameter triplets as follows:</p> <p><code><parm1name>,<parm1type>,<parm1value>,...,<parmNname>,<parmNtype>,<parmNvalue></code></p> <p>where:</p> <p>name = parameter Name (e.g. "URI") type = parameter Type (e.g. "String") - not case sensitive value = parameter Value (e.g. http://www.amx.com)</p>

App Send Commands (Cont.)	
^APP (Cont.)	<p>Note that name, type and value are separated by a single comma. If there are additional parameters, a single comma should separate the previous parameter's value and the next parameter's name.</p> <p>Since comma is used to delimit the parameter fields, any comma appearing in the value of the element must be escaped with a backslash ('\').</p> <p>If a backslash itself appears in any element, it too must be escaped with another backslash.</p> <p>To access a file on an attached USB drive, the URI must be:</p> <pre>file:///udisk/path_to_file.</pre> <p>Note: there are three (3) forward slashes after the file: and you must specify udisk to point to the USB disk.</p> <p>Syntax:</p> <pre>^APP-<action>,<AppName>[,<parmList>]</pre> <p>Performs <action> on AppName where action is:</p> <ul style="list-style-type: none"> show - show an app, launch if not visible close - close a running app close_all - close all running apps <p>If action=show, the optional parmList is a comma-separated list of parameter triplets as follows:</p> <pre><parmlname>,<parmltype>,<parmlvalue>,...,<parmNname>,<parmNtype>,<parmNvalue></pre> <p>where:</p> <ul style="list-style-type: none"> name = parameter Name (e.g. "URI") type = parameter Type (e.g. "String") - not case sensitive value = parameter Value (e.g. http://www.amx.com) <p>Examples:</p> <pre>SEND COMMAND Panel,'^APP-0,0,Browser' Launch browser in upper left corner SEND COMMAND Panel,'^APP-Browser' Kill browser SEND COMMAND Panel,'^APP-show,Browser' Show the browser in the default location and window type. SEND COMMAND Panel,'^APP-close,Browser' Close the browser SEND COMMAND Panel,'^APP-0,0,Browser,URI,string,http://www.amx.com' Open browser in upper left corner with startup page set to http://www.amx.com SEND COMMAND Panel,'^APP-show,Browser,URI,string,http://www.amx.com' Launch browser in default position with startup page set to http://www.amx.com</pre>
?APP	<p>Query all the available apps installed. App names are sent through a custom event:</p> <p>Port: port command was received on</p> <p>ID: 1</p> <p>Type: 4170</p> <p>Flag: 0</p> <p>Value1: App Number (0 - max number apps in no particular order)</p> <p>Value2: Number of available apps</p> <p>Value3: n/a</p> <p>Text: App Name (suitable for launching via ^APP,0,0,AppName)</p>

SIP Send Commands

The following table lists and describes SIP commands that are generated from the touch panel.

SIP Send Commands	
^PHN-AUTOANSWER	<p>Provides the state of the auto-answer feature.</p> <p>Syntax: <code>"' ^PHN-AUTOANSWER, <state>'"</code></p> <p>Variable: <code>state = 0 or 1 (off or on)</code></p> <p>Example: <code>SEND_COMMAND Panel, "' ^PHN-AUTOANSWER, 1'"</code></p>
^PHN-CALL	<p>Provides call progress notification for a call.</p> <p>Syntax: <code>"' ^PHN-CALL, <status>, <connection id>'"</code></p> <p>Variable: <code>status = CONNECTED, DISCONNECTED, TRYING, RINGING, or HOLD.</code> <code>connection id = The identifying number of the connection.</code></p> <p>Example: <code>SEND_COMMAND Panel, "' ^PHN-CALL, CONNECTED, 1'"</code> Notifies that the call is connected.</p>
^PHN-DECLINE	<p>Declines the incoming call on <CallID> as indicated from the previous message.</p> <p>Decline (send to voice mail if configured) the incoming call on <CallID> as indicated from the previous PHN-INCOMING message. CallID should be 0 or 1.</p> <p>Syntax: <code>"' ^PHN-DECLINE, <CallID>'"</code></p> <p>Variable: <code>CallID = The identifying number of the connection.</code></p> <p>Example: <code>SEND_COMMAND Panel, "' ^PHN-DECLINE, 0'"</code></p>
^PHN-INCOMING	<p>Provides incoming call notification and the connection ID used for all future commands related to this call. The connection id will be 0 or 1.</p> <p>Syntax: <code>"' ^PHN-INCOMING, <caller number>, <caller name>, <connection id>, <timestamp>'"</code></p> <p>Variable: <code>caller number = The phone number of the incoming call</code> <code>caller name = The name associated with the caller number</code> <code>connection id = The identifying number of the connection</code> <code>timestamp = The current time in MM/DD/YY HH:MM:SS format</code></p> <p>Example: <code>SEND_COMMAND Panel, "' ^PHN-INCOMING, 2125551000, AMX, 07/22/08 12:00:00, 1'"</code></p>
^PHN-LINESTATE	<p>Indicates the current state of each of the available connections used to manage calls.</p> <p>Syntax: <code>"' ^PHN-LINESTATE, <connection id>, <state>, <connection id>, <state>, ...'"</code></p> <p>Variable: <code>connection id = The identifying number of the connection.</code> <code>state = IDLE, HOLD, or CONNECTED</code> <code>extn = The local extension of this panel (see Example)</code></p> <p>Example: <code>SEND_COMMAND Panel, "' ^PHN-LINESTATE, 1, IDLE, 2, CONNECTED, SIP, <extn>'"</code></p>

SIP Send Commands (Cont.)	
^PHN-MSGWAITING	<p>Indicates the number of messages waiting the user's voice mail box.</p> <p>Syntax:</p> <pre>"'^PHN-MSGWAITING,<messages>,<new message count>,<old message count>, <new urgent message count>,<old urgent message count>!"</pre> <p>Variable:</p> <ul style="list-style-type: none"> messages = 0 or 1 (1 indicates new messages) new message count = The number of new messages. old message count = The number of old messages. new urgent message count = The number of new messages marked urgent. old urgent message count = The number of old messages marked urgent. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^PHN-MSGWAITING,1,1,2,1,0!"</pre>
^PHN-PRIVACY	<p>Indicates the state of the privacy feature.</p> <p>Syntax:</p> <pre>"'^PHN-PRIVACY,<state>!"</pre> <p>Variable:</p> <ul style="list-style-type: none"> state = 0 (Disable) or 1 (Enable) new message count = The number of new messages. old message count = The number of old messages. new urgent message count = The number of new messages marked urgent. old urgent message count = The number of old messages marked urgent. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^PHN-PRIVACY,0!"</pre>
^PHN-REDIAL	<p>Indicates the panel is redialing the number.</p> <p>Syntax:</p> <pre>"'^PHN-REDIAL,<number>!"</pre> <p>Variable:</p> <ul style="list-style-type: none"> number = The phone number to dial. <p>Example:</p> <pre>SEND_COMMAND Panel,"'^PHN-REDIAL,2125551000!"</pre>
^PHN-TRANSFERRED	<p>Indicates a call has been transferred.</p> <p>Syntax:</p> <pre>"'^PHN-TRANSFERRED!"</pre> <p>Example:</p> <pre>SEND_COMMAND Panel,"'^PHN-TRANSFERRED!"</pre>

SIP Call Management Commands

The following table lists and describes SIP commands that are sent to the touch panel to manage calls.

SIP Call Management Commands	
^PHN-ANSWER	<p>Answers the call.</p> <p>Syntax: " !^PHN-ANSWER,<connection id>"</p> <p>Variable: connection id = The identifying number of the connection</p> <p>Example: SEND_COMMAND Panel, " !^PHN-ANSWER,1 "</p>
^PHN-AUTOANSWER	<p>Enables (1) or disables (0) the auto-answer feature on the phone.</p> <p>Syntax: " !^PHN-AUTOANSWER,<state>"</p> <p>Variable: state = 0 (Disable) or 1 (Enable)</p> <p>Example: SEND_COMMAND Panel, " !^PHN-AUTOANSWER,1 " Enables the auto-answer feature.</p>
?PHN-AUTOANSWER	<p>Queries the state of the auto-answer feature.</p> <p>The panel responds with the ^PHN-AUTOANSWER, <state> message.</p> <p>Syntax: " !?PHN-AUTOANSWER "</p> <p>Example: SEND_COMMAND Panel, " !?PHN-AUTOANSWER "</p>
^PHN-CALL	<p>Calls the provided number.</p> <p>Syntax: " !^PHN-CALL,<number>"</p> <p>Variable: number = The provided phone number</p> <p>Example: SEND_COMMAND Panel, " !^PHN-CALL,2125551000 "</p>
^PHN-DTMF	<p>Sends DTMF codes.</p> <p>Syntax: " !^PHN-DTMF,<DTMF code>"</p> <p>Variable: DTMF code = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, POUND, or ASTERISK.</p> <p>Example: SEND_COMMAND Panel, " !^PHN-DTMF,1234567879ASTERISK "</p>
^PHN-HANGUP	<p>Hangs up the call.</p> <p>Syntax: " !^PHN-HANGUP,<connection id>"</p> <p>Variable: connection id = The identifying number of the connection</p> <p>Example: SEND_COMMAND Panel, " !^PHN-HANGUP,1 "</p>
^PHN-HOLD	<p>Places the call on hold.</p> <p>Syntax: " !^PHN-HOLD,<connection id>"</p> <p>Variable: connection id = The identifying number of the connection</p> <p>Example: SEND_COMMAND Panel, " !^PHN-HOLD,1 "</p>

SIP Call Management Commands (Cont.)	
?PHN-LINESTATE	Queries the state of each of the connections used by the SIP device. The panel responds with the ^PHN-LINESTATE message. Syntax: " '?PHN-LINESTATE'" Example: SEND_COMMAND Panel, "?PHN-LINESTATE" SEND_COMMAND Panel, "?PHN-LINESTATE"
^PHN-PRIVACY	Enables or disables the privacy feature on the phone (do not disturb). Syntax: " '^PHN-PRIVACY,<state>'" Variable: state = 0 (Disable) or 1 (Enable) Example: SEND_COMMAND Panel, "^PHN-PRIVACY,1" Enables the privacy feature.
?PHN-PRIVACY	Queries the state of the privacy feature. The panel responds with the ^PHN-PRIVACY, <state> message. Syntax: " '?PHN-PRIVACY'" Example: SEND_COMMAND Panel, "?PHN-PRIVACY" SEND_COMMAND Panel, "?PHN-PRIVACY"
^PHN-REDIAL	Redials the last number. Syntax: " '^PHN-REDIAL'" Example: SEND_COMMAND Panel, "^PHN-REDIAL" SEND_COMMAND Panel, "^PHN-REDIAL"
^PHN-TRANSFER	Transfers the call to the provided number. Syntax: " '^PHN-TRANSFER,<connection id>,<number>'" Variable: connection id = The identifying number of the connection number = The number to which you want to transfer the call. Example: SEND_COMMAND Panel, "^PHN-TRANSFER,1,2125551000" SEND_COMMAND Panel, "^PHN-TRANSFER,1,2125551000"

SIP Setup Commands

The following table lists and describes SIP setup commands. Using any of these commands causes the current user to go offline.

SIP Setup Commands	
^PHN-SETUP-ENABLE	Registers a new user. Once the configuration has been updated, the ENABLE command should be run to re-register the new user. Syntax: " '^PHN-SETUP-ENABLE'"
^PHN-SETUP-PASSWORD	Sets the user password for the proxy server. Syntax: " '^PHN-SETUP-PASSWORD,<password>'" Variable: password = The password for the user name Example: SEND_COMMAND Panel, "^PHN-SETUP-PASSWORD,6003" SEND_COMMAND Panel, "^PHN-SETUP-PASSWORD,6003"

SIP Setup Commands (Cont.)	
^PHN-SETUP-PORT	Sets the port number for the proxy server. Syntax: " ^PHN-SETUP-PORT ,<port> " Variable: port = The port for the proxy server Example: SEND_COMMAND Panel," ^PHN-SETUP-PORT,5060 "
^PHN-SETUP-PROXYADDR	Sets the IP address for the proxy server. Syntax: " ^PHN-SETUP-PROXYADDR,<IP> " Variable: IP = The IP address for the proxy server Example: SEND_COMMAND Panel," ^PHN-SETUP-PROXYADDR,192.168.223.111 "
^PHN-SETUP-USERNAME	Sets the user name for authentication with the proxy server. Syntax: " ^PHN-SETUP-USERNAME,<username> " Variable: username = The user name (usually the phone extension) Example: SEND_COMMAND Panel," ^PHN-SETUP-USERNAME,6003 "

VNC Send Commands

VNC is handled via an external application and is displayed in a window. To enable a VNC connection to a remote device, a VNC App window must be created in the TPD project.

A single window can support connections to multiple destinations, though not simultaneously. Once a window is open, the parameters such as host, username, and password can be changed via send commands.

The following send commands are available to control VNC sessions. The application window name (from TPDesign5) is used as the key to update VNC parameters. If an existing window is open, the session should be logged out first before changing any parameters to avoid undefined behavior. Once all the parameters have been changed, then login to connect with the new parameters.

VNC Send Commands	
^BVL	Login to VNC Session. Syntax: ^BVL-appWindowName,<1=Logon 0=Logoff> Login/out of an existing session. For logon, if the window is not open, the window is opened and the session is connected using the current parameters. If the window is already open, then the session is updated to new/current parameters. Logoff will close the session and window.
^BVG	Update parameter list. Syntax: ^BVG-appWindowName,paramList This command is a generic form of the remainder of the commands. Any parameter in the VNC App Parameter List from TPDesign can be updated with this command by including the KEV pair in the list. For instance, the password can be changed: ^BVG-VNCClient,password=myNewPassword One limitation is that no commas may be used in any of the fields. Delimiters are not escaped at this time.

VNC Send Commands (Cont.)	
^BVP	Update Password. Syntax: ^BVP-appWindowName,newPassword
^BVT	Update port. Syntax: ^BVT-appWindowName,port
^BVN	Update hostname. Syntax: ^BVN-appWindowName,hostname

RGB Triplets and Names For Basic 88 Colors

RGB Values for all 88 Basic Colors

Index No.	Name	Red	Green	Blue	Index No.	Name	Red	Green	Blue
00	Very Light Red	255	0	0	45	Medium Aqua	0	80	159
01	Light Red	223	0	0	46	Dark Aqua	0	64	127
02	Red	191	0	0	47	Very Dark Aqua	0	48	95
03	Medium Red	159	0	0	48	Very Light Blue	0	0	255
04	Dark Red	127	0	0	49	Light Blue	0	0	223
05	Very Dark Red	95	0	0	50	Blue	0	0	191
06	Very Light Orange	255	128	0	51	Medium Blue	0	0	159
07	Light Orange	223	112	0	52	Dark Blue	0	0	127
08	Orange	191	96	0	53	Very Dark Blue	0	0	95
09	Medium Orange	159	80	0	54	Very Light Purple	128	0	255
10	Dark Orange	127	64	0	55	Light Purple	112	0	223
11	Very Dark Orange	95	48	0	56	Purple	96	0	191
12	Very Light Yellow	255	255	0	57	Medium Purple	80	0	159
13	Light Yellow	223	223	0	58	Dark Purple	64	0	127
14	Yellow	191	191	0	59	Very Dark Purple	48	0	95
15	Medium Yellow	159	159	0	60	Very Light Magenta	255	0	255
16	Dark Yellow	127	127	0	61	Light Magenta	223	0	223
17	Very Dark Yellow	95	95	0	62	Magenta	191	0	191
18	Very Light Lime	128	255	0	63	Medium Magenta	159	0	159
19	Light Lime	112	223	0	64	Dark Magenta	127	0	127
20	Lime	96	191	0	65	Very Dark Magenta	95	0	95
21	Medium Lime	80	159	0	66	Very Light Pink	255	0	128
22	Dark Lime	64	127	0	67	Light Pink	223	0	112
23	Very Dark Lime	48	95	0	68	Pink	191	0	96
24	Very Light Green	0	255	0	69	Medium Pink	159	0	80
25	Light Green	0	223	0	70	Dark Pink	127	0	64
26	Green	0	191	0	71	Very Dark Pink	95	0	48
27	Medium Green	0	159	0	72	White	255	255	255
28	Dark Green	0	127	0	73	Grey1	238	238	238
29	Very Dark Green	0	95	0	74	Grey3	204	204	204
30	Very Light Mint	0	255	128	75	Grey5	170	170	170
31	Light Mint	0	223	112	76	Grey7	136	136	136
32	Mint	0	191	96	77	Grey9	102	102	102
33	Medium Mint	0	159	80	78	Grey4	187	187	187
34	Dark Mint	0	127	64	79	Grey6	153	153	153
35	Very Dark Mint	0	95	48	80	Grey8	119	119	119
36	Very Light Cyan	0	255	255	81	Grey10	85	85	85
37	Light Cyan	0	223	223	82	Grey12	51	51	51
38	Cyan	0	191	191	83	Grey13	34	34	34
39	Medium Cyan	0	159	159	84	Grey2	221	221	221
40	Dark Cyan	0	127	127	85	Grey11	68	68	68
41	Very Dark Cyan	0	95	95	86	Grey14	17	17	17
42	Very Light Aqua	0	128	255	87	Black	0	0	0
43	Light Aqua	0	112	223	255	TRANSPARENT	99	53	99
44	Aqua	0	96	191					

SSH Commands

Overview

The panel has a SSH server that currently listens for connections on port **22**. At this time the port is not configurable. The SSH server can be enabled and disabled in the Settings menu.

To connect, the SSH client must provide a user and password. The user is "**amx**" and the password is the Configuration Password used in the Settings menu on the panel.

The SSH server provides a shell that allows for commands to be entered and also has an interactive menu for many commands.

SSH Commands	
help ?	Displays this help or help about a command Syntax: *:help [command] Arguments: command The command for which help is needed.
back	Issue the 'BACK' keystroke to the system. Syntax: *:back [options] Options: --help Display this help message
clear	Clears the console buffer. Syntax: *:clear
date	Gets/sets the current system date. An interactive menu is available when using the set proxy (i.e. "set date"). Syntax: *:date [options] [date] Arguments: date New date in format: YYYY-MM-DD Options: --config, -c, --set Set the system date. --day, -d Day of month (1-31, defaults to -1), --help Display this help message --info, -? Display the current date on screen. --month, -m Month (1-12, defaults to -1). --verbose, -v Display verbose date information. --year, -y Year (XXXX, defaults to -1).

SSH Commands (Cont.)	
debug	<p>View/set debug level for 'msg' logging . An interactive menu is available when using the set proxy (i.e. "set debug").</p> <p>Syntax:</p> <pre>* :debug [options] [action]</pre> <p>Arguments:</p> <ul style="list-style-type: none"> action: enable or disable mode action to perform 'enable', 'on': enable debug mode. 'disable', 'off': disable debug mode. <p>Options:</p> <ul style="list-style-type: none"> --config, -c, --set Set the debug level. --disable, -d, --off, -F Disable debug mode. --enable, -e, --on, -N Enable debug mode. --help Display this help message --info, -? Display the current debug level.
echo	<p>Echoes or prints arguments to STDOUT.</p> <p>Syntax:</p> <pre>* :echo [options] [arguments]</pre> <p>Arguments:</p> <ul style="list-style-type: none"> arguments Arguments to display separated by whitespaces. <p>Options:</p> <ul style="list-style-type: none"> --help Display this help message. --newline, -n Do not print the trailing newline character.
logout	Terminate the command shell session.
exit	
quit	
g5:cache	<p>Cache command - dump or purge cache contents.</p> <p>Syntax</p> <pre>g5:cache [options]</pre> <p>Options:</p> <ul style="list-style-type: none"> --help Display this help message. -purge Purge. -verbose, -v, -vb Verbose.
g5:config	<p>Display configuration information for NetLinx and IP.</p> <p>Syntax:</p> <pre>g5:config [options]</pre> <p>Options:</p> <ul style="list-style-type: none"> --help Display this help message. --info, -i Return configuration info.

SSH Commands (Cont.)	
g5:sensor	<p>Sensor commands.</p> <p>Syntax:</p> <pre>G5:sensor [options] sensor</pre> <p>Arguments:</p> <pre>sensor Target sensor <motion light></pre> <p>Options:</p> <ul style="list-style-type: none"> --help Display this help message. -calibrate, -c Calibrate light sensor. -enable, -e Enable. -thresh, -t Threshold.
g5:settings	<p>Display the panel settings.</p> <p>Syntax:</p> <pre>G5:settings [options] [category]</pre> <p>Arguments:</p> <pre>category Settings category to display (all, status, sound, master, config, sensors, ethernet)</pre> <p>Options:</p> <ul style="list-style-type: none"> --help Display this help message. --info, -? Display the current settings.
g5:setup	<p>Launch the panel settings utility.</p> <p>Syntax:</p> <pre>G5:setup [options]</pre> <p>Options</p> <ul style="list-style-type: none"> --help Display this help message
g5:touch	<p>Touch panel overlay self test and diagnostics.</p> <p>Syntax:</p> <pre>G5:touch [options] [watchEnable]</pre> <p>Arguments</p> <pre>watchEnable Optional 'on'/'off' to enable/disable persistent diagnostics watching.</pre> <p>Options</p> <ul style="list-style-type: none"> --help Display this help message --watchTime, -w Time interval for watching overlay diagnostics in seconds (default is 1).
g5:version g5:ver	<p>Display the G5 version.</p> <p>Syntax:</p> <pre>G5:version [options]</pre> <p>Options:</p> <ul style="list-style-type: none"> --help Displays this help message

SSH Commands (Cont.)	
g5:webu	<p>Start a firmware update from a web server.</p> <p>Syntax: G5:webu [options] url</p> <p>Arguments: url URL to the firmware kit file, including the http://server/kit-filename.</p> <p>Options: --help Display this help message</p>
g5:window-stats g5:ws	<p>Get the application window statistics.</p> <p>Syntax: G5:window-stats [options] [package]</p> <p>Arguments: package A package to filter on.</p> <p>Options: --help Display this help message</p>
get	<p>Get information about a specific target provided as an argument. Acts on any command that has the --info option.</p> <p>Syntax *:get arguments</p> <p>Arguments arguments Command arguments to pass through.</p>
history	<p>Prints command history.</p> <p>Syntax: *:history</p>
ip	<p>Gets/sets the IP settings of the device. An interactive menu is available when using the set proxy (i.e. "set ip").</p> <p>Syntax: *:ip [options]</p> <p>Options: --config, -c, --set Configure the ip info interactively. --dns1, -d1 The IP address of the primary DNS server. --dns2, -d2 The IP address of the secondary DNS server. --domain, -dn The domain name for the network. --gateway, -gw The IP address of the gateway. --help Display this help message. --hostname, -hn The hostname for the device. (Alpha-numeric values and no spaces. Dashes are OK.) --info, -? Display the current IP settings. --ipaddress, -ip The static IP address for the device</p>

SSH Commands (Cont.)	
ip (cont.)	<p>--mode, -m Set the connection mode. (DHCP, Static)</p> <p>--reset, -r Reset IP settings to factory default.</p> <p>--subnetmask, -sm The subnet mask address for the device</p>
key	<p>Issue a keystroke to the system.</p> <p>Syntax: *:key [options] [keystroke]</p> <p>Arguments: keystroke: The keystroke to issue. (Multiple keystrokes may be included.)</p> <p>Options: --help Display this help message --info, -? List available keystroke names</p>
man	<p>Displays this help or help about a command.</p> <p>Syntax: *:man [command]</p> <p>Arguments: command The command to get help for.</p>
msg	<p>Enable/disable diagnostics message logging. An interactive menu is available when using the set proxy (i.e. "set msg").</p> <p>Syntax: *:msg [options] [instruction] [filters]</p> <p>Arguments: instruction Diagnostics message command instruction. 'once': display the diagnostics messages one time and exit 'on': enable diagnostics messages 'off': disable diagnostics messages 'filter': sets optional log filters (provided by filters argument) 'add': add optional log filters (provided by filters argument) 'remove': removed optional log filters (provided by filters argument) 'clear': clear optional log filters 'delete': delete current log filters Optional log message filters (separated by spaces).</p> <p>Options: --add-filter, -af Add a filter to the current diagnostics log filters. --clear-filter, -cf Remove all filters from diagnostics logging. --clear-history, -ch, -d Delete the diagnostics log history. --config, -c, --set Enable/disable diagnostics message output. --filter, -f Optional log message filter. --help Display this help message --info, -? Display current diagnostic message output status. --off, -F, --disable, --stop Disable diagnostics message output.</p>

SSH Commands (Cont.)	
msg (cont.)	<p>--on, -N, --enable, --start Enable diagnostics message output.</p> <p>--remove-filter, -rf Remove one or more filters from the current diagnostics log filter.</p> <p>--show-filter, -sf Display all existing filters applied to diagnostics logging.</p> <p>--verbose, -v Display verbose diagnostics message status information.</p>
netlinx	<p>Gets/sets the NetLinx ICSP connection settings. An interactive menu is available when using the set proxy (i.e. "set netlinx").</p> <p>Syntax: <code>* :netlinx [options]</code></p> <p>Options:</p> <ul style="list-style-type: none"> --clear-credentials, -cc Clear the username and password settings. --config, -c, --set Set NetLinx (ICSP) connection settings. --device, -d Set the device number. --help Display this help message. --info, -? Display the current NetLinx settings. --mode, -m Set the connection mode (AUTO, URL, LISTEN). --password, -pw Set the password for secure mode. --reset, -r Reset NetLinx settings to factory default. --system, -s Set the system number. --url, -u Set the URL of the master controller. --username, -un Set the username for secure mode.
ping	<p>Test TCP/IP network connectivity with another IP address.</p> <p>Syntax: <code>* :ping [options] address</code></p> <p>Arguments:</p> <ul style="list-style-type: none"> address IP Address or URL. <p>Options:</p> <ul style="list-style-type: none"> --help Display this help message. --retry-count, -c Retry Count (number of packets). --timeout, -w
reboot	<p>Reboot the device.</p> <p>Syntax: <code>* :reboot [options]</code></p> <p>Options:</p> <ul style="list-style-type: none"> --help Display this help message. --silent, -s, -Y Do not prompt for confirmation; proceed with reboot.

SSH Commands (Cont.)	
scope	<p>Switch to an alternate command namespace scope. An interactive menu is available when using the set proxy (i.e. "set scope").</p> <p>Syntax:</p> <pre>* :scope [options] [namespace]</pre> <p>Arguments:</p> <ul style="list-style-type: none"> namespace <ul style="list-style-type: none"> The targeted namespace scope to switch to. <p>Options:</p> <ul style="list-style-type: none"> --config, -c <ul style="list-style-type: none"> Prompt the user to configure a new scope. --help <ul style="list-style-type: none"> Display this help message --info, -? <ul style="list-style-type: none"> Display the current scope. --reset, -r <ul style="list-style-type: none"> Reset the current scope to the default scope.
set	<p>Set the configuration for a specific command provided as an argument. Acts on any command that has the --config option.</p> <p>Syntax:</p> <pre>* :set command</pre> <p>Arguments:</p> <ul style="list-style-type: none"> command <ul style="list-style-type: none"> Command to set values and command arguments.
support	<p>Support utility command. Allows capturing of system runtime status.</p> <p>Syntax:</p> <pre>* :support [options] [instruction] [params]</pre> <p>Arguments:</p> <ul style="list-style-type: none"> instruction <ul style="list-style-type: none"> Support command instruction. 'bug-report': Print bug report. Includes dump-log, dump-system, and kernel-msg. 'dump-log': Print current logs. 'dump-system': Print system data for running services. 'kernel-msg': Print kernel messages. params <ul style="list-style-type: none"> Optional instruction parameters. See details on exact commands in OS docs. <p>Options:</p> <ul style="list-style-type: none"> --help <ul style="list-style-type: none"> Display this help message
temp	<p>Report the device temperature in Celsius.</p> <p>Syntax:</p> <pre>* :temp [options] [monitor]</pre> <p>Arguments:</p> <ul style="list-style-type: none"> monitor <ul style="list-style-type: none"> Optional 'on'/off' to enable/disable continuous temperature monitoring. <p>Options:</p> <ul style="list-style-type: none"> --help <ul style="list-style-type: none"> Display this help message --info, -? <ul style="list-style-type: none"> Display current system temperature. --interval, -w, -i <ul style="list-style-type: none"> Time interval for continuous temperature monitoring in seconds (default is 5). --off, -F, --disable, --stop <ul style="list-style-type: none"> Disable continuous temperature monitoring. --on, -N, --enable, --start <ul style="list-style-type: none"> Enable continuous temperature monitoring.

SSH Commands (Cont.)	
time	<p>Gets/sets the current system time. An interactive menu is available when using the set proxy (i.e. "set time").</p> <p>Syntax:</p> <pre>* :time [options] [time] [ampm]</pre> <p>Arguments:</p> <ul style="list-style-type: none"> time New time in format: 00:00:00 ampm AM or PM (not needed if using 24 hour format). <p>Options:</p> <ul style="list-style-type: none"> --am, -am AM (used when setting time) --config, -c, --set Set the system time. --help Display this help message --hour, -h Hour (0-24, defaults to -1) --info, -? Display the current time on screen. --millisecond, -ms Millisecond (0-999,defaults to -1). --minute, -m Minute (0-59, defaults to -1) --pm, -pm PM (used when setting time) --second, -s Second (0-59, defaults to -1) --verbose, -v Display verbose time information.

Appendix A: Text Formatting

Text Formatting Codes for Bargraphs

Text formatting codes for bargraphs provide a mechanism to allow a portion of a bargraphs text to be dynamically provided information about the current status of the level (multistate and traditional). These codes are entered into the text field along with any other text.

The following is a code list used for bargraphs:

Bargraph Text Code Inputs		
Code	Bargraph	Multi-State Bargraph
\$P	Display the current percentage of the bargraph (derived from the Adjusted Level Value as it falls between the Range Values)	Display the current percentage of the bargraph (derived from the Adjusted Level Value as it falls between the Range Values)
\$V	Raw Level Value	Raw Level Value
\$L	Range Low Value	Range Low Value
\$H	Range High Value	Range High Value
\$S	N/A	Current State
\$A	Adjusted Level Value (Range Low Value subtracted from the Raw Level Value)	Adjusted Level Value (Range Low Value subtracted from the Raw Level Value)
\$R	Low Range subtracted from the High Range	Low Range subtracted from the High Range
\$\$	Dollar sign	Dollar sign

By changing the text on a button (via a VT command), you can modify the codes on a button. When one of the Text Formatting Codes is encountered by the firmware, it is replaced with the correct value. These values are derived from the following operations:

Formatting Code Operations	
Code	Operation
\$P	(Current Value - Range Low Value / Range High Value - Range Low Value) x 100
\$V	Current Level Value
\$L	Range Low Value
\$H	Range High Value
\$S	Current State (if regular bargraph then resolves to nothing)
\$A	Current Value - Range Low Value
\$R	Range High Value - Range Low Value

Given a current raw level value of 532, a range low value of 500, and a high range value of 600, the following text formatting codes would yield the following strings as shown in the table below:

Example	
Format	Display
\$P%	32%
\$A out of \$R	32 out of 100
\$A of 0 - \$R	32 of 0 - 100
\$V of \$L - \$H	532 of 500 - 600

Text Area Input Masking

Text Area Input Masking may be used to limit the allowed/correct characters that are entered into a text area. For example, in working with a zip code, a user could limit the entry to a max length of only 5 characters; with input masking, this limit could be changed to 5 mandatory numerical digits and 4 optional numerical digits. A possible use for this feature is to enter information into form fields. The purpose of this feature is to:

- Force the use of correct type of characters (i.e. numbers vs. characters)
- Limit the number of characters in a text area
- Suggest proper format with fixed characters
- Right to Left
- Required or Optional
- Change/Force a Case
- Create multiple logical fields
- Specify range of characters/number for each field

With this feature, it is not necessary to:

- Limit the user to a choice of selections
- Handle complex input tasks such as names, days of the week, or month by name
- Perform complex validation such as Subnet Mask validation

Input mask character types

These character types define what information is allowed to be entered in any specific instance. The following table lists what characters in an input mask will define what characters are allowed in any given position.

Character Types	
Character	Masking Rule
0	Digit (0 to 9, entry required, plus [+] and minus [-] signs not allowed)
9	Digit or space (entry not required, plus and minus signs not allowed)
#	Digit or space (entry not required; plus and minus signs allowed)
L	Letter (A to Z, entry required)
?	Letter (A to Z, entry optional)
A	Letter or digit (entry required)
a	Letter or digit (entry optional)
&	Any character or a space (entry required)
C	Any character or a space (entry optional)



NOTE

The number of the above characters used determines the length of the input masking box. Example: 0000 requires an entry, requires digits to be used, and allows only 4 characters to be entered/used.

Refer to the following SEND_COMMANDs for more detailed information:

- ^BIM - Sets the input mask for the specified addresses.
- ^BMF subcommand %MK - sets the input mask of a text area

Input Mask Ranges

These ranges allow a user to specify the minimum and maximum numeric value for a field. **Only one range is allowed per field. Using a range implies a numeric entry ONLY.**

Input Mask Ranges	
Character	Meaning
[Start range
]	End range
	Range Separator

An example from the above table:

[0|255] This allows a user to enter a value from 0 to 255.

Input Mask Operations

Input Mask Operators change the behavior of the field in the following way:

Input Mask Operators	
Character	Meaning
<	Forces all characters to be converted to lowercase
>	Forces all characters to be converted to uppercase

Input Mask Literals

To define a literal character, enter any character, other than those shown in the above table (*including spaces, and symbols*). A back-slash ('\\') causes the character that follows it to be displayed as the literal character. For example, \\A is displayed just as the letter A. To define one of the following characters as a literal character, precede that character with a back-slash. Text entry operation using Input Masks.

A keyboard entry using normal text entry is straightforward. However, once an input mask is applied, the behavior of the keyboard needs to change to accommodate the input mask's requirement. When working with masks, any literal characters in the mask will be "skipped" by any cursor movement, including cursor, backspace, and delete keys.

When operating with a mask, the mask should be displayed with placeholders. The "-" character should display where you should enter a character. The arrow keys will move between the "-" characters and allow you to replace them. The text entry code operates as if it is in the overwrite mode. If the cursor is positioned on a character already entered and you type in a new (and valid) character, the new character replaces the old character. There is no shifting of characters.

When working with ranges specified by the [] mask, the keyboard allows you to enter a number between the values listed in the ranges. If a user enters a value that is larger than the maximum, the maximum number of right-most characters is used to create a new, acceptable value.

- **Example 1:** If you type "125" into a field accepting 0-100, then the values displayed will be "1", "12", "25".
- **Example 2:** If the max for the field was 20, then the values displayed will be "1", "12", "5".

When data overflows from a numerical field, the overflow value is added to the previous field on the chain if the overflow character was specified. In the above example, if the overflow flag was set, the first example will place the "1" into the previous logical field and the second example will place "12" in the previous logical field. If the overflow field already contains a value, the new value will be inserted to the right of the current characters and the overflow field will be evaluated. Overflow continues to work until a field with no overflow value is set or no more fields remain (i.e. reached first field).

If a character is typed and that character appears in the Next Field list, the keyboard should move the focus to the next field. For example, when entering time, a ":" is used as a next field character. If you enter "1:2", the 1 is entered in the current field (hours) and then the focus is moved to the next field and 2 is entered in that field.

When entering time in a 12-hour format, entry of AM and PM is required. Instead of adding AM/PM to the input mask specification, the AM/PM should be handled within the NetLinx code. This allows a programmer to show/hide and provide discrete feedback for AM and PM.

Input Mask Output Examples

The following are some common input masking examples:

Output Examples		
Common Name	Input Mask	Input
IP Address Quad	[0 255]{.}	Any value from 0 to 255
Hour	[1 12]{.}	Any value from 1 to 12
Minute/Second	[0 59]{.}	Any value from 0 to 59
Frames	[0 29]{.}	Any value from 0 to 29
Phone Numbers	(999) 000-0000	(555) 555-5555
Zip Code	00000-9999	75082-4567

URL Resources

A URL can be broken into several parts. For example, with the URL <http://www.amx.com/company-info-home.asp>, this URL indicates that the protocol in use is **http** (HyperText Transport Protocol) and that the information resides on a host machine named **www.amx.com**. The image on that host machine is given an assignment (*by the program*) name of **company-info-home.asp** (*Active Server Page*).

The exact meaning of this name on the host machine is both protocol dependent and host dependent. The information normally resides in a file, but it could be generated dynamically. This component of the URL is called the file component, even though the information is not necessarily in a file.

A URL can optionally specify a port, which is the port number to which the TCP/IP connection is made on the remote host machine. If the port is not specified, the default port for the protocol is used instead. For example, the default port for http is 80. An alternative port could be specified as: <http://www.amx.com:8080/company-info-home.asp>.



NOTE

Any legal HTTP syntax can be used.

Special Escape Sequences

The system has only a limited knowledge of URL formats, as it transparently passes the URL information onto the server for translation. A user can then pass any parameters to the server side programs such as CGI scripts or active server pages. However; the system will parse the URL looking for special escape codes. When it finds an escape code, it replaces that code with a particular piece of panel, button, or state information.

For example, "http://www.amx.com/img.asp?device=\$DV" would become <http://www.amx.com/img.asp?device=10001>.

Other used escape sequences include:

Escape Sequences	
Sequence	Panel Information
\$DV	Device Number
\$SY	System Number
\$IP	IP Address
\$HN	Host Name
\$MC	Mac Address
\$PX	X Resolution of current panel mode/file
\$PY	Y Resolution of current panel mode/file
\$BX	X Resolution of current button
\$BY	Y Resolution of current button
\$BN	Name of button
\$ST	Current state
\$AC	Address Code
\$AP	Address Port
\$CC	Channel Code
\$CP	Channel Port
\$LC	Level Code
\$LP	Level Port

Appendix B: Bargraph Functions

Overview

For drag operations on Bargraph and Multi-State Bargraph buttons, each movement increments based on the drag increment field.

For centering, the bargraph/multistate bargraph will return to the middle - either the 50% mark for bargraphs, or the median state number, once the touch point is released.

Setup Codes

Bargraph Functions - Setup Codes		
Type	Code	Description
Channel	2	Panel Setup: Brightness Up
Channel	3	Panel Setup: Brightness Down
Channel	6	Panel Setup: Master Volume Up
Channel	7	Panel Setup: Master Volume Down
Channel	8	Panel Setup: Master Volume Mute
Channel	158	Panel Setup: Mic Volume Mute
Channel	171	Panel Setup: Call Volume Up
Channel	172	Panel Setup: Call Volume Down
Channel	1403	Panel Setup: Notification Alarm Volume Mute
Channel	1404	Panel Setup: Notification Volume Up
Channel	1405	Panel Setup: Notification Volume Down
Channel	1407	Panel Setup: Alarm Volume Up
Channel	1408	Panel Setup: Alarm Volume Down
Address	33	Panel Setup: Brightness
Address	35	Panel Setup: Master Volume
Address	144	Time Display: AM PM
Address	46	Panel Setup: Call Volume
Address	450	Panel Setup: Notification Volume
Address	451	Panel Setup: Alarm Volume
Level	1	Panel Setup: Brightness
Level	3	Panel Setup: Master Volume
Level	9	Panel Setup: Call Volume
Level	450	Panel Setup: Notification Volume
Level	451	Panel Setup: Alarm Volume

Appendix C: Video Streaming Troubleshooting

Optimizing Motion JPEG Video Presentation and Speed

In some cases, multiple Motion JPEG streams may slow presentation of individual screen popups, or prevent all of the streams from showing at the same time. This may happen even though the Panel Preview in TPDesign 5 may show no issues. To minimize this and assure a smooth and non-sluggish stream, try these options:

- Limit the number of simultaneous Motion JPEG streams to eight or fewer streams at a time.
- Remove any unnecessary buttons associated with the Motion JPEG streams.
- Make sure that the Refresh rate on a Motion JPEG is set to 0.
- Make sure to hide the preview popup before displaying the full image.
- If possible, uncheck the “Scale to Fit” option, as scaling is very resource-intensive.
- Dial down the frame rate of the server. The frame rate of a Motion JPEG is determined by the server.
- When you go from a page with multiple previews to a page with a single full screen video, it is best to do a page flip rather than popup attach, *or* hide the preview windows first. Otherwise, the preview windows will continue to decode (taxing the system), even though they may be completely or partially obstructed by the popup.
- Verify that the full-screen image is set for acceleration by checking the “Dynamo” box in Resource Manager.

Motion JPEG Support for Modero X Series G5 Panels	
Baseline mode:	ISO 10918-1
Encoding:	ISO-10918-5 (JFIF)
Maximum Resolution:	720p
Recommended resolution:	720x480-NTSC or 720x576-PAL (or less). If the video is defined in the Resource Manager as opposed to video fill, consideration must be made for the video being decoded by the Modero X Series panel, which cannot decode 720p.
Maximum Frame Rate:	Up to 30fps
Latency:	From 1-3 seconds, depending on multiple factors including button size, resolution and network performance.

Transcoding Guidelines

For certain H.264 video and audio streaming , you may observe a drift between audio and video the longer the content is streamed. This drift can be more pronounced when streaming from a non- MXA-MPL source such as a Vision 2 steaming server. If the panel detects excessive drift, it will attempt to restart the stream decode. During the restart, the audio will be temporarily interrupted and the video will be frozen on the last frame until the restart is complete (typically a couple of seconds).

To reduce the drift issue for Vision 2 H264 steaming, video transcoding tools (such as HandBrake or FFmpeg) are available to convert H.264 video into lower bitrates, reduced resolution and/or lower H.264 profiles. For example you can try the H.264, 2mbps bit rate, 480p resolution, Baseline profile. If this does not work, try transcoding the stream into MPEG2 video, which is less susceptible to A/V drift.



*Third-party encoders and digital television devices have not been tested with Modero X Series G5 touch panels, and are **not** supported by AMX.*

NOTE

The table below lists the typical synchronization and latency times for each supported video and audio stream:

Video Performance					
Device	Typical A/V Sync (offset/hr)	Typical A/V Sync Restart Rate	Expected Latency - Typical	Expected Latency - Max	Notes:
MXA-MPL					
H.264	<100ms	~ every 3hrs	750ms (Video) 1s (Audio + Video)	2s or more, depending on network	<p>Recommend maintaining aspect ratio of source and following usage guidelines regarding window/button placement.</p> <p>Network congestion can cause video glitches. AMX recommends the Multi-Preview Live and Modero X touch panel be installed behind a smart Ethernet switch to filter multicast packets reaching the panel and consuming panel resources.</p>
MPEG2	N/A	N/A	N/A	N/A	N/A
H.264	<100ms	~ every 1-2hrs	1.5s	3s or more, depending on network	<p>Network congestion can cause video glitches. AMX recommends the Modero X touch panel be installed behind a smart Ethernet switch to filter unintended multicast packets reaching the panel and consuming panel resources.</p> <p>Recommend maintaining aspect ratio of source and following usage guidelines regarding window/button placement.</p> <ul style="list-style-type: none"> • AAC <= 192Kbps @ 48KHz • H.264 video 720p max (D1 for best results), < 30fps max and a 4Mbps bitrate • UDP Transport protocol only (RTP not supported) • Multicast and/or unicast addresses • SAP disabled <p>May require transcoding to H.264 baseline profile and reducing resolution/ frame rate/bit rate per recommendations above.</p> <p>Recommend transcoding source material to MPEG2 if Audio/Video sync issues still occur after following above guidelines.</p>
MPEG2	<100ms	~ every 1-2hrs	1.5s	3s or more, depending on network	<p>Network congestion can cause video glitches. We recommend the panel be installed behind a smart Ethernet switch to filter unintended multicast packets reaching the panel and consuming panel resources.</p> <p>Recommend maintaining aspect ratio of source and following usage guidelines regarding window/button placement. Best results are obtained with standard definition (NTSC or PAL) sources.</p> <p>Minor audio/video irregularities may be noticed depending on network performance, video source content, and window size. Note: Video frame rate can be affected by network performance.</p> <p>MPEG-2 video streaming Settings:</p> <ul style="list-style-type: none"> • MP2/MP3 audio <= 192Kbps @ 48KHz • MPEG2 video 720p max < 30fps max bitrate of 8Mbps • UDP Transport protocol only (RTP not supported) • Multicast and/or unicast addresses • SAP disabled

Video Performance (Cont.)					
Device	Typical A/V Sync (offset/hr)	Typical A/V Sync Restart Rate	Expected Latency - Typical	Expected Latency - Max	Notes:
3rd Party Solutions					
H.264	N/A	N/A	N/A	N/A	<p>NOTE: Third-party encoders and digital television devices have not been tested with Modero X Series touch panels, and are not supported by AMX.</p> <p>Network congestion can cause video glitches. We recommend the panel be installed behind a smart Ethernet switch to filter unintended multicast packets reaching the panel and consuming panel resources.</p> <p>We recommend maintaining aspect ratio of source and following usage guidelines regarding window/button placement.</p>
MPEG2	N/A	N/A	N/A	N/A	<p>NOTE: Third-party encoders and digital television devices have not been tested with Modero X Series touch panels, and are not supported by AMX.</p> <p>Network congestion can cause video glitches. We recommend the panel be installed behind a smart Ethernet switch to filter unintended multicast packets reaching the panel and consuming panel resources.</p> <p>We recommend maintaining aspect ratio of source and following usage guidelines regarding window/button placement.</p>

NMX-ENC H.264 Encoder - Encoder Settings for G5 Panels

The Modero X Series® G5 line of touch panels can receive video streams from the NMX-ENC H.264 Encoder (FG3201-01), provided that the Encoding settings on the NMX-ENC are configured correctly. Encoding settings for the NMX-ENC are set via the on-board WebConsole interface.



NOTE

Due to resource constraints, the number of playing video streams on a G5 panel is limited to two (720dpi, 30fps). If two or more video streams are requested to play, only the latest two streams with different url will be started.

The WebConsole is accessed via a web browser on a PC that has network access to the encoder. You can access the WebConsole by entering the IP address of the encoder into a web browser. (see the *NMX-ENC H.264 Encoder Instruction Manual* for details).

The NMX-ENC H.264 Encoder should be configured such that:

- Maximum resolution for video windows: **720dpi**
- Maximum frame rate for video windows: **30fps**

To view / set Encoding options, open the NMX-ENC WebConsole to the *Encoding* tab.

Note that by default, *Frame Decimation* is set to "None" (FIG. 1).

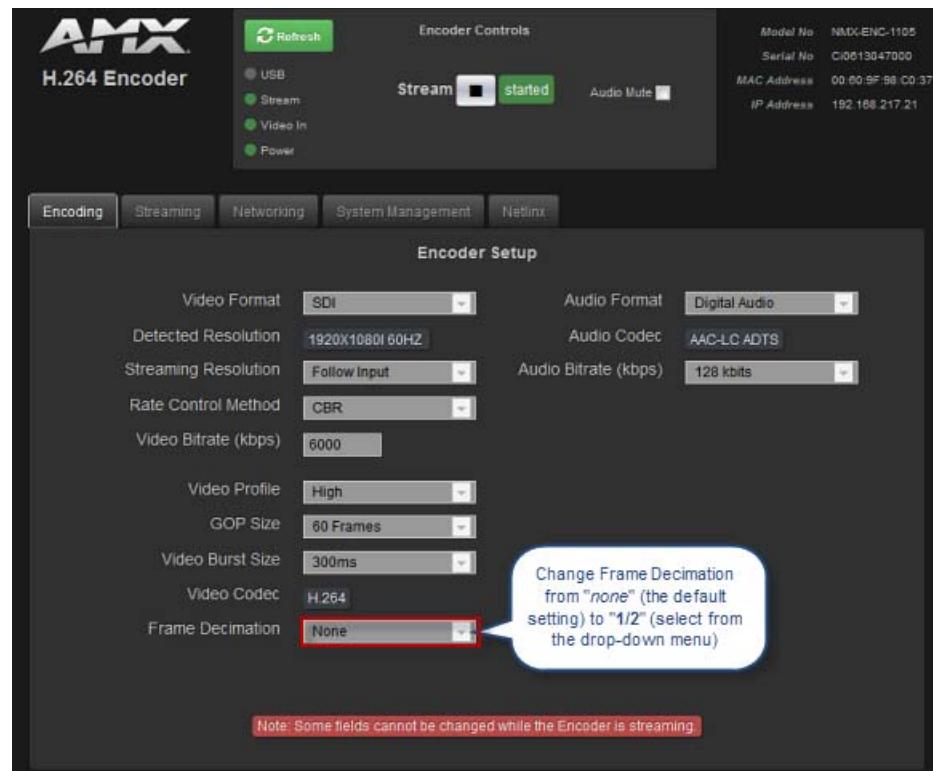


FIG. 1 NMX-ENC WebConsole - Encoding tab

To use the NMX-ENC with X Series G5 touch panels, change the *Frame Decimation* setting from "None" (the default setting) to "1/2" (via the drop-down menu).



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