Partner: Tandberg
Model: MXP
Device Type: Conferencing

GENERAL INFORMATION

SIMPLWINDOWS NAME:	**CMS Tandberg MXP Full Control**
CATEGORY:	**Conferencing**
VERSION:	**4.0**
SUMMARY:	**Control all standard videoconference functions**
GENERAL NOTES:	**This module will only work with Tandberg version 5.0 or higher due to the volume range change made in their firmware.** **This module will provide full control of all standard videoconference functions on Tandberg 3000MXP, and 6000MXP codecs. Since certain features are not available on all codec models, some functions included on this module may not function on the model you are using. All functions were tested and verified functional on a Tandberg 6000MXP codec with version F1.4 NTSC software loaded, with Multisite, Presenter, and Security options installed. All feedback provided by this module is true feedback as provided by the Tandberg system.** **Before performing any other functions, you should pulse the Initialize input. This will setup the Tandberg to provide the proper feedback to the Crestron system, and will poll for the current status of all settings. The initialization process will take approximately four seconds. The Initialize_Busy output will be high while the initialization is in progress. If no valid responses are received from the codec, the No_Communications output will be pulsed for one second. The initialization process should only need to be done once after the codec has been powered on.** **This module has been divided into sections based on categories of control. The categories are:** **1. Camera control** **2. Video/audio switching** **3. Miscellaneous control (PIP, Volume, etc.)** **4. Manual dialing control** **5. Directory dialing controls** **6. Duo video controls** **7. Multipoint controls** **8. Parameter setup controls** **9. Directory setup controls** **10. Ir emulation functions** **11. Full keyboard used for entering all information** **12. System status** **For camera control, you must first select the near or far end camera for control. Then the camera movement and preset buttons will act on the near or far end camera currently selected for transmission. Note that focus controls are not available for the near end camera. Also note that you do not have the ability to store presets on the far end system. To store a preset on the near end system, press and hold the desired preset button for 2 seconds. The Preset_Saved output will pulse, and the preset will be saved.** **For video/audio switching, you have the ability to select any near end video source for transmission. You also have the ability to turn on/off any of the near end audio**

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inputs. For far end control, you can select any of the far end video sources to be transmitted live, and you can select any far end source to be sent as a still image.

For manual dialing control, you have the ability to select from any of the available call qualities discretely, or you can use the Dial_Call_Quality_Up/Down inputs to scroll through the available qualities. You can also make the call restricted. You have the ability to enter either one or two numbers for the call. The actual numbers to be dialed should be entered using the Keyboard_* inputs toward the bottom of this module. Since you can dial both numeric and alphanumeric IP addresses, a full keyboard has been implemented.

You also have the ability to designate what type of call to place (Auto, ISDN, IP, custom 1-3). If you select auto, the codec will attempt to determine the correct call type.

For Directory dialing, you have the ability to dial any of the entries that have been entered into the Tandberg local and global directories. The local directory can contain up to 99 entries, and the global directory can contain up to 199 entries. When you pulse the Request_Directory input, the Crestron system will read both directories and store them in the Crestron system. While the read is in progress, the Request_Directory_In_Progress output will be high, and the Request_Directory_Progress output could be routed to a bargraph on a touch panel to show the relative progress. After the directory has been read, it will be automatically sorted alphabetically. The Sort_In_Progress output will be high while sorting is in progress.

After reading and sorting the directory, you can now display the directory on screens containing up to twenty entries per page. You can use the Directory_First/Prev/Next/Last inputs to scroll between pages. Use the Directory Entries Per Screen <21D to enter the number of entries to be displayed per screen. To display twenty entries per screen, enter 20D.

When you press one of the entries using the Directory_* inputs, the current settings for that entry will be shown at the Directory_Name$, Directory_Number1$, Directory_Number2$, and Dial_Call_Quality$ outputs. To dial the last entry selected, pulse the Directory_Dial input.

The duo video functions control the duo video feature of the codec. This feature allows two simultaneous live sources to be sent to the far end. Whichever duo video source you select will be simultaneously sent to the far end where it will be shown on the Dual output of the Tandberg. Once activated, the duo video can be canceled by pulsing the Duo_Video_Off input.

The multipoint controls allow control of both external bridge multipoint calls, as well as the use of the multisite feature of the Tandberg system. Pulsing the MCU_Request_Type input will cause the Tandberg system to send us the multipoint status of the codec. Based on what type of multipoint call is in progress, different multipoint controls should be displayed on the touch panel.

This module will provide a list of up to 50 mutipoint sites involved in a conference, displayed on screens of up to 10 sites per screen. Set up the number of sites per screen using the MCU_Entries_Per_Screen <11D paramater. To display 9 entries per screen, enter 9D. You can scroll through the screens using the MCU_Screen_First/Previous/Next/Last inputs. For each site, there will be a corresponding site name (MCU_Site_Name_*$), MCU Number (MCU_Number_*$), and MCU Site Number (MCU_Site_Number_*$).

In a multipoint bridge conference, you can choose to request to be chairman. If you are granted the chairmanship, you can then choose to View a site, transmit a site to all other sites, or drop a site from the conference. You can also request the floor, such that your site is transmitted to all other sites.

In a Tandberg hosted multisite call if your site is holding the conference (with up to five other sites connected), you can choose to have a voice-switched or continuous presence conference. You can request the floor in any of the sites in a Tandberg hosted multisite conference.

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	The MCU_Status$ output will indicate the name of the site which you are currently viewing. The MCU_State_Onair_On output will be high when your site is being transmitted to another site. **The Directory edit functions allow you to modify the Tandberg local dialing directory. You cannot modify entries made in the Tandberg global directory. Display and select the directory as was done for your directory dialing page. The Global_Directory_Selected, and Local_Directory_Selected outputs will indicate if the entry selected was in the global or local directory. If it is in the local directory, you can display the settings currently stored, and allow them to be modified. To modify a setting, first select the parameter to be changed using the Directory_Edit_Name/Number1/Number2 inputs. Then use the Keyboard_* inputs at the bottom of this module to change the current settings. When finished, pulse the Directory_Edit_Save_Entry input. You could also choose to delete the last entry selected, or to add a new entry. After making any of these changes, the directory will automatically be resorted. The Local_Directory_Entries_Free output will indicate how many (out of 99 total) entries are available.** **The IR_* functions will directly emulate the functions available on the Tandberg IR remote. The Keyboard functions give full implementation of a computer style keyboard, including the shift and caps lock features. Separate sections are provided for the alphabetic portion and the numeric portion. This keyboard will be used for entering all phone numbers, IP addresses, directory names, etc. Based on what field you had selected for editing (Number 1, Number 2, directory name, etc.) text you typed will be directed into that field.** **Status outputs are provided for a number of paramaters. These include the names of the near and far end sources. The type of Tandberg system being used. The LAN and ISDN bandwidth available. Individual call status for each of the 4 channels. A consolidated Call_Status$ output which will contain messages for all 4 lines. Digital outputs indicating when each of the 4 lines is connected, and an Incoming_Call indicator which will pulse when an incoming call is detected when auto andswer is off.**
CRESTRON HARDWARE REQUIRED:	**C2-COM, ST-COM**
SETUP OF CRESTRON HARDWARE:	RS232 Baud: 9600 Parity: None Data Bits: 8 Stop Bits: 1
VENDOR FIRMWARE:	**F5.0**
VENDOR SETUP:	**Use Data Port 1 to communicate with the Crestron system. The Tandberg codec should have data port 1 set to "control mode"**
CABLE DIAGRAM:	**CNSP-121**

CONTROL:

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Initialize	D	Pulse to set up the Tandberg for proper communications with the Crestron system. Initialize_Busy will be high while this is in progress
Camera_Near_End	D	Pulse to select the currently active near end camera for control
Camera_Far_End	D	Pulse to select the currently active far end camera for control
Camera_Up/Dn/Lt/Rt	D	Press and hold to pan/tilt the near or far end camera
Camera_Zoom_In/Out	D	Press and hold to focus the far end camera only
Camera_Preset_0-14	D	Pulse to select any of the 15 available presets to be recalled. Press and hold for 2 seconds to store the current camera position into the selected preset. Only near end presets can be stored.
Camera_Home	D	Pulse to send the near end camera to the home position
Video_Input_1-5	D	Pulse to select the near end video source for transmission
Audio_Input_*_On/Off/Tog	D	Pulse to turn on/off each of the near end audio sources
Send_Still_Current	D	Pulse to send a still image of the currently transmitted live source
Send_Still_Input_*	D	Pulse to send a still image of any of the available near end sources
View_Still_On/Off	D	Pulse to turn the still image view on/off
Receive_Input_*	D	Pulse to receive a still image from any of the far end sources
PIP_On/Off/Tog	D	Pulse to turn the picture-in-picture on/off
Privacy_On/Off/Tog	D	Pulse to turn privacy (near end mic mute) on/off
Volume_Up/Down	D	Press and hold to ramp the near end receive volume up/down
Volume_Mute_On/Off/Tog	D	Pulse to mute/unmute the near end receive volume
Filter_On/Off/Tog	D	Pulse to turn the filter on/off
Speaker_On/Off/Tog	D	Pulse to turn the speaker on/off
Selfview_On/Off/Tog	D	Pulse to turn the selfview on/off
Do_Not_Disturb_On/Off/Tog	D	Pulse to activate/deactivate multisite receive. When deactivated incoming multisite calls will be ignored
Stream_On/Off/Tog	D	Pulse to start/stop streaming video to an external IP address

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Dial_Call_Quality_*	D	Pulse to select the desired quality for a call. Selecting auto will cause the codec to automatically negotiate the best quality possible
Dial_Call_Type_*	D	Pulse to select the desired call type. You can specifically designate a call to be ISDN or IP for use with a gateway. Or you can select "auto" and have the codec attempt to determine the correct call type. You can also select one of the custom call types, which will correspond to the custom call types set up on the codec.
Dial_Call_Restricted_On/Off	D	Pulse to make the call restricted/non-restricted
Dial_Call_Quality_Up/Down	D	Pulse to cycle through the available call qualities
Dial_Call_Select_Number_1-2	D	Pulse to select number 1 or 2 for entry
Dial_Call_Dial	D	Pulse to dial the call
Dial_Call_Redial	D	Pulse to redial the last call placed
Dial_Call_Hang_Up_All	D	Pulse to hang up all active calls
Dial_Call_Hang_Up_1-4	D	Pulse to individually hang up each of the 4 lines
Request_Directory	D	Pulse to read the local and global directories from the Tandberg system. Request_Directory_In_Progress will be high while the directory is being read
Sort_Directory	D	Pulse to sort the directory. Sort_Directory_In_Progress will be high while sorting
Directory_First	D	Pulse to display the first page of directory entries
Directory_Previous	D	Pulse to display the previous page of directory entries
Directory_Next	D	Pulse to display the next page of directory entries
Directory_Last	D	Pulse to display the last page of directory entries
Directory_1-20	D	Pulse to select any of the entries currently being displayed
Directory_Dial	D	Pulse to dial the last entry selected
Duo_Video_On/Off	D	Pulse to activate/deactivate duo video
Duo_Video_Source_1-5	D	Pulse to select the source to be sent as duo video. This will also automatically turn duo video on.
Duo_Video_Source_Swap	D	Pulse to swap the two sources currently being sent
MCU_Request_Type	D	Pulse to request the current MCU status

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MCU_Screen_First	D	Pulse to display the first screen of MCU sites
MCU_Screen_Previous	D	Pulse to display the previous screen of MCU sites
MCU_Screen_Next	D	Pulse to display the next screen of MCU sites
MCU_Screen_Last	D	Pulse to display the last screen of MCU sites
MCU_View_Site_1-10	D	Pulse to select to view any of the MCU sites currently displayed. Only available if you are the chairman
MCU_Drop_Site_1-10	D	Pulse to drop any of the MCU sites currently displayed. Only available if you are the chairman.
MCU_Request_Floor	D	Pulse to request your site to be the floor (to be seen by all other sites)
MCU_Continuous_Presence	D	Pulse to select the conference to be continuous presence
MCU_Voice_Switched	D	Pulse to select the conference to be voice switched
MCU_Request_Chair	D	Pulse to request to be chairman
MCU_End_View	D	Pulse to end viewing the last site that was selected for viewing
Snapshot_Source_*	D	Allows you to set which source will be the default source for snapshots
Presentation_Mode_*	D	Allows you to select which presentation mode to use
Auto_PIP_On/Off	D	Allows auto-pip to activated/deactivated
Monitors_1/2	D	Allows you to select your system to be single or dual monitors
Screen_Saver_Enable/Disable	D	Allows you to enable or disable the Tandberg screensaver
Screen_Saver_On/Off	D	Allows you to immediately turn the screensaver on/off
Vol_Up/Down/Mute_In_1-6/Out_1-3	D	Allows you to adjust the levels of any of the audio inputs or outputs
Directory_Edit_Name	D	Selects the name field for editing
Directory_Edit_Number_1-2	D	Selects number 1 or 2 for editing
Directory_Edit_Delete_Entry	D	When pulsed, will delete the last entry selected
Directory_Edit_Save_Entry	D	When pulsed will save the edited fields into the last directory entry selected
Directory_Edit_Add_Local_Entry	D	When pulsed, will add the edited fields as a new entry in the directory

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Directory_Edit_Clear_Setting	D	When pulsed will clear the name/number1/number2 fields so a new entry can be entered.
IR_*	D	Directly emulates all functions available on the Tandberg Infra-Red remote control
Keyboard_Clear	D	Pulse to clear the previously entered text
Keyboard_Shift	D	Pulse to activate the shift function. The next keyboard character entered will be shifted, and the shift will automatically cleared.
Keyboard_Caps_Lock	D	Pulse to activate/deactivate the caps lock feature. This will only have an effect on the alphabetic keys
Keyboard_*	D	Includes all standard computer keyboard functions
Numeric_Keypad_*	D	Contains the keys included in the numeric keypad portion of a computer keyboard
From_Device$	S	Serial signal to be routed to a 2-way RS232 port

FEEDBACK:

Initialize_Busy	D	High while the initialization is in progress (about 4 seconds)
No_Communications	D	Pulses for 1 second if proper communications are not established during initialization
Near/Far_End_Camera_Fb	D	Indicates which camera has been selected for control
Camera_Preset_*_Fb	D	Indicates the last preset saved/recalled
Camera_Preset_Saved	D	Pulses when a preset has been saved
Video_Input_*_Fb	D	Indicates which video source is currently selected for transmission
Audio_Input_*_Fb	D	Indicates which audio sources are currently on/off
View_Still_On/Off_Fb	D	Indicates if view still is on or off
Receive_Input_*_Fb	D	Indicates which far end source is currently being transmitted
PIP_On_Fb	D	Indicates if the picture-in-picture is on
Privacy_On_Fb	D	Indicates privacy is active
Volume_Level	A	Indicates the current receive volume level for display on a bargraph

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Volume_Mute_Fb	D	Indicates if the receive volume is muted
Filter_On_Fb	D	Indicates if the filter is on
Speaker_On_Fb	D	Indicates if the speaker is on
Selfview_On_Fb	D	Indicates if selfview is on
Do_Not_Disturb_On/Off_Fb	D	Indicates if do-not-disturb is acive
Multisite_Receive_On/Off_Fb	D	Indicates if multisite receive is active
Stream_On/Off_Fb	D	Indicates if video streaming is active
Dial_Call_Quality_*_Fb	D	Indicates which call quality has been selected
Dial_Call_Type_*_Fb	D	Indicates which call type has been selected
Dial_Call_Restricted_*_Fb	D	Indicates if restricted has been selected for the call
Dial_Call_Quality$	S	Text indicating which call quality has been selected
Dial_Call_Select_Number_1/2	D	Indicates which number has been selected for entry
Request_Directory_In_Progress	D	High while the Tandberg directory is being read
Request_Directory_Progress	A	Progress bar while the Tandberg directory is being read. Could be routed to a bargraph on a touch panel
Sort_Directory_In_Progress	D	High while the directory is being sorted
Directory_1-20$	S	Indicates the name of up to 20 directory entries per page
Directory_Name$	S	Indicates the name of the last directory entry selected
Direcotry_Network$	S	Indicates the network type stored with the last entry selected
Duo_Video_On/Off_Fb	D	Indicates if Duo Video is active or inactive
Duo_Video_Source_Fb	D	Indicates which source is the current Duo Video source
MCU_State_Off_Fb	D	Indicates that no MCU call is currently in progress
MCU_State_Multisite_*_Fb	D	Indicates which type of MCU call is in progress
MCU_State_Chair_Supported_Fb	D	Indicates that chairman is supported in the current MCU call

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MCU_Status$	S	Shows the name of the site currently being viewed at the near end
MCU_Site_Name_1-10$	S	Shows the name of up to 10 sites involved in the conference
MCU_Number_1-10$	S	Shows the MCU number of up to 10 sites involved in the conference
MCU_Site_Number_1-10$	S	Shows the site number of up to 10 sites involved in the conference
MCU_State_Onair_On_Fb	D	High when the local sites video is being viewed by another site
MCU_State_Continuous_Presence_Fb	D	High if a continuous presence conference is in progress
MCU_State_Voice_Switched_Fb	D	High if a voice switched conference is in progress
MCU_State_Chair_Granted_Fb	D	High if the chairmanship has been granted to the near end site
Snapshot_Source_*_Fb	D	Indicates which source has been selected for the default snapshot source
Presentation_Mode_*_Fb	D	Indicates which presentation mode has been selected
Auto_Answer_On/Off_Fb	D	Indicates if auto answer is on/off
Auto_PIP_On/Off_Fb	D	Indicates if auto pip is on/off
Monitors_1/2_Fb	D	Indicates if the system is set up for single or dual monitors
Screensaver_Enable/Disable_Fb	D	Indicates if the screensaver is currently enabled or disabled
Screensaver_On/Off_Fb	D	Indicates if the screensaver is currently on or off
Vol_In/Out_1-6_Level	A	Indicates the levels of each of the 6 audio inputs and 3 audio outputs. Can be routed to bargraphs on a touch panel
Vol_Mute_In/Out_1-6_Fb	D	Indicates if mute is active for any of the audio inputs/outputs
Directory_Edit_Name_Fb	D	High if the directory name field has been selected for editing
Directory_Edit_Number_1/2_Fb	D	High if the directory number 1 or 2 field has been selected for editing
Local_Directory_Entries_Free	D	Indicates the number of entries free in the directory
Global_Directory_Selected	D	High if the last entry selected was from the global directory
Local_Directory_Selected	D	High if the last entry selected was from the local directory
Keyboard_Shift_Fb	D	High while the shift feature is active

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Keyboard_Caps_Lock_Fb	D	High while the caps lock feature is active
Near_Source_1-5$	S	Indicates the name of the near end video sources as read from the Tandberg system
Far_Source_1-5$	S	Indicates the name of the far end sources as read from the Tandberg system
System_Type$	S	Indicates the model of the Tandberg codec connected to the Crestron system
ISDN_Bandwidth	A	Indicates the available ISDN bandwidth set up on the Tandberg system
LAN_Bandwidth	A	Indicates the available LAN bandwidth set up on the Tandberg system
Natural_Presentation_Available	D	Indicates that the Tandberg Natural Presentation Package has been installed on the system
MCU_Available	D	Indicates that the Tandberg MCU option has been installed on the system
Call_Status$	S	Displays any call status messages received for all 4 lines
Call_Status_Channel_*_Direction	S	Indicates the direction of the call individually for each of the 4 lines
Call_Status_Channel_*_Type	S	Indicates the type of the call individually for each of the 4 lines
Line_1-4_Connected	D	High if the corresponding line is connected
Incoming_Call	D	Pulses high when an incoming call is received if auto answer is off
To_Device$	S	Serial signal to be routed to a 2-way RS232 port

TESTING:

OPS USED FOR TESTING:	V3.137 (Release)
SIMPL WINDOWS USED FOR TESTING:	2.05.22
SAMPLE PROGRAM:	CMS Tandberg MXP Demo.smw
REVISION HISTORY:	V2 - Fixed 'View Still Off' function V4 - Changed volume range for Tandberg software version 5.0

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