Partner: Tandberg
Model: C90 + C60
Device Type: Codec

GENERAL INFORMATION

SIMPLWINDOWS NAME:	Tandberg C90 + C60 Serial v1.3
CATEGORY:	Conferencing
VERSION:	1.3
SUMMARY:	Control all standard videoconference functions via RS-232.
GENERAL NOTES:	This module will provide full control of all standard videoconference functions on Tandberg C90 and C60 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 C90 codec with version 2.1 software loaded, with Multisite, Presenter, and Security options installed. All feedback provided by this module is true feedback as provided by the Tandberg system (except Picture_Layout_*).

Note that focus controls are not available for the far 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 Camera_Near_End_Preset_Stored 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. For far end control, you can select any of the far end presentation video sources.

For manual dialing control, you have the ability to select from any of the available call qualities. 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 addresses, a full keyboard has been implemented. You also have the ability to designate what type of call to place (H323/SIP/VoIP).

For Phonebook dialing, you have the ability to dial any of the entries that have been entered into the Tandberg local and corporate directories.

After reading the phonebook, you can now display the phonebook on screens containing up to twenty entries per page. You can use the phonebook _First/Prev/Next inputs to scroll between pages. Use the phonebook Entries Per Screen to enter the number of entries to be displayed per screen. To display twenty entries per screen, enter 20D. It is possible that some of the phonebook entries may be folders. There are outputs on the module that indicate if the entry is a folder. Once you are inside a folder, you can use the phonebook Up_One_Level input to move back to the previous phonebook level. You can now get the total matches found for a phonebook search. This allows paging logic in the phonebook.

The IR_* functions will directly emulate the functions available on the Tandberg IR remote. All available IR commands have been implemented. IR functions should only be used for interacting with the codecs menu system when a user will be observing the OSD. Any other use will most likely cause the module to fail when the firmware is upgraded and the OSD menu changes. Therefore the usage of the IR_* commands is discouraged.

This module is **NOT** System Builder compatible.

This module is for 2-series processors only. |
| **CRESTRON HARDWARE REQUIRED:** | C2ENET-1/2 |
| **SETUP OF CRESTRON HARDWARE:** | RS232

Baud: 38400

Parity: N |

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	Data Bits: 8
	Stop Bits: 1
VENDOR FIRMWARE:	TC2.1
VENDOR SETUP:	N/A
CABLE DIAGRAM:	CNSP-121

CONTROL:

Control_Camera_Near_End_<1..7>	D	Pulse to select the near camera to control.
Camera_Near_End_*	D	Press and hold to move the selected near end camera.
Camera_Near_End_Start_Auto_Focus	D	Pulse to trigger auto focus on the selected near end camera.
Camera_Near_End_Preset_<1..15>	D	Pulse to select the desired preset on the near end camera. Press and hold for 2 second to store the currently selected near end camera's position in the desired preset.
Camera_Far_End_*	D	Press and hold to move the far end camera.
Camera_Far_End_Preset_<1..9>	D	Pulse to select the desired preset on the far end camera.
Video_Near_End_Input_<1..5>	D	Pulse to select the desired near end input.
Volume_<Up/Down>	D	Press and hold to adjust the volume.
Volume_Mute_<On/Off/Toggle>	D	Pulse to turn the volume mute on and off.
MicrophonesMute_<On/Off/Toggle>	D	Pulse to turn the local microphones on and off.
Presentation_ Near_End_Source_<1..5>	D	Pulse to select the desired near end source for presentation.
Presentation_ Near_End_Stop	D	Pulse to stop the near presentation
Presentation_Far_End_Source _<1..15>	D	Pulse to select the desired far end source for presentation.
Presentation_Far_End_Stop	D	Pulse to stop the far end presentation
Dial_Call_Type_<H323/SIP/VOIP/Default>	D	Pulse to select the desired call type.
Dial_Call_Quality_*	D	Pulse to select the desired call quality.

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Dial_Call	D	Pulse to dial the number displayed on the Dial_Call_Number_Text output.
Hang_Up_<All_Calls/Call_1..3>	D	Pulse to hang up all connected calls or the desired individual call.
<Reject/Answer>_Incoming_Call	D	Pulse to reject or answer the incoming call(s).
Phonebook _Request_<Local/Corporate>	D	Pulse to use the local or corporate phonebook.
Phonebook_Search	D	Pulse to get phonebook entries for the selected phonebook and search string given by Phonebook_Search_Text
Phonebook_<First/Previous/Next>_Page	D	Pulse to move through the phonebook.
Phonebook_Up_One_Level	D	When in a folder in the phonebook, pulse to move up to the previous phonebook level.
Phonebook_Entry_<1..20>	D	Pulse to select the desired phonebook entry.
Phonebook_Dial_Selected_Entry	D	Pulse to dial the selected phonebook entry.
IR_Emulation_*	D	Press and release to send the IR key press and release commands.
Phonebook_Search_Keyboard_Clear	D	Pulse to clear the previously entered text for the phonebook search string
Phonebook_Search_Keyboard_Shift	D	Pulse to activate the shift function. The next keyboard character entered will be shifted, and the shift will be automatically cleared.
Phonebook_Search_Keyboard_Caps_Lock	D	Pulse to activate/deactivate the caps lock feature. This will only have an effect on the alphabetic keys.
Phonebook_Search_Keyboard_*	D	Includes all standard computer keyboard functions.
Phonebook_Search_Numeric_Keypad_*	D	Contains the keys included in the numeric keypad portion of a computer keyboard.
DialKeyboard_Clear	D	Pulse to clear the previously entered text for the dial string
DialKeyboard _Search_Keyboard_Shift	D	Pulse to activate the shift function. The next keyboard character entered will be shifted, and the shift will be automatically cleared.
DialKeyboard _Search_Keyboard_Caps_Lock	D	Pulse to activate/deactivate the caps lock feature. This will only have an effect on the alphabetic keys.

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DialKeyboard _Search_Keyboard_*	D	Includes all standard computer keyboard functions.
DTMF_SelectedCallSlot_Auto	D	Pulse to let codec decide which call to send DTMF signals to
DTMF_SelectedCallSlot_<1..3>	D	Pulse to select which call to send DTMF signals to
DTMF_Keypad_*	D	Pulse to send DTMF tone signal
Screen_Saver_<On/Off/Toggle>	D	Pulse to enable and disable the screen saver.
Auto_Answer_<On/Off/Toggle>	D	Pulse to turn the auto answer function on and off.
Encryption_<Best_Effort/Off/Toggle>	D	Pulse to set the encryption mode.
Default_Call_Rate_*	D	Pulse to select the desired default call rate.
Default_Call_Type_<H323/SIP>	D	Pulse to set the default call type to H323 or SIP.
Far_End_Camera_Control_<Enable/Disable/Toggle>	D	Pulse to enable or disable far end control of the near end camera.
On_Screen_Display_<On/Off/Toggle>	D	Pulse to enable or disable the on screen display (OSD).
On_Screen_Display_Output_<1..4>	D	Pulse to select the output that the on screen display will appear on.
Picture_Layout_*	D	Pulse to select the picture layout. (What is the current selected layout cannot be read from system)
Selfview_<On/Off/Toggle>	D	Pulse to turn the self view window on and off.
DoNotDisturbMode_<On/Off/Toggle>	D	Pulse to turn do-not-disturb (disallow incoming calls) on and off.
Standby_<Activate/Deactivate>	D	Pulse to send codec in to standby or wake up from standby
Request_Reboot_Codec	D	Pulse to set Reboot_Is_Requested feedback to high
Cancel_Request_Reboot_Codec	D	Pulse to set Reboot_Is_Requested feedback to low
Reboot_Codec	D	Pulse to reboot codec
VideoInputSource<x>ConnectorTo_<HDMI/HDSDI/YpbPr/DVI/Legacy>	D	Pulse to set the active video source connector for video input <x> Note that not all connectors are available for C60 or C90. These are postfixed with _Cxx_Only.
Show_Dialer_Keyboard	D	Pulse to show dialer keyboard

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Hide_Dialer_Keyboard	D	Pulse to hide dialer keyboard
Phonebook_Search_Show_Keyboard	D	Pulse to show phonebook search keyboard
Phonebook_Search_Hide_Keyboard	D	Pulse to hide phonebook search keyboard
From_Device	S	Feedback received from the codec
VideoInputSource<x>ConnectorTo_<HDMI/HDSDI/YpbPr/DVI/Legacy>	D	Pulse to set the active video source connector for video input <x> Note that not all connectors are available for C60 or C90. These are postfixed with _Cxx_Only.
Auto_AnswerMute_On	D	Pulse to turn on autoanswer-mute
Auto_AnswerMute_Off	D	Pulse to turn off autoanswer-mute
Auto_AnswerMute_Toggle	D	Pulse toggle autoanswer-mute
Camera_Far_End_Focus_In	D	Hold to focus in on far end camera
Camera_Far_End_Focus_Out	D	Hold to focus out on far end camera
Video_Input_Source_3_Connector_To_YC_C60_only	D	Pulse to set the active video source connector for video input <x> Note that not all connectors are available for C60 or C90. These are postfixed with _Cxx_Only.
Message_Alert_Clear	D	Pulse to clear a message alert
Message_Prompt_Clear	D	Pulse to clear a message prompt (without sending a response)
Message_Prompt_Respond_With_Option<x>	D	Pulse to respond to a message prompt using response <x> (sends a response to the management system and causes feedback on the API)
TString_Send_Text	S	Send a message to remote site using TString
SString_Send_Text	S	Send a message to remote site using SString
Phonebook_Clear_Selected_Entry	D	Pulse to clear selected item in phonebook list

FEEDBACK:

Controlling_Camera_Near_End_<1..7>	D	High to indicate the near end camera currently being controlled.
Camera_Near_End_Preset_Stored	D	Pulses high for 3 seconds when a near end camera preset has been stored.

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Signal	Type	Description
Video_Near_End_Input_Is_<1..5>	D	High to indicate the currently selected near end video input.
Volume_Level_Gauge	A	Analog output indicating the current volume level. To be displayed on a touch panel using a gauge.
Volume_Mute_Is_<On/Off>	D	High to indicate the current state of the volume mute.
MicrophonesMute_Is_<On/Off>	D	High to indicate the current state of the local microphones (mic mute).
Presentation_Near_End_Source_Is_<1..5>	D	High to indicate the currently selected near end presentation source.
Dial_Call_Type_Is_<H323/SIP/VOIP/Default>	D	High to indicate the currently selected call type.
Dial_Call_Quality_Is*	D	High to indicate the currently selected call quality.
Dial_Call_Number_Text	S	Serial signal indicating the number to be called.
Incoming_Call	D	High to indicate that there is an incoming call.
Incoming_Call_Number_Text	S	Serial signal indicating the number of the incoming call.
Phonebook_In_Use_Is_<Local/Corporate>	D	High to indicate that the current selected phonebook is local or corporate
Phonebook_Selected_Folder_Name_Text	S	Serial signal indicating the name of the folder If the currently displayed phonebook result is from a folder
Phonebook_Search_Text	S	Serial signal indicating the phonebook search string entered by the Phonebook-Keyboard
Phonebook_Searchresult_Is_From_Subfolder	D	High to indicate that the displayed phonebook list is from a folder
Phonebook_SearchResult_FirstItem_Analog	A	Analog output indicating the first item on the phonebook list. If Phonebook_Previous_Page or Phonebook_Next_Page have not been used then the value is 1 (if entries found) else it is Paging number * entries per page
Phonebook_SearchResult_LastItem_Analog	A	Analog output indicating the last item on the phonebook list. Value is Phonebook_SearchResult_FirstItem_Analog + entries found
Phonebook_Entry_<1..20>_Name_Text	S	Serial signal indicating the phonebook entry name.
Phonebook_Entry_<1..20>_Is_A_Folder	D	High to indicate that the displayed entry is a folder.
Phonebook_Selected_Entry_Name_Text	S	Serial signal indicating the name of the selected

		phonebook entry.
Phonebook_Selected_Entry_Number_Text	S	Serial signal indicating the number of the selected phonebook entry.
Phonebook_Selected_Entry_Call_Rate_Text	S	Serial signal indicating the call rate of the selected phonebook entry.
Phonebook_Keyboard_Shift_is_On	D	High while the shift feature is active.
Phonebook_Keyboard_Caps_Lock_is_On	D	High while the caps lock feature is active.
DialKeyboard_Shift_is_On	D	High while the shift feature is active.
DialKeyboard_Caps_Lock_is_On	D	High while the caps lock feature is active.
DTMF_SelectedCallSlot_Is_<1..3>	D	High to indicate that a specific call slot has been selected to receive DTMF tones
Screen_Saver_Is_<On/Off>	D	High to indicate if the screensaver is currently enabled or disabled.
Auto_Answer_Is_<On/Off>	D	High to indicate the current auto answer state.
Encrytpion_Is_<Best_Effort/Off>	D	High to indicate the current encryption setting.
Default_Call_Rate_Is_*	D	High to indicate the currently selected default call rate.
Default_Call_Type_Is_<H323/SIP>	D	High to indicate the currently selected default call type.
Far_End_Camera_Control_Is_<Enabled/Disabled>	D	High to indicate whether the far end is allowed to control the near end camera.
On_Screen_Display_Is_<On/Off>	D	High to indicate whether the on screen display (OSD) is enabled or disabled.
On_Screen_Display_Output_Is_<1..4>	D	High to indicate the output that the on screen display will appear on.
Picture_Layout_Is_*	D	High to indicate the current picture layout setting.
Selfview_Is_<On/Off>	D	High to indicate whether the self view is on or off.
DoNotDisturbMode_Is_On<On/Off>	D	High to indicate whether do not disturb (disallow incoming calls) is on or off
Standby_Is_<Active/Inactive>	D	High to indicate whether systems is currently in standby or not

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Reboot_Is_Requested	D	High to indicate that a reboot has been requested by pulsing Request_Reboot_Codec. Can be cancelled by pulsing Clear_Request_Reboot
Number_Of_Active_Calls_Value	A	Analog output indicating the number of connected calls.
Call_Status_Call_<1..3>_Is_Active	D	High to indicate whether there exists an active call on call slot <1..3>
Call_Status_Call_<1..3>_Status_Text	S	Serial signal indicating the status of each call.
Call_Status_Call_<1..3>_Type_Text	S	Serial signal indicating the type of each call. (not available yet)
Call_Status_Call_<1..3>_Remote_Number_Text	S	Serial signal indicating the remote number of each call.
Call_Status_Call_<1..3>_Duration_Text	S	Serial signal indicating the duration of each call. (not available yet)
Call_Status_Call_<1..3>_Call_Rate_Text	S	Serial signal indicating the call rate of each call.
Call_Status_Call_<1..3>_Direction_Text	S	Serial signal indicating the direction of each call.
Input_Source_Name[1..5]	S	Serial signal indicating the name of the different input sources. The names are configurable on the codec.
VideoInput_<INPUT>_ConnectedState_Analog	A	Analog output indicating whether there is equipment connected to the input. 0 = not connected, 1 = connected, 2 = unknown. Note that not all connectors are available for C60.
getSystemName_Text	S	Serial signal indicating the system name
getSystemNetworkAddress_Text	S	Serial signal indicating the network address (IP address or DNS)
getGatekeeperStatus_Text	S	Serial signal indicating the status of the gatekeeper registration
getGatekeeperRegistrationMode_Text	S	Serial signal indicating the gatekeeper registration mode
getGatekeeperNetworkAddress_Text	S	Serial signal indicating the address of the registered gatekeeper
getSystemH323ID_Text	S	Serial signal indicating the H323 ID
getSystemE164Alias_Text	S	Serial signal indicating the E164 Alias
getSystemSIPURI_Text	S	Serial signal indicating the SIP URI

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Show_Dialer_Keyboard_Is_Active	D	High if dialer keyboard is active
Phonebook_Search_Show_Keyboard_Is_Active	D	High if phonebook search keyboard is active
Connection_Not_OK	D	High if the connection between control system and device is NOT ok
To_Device	S	The commands that are sent to the device
Call_Status_Call_1_CallId_Analog	A	The call id of call 1
Call_Status_Call_2_CallId_Analog	A	The call id of call 2
Call_Status_Call_3_CallId_Analog	A	The call id of call 3
VideoInput2_DVI_Connected_State_C60_only_Analog	A	If a device is connected to the input connector DVI2. Only for Codec C60.
VideoInput3_Composite_or_YC_Connected_State_C60_only_Analog	A	If a device is connected to the input connector YC3. Only for Codec C60.
Video_Input_Source_2_Connector_Is_DVI_C60_only	D	If video input source 2 switcher is set to DVI. Only for Codec C60.
Video_Input_Source_3_Connector_Is_Composite_C60_only	D	If video input source 3 switcher is set to Composite. Only for Codec C60.
Video_Input_Source_5_Connector_Is_YC_C90_only	D	If video input source 3 switcher is set to YC. Only for Codec C90.
Call_Status_Call_1_ReceiveCallRate_Text	S	The call receive rate of call 1
Call_Status_Call_2_ReceiveCallRate_Text	S	The call receive rate of call 2
Call_Status_Call_3_ReceiveCallRate_Text	S	The call receive rate of call 3
System_Software_Version_Text	S	The software version installed on the codec
Auto_AnswerMute_Is_On	D	High toindicate that when auto answer function is on the microphones will be muted
Auto_AnswerMute_Is_Off	D	High toindicate that when auto answer function is on the microphones will NOT be muted
Preset1_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset2_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset3_Is_Defined	D	High to indicate that a preset has been stored at this

		position
Preset4_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset5_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset6_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset7_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset8_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset9_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset10_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset11_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset12_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset13_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset14_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset15_Is_Defined	D	High to indicate that a preset has been stored at this position
Preset2_Is_Defined	D	High to indicate that a preset has been stored at this position
Call_Status_Call_1_Is_Connected	D	High to indicate that call state of call 1 is connected (status="Connected")
Call_Status_Call_2_Is_Connected	D	High to indicate that call state of call 21 is connected (status="Connected")
Call_Status_Call_3_Is_Connected	D	High to indicate that call state of call 3 is connected (status="Connected")
Video_Input_Source_3_Connector_Is_YC_C60_only	D	If video input source 3 switcher is set to YC. Only for Codec C60.

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Message_Alert_IsActive	D	High when a Message Alert Is Active on the GUI
Message_Alert_Text	S	The text displayed In the active message alert
Message_Prompt_IsActive	D	High when a Message Prompt Is Active on the GUI
Message_Prompt_Title	S	The title of a displayed message prompt
Message_Prompt_Text	S	The text in a displayed message prompt
Message_Prompt_Option1_Text	S	The text for option 1 for the message Prompt popup
Message_Prompt_Option2_Text	S	The text for option 2 for the message Prompt popup
Message_Prompt_Option3_Text	S	The text for option 3 for the message Prompt popup
Message_Prompt_Option4_Text	S	The text for option 4 for the message Prompt popup
Message_Prompt_Option5_Text	S	The text for option 5 for the message Prompt popup
Message_Prompt_Option1_IsActive	D	A message prompt option 1 is active
Message_Prompt_Option2_IsActive	D	A message prompt option 2 is active
Message_Prompt_Option3_IsActive	D	A message prompt option 3 is active
Message_Prompt_Option4_IsActive	D	A message prompt option 4 is active
Message_Prompt_Option5_IsActive	D	A message prompt option 5 is active
Call_Status_Call_1_SupportsPresentation	D	Indicated whether call 1 has H.239 support or not
Call_Status_Call_2_SupportsPresentation	D	Indicated whether call 2 has H.239 support or not
Call_Status_Call_3_SupportsPresentation	D	Indicated whether call 31 has H.239 support or not
TString_Receive_Text	S	TString Receive Text
SString_Receive_Text	S	SString Receive Text
Phonebook_TotalRowsForSearch	A	Totals Rows found for phonebook search – regardless of result limit set.
Phonebook_SearchIsActive	D	Phonebook Search is active – no result received yet

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PARAMETERS:		
User Name	P	Enter the user name to be used when logging in to the Tandberg via Telnet.
Password	P	Enter the password to be used when logging in to the Tandberg via Telnet.
Phonebook Entries Per Screen	P	Enter the number of phonebook entries to display per screen. Default is 8d, max is 20d.
Max Characters	P	Enter the number of characters per phonebook entry. Default is 21, max is 24d.
Port Number	P	Select the port number from the dropdown list. This is only used by System Builder. The only valid port number is 23d.

TESTING:	
OPS USED FOR TESTING:	3.155.1240
SIMPL WINDOWS USED FOR TESTING:	2.11.27
CRESTRON DB USED FOR TESTING:	20.07.012.00
DEVICE DB USED FOR TESTING:	22.06.003.00
SAMPLE PROGRAM:	Tandberg C90 + C60 v1.3 PRO2 Demo
REVISION HISTORY:	V. 1.1 – Original Release. V. 1.2 – Required version for TC2.0 which will not work properly with module V.1.1 V. 1.3 – With added support for new functions in TC2.1. Compatible with TC2.0