CS-64

Administration & Setup Guide

CS-64-F

CS-64

THE POSSIBILITIES ARE ENDLESS

Table of Contents

Release notes:

4/1/2021	Ver 2.1.34	Adds EIA Tone feature
12/11/2020	Ver 2.1.28	Fixes issue with slow volume adjust (requires Atmel IC firmware upgrade to be effective), Fixes audio bleed through issue, fixes log file download bug
5/9/2020	Ver 2.1.21	Fixes bug related to Privacy mode while operating in Unicast
3/16/20	Ver 2.1.17	Introduce new features: DTMF Steering, check boxes for RTP & RTCP keep alives. Fixed bugs: Audio bleed through.
7/1/19	Ver 2.1.0	Introduce CB Mic operation (CS-74), Wall mode, Unicast mode (CS-64), Audible IP address announce. Implemented security patches, add support for Speex (CS-74). Bug fixes: No PBX server IP field blank, footswitch & handset selection HF, Tick/audio gap on PTT.
9/21/18	Ver 2.0.31	Add "Mic Boost" feature. Bug fixes – SIP disconnect protocol issue when save & reload executed, SIP registration & autoconnect issue after save & reload, SIP Privacy PTT issue – constant Tx with no PTT active.
7/23/18	Ver 2.0.23	Bug Fixes - issue concerning static to dhcp reboot freeze up, issue saving Log File priority changes.
6/6/18	Ver2.0.21	Fixes TTL (Time To Live) bug.
5/4/18	Ver2.0.20	Bug fixes – Device ID reporting (SIP), Constant RTP output during call (SIP), RTCP timeout (SIP)
4/20/18	Ver 2.0.15	Implemented new "simulcast" feature (SIP Only), Improvements to Handsfree Audio, normalized levels between hands free, gooseneck & headset operations. Bug fixes – Firmware upgrade process, SIP messaging device ID.
3/9/18	Ver 2.0.0	New release for new & improved CS-74/64. This version is not backward compatible. **Applies only to SN-2180xxxx and above. Major hardware changes. New features added: Privacy, full duplex Hands Free.**
12/28/17	Ver 1.1.9	Added: SIP Registration Fail timer field, PTT DTMF * # feature. Fixed Auto Answer check box bug on CS-74. No Changes to Multicast functions & features.
9/10/17	Ver 1.1.8	No changes to multicast functions & features.
5/1/17	Ver 1.1.7	Added features: Call w/o PBX, HTTPS, QoS(DSCP). Fixed bugs with: single channel reload, device type switching. Implemented several changes to web page layout and descriptions.
10/3/16	Ver 1.1.6.1	Added feature: SIP VAD.
8/30/16	Ver 1.1.6	Added features: PTT Mutes Speaker, RTCP. Fixed bugs for : syslog, 20ms packet size, SIP 480 responses, NTP. Minor webpage verbiage changes
6/15/15	Ver 1.1.4	Added features: call without registration, RTP keep alive, single channel reload, SNMP, device type switching. Improved call status reporting.
12/15/15	Ver 1.1.3g	Fix files size limits in OS kernel. Must be loaded on any device with pre-1.1.4 firmware to allow further firmware upgrades.
12/8/15	Ver 1.1.3.2	Fix device feeze up after unknown period of time.

3/18/15	Ver 1.1.3	Improvements to code structure, add microphone limiter circuitry.
11/24/14	Ver 1.1.2	Patch "shellshock bash" vulnerability, improvements to audio quality, improvements to volume adjust controls, add Listen Only feature to channels, remove half duplex mode, fix various other bugs.
9/22/14	Ver 1.1.1	Fixed numerous bugs discovered in 1.1.0
6/11/14	Ver 1.1.0	First official release

1.0   Product Overview

1.1   Product Description

The CS-64 is a four channel multicast endpoint device capable of transmitting or receiving on up to (4) multicast groups. The CS-64 supports features such as, headset or handset connectivity, foot switch operation, syslog for device management and utilizes Linux as its core OS.

1.2   Product features

- **Display** – Provides information such as device name, user name and line/channel assignments as defined by unit administrator.

- **Volume Control** – Each channel has individual volume control so users can set levels to their liking.

- **Loud Speaker** – Each CS-64 is equipped with a built in loud speaker. Administrators have access to master volume control via web page configuration. Audio for all lines is mixed.

- **LED's** – LED's on the front panel provide visual indication of audio activity for its respective channel.

- **PTT Buttons** – Buttons on front panel serve primarily as PTT (Push to Talk) for the respective channel. A single press & release will activate Hands Free mode for the respective channel.

- **F1/F2 Button** – These buttons have been optionally added to provide expanded capability of the device. Currently used to enable privacy feature, with more functions to follow in near future.

- **Ethernet** – The CS-64 is equipped with a single Ethernet ports for connecting to your network. The port is PoE compliant for powering the device from a PoE Ethernet switch.

- **Handset/Headset** – The CS-64 can be equipped with the option to connect either a mono headset or PTT handset. A handset or headset may be connected via the RJ-25 port on the back of the device. Plantronics' HW-251N can be connected by means of optional adapter cord.

- **Footswitch** – The CS-64 can be equipped with an optional foot switch for PTT activation. Footswitch will connect to the handset port on back of unit. Pins 1 & 6 are used for contact closure input to activate PTT.

- **Gooseneck Mic** – The CS-64 is typically equipped with a close talking gooseneck microphone. For listen only models this option is removed.

- **Built In Mics** – The CS-64-F has been equipped with microphones built in to the enclosure specifically for use with the Hands Free feature.

2.0 Administration

2.1 Login

The CS-64 is configured via browser interface. CS-64's ship set to DHCP as default. Upon connection to appropriate network the device will automatically acquire an IP address via DHCP. This address will be indicated on the device's display during boot up.

ETC recommends using Chrome or Firefox to ensure best browsing experience. IE9 and above can be used as well.

Once the IP address has been determined, open a browser from a PC that is networked with this machine. Type the IP address into the URL bar of the browser and press enter. The CS-64 Login screen is shown in Figure 1.

Default Username is: **admin**, default password is: **admin**. Upon logging in, administrative login credentials can be changed to ensure security of system configuration.

Figure 1

2.2 System Settings

After logging in, you are brought to the System Information page where administrative functions of the CS-64 are presented as tabs across the top of the window. See Figure 2.
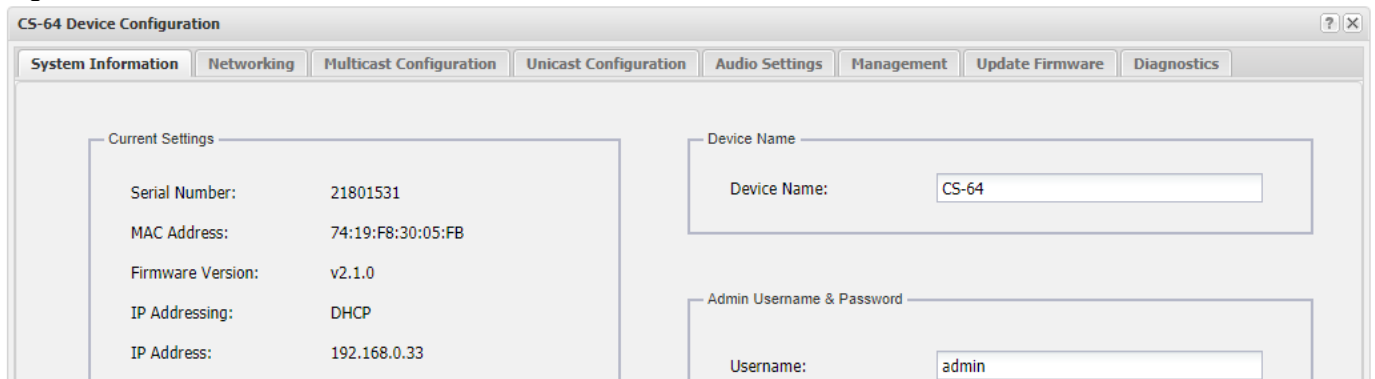
Figure 2

2.3   Menu Options

The menu selections are displayed as tabs across the top of the web page. Each section will be explained in detail, later in the guide. Figure 3 shows the options available.

Figure 3

- **System Information** – This page displays device information and admin definable fields for device name and login credentials.
- **Networking** – This page allows the administrator to configure IP settings for the device and select static or DHCP.
- **Multicast Configuration** – This page allows the administrator to configure multicast related details for the respective channels.
- **Audio Settings** – This page allows the administrator to set master volume & mic gain as well as display brightness/contrast. Other feature settings are accessible from this page.
- **Management** – This page provides the administrator with access to settings for syslog reporting, device type & https settings. New management related features will be added to this page as they are developed.
- **Update Firmware** – This page allows the administrator to upgrade device firmware.
- **Diagnostics** – This page allows the administrator access to diagnostic tools such as activity log & config file download.

2.4　System Information Page

The System Information page displays pertinent information about the device such as IP address, serial number, firmware version etc. Additionally there are fields the administrator may use to identify the specific device and change the device login credentials for security purposes. See Figure 4 below.

Figure 4

- **Device Name** – Enter any alpha-numeric sequence to uniquely identify the device. Note, information entered here will also indicate on the device display.
- **Username** – Enter new login username. Default is: admin
- **Password** – Enter new login password. Default is: admin
- **Confirm Password** – Renter new password to confirm.

Upon making changes you must click **Save Configuration** if making additional changes on other pages or click **Save Configuration & Reload** to activate the changes. These buttons are located at the bottom of the page.

2.5   Networking Page

The Network Settings page allows the administrator to configure the device with a static IP address or configure using DHCP. Device is default DHCP and IP address will be indicated on the display during boot up. See Figure 5 below.

Figure 5

- **IP Address –** Enter static IP address for the gateway, default is 192.168.0.240.
- **Subnet Mask –** Enter the Subnet Mask for the gateway.
- **Default Gateway –** Enter the Default Gateway for the gateway.
- **DNS Server 1 –** Enter the IP address of the primary DNS server if DNS will be utilized.
- **DNS Server 2 –** Enter the IP address of the secondary DNS server if DNS will be utilized.
- **NTP Server –** Enter the IP address of the desired NTP server. If field left blank device will not send NTP requests
- **DSCP/QoS –** Select either Default Forwarding or Expedited Forwarding from the drop down. Selecting Expedited Forwarding will tag RTP packets with DSCP bits 46 (EF). RTP packets are not tagged if Default Forwarding is selected. Device is set from factory to Default Forwarding.
- **Audible IP Address –** Enabling this allow the device to announce it IP address during boot up.

When finished entering IP information click the **Save Configuration & Reload** button at bottom of screen. Once finished with the reload, click the **Reboot** button.

Rebooting is required after making device IP address changes.

2.6   Multicast Configuration Page

The Multicast Configuration page allows an administrator to configure the respective channels with multicast address & port info. See Figure 6 below.

Figure 6

- **Group 1-4 Address** – Allows the administrator to enter multicast addresses for the respective channels 1-4. It is highly recommended to utilize different multicast addresses for each of the respective channels though not required.
- **Ports** – This field allows the administrator to assign ports associated with each channels multicast address. Note: ETC highly recommends using different and even number ports for each of the multicast channels.   This ensures compatibility with other 3rd party VoIP applications.
- **Group Name** – This field allows the administrator to assign a name to each respective channel. This channel identifier will also be presented to the end user on the device display.   It is recommended to use uppercase letters and allows a maximum of 4 characters per channel.
- **Tx Codec** – This field allows the administrator to assign the CODEC to be used by each channel. Selections are: PCMU (G.711 uLaw), PCMA (G.711 ALaw) & G.729 as seen in the drop down in Figure 6 above.
- **Listen Only** – Allows the administrator to select channels for listen only mode should this feature be desired.

2.7   Unicast Configuration Page

The Unicast Configuration tab allows the administrator to configure the respective channels with unicast address & port info. If unicast is enabled, multicast is disabled. See Figure 7.
*Please note. Enabling Unicast mode disables Multicast operation.

Figure 7

- **Channel 1-4 Address** – Allows the administrator to enter IP Addresses for the respective channels. Channels can be configured to use the same IP address or all different.
- **Destination Port** – Enter destination port of channel for which unicast traffic will be sent.
- **Listen Port** – Enter listen port from which channel will receive unicast audio traffic.

2.8   LMR / EIA Tone Settings

The LMR Settings page allows the administrator to enable and configure Land Mobile Radio EIA tones for each channel of the CS-64

Figure 9

- **EIA Tone Remote Enable** – Checking this box enables the EIA Tone Remote feature within the CS-64.

- **PTT Active 2175 Hz** – The user definable filed just to the right allows the administrator to set the duration, in milliseconds, of the initial PTT tone. Anytime PTT on a CS-64 is pressed the device will send a 2175Hz tone at 0dB for the duration specified.

- **Channel 1-4 F1-F17** – The fields next to each Fx allows the administrator to set a 4 character name for each of the EIA tone frequencies. These 4 character names will be displayed on the respective channels of the CS-64. The user will press and release the F1 button then press the respective channel PTT button to scroll through any configured tones then press and release the F1 button again to set. When the user presses the PTT button the device will send the respective Tone to the radio system.

The following table is a quick reference of the respective tones:

Tone	Frequency*	Level & Duration
F1	1950 Hz	0 dBm for 40 msec
F2	1850 Hz	0 dBm for 40 msec
F3	1750 Hz	0 dBm for 40 msec
F4	1650 Hz	0 dBm for 40 msec
F5	1550 Hz	0 dBm for 40 msec
F6	1450 Hz	0 dBm for 40 msec
F7	1350 Hz	0 dBm for 40 msec
F8	1250 Hz	0 dBm for 40 msec
F9	1150 Hz	0 dBm for 40 msec
F10	1050 Hz	0 dBm for 40 msec
F11	950 Hz	0 dBm for 40 msec
F12	850 Hz	0 dBm for 40 msec
F13	750 Hz	0 dBm for 40 msec
F14	650 Hz	0 dBm for 40 msec
F15	550 Hz	0 dBm for 40 msec
F16	2350 Hz	0 dBm for 40 msec
F17	2450 Hz	0 dBm for 40 msec

2.8 Audio Settings Page

The Audio Settings page allows the administrator to adjust specific device properties not covered in other configuration pages such as master volume settings, LCD contrast and other feature settings. See Figure 8.

Figure 8
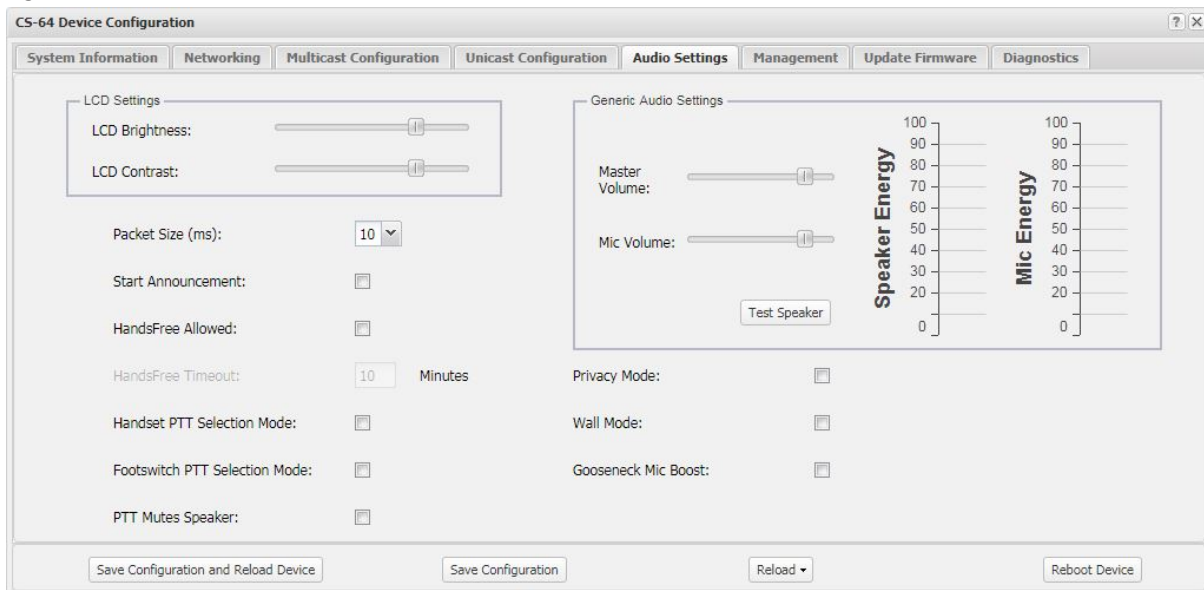
- **LCD Settings** – Allows the administrator to adjust brightness & contrast of device display. Slide right to increase, left to decrease.
- **Audio Settings** – Allows the administrator to adjust master speaker volume & microphone gain of device. Speaker & microphone level meters are provided as simple diagnostic tools to confirm if device is working properly. Master volume level suggested is 0 to10 and Mic Volume level suggested is 0 to10.
- **Test Speaker** – Pressing this button plays a test message on the device.
- **Packet Size** – From the drop down either 10ms or 20ms packet size can be selected depending on use case. It is highly recommended to leave the setting at 10ms when used with adjacent CS-64's. The 20ms setting is used in special situations for interfacing with 3rd party equipment which does not support 10ms packet size.
- **Start Announcement** – If this box is checked the device will play a message indicating it is being restarted any time the device experiences a reload or reboot.
- **Handsfree Allowed** – Check to enable hands free functionality. A user may simply press and quickly release the desired channel PTT button to engage hands free operation. Device display will indicate "HF" on the selected channel.
- **Handsfree Timeout** – This setting allows an administrator to set a time limit, in minutes, the hands free mode will stay on if a user forgets to turn it off after use. ETC recommends setting this for 10-15 minutes. Device default is 10 minutes, max is 60 minutes.
- **Handset PTT Mode** – This option should only be checked if a PTT handset will be connected to the device. When selected the user will select the channel to Tx/Rx on, an indicator will appear on the display above the selected channel and to talk the user will press the PTT button on the handset
- **Footswitch PTT Mode** – This option should only be checked if the device will have a footswitch connected for activating PTT on a selected channel. Once active, channel buttons on device

function to select the channel user will transmit on, the footswitch must then be pressed to enable PTT on the selected channel.

- **PTT Mutes Speaker** – If this box is checked the speaker will be muted when PTT is pressed on any channel. If unchecked the device is in full duplex mode on respective PTT channel.
- **Speaker Energy** – Provides visual indication of audio being produced by the built in speaker.
- **Mic Energy** – Provides visual indication of audio sensed at the built in microphone.
- **Privacy** – Enabling this feature allows user to select a specific channel to have a private conversation on. Only works if a handset or headset is connected. User must press the F2 button then select desired channel to converse with. Incoming audio on unselected channels will be routed to the built in speaker.
- **Gooseneck Mic Boost** – Enabling this feature adds 9dB of gain to the gooseneck mic sensitivity for use in mix environments with earlier versions of CS-64's (pre-218 serial number) or other 3rd party VoIP products.

The remainder of this page intentionally left blank.

2.9   Management

The Management tab currently provides an administrator access to input Syslog Settings for reporting device status, selecting device type and enabling non secure browser access. Additional features will be added to this page in the near future.
See figure 9 below.

Figure 9

- **Syslog Active** – Click the check box to enable Syslog reporting feature, uncheck to disable.
- **Syslog Server** – Input the respective IP address of the Syslog server where status reports will be sent.
- **Syslog Server Port** – Input the respective port the device will be reporting status to.
- **Syslog Facility** – Click the arrow for a drop down menu to select reporting ID. Selecting one of the displayed selections will cause the device to report activity with this 'ID' which can be used for filtering and/or sorting messages from specific devices.
- **Severity Level** - Click the arrow for a drop down menu to select reporting priority.
  - o   Verbose – All messages are reported
  - o   Critical – Only messages classified 'critical' will be reported.

Set device Type – This drop down allows an administrator to change the device type from a SIP device (CS-74) to a RTP device (CS-64) and vice versa. To change device type, click the drop down, select the device type (SIP or RTP) then click the **Set Device Type** button to activate the change.

WARNING! Please refresh (shift F5) your browser window immediately after changing the device type to avoid configuration data loss.

- **Enable HTTP** – Unchecking this option allows secure (https) browsing only to the device for configuration. ETC utilizes a self-signed certificate for secure browsing. This feature is factory set to enable.

Note: Syslog message definitions are provided in appendix 4.2 of this guide.

2.10   Update Firmware

The Update Firmware page allows an administrator to easily & quickly update firmware on a device. From time to time ETC will send out firmware releases to fix bugs or add features. Simply click the browse button and navigate to where the firmware file has been saved then click Update Firmware. A pop up window will appear indicating status of firmware update. See Figure 10.

Figure 10
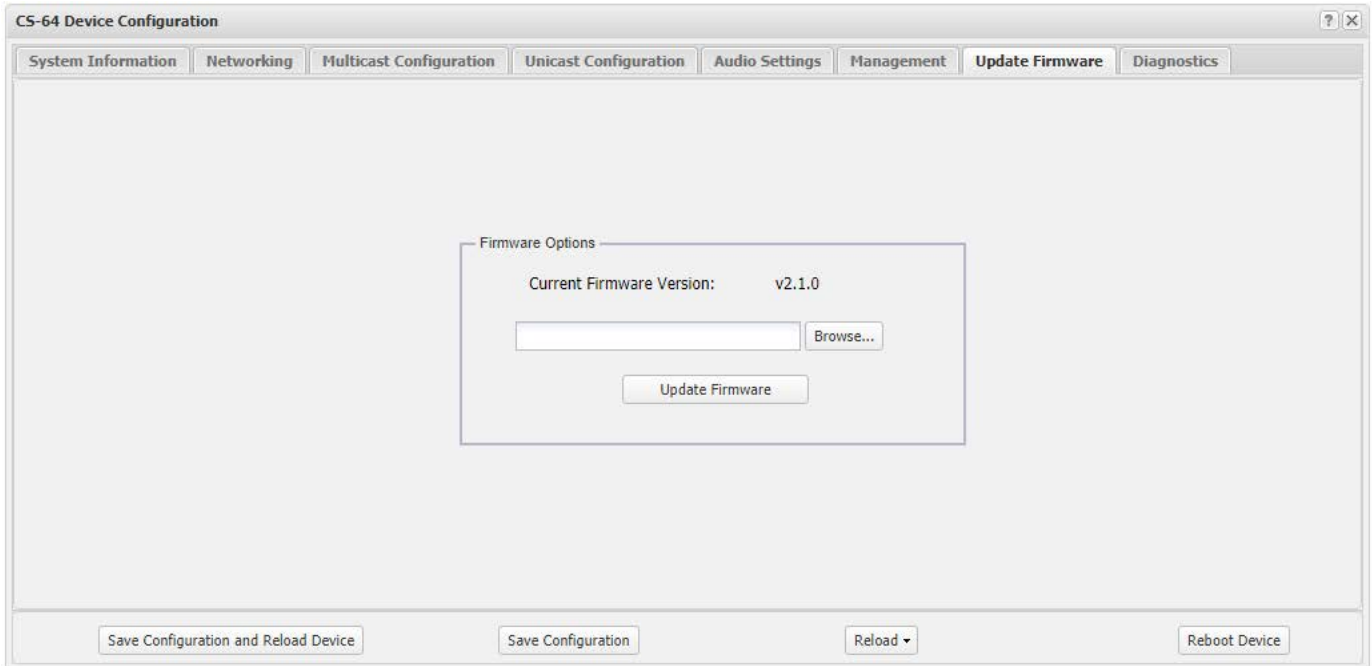
NOTE: AFTER UPDATING FIRMWARE YOU MUST (Shift + F5) REFRESH YOUR BROWSER WINDOW FOR NEW FEATURES TO BE DISPLAYED. Most browsers will cache previous pages of the device and therefore a refresh must be performed after a firmware update.

2.11   Diagnostics Page

The Diagnostics page has been provided to allow an administrator access to troubleshooting tools such as Activity Log. This tool will be useful in providing ETC information specific to the device to aid in diagnosing problems. See Figure 11.

Figure 11

- **Config File Download –** Allows the administrator to down load the devices current configuration to a .conf file which can be read by any text editing application.
- **Browse –** Allows administrator to find and select CS-64 configuration file for upload.
- **Config File Upload –** Initiates uploading of the selected configuration file.
- **Log Level –** Sets the logging level for the device. Level 6 collects the most data & level 1 the least. ETC recommends leaving log level set to 6 for diagnostic purposes.
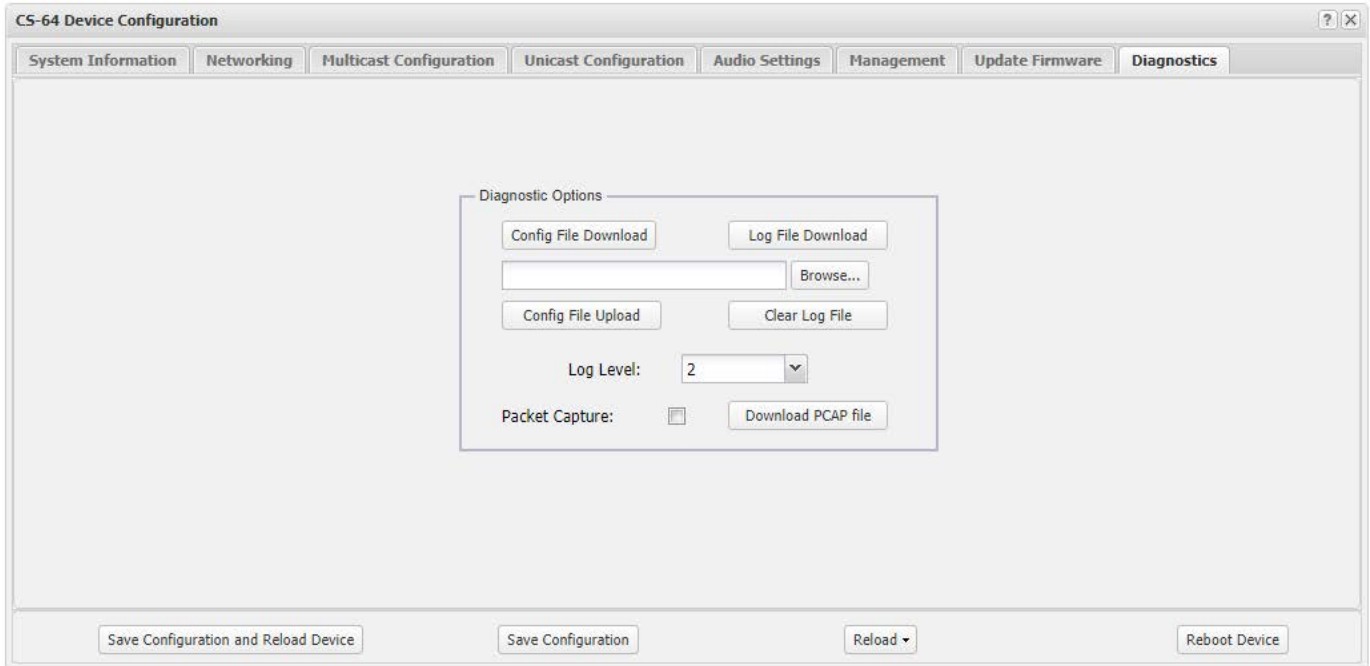- **Clear Log File –** This button clears data in log file to allow for clean data capture.
- **Log File Download –** Clicking this button will down load the Log file to destination of choice. The file downloaded is .conf which can be read by any text editing application.
- **Packet Capture –** Clicking this checkbox will start a packet capture on the device. A pop up will indicate "uncheck box to stop packet capture". When packet capture is stopped a pop up will indicate "Press Download PCAP file button" to download the packet capture to your PC.
- **Download PCAP File –** Press this button to download the PCAP file after packet capture is complete.

3.0   Frequently Asked Questions

Q: What is the IP address of device?

A: When the device boots up the IP, Mask , Gateway and MAC address are presented briefly on the display. You can also press button 1 & 4 at the same time and IP address will be displayed on the device.

Q: The device is not powering up?

A: If you are using a POE switch, make sure the patch cord is seated securely in the jack to power up the device. If you are not using a POE switch then you must use optional local PoE injector type power supply.

Q: How do I change the device IP?

A: Once the device has booted up and you have identified its IP address, open a browser and browse to the device's IP address, Login and go to Network settings page to change the network settings.

Q: How do I change a channel's label?

A: Labels can be changed via the "Multicast Configuration" web page. Max of 4 alphanumerical characters. It is recommended to use upper case characters.

Q: User does not hear audio?

A: Is it on a specific channel or no audio from any channel?
   1.   If a single channel, check if channel/s is configured correctly. Addresses used must be in the 'multicast' range of IP addresses and even numbered ports should be used.
   2.   Check the Audio Setting page and verify Master Volume is set to 70%-80%.

Q: IP address of device does not change?

A: The device requires a reboot after changing the IP address. A 'Save & Reload' does not activate IP address changes. Click the reboot button on the web page. Note: after reboot, you will most likely need to refresh your web page (F5).

Q: User reports unable to transmit?

A: Is user pressing PTT button for respective channel?

A: On the 'Audio Settings' web page is there activity on the 'Mic Energy' meter, if yes the physical microphone is working.

A: Check Mic volume on device 'Audio Settings' webpage, should be at 40% or higher depending on the user.

4.0 Appendix

4.1 Specifications

Channels
- (4) Multicast or unicast channels

Call Types
- Multicast IP broadcast
- Unicast

Signaling
- None

Interfaces
- 12″ Gooseneck Microphone
- Handset w/PTT
- Plantronics Mono Headset
- Footswitch (PTT only)
- NIC, (1) RJ45, 10Mb Ethernet,

Network Requirements
- 10 Base T, (full duplex)
- IEE 802.3af (PoE) compliant
- Protocols - RTP, UDP, TCP, HTTP, Syslog, DHCP, NTP, IGMP, DNS, SFTP

Dimensions
- Width - 4" / 102 mm
- Depth – 5.5" / 140 mm
- Height – 5.5" / 140 mm
- Weight – 1.1 lbs / 525 g
- 12"/305 mm - Gooseneck microphone

Media
- Bandwidth - supports codecs: G.711 80 kbps, G.729 20kbps.
- RTP, UDP
- Linux OS,
- Audio Latency – Less than 50 ms
- Audio – 300Hz-3kHz, 1 Watt RMS

Management
- Browser based - Internet Explorer, Google Chrome
- Support HTTP & HTTPS (self signed certificate)
- Upgradeable device firmware via file upload
- Syslog output
- SNMP output
- QoS

Power
- 48 VDC, IEEE 802.3af, Alt A & B, Power over Ethernet compliant (PoE).

Thermal
- 3 Watts
- 10 BTU/hr
- Cooling – Ambient air

Other
- Handset/Headset Pinout (RJ-25)
    - 1 – PTT+
    - 2 – EAR-
    - 3 – MIC+
    - 4 – MIC-
    - 5 – EAR+
    - 6 – PTT-

Optional Accessories
- PTT Belt pack, PN -2318
- Mono Headset, PN - HW251N (Plantronics)
- Foot switch, PN - FP-115
- Handset, PN - TH-3
- Dongle headset/footswitch combo, PN–CDA-FPHW251
- Dongle, Headset no PTT, PN – QD-RJ25

4.2   Syslog Messages

Below is a list of generic Syslog messages the CS-64 can produce which can be used with a customer provided Syslog Server. The messages have been classified into 2 categories; Critical & Verbose.

Verbose - "Device type is "
Verbose - "RTPD started"
Verbose - "No channels configured ! Please check the cfg file"
Verbose - "Old_Dev mode is "
Verbose - "Connected to MIC"
Verbose - "RTPD TX part done"
Verbose - "Connected to Speaker"
Verbose - "RTPD RX part done"
Verbose - "Mixer thread started"
Verbose - "Player thread started"
Verbose - "Can't install SIGUSR2 signal !"
Verbose - "Can't install SIGPIPE signal !"
Verbose - "External Mic inserted"
Verbose - "External Mic is present"
Verbose - "External Mic removed"
Verbose - "External Mic absent"
Verbose - "Start playing playfile"
Verbose - "Error opening playfile"
Verbose - "Stop playing playfile"
Verbose - "Error reading playfile"
Verbose - "fill_samples_buf: wrong len "
Critical - "spk: can't open device "
Critical - "spk: can't allocate hardware configuration structure"
Critical - "spk: hardware configuration structure cannot be assigned to device"
Critical - "spk: access method cannot be configured : " << snd_strerror(err);
Critical - "spk: can't get access method"
Critical - "spk: access method set failed : "
Critical - "spk: can't configure format : "
Critical - "spk: can't get format : "
Critical - "spk: format set failed : "
Critical - "spk: can't set sample rate : "
Critical - "spk: can't get sample rate : "
Critical - "spk: sample rate set failed : "
Critical - "spk: can't set channels : "
Critical - "spk: can't get channels : "
Critical - "spk: channels set failed : "
Critical - "spk: can't set buffer size : "
Critical - "spk: can't get buffer size : "
Critical - "spk: buffer size set failed : "
Critical - "spk: can't set period size : "
Critical - "spk: can't get period size : "
Critical - "spk: period size set failed : "
Critical - "spk: can't configure hw_params : "
Critical - "spk: buffer overrun cannot be recovered, snd_pcm_prepare fail: "
Critical - "spk: ESTRPIPE"
Critical - "spk: suspend cannot be recovered, snd_pcm_prepare fail: "
Critical - "spk: EBADFD"
Critical - "spk: unknown error: "
Critical - "spk: Invalid poll descriptors count"
Critical - "spk: Unable to obtain poll descriptors for write: "
Critical - "spk: Write error: "
Critical - "spk: Wait for poll failed"

Critical - "g729ab_decode: Invalid parameter !"
Verbose - "\nStat: total streams: "
Verbose - "Stat: streamX: [ChX] ssrc: 0x"
Critical - "*** rw_and_poll_loop failed, restarting ..."
Critical - "mic: can't open device "
Critical - "mic: can't allocate hardware configuration structure : "
Critical - "mic: hardware configuration structure cannot be assigned to device : "
Critical - "mic: access method cannot be configured : "
Critical - "mic: can't get access method : "
Critical - "mic: access method set failed : "
Critical - "mic: can't configure format : "
Critical - "mic: can't get format : "
Critical - "mic: format set failed : "
Critical - "mic: can't set sample rate : "
Critical - "mic: can't get sample rate : "
Critical - "mic: sample rate set failed : "
Critical - "mic: can't set channels : "
Critical - "mic: can't get channels : "
Critical - "mic: channels set failed : "
Critical - "mic: can't set buffer size : "
Critical - "mic: can't get buffer size : "
Critical - "mic: buffer size set failed : "
Critical - "mic: can't set period size : "
Critical - "mic: can't get period size : "
Critical - "mic: period size set failed : "
Critical - "mic: can't configure hw_params : "
Critical - "mic: buffer overrun"
Critical - "mic: buffer overrrun cannot be recovered, snd_pcm_prepare fail: "
Critical - "mic: ESTRPIPE"
Critical - "mic: suspend cannot be recovered, snd_pcm_prepare fail: "
Critical - "mic: EBADFD"
Critical - "mic: unknown error: "
Critical/Verbose - "alsa_read: "
Verbose - "channel_disabled: Invalid channel: "
Verbose"Disabling MIC"
Critical"enable_channel: Invalid channel: "
Verbose - "Enabling MIC on channel"
Critical - "random32: failed"
Critical – "rebooting"
Critical – "booted"

CS-64/74 Hardware Product Limited Warranty

ETC warrants that your ETC hardware product shall be free from defects in material and workmanship for One Year, beginning from the date of purchase. Except where prohibited by applicable law, this warranty is nontransferable and is limited to the original purchaser. This warranty gives you specific legal rights, and you may also have other rights that vary under local laws

ETC's entire liability and your exclusive remedy for any breach of warranty shall be, at ETC's option, (1) to repair or replace the hardware, or (2) to refund the price paid, provided that the hardware is returned to the point of purchase or such other place as ETC may direct with a copy of the sales receipt or dated itemized receipt. Shipping and handling charges may apply except where prohibited by applicable law. ETC may, at its option, use new or refurbished or used parts in good working condition to repair or replace any hardware product. Any replacement hardware product will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer or for any additional period of time that may be applicable in your jurisdiction. This warranty does not cover problems or damage resulting from (1) accident, abuse, misapplication, or any unauthorized repair, modification or disassembly; (2) improper operation or maintenance, usage not in accordance with product instructions or connection to improper voltage supply; or (3) use of consumables, such as replacement batteries, not supplied by ETC except where such restriction is prohibited by applicable law.

Before submitting a warranty claim, we recommend you contact ETC support at support@essentialtel.com for technical assistance. Valid warranty claims are generally processed through the point of purchase during the first thirty (30) days after purchase; however, this period of time may vary depending on where you purchased your product – please check with ETC for details. Warranty claims or other product related questions should be addressed directly to ETC. The addresses and customer service contact information for ETC can be found in the documentation accompanying your product and on the web at www.essentialtel.com.

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