

Description:

This Document list and explains the revisions of all of the versions of the Converge Pro Product, software and firmware.

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1. Introduction
2. Install and Upgrade Procedures
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4. Revision/Upgrade History

Section 1: Introduction

1-1 Description

This document will assist you in determining if Converge Pro Products need to be upgraded, how to install Console, and what Product is compatible with which Console and firmware version as well and updates and resolved issues.

1-2 Is an upgrade necessary?

First, with the knowledge of the current Firmware version loaded onto a Converge Pro Product, please refer to the Revision/ Upgrade History in Section 4.

Evaluate your needs – do you require the enhancements that come with a firmware upgrade? If you are satisfied with how your system performs, you might not need the enhancements that come with upgrading. Also check to make sure that your unit is compatible with your version of Console. See section 3 for compatibility charts. Please refer to the Console Revision/Upgrade History in Section 4 for a synopsis of each upgrade.

Section 2: Install and Upgrade Procedures

2-1 Converge Console System Requirements

The minimum system required to run Converge Console which is the software used to Program Converge Pro units are:

Supported Operating Systems

Windows XP

Windows 2000 SP4 Rollup

Windows Vista 32bit (64bit not supported)

Minimum System Requirements

Processor: 300 MHz Pentium III (or AMD equivalent)

RAM: 256 Megabytes RAM

Video: 1024x768 SVGA (16 bit)
Hard Drive: 40 Megabytes
Network: 10/100 Mbps Ethernet
USB Port: Version 1.0 *
CD Drive: CD/DVD ROM

Minimum Software Requirements

Browser: Microsoft Internet Explorer version 5.5 or higher
Flash: Adobe Flash Version 9.0 or higher
Java: Sun Microsystems Java Runtime Environment version 6.0 or higher
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2-2 Firmware and Console Versions

Each version of Console contains the latest firmware release available at the time of the Console release. In order to install a newer version of Converge Console to your PC you must remove any older versions from your PC. See compatibility chart in section 3

The firmware upgrade files are located in the accompanying Console version (refer to Compatibility Between Console and Firmware in Section 3 and Console Revision/Upgrade History in Section 4 for additional information on compatibility and upgrade history).

Version 2.0.30 of Converge Console includes version 1.1.7 which is compatible with all Versions of firmware from 1.0.4 - 1.0.5.C (see Compatibility between Console and Firmware in Section 3). To switch between versions of Converge Console you will need to use Console Manager which is included with Console version 2.0.30. Console Manager is a program that allows you to switch between version 2.0.30 and 1.1.7 Since there are functions available in 2.0.30 that are not available in Firmware versions 1.1.5.C and earlier.

2-3 What do I need to upgrade?

When upgrading a system you will need either a USB Cable or a LAN cable* (*Straight through or Crossover). You will also need Converge Console installed on your PC.

Section 3: Compatibility between Console and Firmware

Description

As ClearOne audio conferencing and sound reinforcement Products are enhanced, it is often necessary to upgrade the Console software and the units firmware to take advantage of the latest features and functionality. Use the chart below to determine which firmware and software versions are compatible.

Console Version	Firmware Version	Controller Builder	Supported Units	OS	Configuration File Compatibility
1.0.4	1.0.4	1.2.41	880 840T TH20 8i	Windows XP Windows Vista 32	.psr (converted) .cvg (native)
1.1.5	1.0.4 1.1.5 1.1.5.C	1.3.3	Added support for: 880T SR 1212	Windows XP Windows Vista 32	.psr (converted) .cvg (native)
1.1.7	1.0.4 1.1.5 1.1.5.C	1.3.3	No added support. Maintenance release w/ version 2.0.30	Windows XP Windows Vista 32	.psr (converted) .cvg (native)
2.0.30	2.0.28	2.0.30	Added support for: 880TA SR 1212A	Windows XP Windows Vista 32	.psr, (converted) .cvg (converted) .cnv (native)

UNIT	Firmware Version			
	1.0.4	1.1.5	1.1.5c	2.0.28
840T	X	X	X	X
880	X	X	X	X
8i	X	X	X	X
TH20	X	X	X	X
880T		X	X	X
SR 1212		X	X	X
880TA				X
SR 1212A				X

Example:

If you have Console 1.0.4, you see on the chart that the 880TA and SR1212A are not compatible with Console and firmware versions prior to 2.0.28. Therefore if you need to connect to an amplifier unit you will need to upgrade your Converge pro units that are 1.1.5.C and lower units to firmware 2.0.30 in order to add and Amplifier series Converge Pro unit to your system.

2.0 Firmware upgrade Procedure

If Converge Console has detected that the connected site requires a firmware upgrade. If the connected site contains units that are Version 2.0.28, please remove them from the expansion bus prior to performing the firmware upgrade. Please follow the steps below to upgrade the 1.X units to 2.0.28

Step 1: Remove any 2.0.28 units from the stack by disconnecting the expansion bus link cable from the 1.X units.

Step 2: Re-connect to the 1.X stack with Console 1.1.7 and save site file to your computer. Switch to Console 2.0.30

Step 3: Download the 2.0.28 firmware file to the stack of units.

Step 4: The units will default and reboot after the download of 2.0.28 firmware. The 1.X to 2.0.28 upgrade requires the firmware to be loaded twice to complete the version upgrade. All unit device IDs will need to be reset

Step 5: Reconnect to the stack with Console. Download 2.0.28 a second time to the units. The units will reboot.

Step 6: Units are fully upgraded

Step 7: Verify units have been upgraded by check firmware version on the front panel.

Step 8: Reconnect all 2.0.28 units to the updated stack

Firmware and Software Compatibility Notes: If you connect a unit that is not available in the version of Converge Console you will not see it in the devices list (for example when running Console 1.0.4 connected to an 880TA, the 880TA will be unavailable in the software).

Section 4: Converge Pro Revision / Upgrade History-Ware Version

1.0.4 Converge Pro original release 9/27/07(880, 840T, 8i & TH20)

1.0.5

Firmware and Converge Console Version 1.0.4 & Controller Builder 1.2.41

Converge Pro - Console 1.0.4 Known Issues:

USB Connection Failure:

At times, the initialization of USB connection between the Console and the Converge Pro may fail. This can be identified by the appearance the PC is frozen. If this occurs, disconnect the USB cable between the PC and the Converge Pro Product. Reboot the Converge Pro Product and reconnect to the PC. The root cause of this behavior is not known at this time. This issue has a low occurrence.

Adding/Removing Mixers while connected to Console:

Console does not dynamically recognize units physically being added or removed from a site while connected. The software requires a re-synchronization to the site by disconnecting and reconnecting through the application. (See the adding and removing application note)

Controller Builder Software Application Compatibility:

Along with the Converge Pro introduction there will be a new release of the Controller Builder software application to allow Programming of the table top controller to control new Converge Pro Products. For Proper operation of the Console application the Controller Builder Software will need to be updated on the PC. All Controller Builder files are backward compatible with the new revision.

Timed Events:

A minimum of a 1 minute time interval between consecutive scheduled timed events is required for Proper execution by the Converge Pro. Potential Problems if multiple events are scheduled within the 1 minute interval may include:

- Events executing out of order
- Events executing twice
- Events not executing

SNMP Agent does not support TE command:

The SNMP agent for this release does not support the "TE" (on-off hook) command on the 840T and TH20 telephone hybrids. However, other telephone functions are supported and can be accessed from the MIB. The TE support will be added on a future release.

Device Log Clears

The Converge Pro device log has 256 Kbytes allocated for logging events. Once the log reaches the 256 Kbytes, it will automatically delete the file and re-start recording. The user should download device log file prior to reaching file limit (if data is to be retained).

PA Adapt not functional

PA Adapt does not function in this release

Drag and Drop Mic AV Objects brings all filters in as PEQ's

In Console 1.0.4 when any mic object is dragged and dropped all filters saved with the object are imported as PEQ's regardless of the type of filter that was saved. In firmware 1.1.5 all mic objects import the correct filter type when dragged and dropped.

G-Ware to Console conversion corrupts the GPIO's.

In Console 1.0.4, when a G-Ware to Console conversion is performed something in the GPIO's causes the Site Data Light in Console to turn purple when the Converge file was pushed. To correct then corruption, a default GPIO object is dragged and dropped onto the GPIO's. The Control port in Console is then Programmed with the custom settings. Simply clearing the GPIO's or Programming the GPIO's after the conversion will not fix the issue, a default object must be dragged and dropped.

Firmware Upload Failure.

In firmware 1.0.4, if a firmware upload is interrupted and fails the front panel LCD screen never recovers on its own. In firmware 1.1.5 this is fixed. When the firmware update time out occurs the LCD is reset to the main screen.

1.1.5 Console Pro 12/21/07 (880T and Converge SR 1212 First Release) Firmware and Converge Console Version 1.1.5 Controller Builder 1.3.3.

The 880T is a derivative of the Converge 880 mixer that has an integrate telephone hybrid and amplifier.

- Same Telco as the 840T
- Same 10W amplifier as the 840T
- All other functions work like the 880.
- 880T has a device type of "D"
- DID range is from 0-7
- G-Links with all other Converge Pro and Converge SR units
- Contains same function as the initial Converge Pro Products
- AEC enhanced to a wideband AEC.

The Converge SR 1212 mixer will be a derivative Product created from the Converge Pro hardware platform intended to be a next generation Product to replace the PSR 1212 Product.

- Same hardware as the 880 with the AEC and NC functions removed.
- G-Links to all other Converge Pro units.
- Uses Console to configure.
- SR 1212 has a device type of "G"
- DID range is from 0-7
- G-Links with all other Converge Pro and Converge SR units
- Contain same functions as the initial Converge Pro Products

Converge Pro issues resolved in Converge Console 1.1.5

G-Ware to Console conversion corrupts the GPIO's.

In Console 1.0.4, when a G-Ware to Console conversion is performed something in the GPIO's causes the Site Data Light in Console to turn purple when the Converge file was pushed. To correct then corruption, a default GPIO object is dragged and dropped onto the GPIO's. The Control port in Console is then Programmed with the custom settings. Simply clearing the GPIO's or Programming the GPIO's after the conversion will not fix the issue, a default object must be dragged and dropped.

PA Adaptive Mode.

In Firmware 1.0.4 PA Adaptive mode does not function at all.

Firmware Upload Failure.

(In firmware 1.0.4, if a FW upload is interrupted and fails the front panel LCD screen never recovers on its own.) Now when the firmware update time out occurs the LCD is reset to the main screen

Device log clears after it reaches 256K.

In Firmware 1.0.4 when the device log reached its max allotted size, 256K the log clears and starts over. With Firmware 1.1.5 when the max allotted size is reached the last half of the log is saved and over writes the first half of the log then clears the last half the log. The log then continues from the end of the saved portion.

Drag and Drop Mic AV Objects brings all filters in as PEQ's

In Console 1.0.4 when any mic object is dragged and dropped all filters saved with the object are imported as PEQ's regardless of the type of filter that was saved. In firmware 1.1.5 all mic objects import the correct filter type when dragged and dropped.

The USB connection failure.

With Console 1.0.4, occasionally, the USB connection between PC and the Converge Pro unit would lock up the PC until the USB cable is disconnected.

Known issues with Console 1.1.5

Adding/Removing Mixers while Connected to Console

Console does not dynamically recognize units physically being added or removed from a site while connected to the site. Console requires re-synchronization with the site by disconnecting from the site, then reconnecting to the site using Console.

Controller Builder Application Compatibility

The Converge Pro Product launch includes a new release of the Controller Builder software that allows Programming of Converge Pro devices. The Controller Builder software must be updated on the PC to ensure compatibility with Converge Console. The new Control Builder software is backward compatible with files created with prior versions of the software.

Timed Events

A minimum of a one minute time interval between consecutive scheduled timed events is required for Proper execution by Converge Pro devices. Potential Problems that can occur if multiple events are scheduled one minute of each other include:

- Events executing out of order
- Events executing twice
- Events not executing
- Events scheduled at the exact same time will not be affected.

SNMP Agent TE Command Support

The SNMP agent for this release does not support the TE (On/Off Hook) command on the 840T and TH20 telephone hybrids. However, other telephone functions are supported and can be accessed from the SNMP MIB file. TE command support will be added in a future release.

RAMP Command Support

The telephone receive (Telco Rx) and the telephone transmit (Telco TX) channels on Converge Pro models 840T and TH20 do not support the RAMP serial command. RAMP support for these channel types will be added in a future release.

1.1.5.C Converge Pro Firmware release 12/8/08 (880, 880T, 840T, 8i, TH20)

General

ClearOne has created a firmware "patch" release to correct reported Problems of detecting in-bound calls from PBX that utilizes a distinctive ring cadence. Specifically, some customers have experienced that a Converge Pro telephone hybrid (880T, 840T, TH20) does not recognize an in coming call where special ring cadences are used.

To resolve this issue, ClearOne has created a new function that allows the integrator to configure a custom ring cadence on the Converge Pro telephone hybrids. The ring cadence setting has a selectable On-Time and a selectable Off-Time. The On and off times are the minimum time values used by the detection scheme to determine if a valid ring has occurred.

An integrator will be required to configure the custom ring cadences through a serial command. Eventually, the custom ring cadence settings will be incorporated into Converge Console.

Standard Ring Cadences

The standard Ring Cadence used in the Converge Pro is tied to the Country Settings. These setting were selected based upon typical ring cadence configuration used by the PSTN.

Country Setting	On-Time (msec)	Off-Time (msec)
Australia	150	256
New Zealand	384	256
Brazil	512	640
China	512	640
Japan	512	640
Singapore	384	256
S Africa	384	256

Country Setting	On-Time (msec)	Off-Time (msec)
S Korea	512	640
Taiwan	512	640
UK/EU	384	640
India	384	640
Hong Kong	384	640
Malaysia	384	640
Argentina	384	640
Mexico	512	640
United States	512	640

Custom Ring Cadences

The custom ring cadences are user selectable. Available On and off times are contained in the table below

Ring Cadence Mode	On-Time Settings (msec)	Off-Time Settings (msec)
Custom	200	256
	256	384
	384	512
	512	640
	640	768
	1024	896
		1024

Recommended Configuration Settings

The ring cadence detection scheme on the Converge Pro utilizes voltage, frequency, and cadence to qualify an inbound ring. If custom ring cadences are used for the application, it is recommended that the on and off time settings on the Converge Pro be as close to the on and off setting used in the PBX. This will minimize ring false by the Converge Pro.

A custom ring cadence can be set on the Converge Pro hybrids (880T, 840T, TH20) through serial three serial commands. The commands are:

RINGMOD- Sets/Gets the ring cadence mode between standard or custom

RINGON- Sets/Gets the ring on-time for the cadence detection.

RINGOFF- Sets/Gets the ring off-time for the cadence detection.

These commands will eventually be included in the Converge Console software application on a future release.

Serial Commands

RINGMOD – Ring Cadence Mode

This command sets the ring cadence to either standard mode or custom mode. The cadence can be set using the RINGON and RINGOFF commands. The country code should be set first using the COUNTRY command.

Command Form: *DEVICE RINGMOD* <Channel> <Group> [Value]

COMMAND ID: 241

Number of ARGUMENTS: 1

Argument	Type	Size	Values	Units
Channel	Channel	1	See Groups and Channels	
Group	Group	1	17 (R)	
Value	Unsigned Short	2	0 = Standard 1 = Custom (Null to query in text)	

RINGON – Ring Cadence On Time

This command sets the ring cadence on time. The country code should be set first using the COUNTRY command.

Command Form: *DEVICE RINGON* <Channel> <Group> [Value]

Argument	Type	Size	Values	Units
Channel	Channel	1	See Groups and Channels	
Group	Group	1	17 (R)	
Value	Unsigned Short	2	0 = 100 1 = 150 2 = 200 3 = 256 4 = 384 5 = 512 6 = 640 7 = 1024 (Null to query in text)	ms

RINGOFF – Ring Cadence Off Time

This command sets the ring cadence off time. The country code should be set first using the COUNTRY command.

Command Form: *DEVICE RINGOFF* <Channel> <Group> [Value]

Argument	Type	Size	Values	Units
Channel	Channel	1	See Groups and Channels	
Group	Group	1	17 (R)	
Value	Unsigned Short	2	0 = 80 1 = 128 2 = 256 3 = 384 4 = 512 5 = 640 6 = 768 7 = 896 8 = 1024 (Null to query in text)	ms

Instructions

When a customer calls Technical Support, Technical Support will troubleshoot the issue and determine if Firmware 1.1.5.C will fix the issue. If it is determined that Firmware 1.1.5.C will fix the issue, Technical Support will send the firmware to the customer along with the release notes. Firmware 1.1.5.C addresses issues on units with hybrid but the firmware works on all units. Console was not addressed to support the ring cadence detect so to setup custom ring cadence detection the serial commands must be used. When a site file is saved the custom ring detection settings are not stored in the site file. Pushing the saved site file will not affect the ring cadence detection. Console is compatible with both 1.1.5 and 1.1.5.C in separate or mixed sites.

When the RINGMOD command is set to 0, the cadence detection used is the standard detection built into the individual country codes. If the RINGMOD is set to 1, the custom RINGON and RINGOFF setting will be used to detect the ring cadence. Changing the country code after the RINGMOD is set to 1 does not change the detection to the standard country code detection. When the unit is defaulted the RINGMOD, RINGON, and RINGOFF commands are set to 0. This release also incorporates compliance changes for India.

Resolved Issues in firmware 1.1.5.C

MTRXCLEAR not clearing fader channel- MTRXCLEAR command now clears the fader channels.

Ramp Gain report- Ramp stops on the reported Gain Value

DID Channel Labels- The channel labels saved if the DID is changed after the labels are changed

Telco state in preset

The Telco enable state is not executed when a preset is run. With this release when a preset is executed the Telco will not go on or off hook.

Telco Ramp

The ramp command now supports ramping of both the Telco RX and Telco TX channels.

2.0.30 Converge Pro Converge Console and Firmware version 2.0.28 release (880TA and Converge SR 1212A First Release)
Controller Builder 2.0.30

New Functions, Firmware, Features and Enhancements

Converge Pro 880TA- The Converge Pro 880TA is a new conferencing mixer with 8 AEC channels, telephone hybrid, and 4 power amplifier channels capable of 35 watts into 8 ohm. The PA channels also have terminals for 70/100V interface. Key features and functions within the new mixer include

- Feedback Elimination:
 - The PA channels include Clear One's new feedback cancellation with ring elimination.
- PA Virtual AEC Reference:
 - A new PA AEC virtual reference has been added that tracks all dynamic signal Processing changes in the channel.
- Loudspeaker Centric Signal Processing Chain:
 - The PA channels include signal Processing functions associated with loudspeakers to include EQ, Noise Gate, Limiter/Compressor.

Converge Pro SR1212A- The Converge Pro SR 1212A is a new sound reinforcement mixer with 8 mic/line channels, 4 line inputs, 8 line outputs and 4 power amplifier channels.

Converge Manager Software- The Converge Manager software is an application that allow an installer to connect to either 1.X or 2.0.30 sites. This application is similar to the G-Switch in the XAP Product line.

Increase Maximum Number of Microphones- The maximum number of microphones support on a site by the automatic microphone mixer has increased to 96 total microphones. The previous limit was 64 microphones.

New Expansion Bus Channels- Six new expansion buses have been added to each mixer. The new buses are labeled I thru N.

Additional Expansion Bus NOM Capabilities: Expansion Buses I-R all support NOM in this release.

New Global Gating Groups- Two new global gating groups (E&F) have been added to the units.

New Expansion Bus AEC Reference Channels- Four new expansion bus reference (5-8) has been added to the units.

Custom Ring Cadence Setting- A new function has been added to allow a user to customize the detectable ringer cadence used

by the Converge Pro telephone hybrids.

Print All Function for Macro- A new feature was added to allow the user to print all macros on a unit.

Last Macro/Preset Displayed in Console – A new feature was added to report the last macro and preset ran on the unit. This is displayed in the bottom toolbar of Console.

Added Gain Events to Device Log- A new feature has been added to the device log that reports channel gain changes.

Gate Status to Meter View- Gate status is now available in the meter view.

Post AGC Meter to line inputs- Post AGC meter added to line input meters

Mic/Line input Conversion- Converge Console now has the to convert a mic to a line input for the right click menu

Site File Conversion from 1.X to 2.0.30 Files:

The PSR Conversion utility has been modified to allow 1.X files to be converted to a 2.0.30 format.

Database Builder Updates:

The database builder was modified to allow creation and sharing of Macro, Presets, and Matrix objects.

Installed Controller Builder

The Converge Pro 880TA and Converge Pro SR1212A have been added to the Installed Controller Builder software allowing the use with the Installed Controller.

Converge Console Manager

Converge Console manager is an included Program that allows you to switch between Converge Console Versions 2.0.30 and 1.1.7 so that you can connect to older versions of Converge Pro units with firmware 1.1.5.C and older

Converge Installation CD:

The Converge installation CD will automatically install the Console, Console Manager, and Installed Controller Builder on the PC.

Compatibility Issues

Mixed Stack Operations & Firmware Updates:

The 2.0.30 release made significant improvement to the expansion bus capabilities creating an incompatibility between 1.X and 2.0.28 units in the same site. A 1.X unit must be isolated from any 2.0.28 units on the expansion bus prior to operations and any firmware upgrade. This can be achieved by disconnecting any 2.0.28 units on the bus. The 2.0.28 firmware upgrade Procedure also requires the firmware file to be downloaded to the unit twice. The first download provides the application code to the unit. The second download provides a listing of all Converge Pro unit types to include the 880TA and SR1212A.

Web Based Firmware Upgrade from 1.X to 2.0.28:

The Web Based firmware loader function cannot be used to perform an upgrade from Version 1.X to Version 2.0.28. All firmware upgrade must be done through Console for this release.

Version 1.X A/V and Object Database:

Any A/V and channel object created in version 1.X will not be compatible with version 2.0.30. The user must recreate the objects with the Console 2.0.30 release.

Console Manager Software and Microsoft Vista:

The user will require administrative privileges to install and launch the Converge Manager. The Console Manager allows the registration of either Console 1.1.7 or Console 2.0.30. This can create security permission Problems with Windows Vista. This can be overcome by having admin privileges and disabling the User Access Control function within Vista.

Known Issues

Pushing a 2.X Site File to a 1.X Unit:

The user can accidentally push a site file created in Console Version 2.0 to a unit running version 1.X. This will cause the

User Name and Password to become scrambled. This can be corrected by defaulting the unit.

Console Software Chinese Help File Support:

This release does not have the translated on-line help for Console. This will be included in a future release.

.PSR to .CVG File Conversions:

A number of PSR to CVG file conversion bugs have been identified and are not resolved in this release. See below:

- Phonebook- A PSR phonebook will not be converted to the new CVG file.
- Front Panel Lock- Front Panel Lock setting is not moved into the converted file.
- XAP TH2 GPIO Conversion- A TH2 control status conversion to a Converge Pro TH20 will improperly map pin 17 of the TH2 to pin 18 in the TH20.
- EREF Command in XAP Macro- The EREF command used in a macro will not be converted to the new Converge Pro Marco.
- Ringer Command in XAP Macro- A Ringer command with a macro is not converted Properly to the Converge Pro macro.
- Object Compatibility- Objects Created in Converge Console 1.0.4 – 1.1.7 cannot be imported into Converge Console 2.0.30
- Site File Compatibility- Converge Console 1.1.5 & 1.1.7 cannot open site files created with Converge Console 2.0.30