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Solid State Logic V3.3.12 12-In-8-Out USB Audio Interface Instructions

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Contents

Introduction

System T installations typically include one or many SSL surfaces, Tempest Engines, and Network I/O units. This software release comprises control surface software, Tempest Engine card firmware updates and Network I/O updates as part of the V4.4 Package.

Updating to V3.3.12 directly from V2 software is not supported; a V3.0 version must be already installed first due to significant changes to the console's embedded operating system. Users running V2 software who are registered Broadcast Users on the **SSL Support** site may access legacy software versions such as V3.0.26. Unregistered users should contact **support@solidstatelogic.com** for further information and access to the site.

Refer to the V3.3.12 Features Release Notes for further information prior to installation.

Requirements

- Console running a minimum of V3.0.x software
- Blank USB drive – 16GB or larger – for Flat Install image
- Additional USB drive for backing up console files
- USB Keyboard
- USB A-B cable
- Windows PC and Quartus Prime Programmer software
- System T V3.3.12 install image file
- **Rufus V3.5** software installed on a Windows PC
- **Dante Controller**
- **Network I/O V4.4 Package**
- **WinMD5** checksum validation tool [Optional]
- TeamViewer login credentials [Optional]
- T-SOLSA V3.3.12 Installer [Optional]
- Basic hand tools – PZR driver, 2mm hex driver and M4 tile puller as originally supplied with console

Create the USB Flat Installer

1. Download the software image file using the link above.
2. [Optional] Run a checksum on the downloaded file using WinMD5. The checksum value is: a9a05d0a2a2c81e91d824677e6df077b
3. Download Rufus 3.5 and run the .exe application. Select the correct iso image in Boot selection, choose the correct Device, then ensure the Partition scheme is set to GPT.
4. Enter a suitable Volume label so that the drive can be identified in future i.e. System T V3.3.12 Flat Installer.
5. Select Start and Confirm that you wish to erase all data on the USB drive by clicking OK. Rufus will now partition your device and copy the files. (USB2 will take approximately 40mins, USB3 5mins)
6. Once the process is complete there will be an 'Important notice about Secure Boot'. This can be ignored – press Close. The USB Flat Installer is now ready to be used.
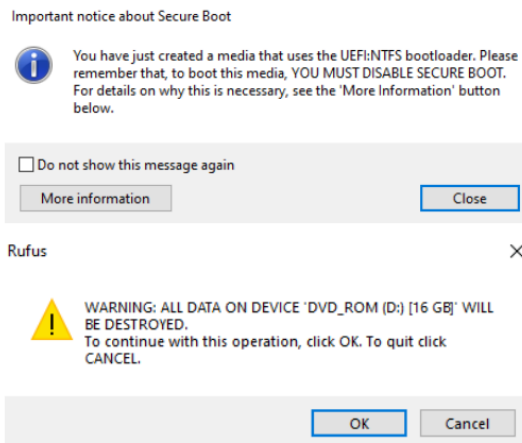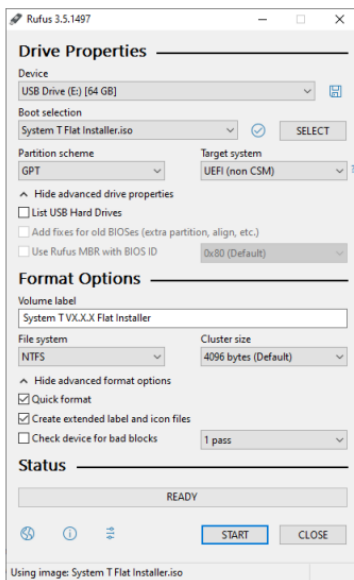
Install Console Software

The same USB Flat Installer is used to update the Front Panel Processor (FPP) in all System T console variants as well as the Meter Bridge Processor (MBP) in S500/S500m surfaces. It is important that the control surface assemblies are updated in the order detailed below. Failure to follow this order can break communication between the FPP and MBP assemblies for example.

Preparation and Update Order

1. Backup of system files – insert a spare USB drive (not Flat Installer) then navigate to Menu>Setup>Service>Admin to use the Backup Data function
2. Load a blank showfile template – clears routing and relinquishes any ownership
3. Power off the console
4. Remove any external screen connections [S300 only]
5. Update Meter Bridge Processor software [S500/S500m with meter bridge]
6. Update additional Member FPPs where applicable; User 2 and 3 positions in larger surfaces and/or remote TCR Member surfaces etc.
7. Update main console FPP software
8. Automatic Tempest Engine OCP software updates
9. Update Control Surface tiles and assembly firmware from GUI
10. Program Tempest Engine 120 card using Quartus Prime [if updating from V3.1 or earlier]
11. Other updates including T-SOLSA and TeamViewer re-installation where relevant

Important Note on USB Installer Connections
It is recommended that the USB flat installer is connected directly to the processor motherboard/carrier board USB ports when installing. This means locating the bay position in which the processor is located and temporarily removing the relevant touch screen or surface tile to insert the USB, seating them back in their usual position while the installation process completes.

Update the Meter Bridge Processor

Applicable to S500/S500m surfaces with Meter Bridge only.

1. Gain access to the processor then insert the USB install stick to an available internal port. Connect a keyboard to the MBP USB connection at the rear of the console.
2. Power on the console and tap F7 on the keyboard continuously to open the boot menu.
3. Use the Up/Down arrow keys on the keyboard to select the UEFI device (USB Flat Installer) then press Enter. If there are two devices listed as per screenshot below, select the upper UEFI option. The console will now boot from the USB Flat Installer.

4. The screen will appear blank for approximately two minutes while the OS installer starts. When the Command Prompt 'Solid State Logic Tempest Installer' appears, choose option 1; **"Install image and KEEP user data."** This retains the existing MBP configuration.
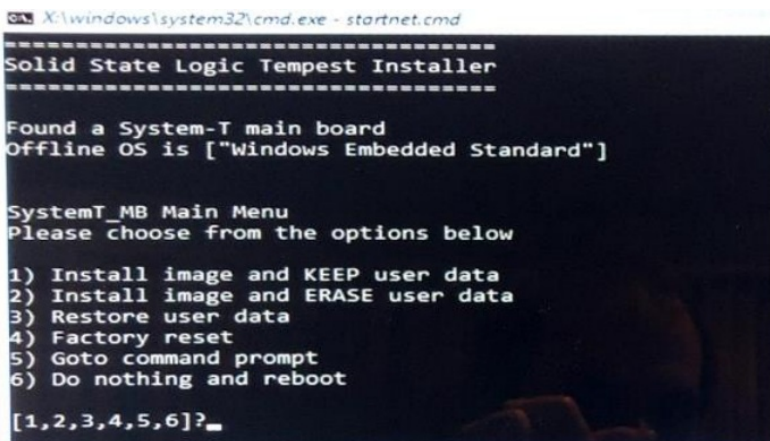
5. Progress will be shown at the bottom of the window as a percentage, taking approximately five minutes to complete. Upon completion, the message 'Have you removed all removable media?' will appear. Physically remove the USB Flat Installer stick from the processor, then press Y on the keyboard to progress.
6. The 'Please press 1 to REBOOT' will now display. Follow the on-screen instruction and press number 1 on the keyboard to reboot.
7. Windows Setup will begin with various progress screens and automatic restarts during this process. Please note: It may look like the installer is not active during this time. Be patient and DO NOT power cycle the console during this process. When complete the Meter Bridge will show a blank meters layout.

Update the Front Panel Processor(s)

Your System T console surface may have more than one FPP for multi-operational positions or due to the large size of the surface. If you are not able to determine this, contact your local SSL Support Office. Additional FPPs in positions 2 and 3 etc. must be updated before the host FPP in position 1. This includes any remote TCR or other console surfaces configured as Members. The update instructions are the same for each:

1. Gain access to the processor then insert the USB install stick to an available internal port. Connect a keyboard to an available internal or external USB port on the same processor.
2. Power on the console and tap F7 on the keyboard continuously to open the boot menu.
3. Use the Up/Down arrow keys on the keyboard to select the UEFI device (USB Flat Installer) then press Enter. If there are two devices listed as per screenshot below, select the upper UEFI option. The console will now boot from the USB Flat Installer.

4. The screen will appear blank for approximately two minutes while the OS installer starts. When the Command Prompt 'Solid State Logic Tempest Installer' appears, choose option 1; "Install image and **KEEP** user data." This retains the existing FPP configuration.
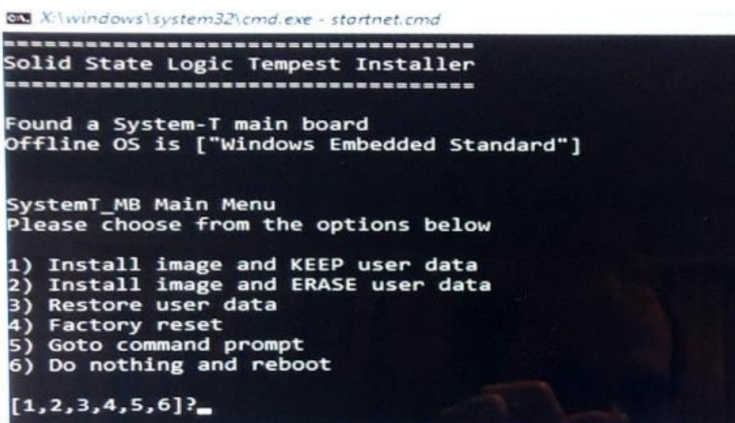
5. Progress will be shown at the bottom of the window as a percentage, taking approximately five minutes to complete. Upon completion, the message 'Have you removed all removable media?' will appear. Physically remove the USB Flat Installer stick from the processor, then press Y on the keyboard to progress.
6. The 'Please press 1 to REBOOT' will now display. Follow the on-screen instruction and press number 1 on the keyboard to reboot.
7. Windows Setup will begin with various progress screens and automatic restarts happen during this process. Please note: It may look like the installer is not active during this time. Be patient and DO NOT power cycle the console during this process. When complete the console will boot into the usual Front Panel display/console GUI.
8. Navigate to the Menu>Setup>Service>Update page to confirm the Current Version for the Control Software is showing 3.3.12.55366.
9. Repeat the above steps for any other FPPs fitted to the console surface (Position 3 then position 1 FPP last for example).
10. Once the final FPP update has been completed, restart the console so that it can restore its network adapter configuration. [Only required if updating from V3.0]
11. Restart the console once more so that it reads its Console Name file, visible in Menu>Setup>Options>System.

T-Engine OCP Software (automatic)
This process is automatic and will happen within three minutes of the main FPP booting into the new software. Menu>Setup>Service>Update will show 'Automatic Update Pending' next to any connected T-Engines, followed by 'Error: Connection Lost'. This is a result of code being downloaded and the T-Engine rebooting itself. Connection will re-establish itself shortly afterwards. Refer to the 'Software and Firmware Version Overview' table later in this document to confirm correct versions are shown.


Update Surface Assemblies
The Menu>Setup>Service>Update page lists all connected control surface tiles and internal card assemblies (on each FPP, if multiple fitted). Required updates are automatically prompted and can be completed in any order. Press-and-hold the active Update button to start the firmware update. The screen and surface will be locked out while the update is in progress. Control surface tiles will automatically restart and reconnect upon completion. Repeat the process for all required tiles/assemblies.

T-Engine 62D120 Card Firmware Update (Only applies to updates from V3.1.x or earlier)
V3.2.8 onwards requires new firmware – UID 500786 – for the 62D120 PCIe Audio fitted to each T-Engine. Users updating from V3.2.8 to V3.3.12 will have already updated this firmware. This is programmed using Quartus Prime Programmer software:

1. Connect a USB memory stick to the console, navigate to Menu>Setup>Service Update then press and-hold the Update button next to the listed 62D120 card. This transfers a .pof firmware file to the USB stick.
2. Download and install Quartus Prime to the Windows PC.
3. With the T-Engine powered, connect a USB A-B cable from the computer to the PROG port on the 62D120 card (labelled AUDIO I/F) at the rear.
4. Launch Quartus Prime. Check Hardware Setup lists a connected USB-Blaster device. If not, follow this guide to complete installation/association of programmer drivers. Once confirmed/resolved return to the main application window.
5. In the Mode dropdown list select JTAG (if not set by default), then press the Auto Detect button in the left of the application window.
6. A dialogue box will appear showing a list of devices. Select the 5CGXFC9E7 device and click OK. This is ordinarily the last entry in the list.
7. A graphical representation of three devices will be shown. Click on the CFI_128Mb chip icon then select Change File from the buttons on the left.
8. In the resulting file browser window, open the MADIMax_5CGXFC9E7F31C8N_D120.pof file from the USB memory stick. The folder path is SSL\SystemT\Firmware\D120.
9. In the main application window tick the boxes for Program/Configure and Verify, then click Start. A progress bar is shown in the top-right corner. Updates take between 5 and 10 minutes, at which point 100% Complete will be shown. Should there be an error/failure reported, check settings then re-attempt.
10. Once completed successfully disconnect then reconnect power to the T-Engine to load the programmed code. Check that the correct firmware UID is shown in the console's Update menu. Repeat steps if there is a second T-Engine.
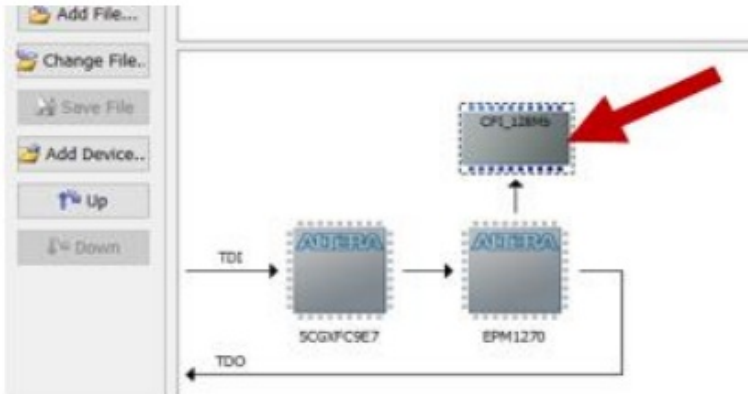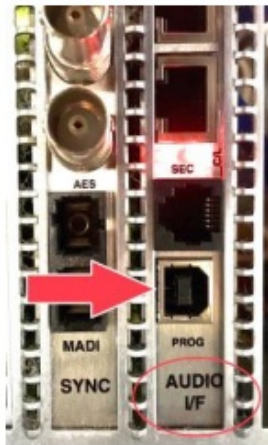
Additional T-Engine/HC Bridge Cards
For 62D124 and 62D151 T-Engine/HC Bridge cards, firmware remains unchanged since V3.0.14. Confirm versions listed Menu>Setup>Service>Update are current compared to the Software and Firmware Version Overview table later in this document. Should there be any cards in addition to the 62D120 that are not up to date, refer to the previous V3.0.x Install Notes document or contact your local SSL Support Office for further guidance.

Network I/O Updates
The Network I/O V4.4 Package includes new SSL and Dante firmware for some Network IO devices. Refer to the Install Notes included in the V4.4 release as well as the firmware table in this document for further information.

TeamViewer Installation
If in use, TeamViewer will need to be reinstalled and configured after this update has been applied. This requires the Admin Access function to be unlocked by a four-digit access code in Menu>Setup>Service>Admin. Contact your local SSL Support Office for an access code. For full details on the installation process refer to System T Application Note 021.

T-SOLSA
Download the installer package provided at the top of this document, which includes T-SOLSA specific installation notes that should be referred to. Update any client machines that require T-SOLSA to V3.3.12 to match the console. It is not possible to connect T-SOLSA clients that are running an older version of the software.

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Please direct all enquiries to: support@solidstatelogic.com

Software and Firmware Version Overview

Numbers in bold denote new versions for this release.

Console and Tempest Engine Software and Firmware

Control Software	3.0.26	3.1.25	3.1.27	3.2.8	3.3.10	3.3.12
Operating System	10.1.22.452	10.3.4.534	10.5.2.549	10.5.8.549	**10.6.19.607**	
T80 Tempest Engine OCP Software	3.585.04.6	3.604.02.6		3.615.03.6	**3.626.05.06**	
T25 Tempest Engine OCP Software	3.585.04.7	3.604.02.7		3.615.03.7	**3.626.05.07**	
TE2 Tempest Engine OCP Software		3.604.02.14		3.615.03.14	**3.626.05.14**	
TE1 Tempest Engine OCP Software		3.604.02.25		3.615.03.15	**3.626.05.15**	
62D120 Tempest Engine Audio Routing Card SSL Firmware	500868			500876		
62D124 Tempest Engine HC Link Card SSL Firmware	20					
62D151 Tempest Engine HC Bridge Dante Firmware	4.1.25703					
62D151 Tempest Engine HC Bridge SSL Firmware	23741					
S500 Tiles	26014	26579		27524	**28225**	
S300 Tiles	26015				**28520**	
D122 KVM	26432	26522		27633		
TCM1	264					
TCM1	259					
T-SOLSA PC Software	3.0.26	3.1.25	3.1.27	3.2.8	3.3.10	**3.3.12**

Other Consoles and Software (SSL testing summary)

For System T and SSL Live consoles in a shared network environment all consoles should be updated at the same time. Other software apps and tools on the network may also have dependencies. To assist with updates SSL, publish a list of versions tested alongside each console release.

Audinate manage forward and backward compatibility for Dante implementations and applications. Other Audinate software versions will work with the console software releases, this list documents what was tested at SSL.

Tested with System T Console Control Software:	3.3.12
SSL Live Console Software	5.2.18
ipMIDI (Windows)	1.9.1
ipMIDI (OSX)	2.0
Audinate Dante Controller	4.8.1.2
Audinate Dante Updater1	2.2.3
Audinate Dante Domain Manager	1.4.1.2

Network I/O Applications

System T Console Control Software	3.0.26	3.1.25	3.1.27	3.2.8	3.3.10	3.3.12
Network I/O – Controller	1.11.6.44902					**1.12.3.53172**
Network I/O – Updater	1.10.0.42678	1.10.6.49138			1.11.1.53012	**1.11.5.55670**

The legacy Dante Firmware Updater is not supported for this release and is incompatible with Brooklyn modules.

Network I/O Devices

Console Control Software		3.0.14	3.0.26	3.1.25 / 3.1.27 / 3.2.8	3.3.10	3.3.12
Network I/O Package		4.1	4.2	4.3	–	**4.4**
SB8.8 + SBi16	SSL Firmware	23927				

	Dante Firmware	4.1.25840		Bk2 4.1.25840Bk3 4.2.820	Bk2 4.1.25840**Bk3 4.2.825**
SB32.24 + SB16.12	SSL Firmware	26181	26621	Mk1 26621 Mk2 128345	**Mk1 28711Mk2 128711**
	Dante Firmware(A Main & B Comp)	4.1.26041		Bk2 4.1.26041Bk3 4.2.820	Bk2 4.1.26041**Bk3 4.2.825**
A16.D16 + A32 + D64	SSL Firmware	25547	26506	Mk1 28345 Mk2 128711	**Mk1 28711Mk2 128711**
	Dante Firmware	4.1.25796		Bk2 4.1.25796Bk3 4.2.820	Bk2 4.1.25796**Bk3 4.2.825**
GPIO 32	SSL Firmware	25547	**28711**		
	Dante Firmware	4.1.25796		Bk2 4.1.25796Bk3 4.2.820	Bk2 4.1.25796**Bk3 4.2.825**
HC Bridge + HC Bridge SRC	SSL Firmware	23741			
	Dante Firmware	4.1.25703			
MADI Bridge	SSL Firmware	24799			
	Dante Firmware	4.1.25700		Bk2 4.1.25700**Bk3 4.2.825**	
SDI and AES	SDI/AES Package	V2.1	V2.2	*No longer distributed – use Net I/O V4.4 Package*	
	Network IO Manager	V2.0.0			
	SDI + AES Main Flash Firmware	V2.1.0.3	2.3.6.1		
	SDI Dante Firmware	V1.0.0.1	V1.0.3.1	Bk2 4.0.2.9	Bk2 4.0.2.9**Bk3 4.2.0.20**
	AES Dante Firmware	V1.0.0.1	V1.0.3.1	Bk2 4.0.2.9	
Net I/O PCIe-R	Audinate Dante PCIe driver	V1.8.0.3 Mac V1.8.0.1 PC			

Device Firmware	4.0.10.5 FPGA4.2.0.9 Dante Firmware

Please note: The Dante firmware version is visible in Dante Controller>Device View>Status under Manufacturer Information>Product Version. Devices fitted with Brooklyn 2 or 3 variants are denoted with 'Bk2' and 'Bk3' respectively in the table.

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Documents / Resources

Solid State Logic *System T* V3.3.12 Console Update Instructions	**Solid State Logic V3.3.12 12-In-8-Out USB Audio Interface** [pdf] Instructions V3.3.12 12-In-8-Out USB Audio Interface, V3.3.12, 12-In-8-Out USB Audio Interface, USB Audio Interface, Audio Interface, Interface

References

- **Dante Controller, Pro AV Networking Software from Audinate | AV's Leading Technology**
- ᔆᔆᴸ **Legal | Solid State Logic**
- ᔆᔆᴸ **Free Open Source Software Documentation | SSL**
- **Altera USB Blaster Driver Installation Instructions - Terasic Wiki**
- **WinMD5 Free - Windows MD5 Utility Freeware for Windows 7/8/10/11**