

EVS APPLICATION NOTE X-ONE & CEREBRUM TALLY MANAGEMENT

VERSION 1.1

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REVISION HISTORY

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INTRODUCTION

A tally light is a small light mounted on a production camera. It is used to make the camera operator aware that their camera feed is being previewed in the production studio (= PRV) or put 'on air' (= PGM). The tally indicator lights up in a specific color (green = PRV, red = PGM).

You can configure X-One so that each time you send a camera feed to the Preview or Program channel in the Live interface of your X-One Client, the tally light on the corresponding camera lights up in the correct color.

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HARDWARE & SOFTWARE REQUIREMENTS

X-ONE

HARDWARE

X-One runs on a PM-X server, which is therefore also required to be able to use the Tally feature.



The X-One server has the following technical specifications:

- Chassis Dimensions: 2U chassis rack mountable
- Power Supply: Redundant and hot-swappable
- Motherboard: Supermicro X10DRW-i
- GPU: Nvidia Quadro P4000
- CPU: 2 x Intel Xeon E5-2680 v4 (2.40 GHz, 14C/28T, 35M, LGA2011-3)
- RAM: 8 x 8GB (DDR4-2400 ECC Registered)
- System disk: Micron SATA SSD MTFDDAK240TCC-1AR1ZABYY 200GB 2.5"
- Live PAM disk: Micron SATA SSD MTFDDAK240TCC-1AR1ZABYY 200GB 2.5"
- RAID: 8 x 450GB 2.5" HDD SAS12G 10K 128 MB (HGST Ultrastar C10K1800) or 8 x 900GB 2.5" HDD - SAS12G 10K 128MB (HGST Ultrastar C10K1800) (optional)
- SDI In: 8 x 3G-SDI



- OS: CentOS (Linux)
- I/O Board: Deltacast Compact versatile 8-channel SDI card + LTC + 2 brackets
- USB: 4 x 3.0 at the back, 1 USB 3.0 port on the front
- Network ports: 2 x 1 Gigabit ethernet port, 2 x SFP+ 10 Gigabit dual ethernet port (optional)

SOFTWARE REQUIREMENTS

Any X-One release as from version 1.0 is compatible. However, we recommend that our customers use the latest version available.

CEREBRUM

A Cerebrum standalone system is required to use Tally over IP. This standalone system runs on any Windows device and could for instance be installed on the same hardware that is used for the graphics management system.

In addition, you will need 4 GD points to perform the procedure below.

TALLY PROCESSING WITHIN X-ONE

In X-One it is possible to configure 2 tallies. You can use X-One together with an external tally control system (e.g. a BFE GPIO Controller) to turn the camera tally lights on and off during your production. When using Cerebrum for the tally workflow, it is possible to share X-One tally information with various kinds of devices, including TSL devices, over an IP network.

CEREBRUM CONFIGURATION

SETTING UP TALLY MANAGEMENT IN CEREBRUM

ADDING A GPI/O DEVICE

1. From the **Network** tab, select **Add Network Device** to open the Add Device dialog, then enter the following:

Device Category	GPI/O
Device Type	EVS X-ONE Tally Interface
Device Name	X-ONE Tally (Please note that this field is case sensitive !!!)



2. Confirm using the **Add** button.

Add Device	
Device Category	GPI/O
Device Type	EVS X-ONE Tally Interface
Device Name	X-ONE Tally
Remote Device	
Additional Device	
Primary IP Address	192 . 168 . 1 . 7
Virtualise	
	Advanced Comms Settings
	Connection Severities
Add	Add and Add Another Cancel



ADDING A UMD DEVICE

1. In the Add Network Device window, select the following:

Device Category	UMD
Device Type	Select a TSL-UMD type, e.g. TSL-UMD
Device Name	TSL Output (Please note that this field is case sensitive !!!)

2. Confirm using the **Add** button.

Add Device		
Device Catego	pry	имр 🗊
Device Type		
Device Name		TSL Output
Remote Devio	e 🗌	
Connection Ty	rpe	
Additional Dev	vice	
Primary IP Ad	dress	192 . 168 . 1 . 7
Virtualise		
		Advanced Comms Settings
		Connection Severities
UMD Protocol C	Configuration	
	Number of LIMDs	125 A Limits LIMD's to refresh (1-126)
	Address Offset	O Offsets the address sent to LIMD (0-126)
	Serial Delay	Onsets the address sent to GMD (0-120) Delay between sending LMD changes (mS)
_	Add	Add and Add Another Cancel



IMPORTING X-ONE TALLY MACROS

Open a Windows File Explorer and copy/paste the "X-ONE TALLY TO TSL TRANSLATION.cmf" macro to the "C:\Program Files (x86)\Axon Digital Design\Cerebrum\GlobalMacros\Client Macros" folder.

	Clipboard	Organize	New	Open	Select		
← → • ↑	→ This PC → Windows (C:) →	→ Program Files (x86) → Axo	n Digital Design → Ce	erebrum > GlobalMacros	> Client Macros		
🗲 Ouick acce	-cc	Name		Date modified	Туре	Size	
		X-ONE TALLY TO TSL T	RANSLATION.cmf	11/09/2020 13:21	CMF File	2 KB	

INSERTING X-ONE TALLY MACROS IN CEREBRUM

From the menu, select **Configuration > Macro Browser**. Select the macro from the Client Macros folder displayed in the tree structure (if it is not visible, click the **Rescan Directory** button at the bottom of the window).

Macro Browser		
🖻 🍺 Macro Files	CMF Management	
🛱 🗁 Axon Utility Macros	Load Unload	Reload
🔁 Cerebrum Alarm Notification.cmf		
	Variables	
GPO Toggle Test.cmf	Variable	Value
RoutedSouceTally.cmf	GPIO_DEVICE_NAME	X-ONE TALLY
Synapse SNMP Trap Handler.cmf	PGM GPI-1\$GPI	1
Trieses Calus Ru CDT and	PGM GPI-1\$TALLY	1
Ingger Salvo by Gri.cmi	PGM GPI-1\$UMD_ADDRESS	1
	PGM GPI-2\$GPI	2
	PGM GPI-2\$TALLY	1
WIMD Text-Tally Combiner.cmf	PGM GPI-2\$UMD_ADDRESS	2
🕀 🍃 Client Macros	PGM GPI-3\$GPI	3
白- 🎾 X-ONE TALLY TO TSL TRANSLATION.cmf	PGM GPI-3\$TALLY	0
X-ONE TALLY TO TSL TRANSLATION-tag-0.cmf	PGM GPI-3\$UMD_ADDRESS	3
F12 Switch to Operator.cmf	PGM GPI-4\$GPI	4
🖻 🍺 Services	PGM GPI-4\$TALLY	0
ROUTER_GENERATOR_V1.0.cmf	PGM GPI-4\$UMD_ADDRESS	4
ROUTER_GENERATOR_V1.2.cmf	PGM GPI-5\$GPI	5
	PGM GPI-5\$TALLY	0
	PGM GPI-5\$UMD ADDRESS	5
Synapse SNMP Trap Handler.cmf	PGM GPI-6\$GPI	6
E TestMacros	PGM GPI-6\$TALLY	0
🛱 🗁 Encryption tests	PGM GPI-6\$UMD_ADDRESS	6
🔅 Device.cmf	PRV GPI-7\$GPI	7
Device_Unicode.cmf	PRV GPI-7\$UMD ADDRESS	1
Auto-loaded Macros	Update Variable Values	
Rescan Directory		Close



X-ONE CONFIGURATION

ENABLING TALLY CONTROL IN X-ONE

In the X-One configuration, the Tally tab allows you to manage the tally control feature and to configure the connection with the Cerebrum Client application.

Maria Maria	Server Settings / Taily	10.129.97.97
53 ******	BFE Box	
¥° secore		
* TALLY		
[-] 5.277556	10 129 97 49 Disconnect	
NUMAY BB		
LAYOUT		
		Start X-ONE

Turn on the **BFE Box** switch at the top of the Tally tab. By default, the switch is disabled.



As soon as you have turned on the **BFE Box** switch, the **BFE IP** and **BFE Port** field will appear. The default LAN port number of the BFE GPIO Controller, i.e. 10373, is already provided.

BFE IP	
	Disconnect
BFE Port	

Enter the IP address set during the configuration and click **Connect** to make the connection.



CONFIGURATION TESTING

1. Connect your X-One server (tally configuration) to your Cerebrum IP address, using the default port number (10373).

In Cerebrum, select the EVS X-ONE Tally Interface, then Device View, then the Object Browser tab. In the Objects folder, check the CLIENT_CONNECTIONS value. If equal to 1, then your X-One is connected to Cerebrum. If not, please check the settings again.





2. Switch to the Tally/Control tab and change the PGM or PRV cameras in your X-One. You will see the lights changing accordingly.

<u>F</u> ile <u>N</u> etwork <u>D</u> evice C <u>o</u> nfiguration <u>V</u> iew <u>H</u> elp		
File Network Device Cgnfiguration Yew Help System View 0 0.00.01(Cerebrum) 0.00.01(Cerebrum) -0.00.01(Cerebrum) - 0.01: IP Router -0.00.01(Cerebrum) -0.00.01(Cerebrum) -0.00.01(Cerebrum) -	Identity Device EVS - ONE Tally Interface IP Address: 192, 168, 1.7 Device Name: X-ONE TALLY Tally/Control Initiation Object Browser CAMERA 1 CAMERA 1 CAMERA 3 CAMERA 2 CAMERA 6 CAMERA 4 CAMERA 6 CAMERA 1 Image: Camera 4 Image: Camera 4 Image: Camera 5 CAMERA 4 Image: Camera 6 CAMERA 4 Image: Camera 6 CAMERA 5	Char Deside Details Char Details User Name: Servic
	Device View Control View Navigation View Event Log	

3. If you now look at the TSL UMD device in the Control tab of the Device View, you can see that the tallies are following your X-One PGM/PRV thanks to the macro.

stem View	▼ # x Identity		Device
Network Devices	Device: TSL-UMD	IP Address: 192.168.1.8 Device Name: TSL OLITPLIT	Edit User Na Details Locatio
🛱 💻 0.0.0.0[Cerebrum]			1
🖳 00: System	Control Monitoring Object	Browser	
	UMD Text	Tally 1 Tally 2 Tally 3 Tally 4	
	0	Off Off Off Off Off	
- T 102 100 1.7 10 ONE TALLES LVD A-ONE TAIL, LASTAGE	1 CAM-1	Red Dff Off Off Off	
- 2 192.168.1.8[TSL OUTPUT] TSL-UMD	2 CAM-2	Off Green D Off Green Off	
	3 CAM-3	Off Off Off Off Off	<u>_</u>
	4 CAM-4	Off V Off V Off V Off	<u> </u>
	5 CAM-5	Off Off Off Off	
	6 CAM-6	Off Off Off Off Off	
	7	Off Off Off Off	
	8	Off Off Off Off	
	9	Off Off Off Off	
	10	Off Off Off Off	
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	Device View Control	View Navigation View	
	Source view his control	tion () instigation view	
	Event Log		