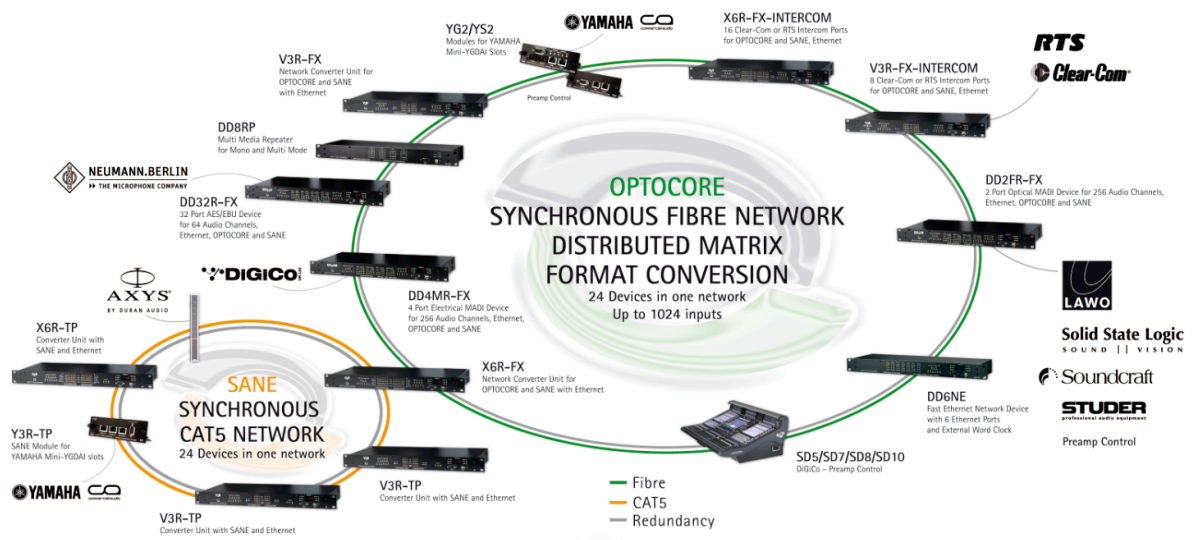




# OPTOCORE



## SANE with Optocore - Quick Start Guide

Using SANE TP devices as expanders for Optocore FX devices  
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This document is intended to be a brief introduction on how to use Optocore SANE TP devices to expand the number of inputs and outputs on Optocore FX devices. The document assumes that an Optocore system has been configured according to the Optocore Quick Start guide and/or the Optocore Software Manual.

## SANE expander setup

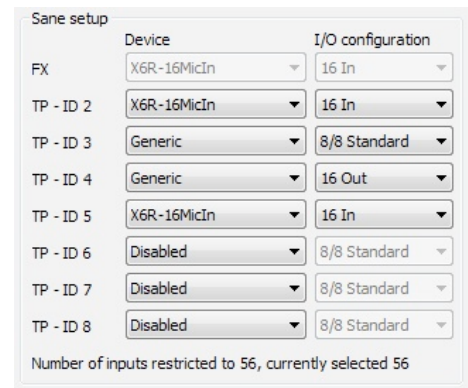
Optocore SANE TP network devices can be used to expand the number of inputs and outputs on Optocore FX devices.

Configuration of SANE TP expanders is set in the Software Local Settings of the Optocore FX device and the Local Settings of the SANE TP device.

- 1) Open the system Configuration window (Drop down menu: "Set" -> "Configuration")
- 2) Enter the Software Local Settings of the Optocore FX device (Local Settings Column -> "Setup" button)
- 3) Set the TP device type for TP-ID 2-8 (TP-IDs 5-8 when configuring DD32R-FX) as required.

By default the AES/EBU ports on TP devices are disabled.

- a) To enable AES/EBU Port A on a TP device
  - Configure the first TP-ID that follows the TP device requiring an active AES/EBU port as "Generic"
  - Select the required "I/O Configuration" for AES/EBU port A
- b) To enable AES/EBU Port B on a TP device
  - Configure the TP-ID that follows AES/EBU port A as "Generic"
  - Select the required "I/O Configuration" for AES/EBU port B

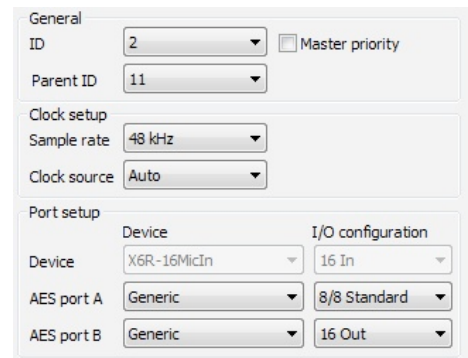


**FX unit - Local Settings – Sane Setup**

### Example:

The screenshot shows X6R-TP-16MI SANE device with TP-ID 2 configured to have both AES/EBU port A and B enabled for a total of 8 AES inputs and 24 AES outputs. The next SANE TP device is assigned to TP-ID 5.

- 4) Click "OK" and in the "Configuration" window click "OK & Write"
- 5) Connect to the Optocore FX device with a USB, Ethernet or RS232 cable and "Write" the Local Settings to the device
- 6) Connect to the SANE TP device with a USB, Ethernet or RS232 cable.
- 7) Enter the Local Settings of the SANE TP device (Drop down menu: "Set" -> "Local Settings")
- 8) Set the "ID" to match the Sane port "TP-ID" configured in the Optocore FX device's Software Local Settings
- 9) Set the "Parent ID" to the ID of the Optocore FX device that is connected to the SANE TP device
- 10) If utilising the AES/EBU port(s) of the SANE TP device, configure the AES port "I/O Configuration" to match the setup in the Optocore FX device.
- 11) Write the Local Settings to the SANE TP device.
- 12) Connect the SANE link from the Optocore FX device's SANE 1 port to SANE TP device's SANE 2.
- 13) Connect the SANE link from SANE 1 to SANE 2 through all devices. Do not connect the SANE link back to the Optocore FX device.



**TP ID 2 - Local Settings**

**Please note:**

Do not connect a SANE link from the last device back to the Optocore FX device.  
The SANE expansion is wired as a daisy chain

Audio is routed using the Optocore Control Software as in a regular Optocore network. Individual SANE TP devices and converters are nested together as ports under the parent Optocore device in the device tree and the Matrix window. The port number relate to the TP-ID of the SANE device.

**Please note:**

Audio inputs from SANE TP units connected to an Optocore FX device need to be added to the total input count from the Optocore FX device in the “Configuration” window to be accessible on the Optocore network.

The sum of all input channels in SANE sub-network cannot exceed 64 (including FX device channels).

The sum of all output channels in SANE sub-network cannot exceed 64 (including FX device channels).

**Please note:**

The software needs to be configured to connect to the devices using USB, Ethernet or RS232.

In the “Administration” pull down menu, select “Server Options” to set the connection method.

Refer to the Optocore Software Manual for setup of the Ethernet connection

**Please note:**

To access and configure Software Local Settings on an Optocore FX device:

- From the drop down menu select: “Set” -> “Configuration”
- In the Local Settings column click “Setup” for the device to be configured
- Configure as needed
- Click “OK” - In the Configuration window click “OK & Write”
- The computer must be connected to the Optocore FX with USB, Ethernet or RS232
- Locate the device from the device list and click “Write”

To access and configure Local Settings on a SANE TP device:

- The computer must be connected to the SANE TP with USB, Ethernet or RS232
- From the drop down menu select: “Set” -> “Local Settings”
- Configure as needed
- Click “Write”

**Please note:**

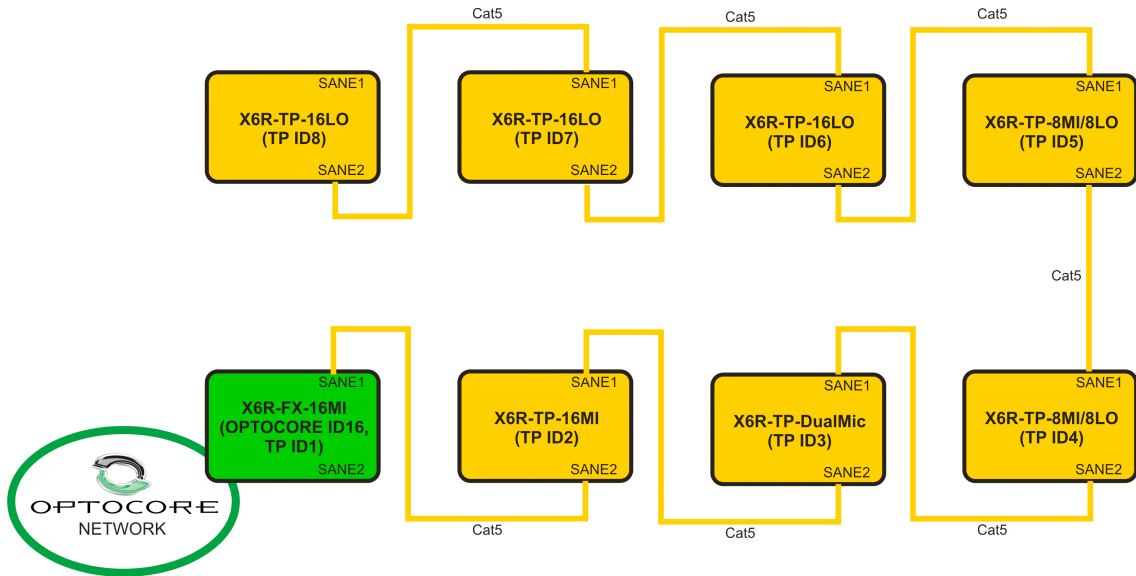
When configuring DD32R-FX with TP devices connected by SANE, IDs 1-4 are reserved to the AES ports of DD32R-FX. The first TP-ID in the daisy chain is 5

## EXAMPLES

The following examples demonstrate how to configure and wire Optocore SANE TP expanders when used with Optocore FX devices.

### EXAMPLE 1: TP devices without AES ports

Seven X6R-TP SANE devices are connected to an Optocore X6R-FX device as shown in the diagram below.



This system would be configured as shown below:

- 1) In ID16 - Software Local Settings - Sane setup:
  - a. TP – ID 2: X6R-16MicIn
  - b. TP – ID 3: X6R-8DualMic
  - c. TP – ID 4: X6R-8MicIn/8LineOut
  - d. TP – ID 5: X6R-8MicIn/8LineOut
  - e. TP – ID 6: X6R-16LineOut
  - f. TP – ID 7: X6R-16LineOut
  - g. TP – ID 8: X6R-16LineOut

Sane setup		
	Device	I/O configuration
FX	X6R-16MicIn	16 In
TP - ID 2	X6R-16MicIn	16 In
TP - ID 3	X6R-8DualMic	16 In
TP - ID 4	X6R-8MicIn/8LineOut	8/8 Standard
TP - ID 5	X6R-8MicIn/8LineOut	8/8 Standard
TP - ID 6	X6R-16LineOut	16 Out
TP - ID 7	X6R-16LineOut	16 Out
TP - ID 8	X6R-16LineOut	16 Out

Number of inputs restricted to 64, currently selected 64

**FX unit - Local Settings – Sane Setup**

- 2) For each X6R-TP – Local Settings:
  - a. ID: 2...8 (depending on the position of the device in the daisy-chain)
  - b. Parent ID: 16
  - c. AES port A and B: Disabled

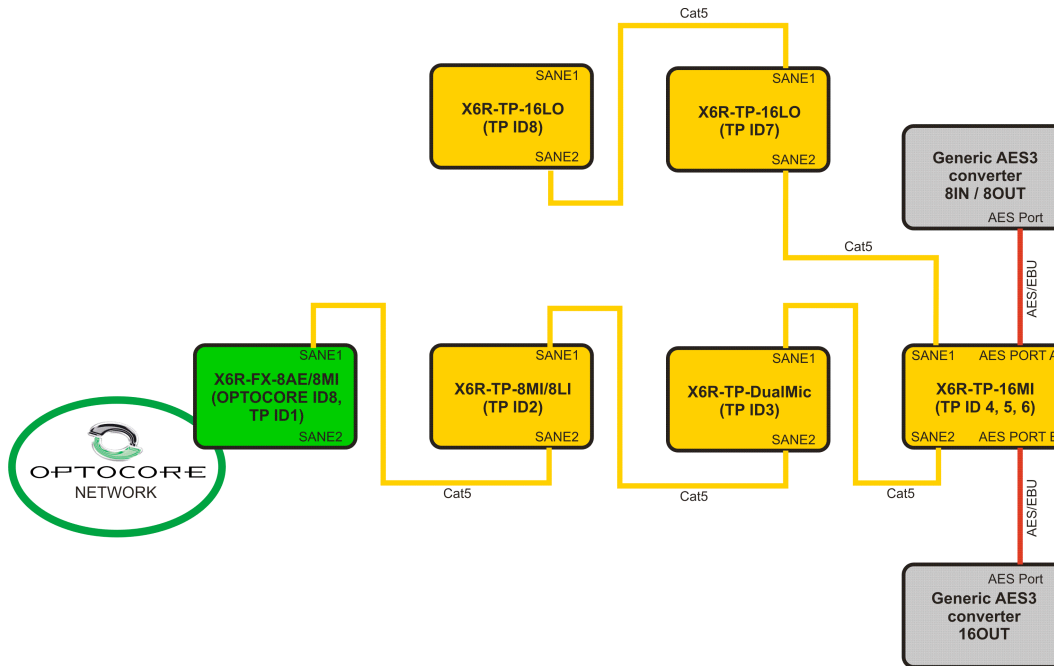
General	
ID	2 <input type="checkbox"/> Master priority
Parent ID	16
Clock setup	
Sample rate	48 kHz
Clock source	Auto
<b>TP-ID 2</b>	
Port setup	
Device	X6R-16MicIn 16 In
AES port A	Disabled
AES port B	Disabled

General	
ID	5 <input type="checkbox"/> Master priority
Parent ID	16
Clock setup	
Sample rate	48 kHz
Clock source	Auto
<b>TP-ID 5</b>	
Port setup	
Device	X6R-8MicIn/8LineOut 8/8 Standard
AES port A	Disabled
AES port B	Disabled

**The screenshots show Local Settings on X6R-TP-16MI (TP-ID 2) and X6R-TP-8MI/8LO (TP-ID 5).**

## EXAMPLE 2: Five TP devices, one with two AES/EBU ports enabled

An Optocore X6R-FX is connected to five X6R-TP devices by SANE. The third TP device in the daisy chain is configured with both AES/EBU ports enabled and connected to generic 3<sup>rd</sup> party converters as shown below.



This system would be configured as shown below:

- 1) In ID8 - Software Local Settings - Sane setup:
  - a. TP – ID 2: X6R-8MicIn/8LineIn
  - b. TP – ID 3: X6R-8DualMic
  - c. TP – ID 4: X6R-16MicIn
  - d. TP – ID 5: Generic, 8/8 Standard
  - e. TP – ID 6: Generic, 16 Out
  - f. TP – ID 7: X6R-16LineOut
  - g. TP – ID 8: X6R-16LineOut
- 2) In the third X6R-TP – Local Settings:
  - a. ID: 4
  - b. Parent ID: 8
  - c. AES port A: Generic, 8/8 Standard
  - d. AES port B: Generic, 16 Out
- 3) In the first, second, fourth and fifth X6R-TP– Local Settings
  - a. ID: 2, 3, 7, 8 (depending on the position of the device in the daisy-chain)
  - b. Parent ID: 16
  - c. AES port A and B: Disabled

Sane setup		
	Device	I/O configuration
FX	X6R-8AES/8MicIn	8/8 Reverse
TP - ID 2	X6R-8MicIn/8LineIn	16 In
TP - ID 3	X6R-8DualMic	16 In
TP - ID 4	X6R-16MicIn	16 In
TP - ID 5	Generic	8/8 Standard
TP - ID 6	Generic	16 Out
TP - ID 7	X6R-16LineOut	16 Out
TP - ID 8	X6R-16LineOut	16 Out

Number of inputs restricted to 64, currently selected 64

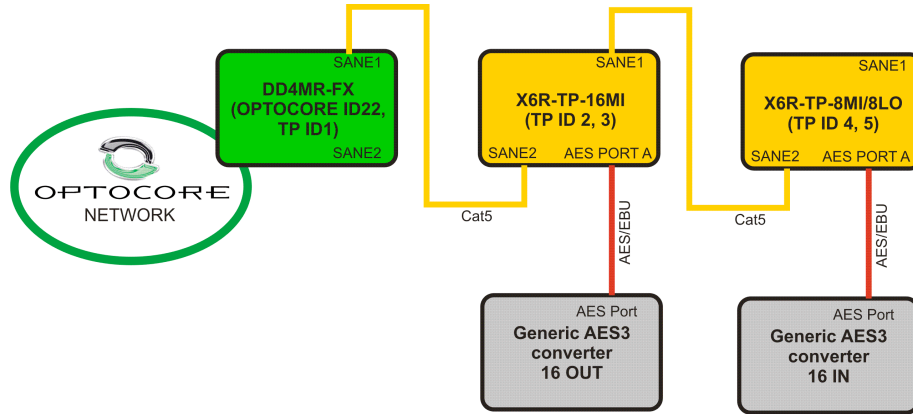
### FX unit - Local Settings – Sane Setup

General	
ID	4 <input type="checkbox"/> Master priority
Parent ID	8
Clock setup	
Sample rate	48 kHz
Clock source	Auto <b>TP-ID 4</b>
Port setup	
Device	X6R-16MicIn 16 In
AES port A	Generic 8/8 Standard
AES port B	Generic 16 Out

General	
ID	2 <input type="checkbox"/> Master priority
Parent ID	8
Clock setup	
Sample rate	48 kHz
Clock source	Auto <b>TP-ID 2</b>
Port setup	
Device	X6R-8MicIn/8LineIn 16 In
AES port A	Disabled
AES port B	Disabled

### EXAMPLE 3: Two TP devices connected to DD4MR-FX, each with a single AES/EBU port enabled

In this example a DD4MR-FX Optocore unit is connected to two X6R-TP devices, each with one AES port enabled.



This system would be configured as shown below:

- 1) In ID22 - Software Local Settings - Sane setup:
  - a. TP – ID 2: X6R-16MicIn
  - b. TP – ID 3: Generic, 16 Out
  - c. TP – ID 4: X6R-8MicIn/8LineOut
  - d. TP – ID 5: Generic, 16 In
- 2) In X6R-TP-16MI - Local Settings:
  - a. ID: 2
  - b. Parent ID: 22
  - c. AES port A: Generic, 16 Out
  - d. AES port B: Disabled
- 3) In X6R-TP-8MI/8LO - Local Settings:
  - a. ID: 4
  - b. Parent ID: 22
  - c. AES port A: Generic, 16 In
  - d. AES port B: Disabled

Port setup		Standard	Channels
MADI 1 In		AES 10-2003 (64/32 channels)	64
MADI 1 Out		AES 10-2003 (64/32 channels)	64
MADI 2 In		AES 10-2003 (64/32 channels)	64
MADI 2 Out		AES 10-2003 (64/32 channels)	64
MADI Cat 2 In		Disabled	64
MADI Cat 2 Out		Disabled	64
		Device	I/O configuration
TP 2		X6R-16MicIn	16 In
TP 3		Generic	16 Out
TP 4		X6R-8MicIn/8LineOut	8/8 Standard
TP 5		Generic	16 In
TP 6		Disabled	8/8 Standard
TP 7		Disabled	8/8 Standard
TP 8		Disabled	8/8 Standard

Number of inputs restricted to 168, currently selected 168

**FX unit - Local Settings – Sane Setup**

General	
ID	2 <input type="checkbox"/> Master priority
Parent ID	22
Clock setup	
Sample rate	48 kHz
Clock source	Auto
Port setup	
Device	X6R-16MicIn 16 In
AES port A	Generic 16 Out
AES port B	Disabled

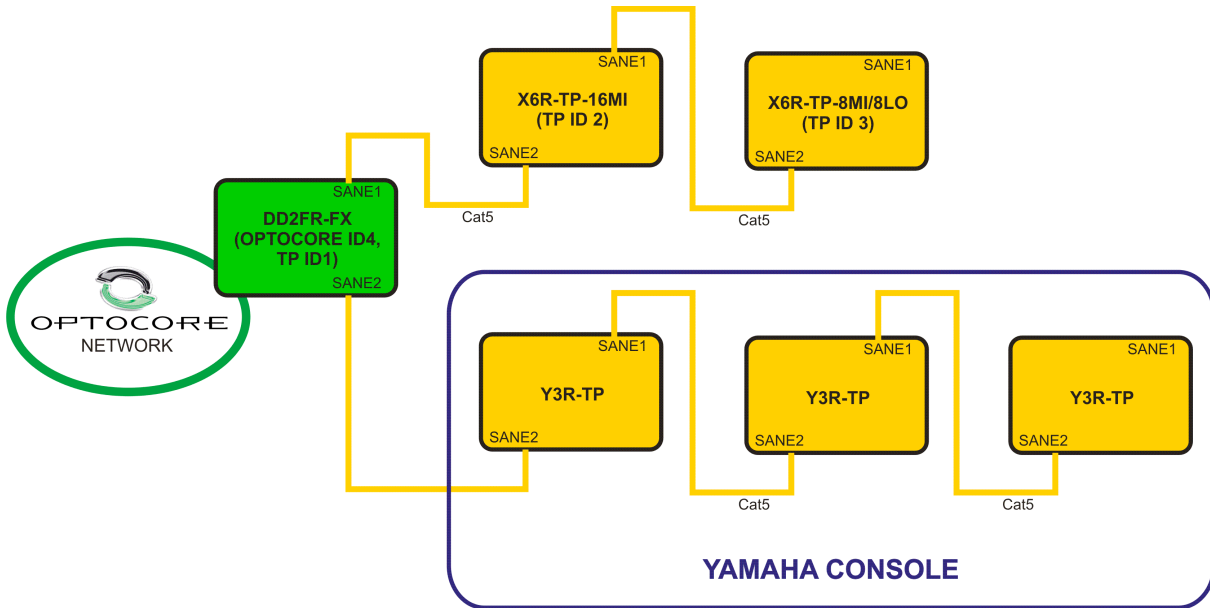
**TP ID 2 - Local Settings**

General	
ID	4 <input type="checkbox"/> Master priority
Parent ID	22
Clock setup	
Sample rate	48 kHz
Clock source	Auto
Port setup	
Device	X6R-8MicIn/8LineOut 8/8 Standard
AES port A	Generic 16 In
AES port B	Disabled

**TP ID 4 - Local Settings**

## EXAMPLE 4: Two TP devices connected to DD2FR-FX and three Y3R-TP cards connected through SANE2

In this example a DD2FR-FX Optocore unit is connected to two X6R-TP devices and three Yamaha expansion cards connected through SANE2 connector compatible with MADI over CAT protocol. Depending on number of cards channel count for MADI Cat 2, should match number of cards x 16. E.g. for 2 cards 32 In and 32 Out should be configured.



This system would be configured as shown below:

1) In ID4 - Software Local Settings - Sane setup:

- a. TP – ID 2: X6R-16MicIn
- b. TP – ID 4: X6R-8MicIn/8LineOut
- c. MADI Cat 2 IN – AES10-2003 48 ch
- d. MADI Cat 2 OUT – AES10-2003 48 ch

2) In X6R-TP-16MI - Local Settings:

- a. ID: 2
- b. Parent ID: 4
- c. AES port A: Disabled
- d. AES port B: Disabled

3) In X6R-TP-8MI/8LO - Local Settings:

- a. ID: 3
- b. Parent ID: 4
- c. AES port A: Disabled
- d. AES port B: Disabled

Port setup	Standard	Channels
MADI 1 In	AES10-2003 (64/32 channels)	64
MADI 1 Out	AES10-2003 (64/32 channels)	64
MADI 2 In	AES10-2003 (64/32 channels)	64
MADI 2 Out	AES10-2003 (64/32 channels)	64
MADI Cat 2 In	AES10-2003 (64/32 channels)	48
MADI Cat 2 Out	AES10-2003 (64/32 channels)	48
	Device	I/O configuration
TP 2	X6R-16MicIn	16 In
TP 3	X6R-8MicIn/8LineOut	8/8 Standard
TP 4	Generic	8/8 Standard
TP 5	Generic	8/8 Standard
TP 6	Generic	8/8 Standard
TP 7	Generic	8/8 Standard
TP 8	Generic	8/8 Standard

Number of inputs restricted to 240, currently selected 240

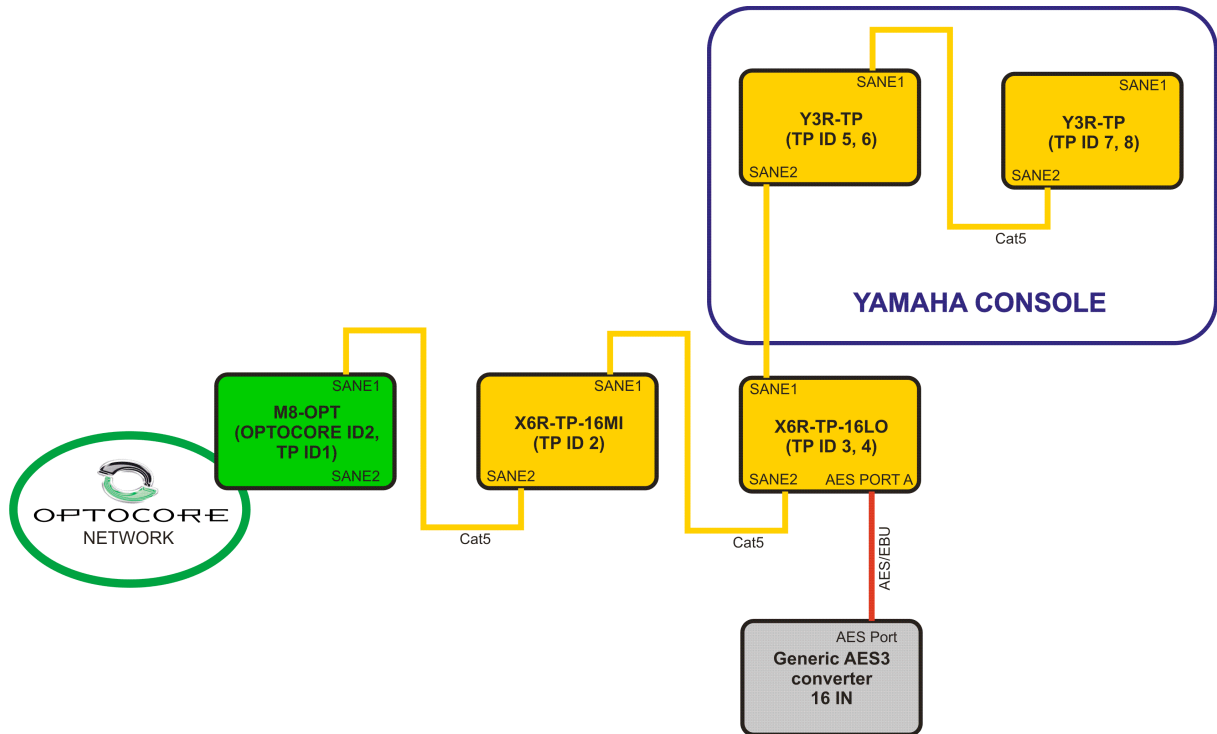
FX unit - Local Settings – Sane Setup



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## EXAMPLE 5: Two TP devices connected one with AES/EBU generic device expansion to DD2FR-FX and two additional Y3R-TP cards

In this example a DD2FR-FX Optocore unit is connected to two X6R-TP devices, where one is expanded with external AES/EBU converter and two Yamaha expansion cards connected to SANE daisy chain. Depending on number of cards channel count for MADi Cat 2, should match number of cards x 16. E.g. for 2 cards 32 In and 32 Out should be configured (sum for TP ID5 – ID8 is 32/32 channels)



This system would be configured as shown below:

- 4) In ID2 - Software Local Settings - Sane setup:
  - e. TP – ID 2: X6R-16MicIn
  - f. TP – ID 3: X6R-16LineOut
  - g. TP – ID 4: Generic, 16 In
  - h. TP – ID 5: Generic, 8/8 Standard
  - i. TP – ID 6: Generic, 8/8 Standard
  - j. TP – ID 7: Generic, 16 In
  - k. TP – ID 8: Generic, 16 Out
- 5) In X6R-TP-16MI - Local Settings:
  - e. ID: 2
  - f. Parent ID: 2
  - g. AES port A: Disabled
  - h. AES port B: Disabled
- 6) In X6R-TP-16LO - Local Settings:
  - e. ID: 3
  - f. Parent ID: 2
  - g. AES port A: Generic ,16 in
  - h. AES port B: Disabled

Port setup		
	Standard	Channels
MADI 1 In	AES10-2003 (64/32 channels)	64
MADI 1 Out	AES10-2003 (64/32 channels)	64
MADI 2 In	AES10-2003 (64/32 channels)	64
MADI 2 Out	AES10-2003 (64/32 channels)	64
MADI 3 In	AES10-2003 (64/32 channels)	64
MADI 3 Out	AES10-2003 (64/32 channels)	64
MADI 4 In	AES10-2003 (64/32 channels)	64
MADI 4 Out	AES10-2003 (64/32 channels)	64
MADI Cat 2 In	Disabled	64
MADI Cat 2 Out	Disabled	64
Device		I/O configuration
TP - ID 2	16MicIn	16 In
TP - ID 3	16LineOut	16 Out
TP - ID 4	Generic	16 In
TP - ID 5	Generic	8/8 Standard
TP - ID 6	Generic	8/8 Standard
TP - ID 7	Generic	16 In
TP - ID 8	Generic	16 Out

Number of inputs restricted to 320, currently selected 320

FX unit - Local Settings – Port Setup

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