

## FOC2 - FOC2I - FOC2O RACK-MEDIA2-18/SNMP

### Features

- **FOC2** automatic
- **FOC2I** automatic and local management by rack
- **FOC2O** automatic, remote management with OAM
- Small size  
FOC2/FOC2I 20x51x74mm  
FOC2O 20x51x100mm
- 10/100BaseT to 100FX
- 10/100/1000BaseT to 1000GSX/GLX
- 10/100/1000BaseT to 100FX or 1000GSX/GLX
- Fix fiber 2 cores or WDM
- SFP from MM to SM 200km, WDM, CDWM
- **RACK-MEDIA2-18** non management rack dual AC or DC
- **RACK-MEDIA2-18-SNMP** management Web, Telnet, SSH v2 by menu or CLI, SNMP v1,v2,v3
- **FOCO** to **FOCO** managed in OAM IEEE802.3ah through the rack
- VLAN tagg/untagg 802.1q, Q-in-Q,
- Monitoring of devices and traffic , frame counts...

### AN OPTIMISED MEDIA CONVERTER OFFER

*FOC2 is a new range of Ethernet and Gigabit Ethernet media converters with enhanced integration and capabilities, and better CAPEX/OPEX performance. The product family is made of FOC2, FOC2I and FOC2O that provide various local and remote management options for the 18 slots AMS-MEDIA2-18 chassis.*



The **FOC2x** and **RACK-MEDIA2-/SNMP** solutions are giving to the users a full transparent Ethernet and Gigabit Ethernet conversion. These Media Converters are automatic or fully managed by the rack with a high level of security. They support:

- The 9KByte Jumbo Frames for network traffic loading , IPTV services...
- The Link alarm function that down automatically the next port to inform the equipment that the link is down; this is particularly important to block UDP applications.
- The dual rates in copper and fiber sides. The fiber rate is adjusted automatically to 100FX or 1GX according to the fiber signal from the equipment at the other side. This save cost in case of migrations.
- Stand alone module automatic or with DIP switch settling
- 18 modules rack for redundant power and fan distribution
- 18 modules rack for redundant power, fan distribution and secure management of the local modules and the distant modules in OAM.
- Module reset, power-down of copper/fibers ports
- Ingress/Egress Rate limiting
- VLAN tagging 802.1q and Q-in-Q services
- Full modules set up per rack: duplex, rate, MD/MDIX per ports
- Ports, traffic counter, SFP/DMI ... monitoring
- Management of remote module by local module with OAM protocol 802.3ah

### FOC2X RANGES

	FOC2	FOC2I	FOC2O
Version 100FX	YES	YES	-
Version 1000GX	YES	YES	YES
Version DUAL RATE	YES	YES	YES
Version DUAL RATE SFP	YES	YES	YES
DIP switch setup	-	-	-
Use in RACK-MEDIA2-18 and RACK-MEDIA2-18-SNMP	YES	YES	YES
Management inside the RACK-MEDIA2-18-SNMP	-	YES	YES
Management of the remote device attach to local	-	-	YES

**FOC2 - FOC2I - FOC2O**



**FOC2 DIP SWITCH SET MEDIA CONVERTER**

The **FOC2 Series** are automatic **Ethernet/Fast-Ethernet/Gigabit-Ethernet** media converter from **Copper to Fiber** ports.

All FOC2x Series use the Store and Forward switching mechanism and they support the transparent transport of VLAN, BPDU and Jumbo frames up to 9KB thanks to 128KB memory buffer and 2K Mac address table.

Auto-Rate or rate selection by DIP-switch  
 Auto-cross of TP port MDI/MDI-X, Half/Full duplex  
 Link Alarm support : On/Off  
 Dimension: 51x74x20mm, 100g  
 Power: 3.3Vdc , 1.9 to 2.3W; supply with AC to DC adapter

We offer the following models:

- FOC2-TTX-FX-MM/SM20/WDM** conversion 10/100BT to 100FX Multi/Single Mode, WDM
- FOC2-TTX-FX-SFP** conversion 10/100BT to 100FX with SFP 100FX
- FOC2-TGTX-GSX/GLX-MM/SM10/30/50** conversion 10/100/1000BT to 1000GSX multi mode or 1000GLX Single Mode 10,30 or 50km
- FOC2-TGTX-FX/GLX10W3/W5** conversion 10/100/1000BT to dual fiber rate 100FX or 1000GLX Single Mode 10km single fiber WDM 1310nm or 1550nm
- FOC2-TGTX-USFP** conversion 10/100/1000BT to dual fiber rate 100FX or 1000GSX/GLX Multi or Single Mode with dual rate SFP.
- MTBF : 245.000 hours

**FOC2I LOCAL MANAGED MEDIA CONVERTER**

The **FOC2I Series** are automatic or manageable by the rack **Ethernet/Fast-Ethernet/Gigabit-Ethernet** media converter from **Copper to Fiber**

The **FOC2I** has the same specifications (mechanical, electrical, Ethernet) than the FOC2 and without RACK-M...-SNMP it is used as the FOC2 with DIP-switch.

When installed in RACK-MEDIA2-18-SNMP we can from the RACK

- Activate/inactivate the module,
- Configure the rate of copper and fiber if dual rate, limit the copper rate by 32Kbps step.
- Tagg/untagg VLAN or Q-in-Q
- Monitor the status of the ports, rate, Ethernet frame counters

We offer the following models:

- FOC2I-TTX-FX-MM/SM30/50** conversion 10/100BT to 100FX Multi-mode or Single Mode 20 or 50km,
- FOC2I-TGTX-GSX/GLX-MM/SM10** conversion 10/100/1000BT to 1000GSX multi mode or 1000GLX Single Mode 10km
- FOC2I-TGTX-FX/GLX10W3/W5** conversion 10/100/1000BT to dual fiber rate 100FX or 1000GLX Single Mode 10km single fiber WDM 1310nm or 1550nm

**FOC2O OAM MANAGED MEDIA CONVERTER**

The **FOC2O Series** are automatic or manageable by the rack locally or remotely **Ethernet/Fast-Ethernet/Gigabit-Ethernet** media converter from **Copper to Fiber**

The **FOC2O** has the same specifications (mechanical, electrical, Ethernet) than the FOC2 and without RACK-M...-SNMP it is used as the FOC2 with DIP-switch.

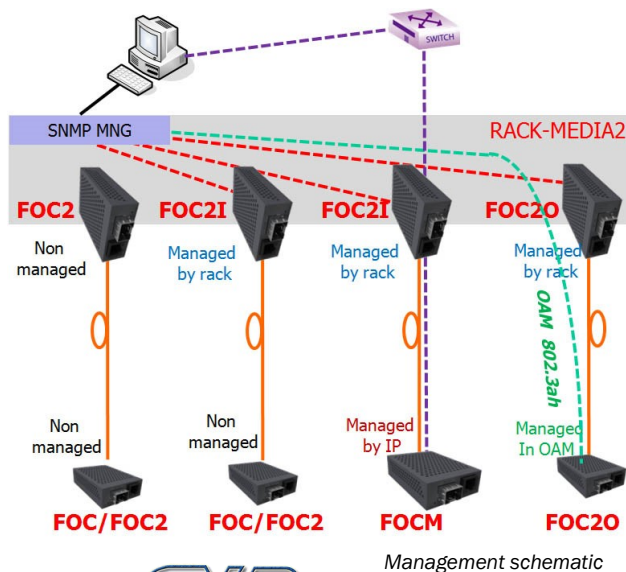
When the local FOC2O is installed in RACK-MEDIA2-18-SNMP, and the remote FOC2O is connected to this fiber we can from the RACK the local and remote

- Activate/inactivate the local and remote module,
- Configure the rate of copper and fiber if dual rate, limit the copper rate by 32Kbps step.
- Tagg/untagg VLAN or Q-in-Q
- Monitor the status of the ports, rate, Ethernet frame counters

The remote device is managed over the local device in the rack and the fiber. The protocol use is OAM 802.3ah independent of the traffic in the fiber.

We offer the following models:

- FOC2O-TGTX-GSX-MM** conversion 10/100/1000BT to 1000GSX multi-m.
- FOC2O-TGTX-FX/GLX10** conversion 10/100/1000BT to dual fiber rate 100FX or 1000GLX Single Mode 10km
- FOC2O-TGTX-USFP** conversion 10/100/1000BT to dual fiber rate 100FX or 1000GSX/GLX Multi or Single Mode with dual rate SFP.



Management schematic



## RACK-MEDIA2-18

**FOC2 - FOC2I - FOC2O**

**This high density unmanageable rack supports up to 18 compact modules FOC2, FOC2I and FOC2O for power and temperature**

Two redundant power supplies and 4 FANs with FAN monitor give to the media converter a stability of use even variable external condition.

The modules are hot swappable in the chassis.

The choice of fixed power supplies on order is :  
2 AC, 2 DC 48V or 1 AC +1 DC 48V.

Dimensions: 440 x 340 x 66mm ,1,5U 19"

Temperature : Working -10 to +50 °C Storage -20 to 60 °C  
LED : Power A and B"



## RACK-MEDIA2-18-SNMP

**This high density manageable rack supports up to 18 modules with - Power/Temperature control FOC2, FOC2I and FOC2O ,**

**- Management local of FOC2I**

**- Management local and remote of FOC2IO**

Two modular redundant power supplies (AC or DC48v) and 4 FANs with FAN monitor give a stability to the media converter

The modules are hot swappable in the chassis.

Carte de management: 1 Ethernet et 1 port RS232 RJ45

Dimensions: 440 x 340 x 66mm ,1,5U 19"

Temperature : Working -10 to +50 °C Storage -20 to 60 °C

Power consumption 7W and 35W fully load of 18 converters

LED : Power A and B, LAN, Status, COM"



### Rack Management

Over console port, Telnet or SSHv2,  
Web management, SNMP v1,v2c,v3  
SNTP Relay

### Management of local modules:

Inventory of modules and customer name of the link

Secret: "No possibility to read data in the module"

Local Module Firmware upgrade (FOC2I/FOC2O)

Local Module Configuration (FOC2I/FOC2O):

- Port ON/OFF
- Fiber speed auto or set
- Half/Full duplex auto or set
- Copper port speed or set
- Copper rate limit Ingress/Egress
- Link alarm function ON/OFF

Local Module Monitor

- Port Status
- Port Traffic Counters
- SFP/DMI information

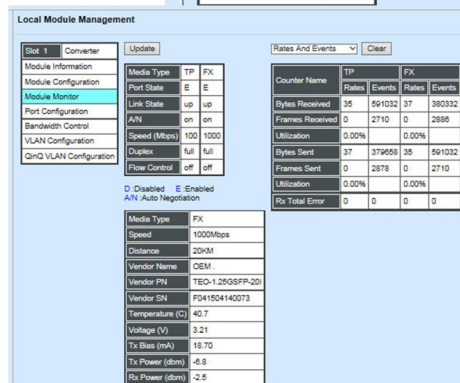
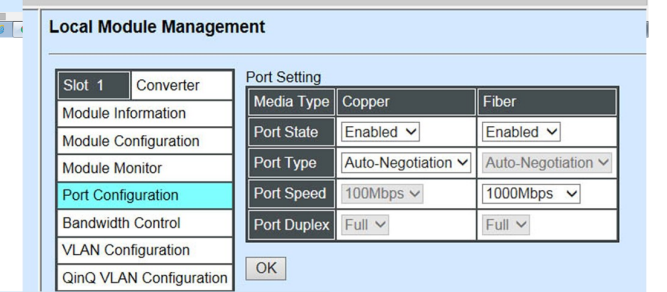
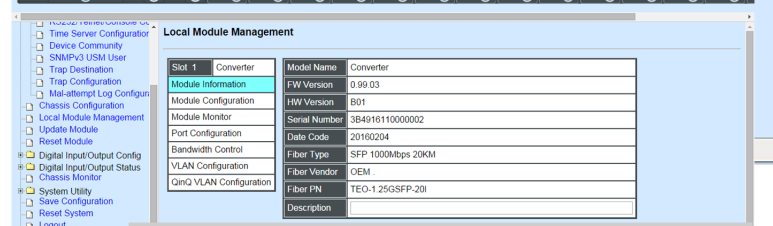
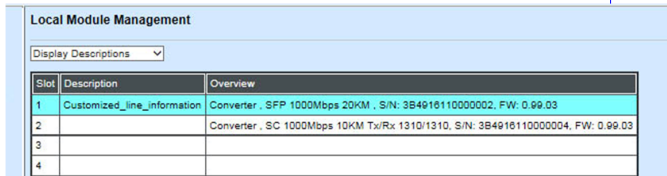
### Management of remote modules:

Inventory of FOC2O remote modules connected to FOC2O modules in the rack

Similar configuration and monitoring in the local and remote FOC2O

Management over OAM 802.3ah protocol channel.

Dying gasp information: remote lost the power





FOC2 - FOC2I -  
FOC2O



CXR Anderson Jacobson  
Rue de l'Ormette  
28410 Abondant - France

T +33 (0) 237 62 87 90  
F +33 (0) 237 62 88 01  
email: contact@cxr.com

## MODELS

	RACK CHASSIS
<b>RACK-MEDIA2-18-2A</b>	Unmanageable rack for 18 FOC2/FOC2I media converter modules, delivered with two redundant fixed AC 100-240Vac power supplies.
<b>RACK-MEDIA2-18-2D48</b>	Idem with two redundant fixed DC 48V power supplies.
<b>RACK-MEDIA2-18-AD48</b>	Idem with fixed one AC 100-240Vac and one DC 48V redundant power supplies.
<b>RACK-MEDIA2-18SNMP-A</b>	Manageable rack for 18 FOC2/FOC2I media converter modules, delivered with 1 AC power supply (maxi 2 redundant ) and one SNMP card with RJ45/DB9. Administration Telnet, http and SNMP. Supports bandwidth management per channel, back-up, RMON probe.
<b>RACK-MEDIA2-18SNMP2A</b>	Idem with 2 AC100-240V power supplies
<b>RACK-MEDIA2-18SNMP-D</b>	Idem with 1 DC 48v power supply (maxi 2 redundant )
<b>RACK-MEDIA2-18SNMP2D</b>	Idem with 2 DC 48v power supplies
<b>RACK-MEDIA2-18SNMPAD</b>	Idem with 1 AC and 2 DC 48v power supplies
<b>PS-AC-RACK-MEDIA2</b>	110/230V 50/60Hz AC power for RACK-MEDIA2-18-SNMP, maxi 2
<b>PS-DC-RACK-MEDIA2</b>	110/230V 50/60Hz DC48V power for RACK-MEDIA2-18-SNMP, maxi 2
NON MANAGEABLE MODULE	
<b>FOC2-TTX-FX-MM</b>	Media converter switch 10/100BT to 100FX MM 1310nm budget 11dB, full duplex SC
<b>FOC2-TTX-FX-MM-ST</b>	Media converter switch 10/100BT to 100FX MM 1310nm budget 11dB, full duplex ST
<b>FOC2-TTX-FX-SM30</b>	Media converter switch 10/100BT to 100FX SM 1310nm 19db, full duplex SC
<b>FOC2-TTX-FX-SM20W3</b>	Media converter switch 10/100BT to 100FX SM 1310nm 19db , single fiber full duplex SC
<b>FOC2-TTX-FX-SM20W5</b>	Media converter switch 10/100BT to 100FX SM 1550nm 19db , single fiber full duplex SC
<b>FOC2-TTX-FX-SFP</b>	Media converter switch 10/100BT to 100FX SFP, w/o SFP modules.
<b>FOC2-TGTX-GSX-MM</b>	Media converter switch 10/100/1000BaseT to 1000SX MM 850nm 8,5db for 550m, full dx SC
<b>FOC2-TGTX-GLX-SM10</b>	Media converter switch 10/100/1000BaseT to 1000LX SM 1310nm 10,5db, full duplex SC
<b>FOC2-TGTX-GLX-SM30</b>	Media converter switch 10/100/1000BaseT to 1000LX SM 1310nm 19db, full duplex SC
<b>FOC2-TGTX-GLX-SM50</b>	Media converter switch 10/100/1000BaseT to 1000LX SM 1550nm 19db, full duplex SC
DUAL RATE FIBER FX/GX NON MANAGEABLE MODULE	
<b>FOC2-TGTX-FX/GLX10W3</b>	Media converter switch 10/100/1000BaseT to 100FX or 1000LX SM 1310nm 12db , single fiber WDM full duplex SC
<b>FOC2-TGTX-FX/GLX10W5</b>	Media converter switch 10/100/1000BaseT to 100FX or 1000LX SM 1550nm 12db , single fiber WDM full duplex SC
<b>FOC2-TGTX-USFP</b>	Media converter 10/100/1000BT to 100FX or 1000SX or 1000LX per SFP module (w/o module)
RACK-MEDIA18-SNMP MANAGEABLE MODULE	
<b>FOC2I-TTX-FX-MM</b>	HTML/SNMP manageable per RACK-MEDIA2-18-SNMP, media converter switch 10/100BT to 100FX MM 1310nm budget 11dB, connector SC
<b>FOC2I-TTX-FX-SM30</b>	Idem 100FX SM 1310nm 19dB for 30km, connector SC
<b>FOC2I-TTX-FX-SM50</b>	Idem 100FX SM 1310nm 30dB for 50km, connector SC
<b>FOC2I-TGTX-GSX-MM</b>	HTML/SNMP manageable per RACK-MEDIA2-18-SNMP, media converter switch 10/100/1000BaseT to 1000SX MM 850nm 8,5db for 550m, SC connector
<b>FOC2I-TGTX-GLX-SM10</b>	Idem 1000LX SM 1310nm 10.5dB, SC connector
DUAL RATE FIBER FX/GX RACK-MEDIA18-SNMP MANAGEABLE MODULE	
<b>FOC2-TGTX-FX/GLX10W3</b>	HTML/SNMP manageable per RACK-MEDIA2-18-SNMP, media converter switch 10/100/1000BaseT to 100FX or 1000LX SM 1310nm 10dB , single fiber WDM full duplex SC
<b>FOC2-TGTX-FX/GLX10W5</b>	HTML/SNMP manageable per RACK-MEDIA2-18-SNMP, media converter switch 10/100/1000BaseT to 100FX or 1000LX SM 1550nm 10dB , single fiber WDM full duplex SC
<b>FOC2I-TGTX-USFP</b>	HTML/SNMP manageable per RACK-MEDIA2-18-SNMP, media converter switch 10/100/1000BaseT to 1000SX/LX/ZX delivered w/o module.
DUAL-RATE FX/GX RACK-MEDIA18-SNMP and OAM MANAGEABLE MODULE	
<b>FOC2O-TGTX-GSX-MM</b>	HTML/SNMP manageable by RACK-MEDIA2-18-SNMP and distant in OAM 802.3ah: media converter switch 10/100/1000BaseT to 1000SX MM 850nm 8,5db for 550m, full duplex SC. VLAN 802.1q, Q-in-Q,
<b>FOC2O-TGTX-FXGLXSM10</b>	HTML/SNMP manageable by RACK-MEDIA2-18-SNMP and distant in OAM 802.3ah: media converter switch 10/100/1000BaseT to 1000LX SM 1310nm 12dB, full duplex SC. VLAN 802.1q, Q-in-Q,
<b>FOC2O-TGTX-USFP</b>	HTML/SNMP manageable by RACK-MEDIA2-18-SNMP and distant in OAM 802.3ah: media converter 1000BT to 100FX or 1000SX or 1000LX per SFP module (w/o SFP module). VLAN 802.1q, Q-in-Q.

The information contained in this document are provided without warranty and do not constitute a contractual document. In order to improve its products, CXR reserves its right to modify, without notice, any part of this document and the specification it contains.