

FOC2-FOC2I-FOC2O

RACK-MEDIA2-18/SNMP

GIGA ETHERNET MEDIA CONVERTER OFFER



FOC2

Automatic

FOC2I

Automatic and local
management by rack

FOC2O

Automatic, remote
management with
OAM

Small size FOC2/
FOC2I 20x51x74mm
FOC2O 20x51x100m

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

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



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...

FOC2 - FOC2I - FOC2O

RACK-MEDIA2-18/SNMP



FOC2x RANGES

| | FOC2 | FOC2 I | FOC2 O |
|---|------|--------|--------|
| 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 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
- Dual rate fiber model support FE and GE traffic with 100FX or 1000GX automatically detected

FOC2 - FOC2I - FOC2O

RACK-MEDIA2-18/SNMP



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

FOC2I-TGTX-USFP conversion 10/100/1000BT to dual fiber rate 100FX or 1000GSX/GLX Multi or Single Mode with dual rate SFP.

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

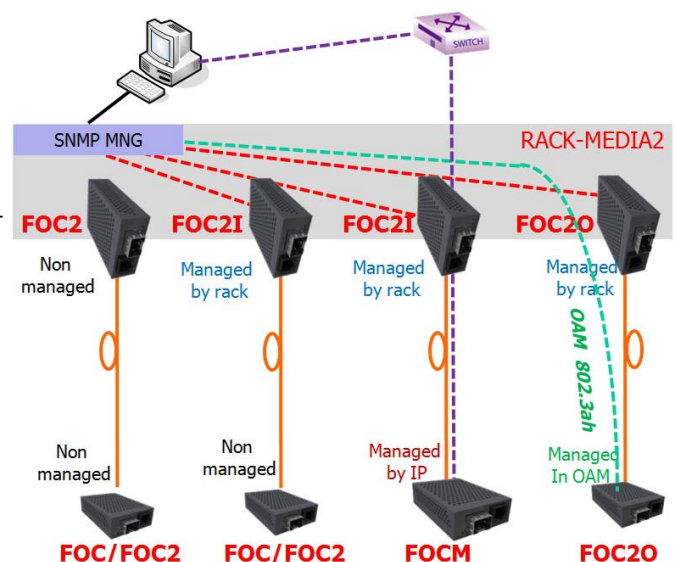
The remote device is managed over the local device in the rack and the fiber. The protocol use is OAM 802.3ah independent of the traffic in the fiber.

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.



RACK-MEDIA2-18



This high density unmanageable rack supports up to 18 compact modules FOC2, FOC2I and FOC20 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 FOC20 ,
- 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-MEDIA2-18-SNMP

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

Local Module Management

Display Descriptions

| Slot | Description | Overview |
|------|-----------------------------|--|
| 1 | Customized_line_information | Converter, SFP 1000Mbps 20KM, S/N: 3B4916110000002, FW: 0.99.03 |
| 2 | | Converter, SC 1000Mbps 10KM Tx/Rx 1310/1310, S/N: 3B4916110000004, FW: 0.99.03 |

Chassis version 1.0002
10.5.190.60/cgi-bin/index.cgi



Local Module Management

| Slot 1 | Converter | Model Name | Converter |
|-------------------------|---------------|-------------------|-----------|
| Module Information | FW Version | 0.99.03 | |
| Module Configuration | HW Version | B01 | |
| Module Monitor | Serial Number | 3B4916110000002 | |
| Port Configuration | Date Code | 20160204 | |
| Bandwidth Control | Fiber Type | SFP 1000Mbps 20KM | |
| VLAN Configuration | Fiber Vendor | OEM | |
| QinQ VLAN Configuration | Fiber PN | TEO-1.25GSFP-20I | |
| | Description | | |

Local Module Management

| Slot 1 | Converter | Port Setting | |
|-------------------------|-------------|------------------|------------------|
| Media Type | Copper | Fiber | |
| Module Information | Port State | Enabled | Enabled |
| Module Configuration | Port Type | Auto-Negotiation | Auto-Negotiation |
| Module Monitor | Port Speed | 100Mbps | 1000Mbps |
| Port Configuration | Port Duplex | Full | Full |
| Bandwidth Control | | | |
| VLAN Configuration | | | |
| QinQ VLAN Configuration | | | |

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Local Module Management

| Slot 1 | Converter | Media Type | |
|-------------------------|--------------|------------|------|
| Media Type | TP | FX | |
| Module Information | Port State | E | E |
| Module Configuration | Link State | up | up |
| Module Monitor | A/N | on | on |
| Port Configuration | Speed (Mbps) | 100 | 1000 |
| Bandwidth Control | Duplex | full | full |
| VLAN Configuration | Flow Control | off | off |
| QinQ VLAN Configuration | | | |

D : Disabled E : Enabled
A/N : Auto Negotiation

| Counter Name | TP | | FX | |
|-----------------|-------|--------|-------|--------|
| | Rates | Events | Rates | Events |
| Bytes Received | 35 | 591032 | 37 | 380332 |
| Frames Received | 0 | 2710 | 0 | 2888 |
| Utilization | 0.00% | | 0.00% | |
| Bytes Sent | 37 | 379658 | 35 | 591032 |
| Frames Sent | 0 | 2878 | 0 | 2710 |
| Utilization | 0.00% | | 0.00% | |
| Rx Total Error | 0 | 0 | 0 | 0 |

| Media Type | FX |
|-----------------|------------------|
| Speed | 1000Mbps |
| Distance | 20KM |
| Vendor Name | OEM |
| Vendor PN | TEO-1.25GSFP-20I |
| Vendor SN | FD41504140073 |
| Temperature (C) | 40.7 |
| Voltage (V) | 3.21 |
| Tx Bias (mA) | 18.70 |
| Tx Power (dbm) | -8.8 |
| Rx Power (dbm) | -2.5 |





MODEL

| RACK CHASSIS | |
|---|--|
| RACK-MEDIA2-18-2A | Unmanageable rack for 18 FOC2/FOCI2 media converter modules, delivered with two redundant fixed AC 100-240Vac power supplies. |
| RACK-MEDIA2-18-2D48 | Idem with two redundant fixed DC 48V power supplies. |
| RACK-MEDIA2-18-AD48 | Idem with fixed one AC 100-240Vac and one DC 48V redundant power supplies. |
| RACK-MEDIA2-18SNMP-A | Manageable rack for 18 FOC2/FOCI2 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. |
| RACK-MEDIA2-18SNMP2A | Idem with 2 AC100-240V power supplies |
| RACK-MEDIA2-18SNMP-D | Idem with 1 DC 48v power supply (maxi 2 redundant) |
| RACK-MEDIA2-18SNMP2D | Idem with 2 DC 48v power supplies |
| RACK-MEDIA2-18SNMPAD | Idem with 1 AC and 2 DC 48v power supplies |
| PS-AC-RACK-MEDIA2 | 110/230V 50/60Hz AC power for RACK-MEDIA2-18-SNMP, maxi 2 |
| PS-DC-RACK-MEDIA2 | 110/230V 50/60Hz DC48V power for RACK-MEDIA2-18-SNMP, maxi 2 |
| NON MANAGEABLE MODULE | |
| FOC2-TTX-FX-MM | Media converter switch 10/100BT to 100FX MM 1310nm budget 11dB, full duplex SC |
| FOC2-TTX-FX-MM-ST | Media converter switch 10/100BT to 100FX MM 1310nm budget 11dB, full duplex ST |
| FOC2-TTX-FX-SM30 | Media converter switch 10/100BT to 100FX SM 1310nm 19db, full duplex SC |
| FOC2-TTX-FX-SM20W3 | Media converter switch 10/100BT to 100FX SM 1310nm 19db , single fiber full duplex SC |
| FOC2-TTX-FX-SM20W5 | Media converter switch 10/100BT to 100FX SM 1550nm 19db , single fiber full duplex SC |
| FOC2-TTX-FX-SFP | Media converter switch 10/100BT to 100FX SFP, w/o SFP modules. |
| FOC2-TGTX-GSX-MM | Media converter switch 10/100/1000BaseT to 1000SX MM 850nm 8,5db for 550m, full dx SC |
| FOC2-TGTX-GLX-SM10 | Media converter switch 10/100/1000BaseT to 1000LX SM 1310nm 10,5db, full duplex SC |
| FOC2-TGTX-GLX-SM30 | Media converter switch 10/100/1000BaseT to 1000LX SM 1310nm 19db, full duplex SC |
| FOC2-TGTX-GLX-SM50 | Media converter switch 10/100/1000BaseT to 1000LX SM 1550nm 19db, full duplex SC |
| DUAL RATE FIBER FX/GX NON MANAGEABLE MODULE | |
| FOC2-TGTX-FX/GLX10W3 | Media converter switch 10/100/1000BaseT to 100FX or 1000LX SM 1310nm 12db , single fiber WDM full duplex SC |
| FOC2-TGTX-FX/GLX10W5 | Media converter switch 10/100/1000BaseT to 100FX or 1000LX SM 1550nm 12db , single fiber WDM full duplex SC |
| FOC2-TGTX-USFP | Media converter 10/100/1000BT to 100FX or 1000SX or 1000LX per SFP module (w/o module) |
| RACK-MEDIA18-SNMP MANAGEABLE MODULE | |
| FOC2I-TTX-FX-MM | HTML/SNMP manageable per RACK-MEDIA2-18-SNMP, media converter switch 10/100BT to 100FX MM 1310nm budget 11dB, connector SC |
| FOC2I-TTX-FX-SM30 | Idem 100FX SM 1310nm 19dB for 30km, connector SC |
| FOC2I-TTX-FX-SM50 | Idem 100FX SM 1310nm 30dB for 50km, connector SC |
| FOC2I-TGTX-GSX-MM | HTML/SNMP manageable per RACK-MEDIA2-18-SNMP, media converter switch 10/100/1000BaseT to 1000SX MM 850nm 8,5db for 550m, SC connector |
| FOC2I-TGTX-GLX-SM10 | Idem 1000LX SM 1310nm 10.5dB, SC connector |
| FOC2I-SFPP-SFPP | HTML/SNMP manageable per RACK-MEDIA2-18-SNMP, Ethernet media converter, SFP+ to SFP+, dual rate 1G and 10G, delivered without SFP module, managed from the RACK-MEDIA2-18-SNMP chassis or through DIP-Switches. |
| DUAL RATE FIBER FX/GX RACK-MEDIA18-SNMP MANAGEABLE MODULE | |
| FOC2-TGTX-FX/GLX10W3 | 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 |
| FOC2-TGTX-FX/GLX10W5 | 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 |
| FOC2I-TGTX-USFP | 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 | |
| FOC2O-TGTX-GSX-MM | 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, |
| FOC2O-TGTX-FXGLXSM10 | 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, |
| FOC2O-TGTX-USFP | 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. |
| DIN-FOC | Kit DIN for FOC2 (optional) |