OT6/1FED-4 OR1/6FUD-4
OT10/1FED-4 OR1/10FUD-4
OT14/1FED-4 OR1/14FUD-4
OT18/1FED-4 OR1/18FUD-4

EMP-CENTAURI®

Dear Customer,
congratulations on the purchase of the EMP-Centauri product. Before its installation and putting into operation, read carefully the entire operation manual. Keep the purchase and rework (if any) records for future need.

1) Field of Application, Warranty

The product is designed for distribution of terrestrial & satellite signals and data connectivity in hybrid coaxial / fiber optic systems. EMP-Centauri FIBER CLASS products are covered under 4 (four) years warranty from the date of purchase, see details in EMP-Centauri General trade conditions, published at manufacturer's website www.emp-centauri.cz.
The user will be responsible for injury or material damage which may arise in consequence of any product use in contradiction with the manual. Repairs or any interventions in the product may be performed only by EMP-Centauri company, or other companies authorized by EMP-Centauri.

2) Technical Specifications

Products OT6/1FED-4, OT10/1FED-4, OT14/1FED-4 and OT18/1FED-4 are coaxial-to-fiber converters (optical transmitters) for up to 16 satellite inputs and one terrestrial input. They are powered from power supply 12V and pass power also to connected Quattro LNBs. Recommended fiber cable is singlemode.
Products OR1/6FUD-4, OR1/10FUD-4, OR1/14FUD-4 and OR1/18FUD-4 are fiber-to-coaxial converters (optical receivers) providing up to 16 satellite outputs and one terrestrial output. They can be powered from devices connected to coaxial outputs (multiswitch) or from external power supply 12V.
Both optical transmitter and receiver allow path of data wavelengths 1310 & 1490 for easy integration with data passive optical networks (PON).

Specifications	**OT6/1FED-4**	**OT10/1FED-4**	**OT14/1FED-4**	**OT18/1FED-4**
Number of coaxial inputs	5	9	13	17
Number of fiber inputs	1 (SC/APC), wavelengths 1310 & 1490 nm			
Frequency Range	TERR 5–862 MHz; SAT 950–2150 MHz			
Input Signal Level Range	45–85 dBuV (see table RF Signal level performance, page 3)			
Number of fiber outputs	1 (SC/APC)			
Optical output power	1 dBm (individual wavelength)			
Optical loss	3 dB (for data pass 1310 & 1490 nm)			
Optical wavelength	1270–1350 nm	1270–1430 nm	1270–1530 nm	1270–1610 nm
Current consumption*	0.4 A	0.6 A	0.8 A	1.0 A
Dimensions (w,d,h)	18.5 x 14.5 x 7.8 cm			

Specifications	OT6/1FED-4	OT10/1FED-4	OT14/1FED-4	OT18/1FED-4
Temperature Range	−25 … +50 °C			

*for total consumption add consumption of powered LNBs

Specifications	OR1/6FUD-4	OR1/10FUD-4	OR1/14FUD-4	OR1/18FUD-4
Number of fiber inputs	1 (SC/APC)			
Optical input power	−20 … +5 dBm			
Optical wavelength	1270–1350 nm	1270–1430 nm	1270–1530 nm	1270–1610 nm
Number of coaxial outputs	5	9	13	17
Frequency Range	TERR 5–862 MHz; SAT 950–2150 MHz			
Output Signal Level Range	50–95 dBuV (see table RF Signal level performance, page 3)			
Number of fiber outputs	1 (SC/APC), wavelengths 1310 & 1490 nm			
Optical loss	3 dB (for data pass 1310 & 1490 nm)			
Current consumption*	60 mA	90 mA	120 mA	150 mA
Dimensions (w,d,h)	18.5 x 14.5 x 5.5 cm			
Temperature Range	−25 … +50 °C			

3) Product Takeover

Make sure that the product is not damaged. Please contact your dealer in the case of damage.

4) Product Storing and Installation

We recommend the device to be installed and serviced by the qualified technician.

The product must not be stored and installed:

- in the place with excessive humidity
- in the place with dropping or splashing water,
- in the place with excessive dust pollution, mechanical vibrations or impacts
- in the place out of temperature limits specified in the section 2) Technical Specifications
- close to heat sources (radiators or air ventilators, direct sunshine etc.)
- in the reach of children.

Use the apparatus only in moderate climates (not in tropical climate).

Fix the product firmly on a wall or another hard and inflammable surface with screws and dowels.

5) Product Connection

Connect the product in accordance with this manual and valid regulation. Use high-quality 75 Ω coaxial cable designed for satellite reception. Mount the F connectors (screw, crimp or compress type) on the ends of coaxial cables. Connect the F connectors into the F sockets of product and fasten them with an appropriate force. The coaxial cables shall not be broken, the minimum bending radius should be 5 cm.

Fiber cable (recommended single mode) must be terminated with SC/APC connector.

Optical transmitter:

- Connect F sockets marked “A” – “D” with LNB outputs (recommended LNB type is Quattro)
- Connect input F socket marked “TERR” with output of terrestrial antenna, eventually with output of terrestrial amplifier or channel processing equipment

- Connect SC/APC socket to PON data headend (OLT)
- Connect output SC/APC socket to other optical device (splitter, receiver)
- Connect DC2.1 socket marked “DC 12V” with power supply
- Connect connector marked with protective bounding symbol with protective bounding conductor

Note: Use only Quattro LNB. If optical splitting is required, use PLC splitters.

Optical receiver:

- Connect input SC/APC socket to other optical device (splitter, transmitter)
- Connect F sockets marked “A” – “D” with inputs of attached multiswitch or other coaxial device*
- Connect output F socket marked “TERR” with output of terrestrial antenna, eventually with output of terrestrial amplifier or channel processing equipment
- Connect SC/APC socket to PON splitter or user terminal (ONU)
- Connect DC2.1 socket marked “DC 12V” with power supply**
- Connect connector marked with protective bounding symbol with protective bounding conductor

* RF signals put in transmitter’s inputs appear at corresponding of receiver’s outputs

** if DC power is present in SAT coaxial cables, external power supply is not necessary

RF Signal level performance based on optical link configuration	Recommended input RF level		RF gain / loss
	Min	Max	
Transmitter – receiver, direct connection	45 dBuV	85 dBuV	10 dB (gain)
Transmitter – 2way splitter (PLC) – receiver	50 dBuV	85 dBuV	4 dB (gain)
Transmitter – 4way splitter (PLC) – receiver	55 dBuV	85 dBuV	-2 dB (loss)
Transmitter – 8way splitter (PLC) – receiver	60 dBuV	85 dBuV	-8 dB (loss)
Transmitter – 16way splitter (PLC) – receiver	65 dBuV	85 dBuV	-14 dB (loss)
Transmitter – 32way splitter (PLC) – receiver	70 dBuV	85 dBuV	-20 dB (loss)

The wiring examples are shown in the section 9) Example of use or at the website www.emp-centauri.cz.

6) Safety

Due to security reasons the product and wiring in which the product is connected, must be grounded properly. Make sure the antennas are grounded properly. Connect all devices to power grid only after all connections are finished and checked. Never work on the wiring (including satellite receivers, TVs) during or before a storm. A lightning stroke into the antenna may cause dangerous overvoltage in the product metallic parts.

7) Product Maintenance

Always disconnect the product from the power supply and coaxial wiring before performing any maintenance of the product. If you have to enter places with a risk of fall, pay attention to your safety. Use only dry cloth to clean the product and do not use any liquid agents.

8) Symbols Explanation

CE	certificate of conformity		Protective ground		Invisible laser radiation
	According to EU directive, electric and electronic devices which are identified by one of the following symbols must not be disposed of together with municipal waste. When disposing of the old device, use local waste collection and separation systems.				

10) Contact

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9) Example of use