

Outdoor optical node

Ref. 231080

Important Safety Instructions

Caution Statements

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Please allow air circulation around the equipment.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
7. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
8. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit the apparatus.
9. Only use attachments/accessories specified by the manufacturer.
10. Unplug this apparatus during lightning storms or when unused for long periods of time.
11. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Safe operation

- Power requirements for this product are 110 - 230V ~ 50/60 Hz.
- Do not take the cover off the equipment without disconnecting it from the mains.

Safe installation

- Ambient temperature should not be higher than 113°F.
- Do not place the equipment in a place where it can suffer vibrations or shocks.
- Do not place naked flames, such as lighted candles on or near the product.

Optical connection instructions:

- An SC/APC single mode fiber cable must be used. Remove the protective cover from the optical connector on the unit and the cap on the cable connector. Carefully align the guides on both connectors when plugging a cable to the device, then push the connector all the way in.
- Take special care to avoid damaging the unprotected ends of the connectors, as small scratches, impurities and/or particles of dirt, oil, grease, sweat, etc. may significantly affect the quality of the signal.
- To clean the ends of the connectors, gently rub with a lint-free lens cleaning cloth, dampened using additive-free isopropyl alcohol. Make sure the alcohol evaporates fully before connecting.
- Keep the connector covers and cable caps in a safe place in case they are needed in the future.
- Always fit the covers on the connectors of devices that are not connected to cables to prevent the laser beam from damaging the eyes.
- Do not turn the transmitter on without a fiber optic cable connected to it.

Safety measures

Warning.-

This product emits an invisible laser beam. Avoid contact with laser radiation. The use of equipment such as binoculars or magnifying glasses may increase damage caused to the eyes.



According to EN 60825-1: 2014

Maximum Output: 3dBm / Emitted Wavelength: 1310nm



Caution

- The use of the equipment in any other way than the specified in this manual may lead to exposure to harmful radiation.
- Do not use the equipment in any way that does not comply with the operating instructions or in any conditions that exceed the stipulated atmospheric specifications.
- Never point the laser beam at people or animals.

Class B equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Symbology



This symbol indicates that the equipment complies with the safety requirements for class II equipments.



To avoid the risk of electric shock, do not open the unit.



The equipment complies with the CE mark requirements.



The equipment complies with the FCC mark requirements.

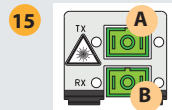
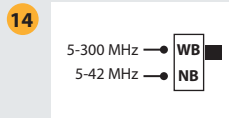
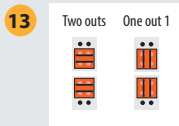
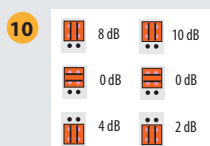
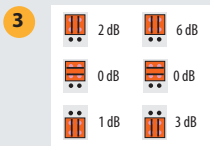
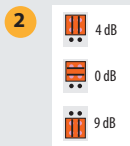
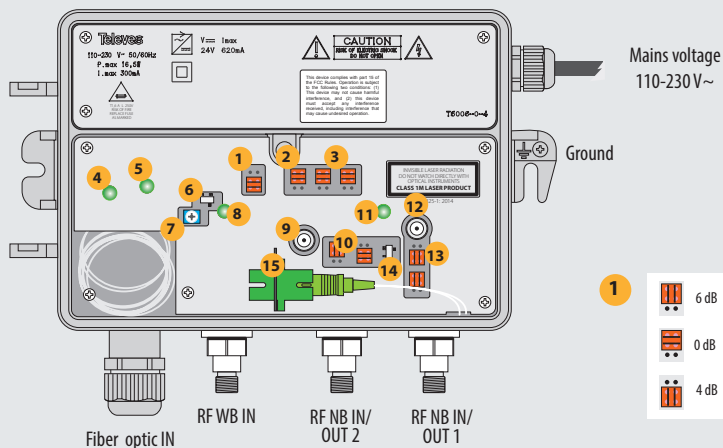
Technical specifications

Reference		231080
Forward path		
Optical stage		
Wavelength	nm	1200 ... 1600
Optical return loss	dB	>40
Optical input level for OLC	dBm	-8 ... +1
Max. optical input power before damage	dBm	+4
Optical device	type	InGaAs pin photodiode
Optical connector	type	SC/APC
RF stage		
Frequency range	MHz	54 ... 1220
Output impedance	Ohm	75
RF output return loss	dB	>10
Input attenuator	dB	4, 6 selectable
Inter stage attenuator	dB	1, 2, 3, 4, 5, 6, 7, 8 selectable
Equaliser	dB	4, 9 selectable
Flatness	dB	± 0.75
Number of outputs (selectable) ⁽¹⁾	no	1 / 2
Typical output level in OLC range, port 1 ⁽²⁾ (CNR>52, CSO >60 dB) (CTB >60 dB)	dBmV	53
Test point, inside	dB	-30
RF connectors	type	5/8 entry fitting with F adapter
Return path		
Optical stage		
Wavelength	nm	1310 ±20
Optical output level	dBm	3
Optical return loss	dB	>40
Laser type	type	DFB (Class1M)
Optical connector	type	SC/APC
RF stage		
Frequency range	MHz	5 ... 42 / 5 ... 300 selectable
Input impedance	Ohm	75
RF input level	dBmV	15 ... 30
RF input level control	dB	0 ... -10 (step 2dB), -14, -18
General		
Mains voltage	V~	110 - 230
Mains frequency range	Hz	50 / 60
Max. current consumption	mA	300
Max. power consumption	W	16.5
Housing material		Aluminium
Mains cord input	type	PG-7
Optical fiber input	type	PG-13,5
Operating temperature	°F	14 ... 113
Dimensions	in	9.13 x 3.54 x 5.51
Weight	lb	4.02
Index of protection		IP65

(1) With internal splitter 50/50.

(2) Measure made with a transmitter 233306 (AGC mode). RF level at the transmitter input 25 dBmV per channel (42 ch's CENELEC) and +0 dBm optical power at the receiver input.

Power modes / Controls description



- 1.- Pre-attenuation control.
- 2.- Slope control.
- 3.- Forward path Att. control.
- 4.- PWR LED indicator
- 5.- Optical level indicator (OLC):
 - (red) > +1 dBm
 - (green) -8 ... +1 dBm
 - (orange) < -8 dBm
- 6.- Switch OLC (AUTO/MAN.).
- 7.- Manual control Gain if OLC = MANUAL.

- 8.- Return Path PWR LED indicator
- 9.- Return path board Test point.
- 10.- Return path Att. control.
- 11.- Return Path Laser LED indicator
- 12.- General Test point (-30dB).
- 13.-Switch return path band:
 - WB - Wide band/NB - Narrow band.
- 14.-Return Path Band SWITCH selector.
- 15.- TX/RX:
 - A) Return channel optical output
 - B) Forward channel optical input

All "F" connectors are interchangeable by adapters, reference 4121, for half inch cable.

Setting the return path

Select the return path band (WB up to 300MHz or NB up to 42MHz).

Narrow band (NB): Select the best combination of attenuators up to measure 16-17 dBmV per channel in the return path test point. This

measure was done with 6 channels.

Wide band (WB): Select the best combination of attenuators up to measure 10-12dBmV per channel in the return path test point. This measure was done with 28 channels.

Televés Limited Warranty

Televés S.A.U. guarantees this product as per legislation applicable for this type of product at the time and in the country of purchase.

- (A) Televés warrants, only to the original Purchaser, all Products be free from any defect in materials or workmanship for a period of two (2) years from the date of original purchase, unless otherwise specified.
- (B) Televés shall, free of charge and in its sole discretion, either repair, replace with a new or factory reconditioned equivalent, or refund the purchase price of the Product(s), that has been determined by Televés to be defective in material or workmanship, subject to the limits of this warranty.
- (C) This warranty excludes any damage or inoperability resulting from:
 - (I) use or installation that is not in strict compliance with the written instructions and specifications;
 - (II) any modification or alteration performed by any third party not authorized in writing by Televés;
 - (III) service or repair performed by any third party not authorized in writing by Televés;
 - (IV) misuse, abuse, intentional harm, or lack of reasonable care;
 - (V) fire, ice, snow, rain, wind, water, volcano, excessive heat or cold, lightning, flood, power surge, earthquake, or any other acts of God;
 - (VI) war, crime, strike, riot, electro-magnetic pulse, or any other acts beyond the control of Televés;
 - (VII) shipping.
- (D) All claims under the terms of this warranty must be made in writing, by the original Purchaser, within fourteen (14) days of the defect being known to the Purchaser. Such claims shall be accompanied by a description of any material facts related to the claimed

defect and the invoice or other proof of original purchase date and price. If Televés so requests, the Purchaser shall, at Purchaser's expense, deliver the claimed Product(s) to Televés, within 14 days of the date of the return authorization. Under no circumstances shall the Product(s) be returned to Televés without a return authorization.

- (E) Any refund to the Purchaser, shall be limited to the purchase price of the Product(s), excluding any applicable taxes, duties, freight costs, removal costs, installation costs, or any other charges incident to the purchase of the product.
- (F) Any damage caused by shipper shall be claimed with the shipper in accordance with the shipper's policies and procedures.
- (G) Televés shall in no event and under no circumstances be liable or responsible for any consequential, indirect, incidental, punitive, direct or special damages based upon breach of warranty, breach of contract, negligence, strict tort liability or otherwise or any other legal theory, arising directly or indirectly from the sale, use, installation or failure of any product acquired by Purchaser from Televés.
- (H) This limited warranty extends to the original Purchaser and cannot be assigned or transferred to any other party without the prior express written permission of Televés, which permission Televés may withhold for any reason or for no reason at all.
- (I) Televés will not assume any liabilities for any other warranties, whether statutory, express or implied, made by any other person.
- (J) Televés reserves the right to modify or discontinue this warranty at Televés' sole discretion without notification. No other warrantees are expressed or implied.

DECLARACIÓN DE CONFORMIDAD ■ DECLARATION OF CONFORMITY ■ DECLARAÇÃO DE CONFORMIDADE ■ DECLARATION OF CONFORMITY ■ DICHIARAZIONE DI CONFORMITÀ ■ DEKLARACJA ZGODNOŚCI ■ KONFORMITÄTSEKLRÄRUNG ■ ΠΣΤΟΠΟΙΗΤΙΚΟ ΣΥΜΜΟΡΦΩΣΗΣ ■ FÖRSÄKRAN OM ÖVERENSSTÄMMELSE ■ ДЕКЛАРАЦИЯ СООТВЕТСТВИЯ ■ فق باطامل نايب ▶ [https:// doc.televés.com](https://doc.televés.com)

Manufacturer :

Televés S.A.U. Rúa B. de Conxo, 17 - 15706 Santiago de Compostela, A Coruña. Spain www.televés.com

Responsible party:

Televés USA LLC. 16596 E. 2nd Avenue Aurora, CO 80011 USA Telephone: +1 (720) 379 3748 televés.usa@televés.com



01030463001-002