

HDO803 OPTICAL RECEIVER

HDO803 is a forward path receiver for fibre optic links in CATV networks. HDO803 receiver has an extended frequency range to fulfil DOCSIS 3.1 requirements. HDO803 can be delivered with an integrated spectrum analyser module. HDO803 is installed into HDX installation frame.

Features

- DOCSIS 3.1 compatible 1.2 GHz bandwidth
- Fibre connector can be located at the rear or at the front panel
- Front panel DC test point for optical input power
- Wide adjustment ranges for output level and slope
- Automatic A/B backup switching with external passive RF coupler
- Three output level control modes:
 - Automatic based on optical input level
 - Manual
 - Pilot based (with spectrum analyser option)
- Optional spectrum analyser module
- Small form factor family, 2 RU height
- Forced cooling through the unit



Management features

- Optical input power measurement and monitoring
- User configurable backup switching with monitoring
- Automatic and manual output level control with monitoring
- Spectrum analyser module option, allowing pilot based level adjustment and signal monitoring with fully user programmable frequencies and limits
- Manual slope control
- LED indicators for signal and module statuses
- Internal temperature measurement and monitoring
- Intelligent fan speed control with monitoring
- Non-volatile logging of 32 latest events, including alarms, alarming values, settings changes and application starts.
- Uptime and total uptime counters
- All adjustments and alarm limits fully user configurable
- Local PC connection through backplane HDO bus with HDX021 cable
- Remote IP connection through HDC100 controller module
- SNMP monitoring and configuration through HDC100 controller module

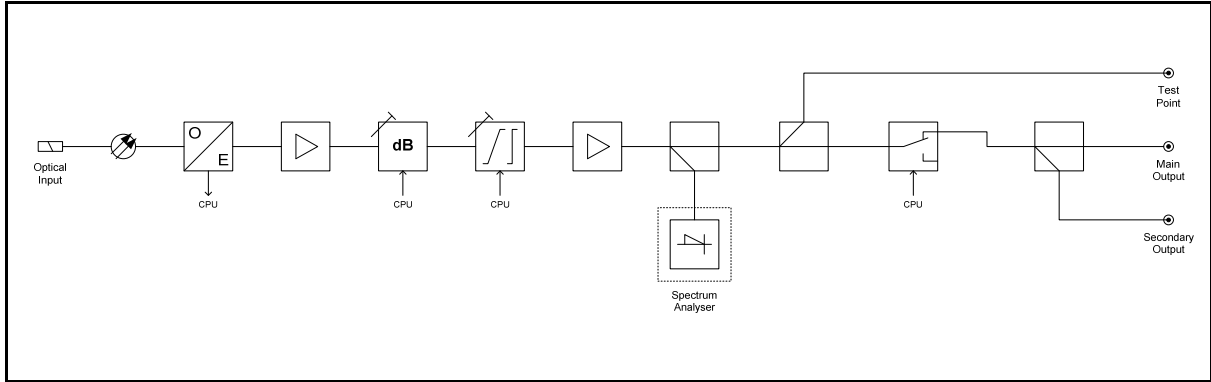
Technical specifications

Parameter	Specification	Note
Optical parameters		
Light wavelength	1290...1620 nm	
Input power	-5...+3 dBm	1)
RF parameters		
Frequency range	47...1218 MHz	
Output level	105 dB μ V	2)
Flatness	\pm 0.5 dB	3)
Slope variation	\pm 1 dB	4)
RF impedance	75 Ω	
Output return loss	18 dB	5)
Slope control range	10 dB	
Level control range	20 dB	
RF test point attenuation	20 dB	6)
Secondary output attenuation	20 dB	
Spectrum analyser module (optional)		
Measurement range	47...1218 MHz, 0.25 MHz steps	
Measurement bandwidth	0.35 MHz	7)
Dynamic range	70...110 dB μ V	8)
Measurement accuracy	\pm 1 dB	9)
Noise and distortion performance		
U_{\max} (138 x QAM channels) @ 1.2 GHz	>104.5 dB μ V	10)
Noise current density	5.5 pA/ \sqrt Hz	
CTB	72 dB	11)
CSO	68 dB	11)
General		
Power consumption	13.7 W (with SA 14.7 W)	12)
Supply voltages	25 V / 470 mA (with SA 470 mA)	12)
	6.3 V / 320 mA (with SA 470 mA)	12)
Optical connector	SC/APC or E2000/APC	13)
RF connectors	F female	14)
Cooling	Field replaceable fan	15)
Dimensions	2U x 7HP x 380 mm	h x w x d
	Occupies 1/12 of HDX002	
Weight	1.5 kg	
EMC compliance	EN 50083-2	
Enclosure classification	IP20	
Operating temperature range	0...+45 °C	
Storage temperature range	-20...+60 °C	
Operating relative humidity	0...85%	

Notes

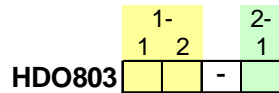
- 1) Recommended input power range. High input power creates more distortion.
- 2) Gain limited, maximum available output level when the optical input power is 0 dBm, the wavelength is 1310 nm and the optical modulation index is 4.5 %. If the optical input power decreases 1 dB the maximum RF output level decreases 2 dB.
- 3) Typical value. Maximum value is ± 0.75 dB.
- 4) Maximum value at 25 °C.
- 5) Typical value is 18 dB on the whole frequency band. Minimum value is 18 dB and above 40 MHz -1 dB/octave.
- 6) Typical inaccuracy is ± 0.4 dB. Maximum value is ± 0.75 dB.
- 7) Typical -3 dB bandwidth. Typical -45 dB bandwidth is 0.5 MHz.
- 8) For CW/ PAL signal at the main output. For QAM detection the dynamic range is ~ 6 dB higher. QAM detection measures a ~0.35 MHz band and the level calculation assumes the carrier to be 6.875 Msymbols/s signal.
- 9) This is the typical performance over band 50...740 MHz for CW/PAL signals. For PAL signals above 740 MHz and all QAM signals the accuracy is ± 1.7 dB.
- 10) According to IEC60728-3-1. OMI of one channel is 2.2 %. Flat response, no output slope.
- 11) CENELEC 42 unmodulated channels. Typical value at 25 °C when the output level is 100 dB μ V and the optical input power is less than 0 dBm with flat response. CTB and CSO performance is tested up to 1218 MHz.
- 12) Maximum values without and with the spectrum analyser module.
- 13) Fibre connectors can be located at the rear or at the front panel.
- 14) Fixed connections are located at the rear panel. Test points are located at the front panel.
- 15) The fan can be replaced by the user without signal interruption.

Block diagram



Ordering information

HDO803 configuration map



1-1 Fibre location	
F	Front panel
R	Rear panel
1-2 Fibre connector type	
A	SC/APC, 9 deg.
C	E2000/APC
D	SC/APC, 8 deg.
H	SC/APC with shutter, 8 deg.
2-1 Signal monitoring	
B	Spectrum analyser
X	None

DOC0022827, Rev002