

18.10.2017

## HDO908 O-BAND DWDM CATV FIBRE TRANSMITTER

HDO908 is a high performance, linear directly modulated O-band DWDM DFB laser transmitter for forward path fibre optic links in CATV and FTTx networks. The transmitter has an extended frequency range to fulfil DOCSIS 3.1 requirements. The module is installed into HDX installation frame. HDO908 is available on different DWDM wavelengths in 1310 nm window to support a node segmentation. The product contains an optimised circuit that reduces the chirp-dispersion induced CSO. HDO908 is also available on different optical output power categories to fit various requirements. HDO908 has two equal input sections with level and slope adjustments to support broadcast and narrowcast signal distribution. The RF isolation between the input branches is high minimising the leakage of narrowcast signals into wrong node segments. The power consumption is low but HDO908 still offers the highest level of performance and the widest variety of features, including the internal spectrum analyser module.



### Features

- DOCSIS 3.1 compatible
- Standardised input and test point levels
- Electrical dispersion compensator provides a good CSO performance at longer transmission distances
- First-class power consumption vs. signal performance rate
- Two inputs with level adjustments
- Equaliser in both inputs
- High isolation between inputs
- Unused input can be switched off for power saving and noise reduction
- Integrated input amplifiers and laser driver amplifiers
- Automatic power control providing constant total OMI as standard feature
- Optional spectrum analyser function
- Fibre connectors can be located at the rear or at the front panel
- Optional integrated DWDM 1-ch filter to combine various wavelengths into one fibre i.e. no need for separate DWDM multiplexer module
- Small form factor family, 2 RU height
- Local and remote software control of all adjustments
- Forced cooling through the unit



18.10.2017

### **Management features**

- Monitoring of APC (Automatic Power Control) functionality with user configurable offset
- Optical output power monitoring
- Laser bias current monitoring
- TEC (Thermo-Electric Cooler) current monitoring
- Laser temperature monitoring
- Signal level adjustment in both inputs
- Slope adjustment in both inputs
- Input 2 switch on/ off
- Link span setting for optimised CSO
- Channel level measurement when equipped with spectrum analyser option
- 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 source	Cooled DFB with optical isolator	
Peak wavelength	· · · · · · · · · · · · · · · · · · ·	1)
	1330.459 nm (225.330 THz)	
	1329.220 nm (225.540 THz) 1327.249 nm (225.875 THz)	
	1325.782 nm (226.125 THz)	
	1323,587 nm (226,500 THz)	
	1322,828 nm (226,630 THz)	
	1318,725 nm (227,335 THz)	
	1317,740 nm (227,505 THz)	
Nominal output power	+8, +10 or +12 dBm	2)
1-ch filter	Pass band fits to laser wavelength -154 dBc/Hz	3)
Relative intensity noise OMI per channel	4.5 % for PAL B/G 40 chs	4) 5)
Number of optical ports	1 or 2	6)
RF parameters		
RF inputs	Two identical inputs	7)
Frequency range	471218 MHz	
RF impedance	75 Ω	
Input return loss Flatness	18 dB ±0.4 dB	8)
Automatic power control (APC)	Yes	9) 10)
Laser test point level for 4.5 % OMI	78 dBμV	11)
Input level	77 dBμV	12)
Level adjustment range	10 dB	•=/
Equaliser adjustment range	06 dB	
Isolation between inputs	50 dB	13)



#### 18.10.2017

3(6)

### Spectrum analyser module (option)

Measurement range	471218 MHz, 0.25 MHz steps	
Measurement bandwidth	0.35 MHz	14)
Dynamic range	58…98 dBμV	15)
Measurement accuracy	±1 dB	16)

### Noise and distortion performance, CENELEC 42 chs

Link C/N with 0 dBm to receiver	53.5 dB	14)
СТВ	67 dB	18)
CSO	62 dB	18)

#### General

Power consumption	8.5 W	19)
Supply voltages	25 V / 260 mA	19)
	6.3 V / 300 mA	19)
RF connectors	F female	20)
Optical connector	SC/APC, E-2000	21)
Cooling	Field replaceable fan	22)
Dimensions	2U x 7HP x 380 mm	h x w x d
	Occupies 1/12 of HDX installation frame	
Weight	1.5 kg	
EMC compliance	EN 50083-2	23)
Enclosure classification	IP20	
Operating temperature range	0+45 °C	
Storage temperature range	-20+60 °C	
Operating relative humidity	085 %	

### Notes

- Typical peak wavelength at 25°C.
- Three output power categories available. Optional 1-ch filter reduces the output power 0.5 dB. The wavelength A (1325.78 nm) is available at +14 dBm with the lowered CSO specification.
- Optical filter is used for optical daisy chaining of transmitters i.e. optical multiplexer module is not needed for combining wavelengths.
- 4) Worst case value at the nominal output power when the 2<sup>nd</sup> input is switched off.
- 5) Typical value. The minimum value is 4.0 %.
- 6) Two optical connectors if 1-ch optical filter is included.
- 7) Input 2 can be switched on/ off. Input 2 is switched off as a factory setting.
- 8) Typical value is 18 dB on the whole frequency band. The minimum value is 18 dB and above 40 MHz -1 dB/ octave.
- 9) Typical value. Maximum value is ±0.75 dB.
- 10) APC is based on broadband detection in which the total laser driving power is measured and adjusted so that if the RF power is evenly divided into 40 channels the resulted OMI/channel is 4.5 %. Offset can be set by the user.
- 11) Typical accuracy is ±0.4 dB. Maximum value is ±0.75 dB.
- 12) Input level required to reach 4.5 % OMI with adjustments in 0 dB positions.
- 13) The attenuation from one input to the other input. Above 860 MHz the isolation is 40 dB or higher.
- 14) Typical -3 dB bandwidth. Typical -45 dB bandwidth is 0.5 MHz.
- 15) Level at laser (OMI) test point for modulated CW/ PAL signal. For QAM detection the dynamic range is approx. 6 dB higher. QAM detection measures a ~0.35 MHz band and the

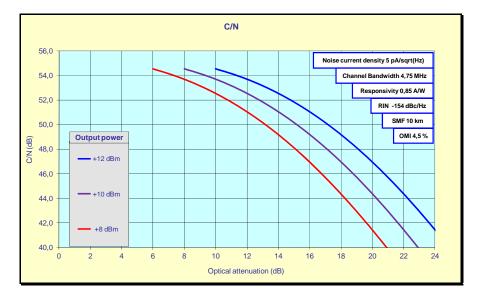


18.10.2017

4(6)

level calculation assumes the carrier to be 6.875 Msymbols/s signal. Nominal level denotes 4.5 % OMI. (0.45...45 % OMI range)

- 16) 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.
- 17) Typical value with 10 km fibre. The minimum value is 52.5 dB with 4.5 % OMI. The values are valid when the 2<sup>nd</sup> input is switched off. When the 2<sup>nd</sup> input is switched on 0.5 dB lower C/N is allowed. C/N values are based the noise current density of 5 pA/√Hz. See graphs below. Longer fibres may have an impact on C/N depending on the input power of the receiver, the optical modulation index, the properties of the fibre and also the chirp characteristics of the laser. For instance the fibre of 25 km causes typically 1...1.5 dB penalty on C/N when 0 dBm is delivered to the receiver.



- 18) Typical value when two wavelengths are launched into 10 km fibre. A longer fibre, higher wavelength count and a higher launch power degrades CSO. CSO is degraded because of the dispersion-chirp as well as the nonlinearities and the optical crosstalk in the fibre. CTB and CSO performance is tested up to 1218 MHz. With modulated channels the distortion distances are better, CTB typically 8 dB and CSO 6 dB. CTB minimum value is 64 dB and CSO minimum value is 58 dB. The CSO minimum value of +14 dBm transmitter is 50 dB.
- 19) Typical power consumption at 25°C without the spectrum analyser module and the 2<sup>nd</sup> input switched off. The power save mode is enabled (-1.9 W). The 2<sup>nd</sup> input consumes 1.5 W and the spectrum analyser 1.5 W.
- 20) Fixed connections are located at the rear panel. Test points are located at the front panel.
- 21) Fibre connectors can be located at the rear or at the front panel.
- 22) The fan can be replaced by the user without signal interruption.
- 23) Radiation limit is 20 dBpW.

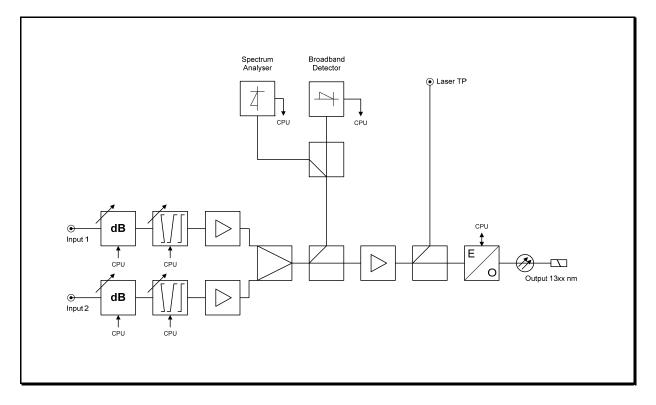


18.10.2017

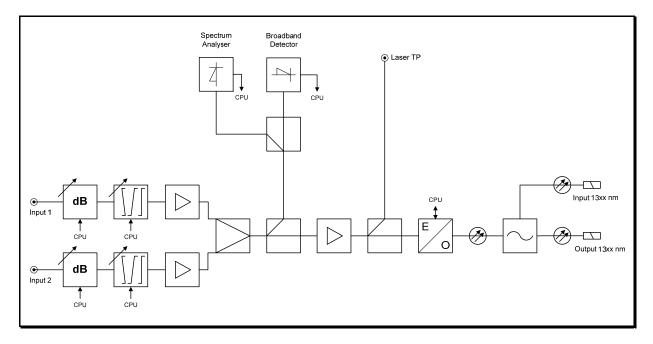
5(6)

### Block diagrams

No optical filter:



Optical filter for combining various transmitters without an optical multiplexer module:





18.10.2017

6(6)

# Ordering information

HD0908   -   -   -     1-1   Wavelength     A   1325.78 nm     B   1327.25 nm     C   1329.28 nm     D   1330.46 nm     E   1323.59 nm     F   1322.83 nm     G   1318.73 nm     H   1317.74 nm     P   1320.46 nm     F   1322.83 nm     G   1318.73 nm     H   1317.74 nm     P   130.46 nm, +8 dBm     AA06   O-band DWDM 1325.78 nm, +10 dBm     AA11   O-band DWDM 1325.78 nm, +12 dBm     AA14   O-band DWDM 1327.25 nm, +12 dBm     BA12   O-band DWDM 1327.25 nm, +12 dBm     BA12   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1323.59 nm, +12 dBm     DA12   O-band DWDM 1323.25 nm, +12 dBm     DA12   O-band DWDM 1323.25 nm, +12 dBm     CA12   O-band DWDM 1323.25 nm, +12 dBm     CA12   O-band DWDM 1323.25 nm, +12 dBm     CA12	<b>1-1 2-1 3-1 4-1 5-1</b>	6-1
A   1325.78 nm   57.00 me     B   1327.25 nm   FX   None     FX   None   FX     D   1330.46 nm   FA   1325.78 nm Filter, Front     F   1322.83 nm   FD   1323.59 nm     G   1318.73 nm   FD   1323.59 nm   FC     F   1322.83 nm   FD   1330.46 nm   FE     C   1318.73 nm   FF   1322.83 nm   FILter, Front     F   1323.59 nm   FILter, Front   FE   1322.83 nm   FILter, Front     F   1322.83 nm   FILter, Front   FE   1322.83 nm   FILter, Front     F   1322.83 nm   FILter, Front   FE   FILter, Front   FE   FILter, Front     F   1322.83 nm   FILter, Front   FE   FILter, Front   FE   FILter, Front   FE   FILter, Front	HDO908	-
A   1325.78 nm   57.00 me     B   1327.25 nm   FX   None     FX   None   FX     D   1330.46 nm   FA   1325.78 nm Filter, Front     F   1322.83 nm   FD   1323.59 nm     G   1318.73 nm   FD   1323.59 nm   FC     F   1322.83 nm   FD   1330.46 nm   FE     C   1318.73 nm   FF   1322.83 nm   FILter, Front     F   1323.59 nm   FILter, Front   FE   1322.83 nm   FILter, Front     F   1322.83 nm   FILter, Front   FE   1322.83 nm   FILter, Front     F   1322.83 nm   FILter, Front   FE   FILter, Front   FE   FILter, Front     F   1322.83 nm   FILter, Front   FE   FILter, Front   FE   FILter, Front   FE   FILter, Front		
A   1325.78 nm     B   1327.25 nm     C   1329.22 nm     D   1330.46 nm     E   1323.59 nm     F   1322.83 nm     G   1318.73 nm     H   1317.74 nm     2-1 Transmitter output power     AA08   O-band DWDM 1325.78 nm, +8 dBm     AA10   O-band DWDM 1325.78 nm, +12 dBm     AA12   O-band DWDM 1325.78 nm, +12 dBm     AA12   O-band DWDM 1325.78 nm, +12 dBm     BA12   O-band DWDM 1327.25 nm, +10 dBm     BA12   O-band DWDM 1327.25 nm, +10 dBm     CA12   O-band DWDM 1327.25 nm, +10 dBm     CA12   O-band DWDM 1327.25 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1323.46 nm, +10 dBm     CA12   O-band DWDM 1323.59 nm, +10 dBm     CA12   O-band DWDM 1323.59 nm, +10 dBm     CA12   O-band DWDM 1323.45 nm, +10 dBm     CA12   O-band DWDM 1323.45 nm, +10 dBm     CA12   O-band DWDM 1323.59 nm, +10 dBm     CA12   O-band DWDM 1323.59 nm, +10 dBm	1-1 Wavelength	4-1 Optopassive
C   1329.22 nm   FB   1327.25 nm Filter, Front     S   1330.46 nm   FC   1327.25 nm Filter, Front     F   1322.83 nm   FD   1330.46 nm Filter, Front     F   1322.83 nm   FD   1330.46 nm Filter, Front     F   1322.83 nm   FD   1330.46 nm Filter, Front     F   1322.83 nm   FF   1322.57 nm Filter, Front     C   138.73 nm   FF   1322.83 nm Filter, Front     Z-1 Transmitter output power   AA08   O-band DWDM 1325.78 nm, +10 dBm   FG   1318.73 nm Filter, Front     AA10   O-band DWDM 1325.78 nm, +12 dBm   RA   1327.25 nm Filter, Front   FH   1318.73 nm Filter, Front     AA12   O-band DWDM 1325.78 nm, +12 dBm   RD   1330.46 nm Filter, rear   RD   1330.46 nm Filter, rear     RA12   O-band DWDM 1327.25 nm, +12 dBm   RG   1318.73 nm Filter, rear   RD   1322.83 nm Filter, rear     CA10   O-band DWDM 1329.22 nm, +12 dBm   RD   1318.73 nm Filter, rear     CA10   O-band DWDM 1320.46 nm, +8 dBm   A1   SC/APC, 9deg   A1   SC/APC, 9deg     DA10   O-band DWDM 1323.59 nm, +12 dBm <td< th=""><th>A 1325.78 nm</th><th></th></td<>	A 1325.78 nm	
C   1329.22 nm     D   1330.46 nm     E   1323.59 nm     F   1322.83 nm     G   1318.73 nm     H   1317.74 nm     Z-1 Transmitter output power     AA08   O-band DWDM 1325.78 nm, +10 dBm     AA10   O-band DWDM 1325.78 nm, +12 dBm     AA12   O-band DWDM 1325.78 nm, +12 dBm     AA14   O-band DWDM 1325.78 nm, +12 dBm     BA08   O-band DWDM 1325.78 nm, +12 dBm     BA10   O-band DWDM 1325.78 nm, +12 dBm     BA10   O-band DWDM 1325.78 nm, +12 dBm     BA10   O-band DWDM 1325.78 nm, +12 dBm     CA10   O-band DWDM 1325.78 nm, +12 dBm     BA14   O-band DWDM 1327.25 nm, +12 dBm     CA10   O-band DWDM 1327.25 nm, +12 dBm     CA10   O-band DWDM 1322.22 nm, +12 dBm     CA11   O-band DWDM 1322.22 nm, +12 dBm     CA12   O-band DWDM 1322.59 nm, +12 dBm     CA10   O-band DWDM 1322.63 nm, +12 dBm     CA10   O-band DWDM 1323.59 nm, +12 dBm     CA10   O-band DWDM 1323.59 nm, +12 dBm     CA10   O-band DWDM 1323.59 nm, +12 dBm     CA11   O-band DWDM	B 1327.25 nm	FA 1325.78 nm Filter, Front
D   1330.46 nm     E   1323.59 nm     F   1322.83 nm     G   1318.73 nm     H   1317.74 nm     2-1 Transmitter output power     AA00   O-band DWDM 1325.78 nm, +8 dBm     AA10   O-band DWDM 1325.78 nm, +10 dBm     AA12   O-band DWDM 1325.78 nm, +12 dBm     AA14   O-band DWDM 1325.78 nm, +12 dBm     BA08   O-band DWDM 1327.25 nm, +12 dBm     BA10   O-band DWDM 1327.25 nm, +12 dBm     BA12   O-band DWDM 1327.25 nm, +12 dBm     BA12   O-band DWDM 1327.25 nm, +12 dBm     CA10   O-band DWDM 1327.25 nm, +12 dBm     CA12   O-band DWDM 1329.22 nm, +12 dBm     CA12   O-band DWDM 1329.22 nm, +12 dBm     CA12   O-band DWDM 1329.22 nm, +12 dBm     CA12   O-band DWDM 1323.59 nm, +12 dBm     CA12   O-band DWDM 1323.59 nm, +12 dBm     CA12   O-band DWDM 1322.83 nm, +10 dBm     CA12   O-band DWDM 1323.59 nm, +12 dBm     CA13   O-band DWDM 1322.83 nm, +10 dBm     CA14   O-band DWDM 1322.83 nm, +10 dBm     CA14   O-band DWDM 1322.83 nm, +10 dBm     CA14	C 1329.22 nm	
F   1322.83 nm   FE   1323.59 nm Filter, Front     G   1318.73 nm   FF   1323.59 nm Filter, Front     F   1317.74 nm   FF   1323.59 nm Filter, Front     2-1 Transmitter output power   AA08   O-band DWDM 1325.78 nm, +10 dBm     AA10   O-band DWDM 1325.78 nm, +10 dBm   RA132.725 nm Filter, rear     AA12   O-band DWDM 1325.78 nm, +12 dBm   RC   1329.22 nm Filter, rear     AA14   O-band DWDM 1325.78 nm, +12 dBm   RD   1330.46 nm Filter, rear     BA10   O-band DWDM 1327.25 nm, +10 dBm   RF   1322.83 nm Filter, rear     CA08   O-band DWDM 1329.22 nm, +10 dBm   RF   1322.83 nm Filter, rear     CA10   O-band DWDM 1329.22 nm, +12 dBm   RI   1317.74 nm Filter, rear     CA12   O-band DWDM 1320.46 nm, +12 dBm   RI   SC/APC, 9deg     DA10   O-band DWDM 1323.59 nm, +12 dBm   FO/APC   C1   E2000     CA12   O-band DWDM 1323.59 nm, +12 dBm   SC/APC, 9deg   J1   SC/APC, 9deg     FA10   O-band DWDM 1322.83 nm, +12 dBm   C1   E2000   C2   2xEC/APC, 9deg   J1   SC/APC, 9deg   J1   SC/APC, 9deg <t< th=""><th>D 1330.46 nm</th><th>FC 1329.22 nm Filter, Front</th></t<>	D 1330.46 nm	FC 1329.22 nm Filter, Front
G   1318.73 nm     H   1317.74 nm     2.1 Transmitter output power     AA08   O-band DWDM 1325.78 nm, +10 dBm     AA10   O-band DWDM 1325.78 nm, +10 dBm     AA12   O-band DWDM 1325.78 nm, +10 dBm     AA14   O-band DWDM 1325.78 nm, +14 dBm     BA08   O-band DWDM 1325.78 nm, +14 dBm     BA08   O-band DWDM 1325.78 nm, +14 dBm     BA08   O-band DWDM 1325.78 nm, +14 dBm     BA10   O-band DWDM 1327.25 nm, +10 dBm     BA12   O-band DWDM 1329.22 nm, +10 dBm     CA18   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1320.46 nm, +12 dBm     CA12   O-band DWDM 1320.46 nm, +12 dBm     CA13   O-band DWDM 1323.59 nm, +12 dBm     DA12   O-band DWDM 1323.59 nm, +12 dBm     CA12   O-band DWDM 1323.59 nm, +12 dBm     FA10   O-band DWDM 1322.83 nm, +12 dBm     FA12   O-band DWDM 1322.83 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-	E 1323.59 nm	FD 1330.46 nm Filter, Front
H   1317.74 nm     2-1 Transmitter output power     AA08   O-band DWDM 1325.78 nm, +8 dBm     AA10   O-band DWDM 1325.78 nm, +10 dBm     AA12   O-band DWDM 1325.78 nm, +12 dBm     BA12   O-band DWDM 1327.25 nm, +12 dBm     BA12   O-band DWDM 1327.25 nm, +12 dBm     CA08   O-band DWDM 1329.22 nm, +8 dBm     CA12   O-band DWDM 1329.22 nm, +12 dBm     CA12   O-band DWDM 1329.22 nm, +12 dBm     CA13   O-band DWDM 1329.22 nm, +12 dBm     CA14   O-band DWDM 1329.22 nm, +12 dBm     CA15   O-band DWDM 1329.22 nm, +12 dBm     CA16   O-band DWDM 1329.35 nm, +12 dBm     CA10   O-band DWDM 1323.59 nm, +8 dBm     EA12   O-band DWDM 1322.83 nm, +10 dBm     EA12   O-band DWDM 1322.83 nm, +12 dBm     FA12   O-band DWDM 1318.73 nm, +12 dBm     FA12   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     G	F 1322.83 nm	FE 1323.59 nm Filter, Front
2-1 Transmitter output power     AA08   O-band DWDM 1325.78 nm, +10 dBm     AA10   O-band DWDM 1325.78 nm, +10 dBm     AA12   O-band DWDM 1325.78 nm, +12 dBm     AA14   O-band DWDM 1325.78 nm, +12 dBm     AA14   O-band DWDM 1325.78 nm, +14 dBm     BA08   O-band DWDM 1325.78 nm, +14 dBm     BA08   O-band DWDM 1325.78 nm, +14 dBm     BA10   O-band DWDM 1327.25 nm, +14 dBm     BA12   O-band DWDM 1327.25 nm, +12 dBm     CA08   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1323.59 nm, +10 dBm     EA10   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +12 dBm     FA10   O-band DWDM 1323.59 nm, +12 dBm     FA12   O-band DWDM 1322.83 nm, +12 dBm     FA12   O-band DWDM 1318.73 nm, +12 dBm     GA13   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     GA14   O-band DWDM 1318.73 nm, +12 dBm	G 1318.73 nm	FF 1322.83 nm Filter, Front
2-1 Transmitter output power     AA08   O-band DWDM 1325.78 nm, +8 dBm     AA10   O-band DWDM 1325.78 nm, +10 dBm     AA12   O-band DWDM 1325.78 nm, +12 dBm     AA14   O-band DWDM 1325.78 nm, +14 dBm     BA08   O-band DWDM 1325.78 nm, +14 dBm     BA10   O-band DWDM 1327.25 nm, +10 dBm     BA12   O-band DWDM 1327.25 nm, +10 dBm     BA12   O-band DWDM 1327.25 nm, +10 dBm     BA12   O-band DWDM 1329.22 nm, +10 dBm     CA08   O-band DWDM 1329.22 nm, +10 dBm     CA10   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1320.46 nm, +12 dBm     DA10   O-band DWDM 1330.46 nm, +12 dBm     CA12   O-band DWDM 1325.59 nm, +12 dBm     CA12   O-band DWDM 1325.59 nm, +12 dBm     EA12   O-band DWDM 1325.89 nm, +10 dBm     EA12   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm	H 1317.74 nm	FG 1318.73 nm Filter, Front
AA08   O-band DWDM 1325.78 nm, +8 dBm   RA   1325.78 nm Filter, rear     AA10   O-band DWDM 1325.78 nm, +10 dBm   RB   1327.25 nm Filter, rear     AA14   O-band DWDM 1325.78 nm, +12 dBm   RC   1329.22 nm Filter, rear     BA08   O-band DWDM 1327.25 nm, +10 dBm   RE   1323.59 nm Filter, rear     BA10   O-band DWDM 1327.25 nm, +10 dBm   RE   1323.59 nm Filter, rear     BA12   O-band DWDM 1327.25 nm, +10 dBm   RF   1322.83 nm Filter, rear     CA18   O-band DWDM 1329.22 nm, +10 dBm   RF   1322.83 nm Filter, rear     CA10   O-band DWDM 1329.22 nm, +10 dBm   RH   1317.74 nm Filter, rear     CA12   O-band DWDM 1329.22 nm, +12 dBm   F1: Fibre connector type     DA10   O-band DWDM 1320.46 nm, +12 dBm   A1   SC/APC, 9deg     DA12   O-band DWDM 1323.59 nm, +8 dBm   D1   SC/APC with shutter, 8 deg     EA12   O-band DWDM 1322.83 nm, +10 dBm   H1   SC/APC with shutter, 9 deg     FA10   O-band DWDM 1322.83 nm, +12 dBm   G2   2xSC/APC, 9deg     FA12   O-band DWDM 1318.73 nm, +12 dBm   G2   2xSC/APC, 8deg     GA12   O-band DWDM 1318.73 nm, +12 dBm <th></th> <th>FH 1317.74 nm Filter, Front</th>		FH 1317.74 nm Filter, Front
AA10   O-band DWDM 1325.78 nm, +10 dBm   RB   1327.25 nm Filter, rear     AA12   O-band DWDM 1325.78 nm, +12 dBm   RC   1329.22 nm Filter, rear     AA14   O-band DWDM 1325.78 nm, +14 dBm   RD   1330.46 nm Filter, rear     BA08   O-band DWDM 1327.25 nm, +10 dBm   RE   1323.59 nm Filter, rear     BA10   O-band DWDM 1327.25 nm, +10 dBm   RF   1322.83 nm Filter, rear     CA08   O-band DWDM 1329.22 nm, +10 dBm   RG   1318.73 nm Filter, rear     CA12   O-band DWDM 1329.22 nm, +10 dBm   RH   1317.74 nm Filter, rear     CA12   O-band DWDM 1330.46 nm, +10 dBm   D1   SC/APC, 9deg     DA10   O-band DWDM 1323.59 nm, +10 dBm   A1   SC/APC, 9deg     DA12   O-band DWDM 1323.59 nm, +10 dBm   B1   FC/APC     CA18   O-band DWDM 1322.83 nm, +10 dBm   B1   SC/APC, 8deg     FA10   O-band DWDM 1322.83 nm, +10 dBm   B2   2xFC/APC     FA12   O-band DWDM 1318.73 nm, +10 dBm   B2   2xFC/APC     FA12   O-band DWDM 1318.73 nm, +12 dBm   G2   2xEC/APC   G4g     GA10   O-band DWDM 1318.73 nm, +10 dBm   B2   2xFC		RX None
AA12   O-band DWDM 1325.78 nm, +12 dBm   RC 1329.22 nm Filter, rear     AA14   O-band DWDM 1327.25 nm, +14 dBm   RD 1330.46 nm Filter, rear     BA08   O-band DWDM 1327.25 nm, +10 dBm   RE 1323.59 nm Filter, rear     BA12   O-band DWDM 1327.25 nm, +10 dBm   RF 1322.83 nm Filter, rear     BA12   O-band DWDM 1327.25 nm, +12 dBm   RG 1318.73 nm Filter, rear     CA08   O-band DWDM 1329.22 nm, +8 dBm   RH 1317.74 nm Filter, rear     CA10   O-band DWDM 1330.46 nm, +10 dBm   S-1: Fibre connector type     DA08   O-band DWDM 1330.46 nm, +12 dBm   S-1: Fibre connector type     DA12   O-band DWDM 1330.46 nm, +12 dBm   B1 SC/APC, 9deg     EA19   O-band DWDM 1323.59 nm, +10 dBm   B1 SC/APC, 8deg     EA12   O-band DWDM 1322.83 nm, +12 dBm   J1 SC/APC, 9deg     FA10   O-band DWDM 1322.83 nm, +12 dBm   J1 SC/APC, 9deg     FA10   O-band DWDM 1318.73 nm, +12 dBm   J2 SC/APC, 9deg     GA10   O-band DWDM 1318.73 nm, +12 dBm   J2 SC/APC, 8deg     GA10   O-band DWDM 1318.73 nm, +12 dBm   J2 SC/APC, 8deg     GA12   O-band DWDM 1318.73 nm, +12 dBm   J2 SC/APC with shutter, 8deg     GA12   O-band DWDM 1317.74 nm, +	AA08 O-band DWDM 1325.78 nm, +8 dBm	RA 1325.78 nm Filter, rear
AA14   O-band DWDM 1325.78 nm, +14 dBm   RD   1330.46 nm Filter, rear     BA08   O-band DWDM 1327.25 nm, +8 dBm   RE   1323.59 nm Filter, rear     BA12   O-band DWDM 1327.25 nm, +10 dBm   RF   1322.83 nm Filter, rear     BA12   O-band DWDM 1327.25 nm, +12 dBm   RF   1322.83 nm Filter, rear     CA08   O-band DWDM 1329.22 nm, +10 dBm   RH   1317.74 nm Filter, rear     CA10   O-band DWDM 1329.22 nm, +10 dBm   S-1: Fibre connector type     DA08   O-band DWDM 1330.46 nm, +12 dBm   A1   SC/APC, 9deg     DA12   O-band DWDM 1323.59 nm, +10 dBm   B1   FC/APC     DA12   O-band DWDM 1323.59 nm, +10 dBm   B1   SC/APC, 8deg     EA10   O-band DWDM 1322.83 nm, +12 dBm   D1   SC/APC, 8deg     FA10   O-band DWDM 1322.83 nm, +12 dBm   B2   2xSC/APC, 9deg     FA10   O-band DWDM 1318.73 nm, +12 dBm   B2   2xSC/APC, 9deg     GA10   O-band DWDM 1318.73 nm, +12 dBm   C2   2xSC/APC, 8deg     GA10   O-band DWDM 1318.73 nm, +12 dBm   B2   2xSC/APC, 8deg     GA12   O-band DWDM 1318.73 nm, +12 dBm   B2   2xSC/APC, 8deg   J	AA10 O-band DWDM 1325.78 nm, +10 dBm	RB 1327.25 nm Filter, rear
BA08   O-band DWDM 1327.25 nm, +8 dBm     BA10   O-band DWDM 1327.25 nm, +10 dBm     BA12   O-band DWDM 1327.25 nm, +12 dBm     CA08   O-band DWDM 1329.22 nm, +8 dBm     CA10   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +12 dBm     DA08   O-band DWDM 1329.22 nm, +12 dBm     DA10   O-band DWDM 1330.46 nm, +12 dBm     DA12   O-band DWDM 1330.46 nm, +12 dBm     EA08   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +12 dBm     FA10   O-band DWDM 1322.83 nm, +12 dBm     FA10   O-band DWDM 1322.83 nm, +12 dBm     FA12   O-band DWDM 1322.83 nm, +12 dBm     FA12   O-band DWDM 1318.73 nm, +8 dBm     GA12   O-band DWDM 1318.73 nm, +8 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +8 dBm     HA08   O-band DWDM 1317.74 nm	AA12 O-band DWDM 1325.78 nm, +12 dBm	
BA10   O-band DWDM 1327.25 nm, +10 dBm     BA12   O-band DWDM 1327.25 nm, +12 dBm     CA08   O-band DWDM 1329.22 nm, +10 dBm     CA10   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +10 dBm     DA08   O-band DWDM 1330.46 nm, +12 dBm     DA10   O-band DWDM 1330.46 nm, +12 dBm     DA12   O-band DWDM 1330.46 nm, +12 dBm     EA08   O-band DWDM 1323.59 nm, +8 dBm     EA10   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +12 dBm     FA08   O-band DWDM 1322.83 nm, +12 dBm     FA10   O-band DWDM 1322.83 nm, +12 dBm     FA12   O-band DWDM 1322.83 nm, +12 dBm     GA13   O-band DWDM 1318.73 nm, +12 dBm     GA14   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +12 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm     HA10   O-band DWDM 1317.74 nm, +12 dBm     HA10   O-band DWDM 1317.74 nm, +12 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm     HA10   O-band DWDM 1317.7	AA14 O-band DWDM 1325.78 nm, +14 dBm	RD 1330.46 nm Filter, rear
BA12   O-band DWDM 1327.25 nm, +12 dBm   RG 1318.73 nm Filter, rear     CA08   O-band DWDM 1329.22 nm, +10 dBm   RH 1317.74 nm Filter, rear     CA10   O-band DWDM 1329.22 nm, +10 dBm   S-1: Fibre connector type     DA08   O-band DWDM 1329.22 nm, +12 dBm   A1 SC/APC, 9deg     DA10   O-band DWDM 1330.46 nm, +10 dBm   B1 FC/APC     DA12   O-band DWDM 1323.59 nm, +10 dBm   B1 SC/APC, 8deg     EA10   O-band DWDM 1323.59 nm, +12 dBm   D1 SC/APC, 8deg     EA10   O-band DWDM 1323.59 nm, +12 dBm   J1 SC/APC, 9deg     FA08   O-band DWDM 1322.83 nm, +12 dBm   J1 SC/APC, 9deg     FA10   O-band DWDM 1322.83 nm, +12 dBm   J2 SC/APC, 9deg     FA12   O-band DWDM 1318.73 nm, +8 dBm   B2 2xFC/APC     GA38   O-band DWDM 1318.73 nm, +10 dBm   B2 2xSC/APC, 8deg     GA10   O-band DWDM 1318.73 nm, +12 dBm   J2 SC/APC with shutter, 8 deg     GA12   O-band DWDM 1317.74 nm, +12 dBm   J2 SC/APC with shutter, 9 deg     HA08   O-band DWDM 1317.74 nm, +12 dBm   J2 SC/APC with shutter, 9 deg     GA12   O-band DWDM 1317.74 nm, +12 dBm   J2 SC/APC with shutter, 9 deg     HA08   O-band DWDM 1317.74 nm, +12 dBm   <	BA08 O-band DWDM 1327.25 nm, +8 dBm	
CA08   O-band DWDM 1329.22 nm, +18 dBm     CA10   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +12 dBm     DA08   O-band DWDM 1330.46 nm, +8 dBm     DA10   O-band DWDM 1330.46 nm, +10 dBm     DA12   O-band DWDM 1330.46 nm, +12 dBm     EA08   O-band DWDM 1323.59 nm, +12 dBm     EA10   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1322.83 nm, +12 dBm     FA08   O-band DWDM 1322.83 nm, +12 dBm     FA10   O-band DWDM 1322.83 nm, +12 dBm     FA12   O-band DWDM 1318.73 nm, +12 dBm     GA08   O-band DWDM 1318.73 nm, +12 dBm     GA10   O-band DWDM 1318.73 nm, +12 dBm     GA10   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +10 dBm     GA12   O-band DWDM 1317.74 nm, +10 dBm     GA12   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm	BA10 O-band DWDM 1327.25 nm, +10 dBm	
CA10   O-band DWDM 1329.22 nm, +10 dBm     CA12   O-band DWDM 1329.22 nm, +12 dBm     DA08   O-band DWDM 1330.46 nm, +8 dBm     DA10   O-band DWDM 1330.46 nm, +10 dBm     DA12   O-band DWDM 1330.46 nm, +12 dBm     EA08   O-band DWDM 1323.59 nm, +12 dBm     EA10   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +12 dBm     FA08   O-band DWDM 1322.83 nm, +10 dBm     FA10   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1318.73 nm, +12 dBm     GA08   O-band DWDM 1318.73 nm, +12 dBm     GA10   O-band DWDM 1318.73 nm, +12 dBm     GA10   O-band DWDM 1318.73 nm, +12 dBm     GA10   O-band DWDM 1317.74 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +12 dBm     HA10   O-band DWDM 1317.74 nm, +12 dBm	BA12 O-band DWDM 1327.25 nm, +12 dBm	RG 1318.73 nm Filter, rear
CA12   O-band DWDM 1329.22 nm, +12 dBm     DA08   O-band DWDM 1330.46 nm, +8 dBm     DA10   O-band DWDM 1330.46 nm, +10 dBm     DA12   O-band DWDM 1330.46 nm, +12 dBm     EA08   O-band DWDM 1323.59 nm, +8 dBm     EA10   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +12 dBm     FA08   O-band DWDM 1322.83 nm, +8 dBm     FA10   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1318.73 nm, +12 dBm     GA08   O-band DWDM 1318.73 nm, +12 dBm     GA10   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +10 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm	CA08 O-band DWDM 1329.22 nm, +8 dBm	RH 1317.74 nm Filter, rear
DA08   O-band DWDM 1330.46 nm, +8 dBm     DA10   O-band DWDM 1330.46 nm, +10 dBm     DA12   O-band DWDM 1330.46 nm, +12 dBm     DA12   O-band DWDM 1330.46 nm, +12 dBm     EA08   O-band DWDM 1323.59 nm, +8 dBm     EA10   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +10 dBm     FA08   O-band DWDM 1322.83 nm, +12 dBm     FA10   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1318.73 nm, +12 dBm     GA08   O-band DWDM 1318.73 nm, +12 dBm     GA10   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +10 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm	CA10 O-band DWDM 1329.22 nm, +10 dBm	
DA10   O-band DWDM 1330.46 nm, +10 dBm     DA12   O-band DWDM 1330.46 nm, +12 dBm     EA08   O-band DWDM 1323.59 nm, +8 dBm     EA10   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +12 dBm     FA08   O-band DWDM 1322.83 nm, +12 dBm     FA10   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +12 dBm     FA12   O-band DWDM 1322.83 nm, +12 dBm     GA08   O-band DWDM 1318.73 nm, +12 dBm     GA10   O-band DWDM 1318.73 nm, +12 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +10 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm	CA12 O-band DWDM 1329.22 nm, +12 dBm	5-1: Fibre connector type
DA12   O-band DWDM 1330.46 nm, +12 dBm     EA08   O-band DWDM 1323.59 nm, +8 dBm     EA10   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +12 dBm     FA08   O-band DWDM 1322.83 nm, +8 dBm     FA10   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +12 dBm     GA08   O-band DWDM 1318.73 nm, +12 dBm     GA10   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1317.74 nm, +10 dBm     HA08   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm	DA08 O-band DWDM 1330.46 nm, +8 dBm	A1 SC/APC, 9deg
EA08   O-band DWDM 1323.59 nm, +8 dBm     EA10   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +12 dBm     FA08   O-band DWDM 1322.83 nm, +12 dBm     FA10   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +12 dBm     GA08   O-band DWDM 1318.73 nm, +8 dBm     GA10   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +10 dBm     HA08   O-band DWDM 1317.74 nm, +12 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm	DA10 O-band DWDM 1330.46 nm, +10 dBm	B1 FC/APC
EA10   O-band DWDM 1323.59 nm, +10 dBm     EA12   O-band DWDM 1323.59 nm, +12 dBm     FA08   O-band DWDM 1322.83 nm, +8 dBm     FA10   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     GA08   O-band DWDM 1318.73 nm, +8 dBm     GA10   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +10 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm	DA12 O-band DWDM 1330.46 nm, +12 dBm	C1 E2000
EA12   O-band DWDM 1323.59 nm, +12 dBm     FA08   O-band DWDM 1322.83 nm, +8 dBm     FA10   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +10 dBm     GA08   O-band DWDM 1318.73 nm, +8 dBm     GA10   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +8 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm	EA08 O-band DWDM 1323.59 nm, +8 dBm	
FA08   O-band DWDM 1322.83 nm, +8 dBm     FA10   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +12 dBm     GA08   O-band DWDM 1318.73 nm, +8 dBm     GA10   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +12 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm	EA10 O-band DWDM 1323.59 nm, +10 dBm	
FA10   O-band DWDM 1322.83 nm, +10 dBm     FA12   O-band DWDM 1322.83 nm, +12 dBm     GA08   O-band DWDM 1318.73 nm, +8 dBm     GA10   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +12 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm         6-1   Signal monitoring     B   Spectrum analyser     X   None	EA12 O-band DWDM 1323.59 nm, +12 dBm	
FA12   O-band DWDM 1322.83 nm, +12 dBm     GA08   O-band DWDM 1318.73 nm, +8 dBm     GA10   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +8 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm     KA12   O-band DWDM 1317.74 nm, +12 dBm	FA08 O-band DWDM 1322.83 nm, +8 dBm	
GA08   O-band DWDM 1318.73 nm, +8 dBm     GA10   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +12 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm	· · · · · · · · · · · · · · · · · · ·	
GA10   O-band DWDM 1318.73 nm, +10 dBm     GA12   O-band DWDM 1318.73 nm, +12 dBm     HA08   O-band DWDM 1317.74 nm, +8 dBm     HA10   O-band DWDM 1317.74 nm, +10 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm     HA12   O-band DWDM 1317.74 nm, +12 dBm     KA12   O-band DWDM 1317.74 nm, +12 dBm     KA12   O-band DWDM 1317.74 nm, +12 dBm     KA12   O-band DWDM 1317.74 nm, +12 dBm		
GA12     O-band DWDM 1318.73 nm, +12 dBm       HA08     O-band DWDM 1317.74 nm, +8 dBm       HA10     O-band DWDM 1317.74 nm, +10 dBm       HA12     O-band DWDM 1317.74 nm, +12 dBm       HA12     O-band DWDM 1317.74 nm, +12 dBm       Kath     Kath     Kath       Kath     Kath     Kath     Kath       Kath     Kath     Kath     Kath       Kath     Kath     Kath     Kath     Kath       Kath     Kath     Kath     Kath     Kath       <	GA08 O-band DWDM 1318.73 nm, +8 dBm	
HA08     O-band DWDM 1317.74 nm, +8 dBm       HA10     O-band DWDM 1317.74 nm, +10 dBm       HA12     O-band DWDM 1317.74 nm, +12 dBm         6-1     Signal monitoring       B     Spectrum analyser       X     None	GA10 O-band DWDM 1318.73 nm, +10 dBm	, 3
HA10 O-band DWDM 1317.74 nm, +10 dBm   HA12 O-band DWDM 1317.74 nm, +12 dBm   Spectrum analyser   X	GA12 O-band DWDM 1318.73 nm, +12 dBm	J2 SC/APC with shutter, 9 deg
HA12   O-band DWDM 1317.74 nm, +12 dBm   B   Spectrum analyser     X   None		
X None		
	HA12 O-band DWDM 1317.74 nm, +12 dBm	
3-1 Fibre location		X None
F Front panel		
R Rear panel DOC0022508 rev. 00	R Rear panel	DOC0022508 rev. 003