DKT COMEGA

Benefits

- Easy plug-and-play installation and operation
- High power for dense FTTH subscriber applications
- Simple network management via HTTP/SNMP
- Many configuration possibilities
- High reliability/high MTBF

erbium doped fibre amplifiers (edfa)

Product information

The DKT EDFA is a rack-mountable integrated amplifier module and power supply. It has been designed for use in CATV, point-to-point (P2P) and Passive Optical Networks (PON) where stand-alone operation is required. It is also ideal as a booster, line or preamplifier.

The amplifier provides very stable optical outputs over a wide range of operating temperatures and this with low power consumption. It is internally supported with input and output isolators for system stability and optimal performance.

The amplifier incorporates electrical control circuits with DSP. This includes photo diodes for monitoring the optical input and the output power through tap couplers.

The amplifier has versatile functions and its status can be monitored from the LCD on the front panel. The amplifier can be also operated from the front buttons and can be monitored and controlled via SNMP.

EDFA and EYDFA

The increasing capacity of wavelength-division multiplexing (WDM) transmission systems requires higher optical output power of EDFAs. Higher output in traditional EDFAs causes nonlinear effects that could result in signal distortion.

Traditional EDFAs have been optimized for improving amplification efficiency, but designs that improve efficiency increase nonlinearity, which makes it complicated to achieve low nonlinearity with traditional EDFAs.

Use of the EYDFAs makes it possible to achieve a high-power amplifier that combines both low nonlinearity and high conversion efficiency, which conventionally have been a trade-off relationship.

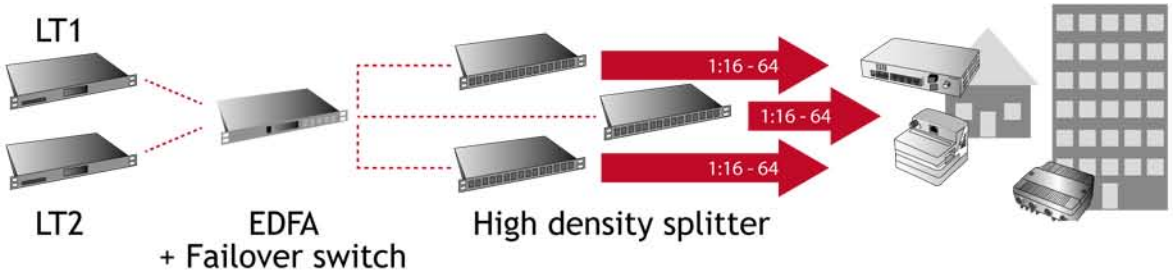
There are some limitations to EYDFA technology. It can only be used in a narrow bandwidth window. Due to video signal degradation in extreme network conditions such as long transmission distances, it is not recommended to cascade EYDFA optical amplifiers, unless used as the last amplifier in a chain.

EDFA - redundancy options

Optionally, several EDFAs with redundant power supplies are available. These automatically switch to the secondary PSU if the primary fails. Additionally, the EDFAs have a built-in protection fail-over switch, where loss of signal from the primary source will make it switch to a secondary source, thereby allowing increased redundancy in the CATV network.

Optical protection switch	
Insertion loss (dB)	1
Optical isolation (dB)	Typical 65 (min. 55 dB)
Switching time (ms)	2.5 (max. 4)
Switch type	Latching
Lifetime	10.000.000 cycles

Failover EDFA in RF overlay setup



edfa - characteristics

Optical specifications	600-series	800-series
Optical wavelength (nm)	1545 to 1565	1530 to 1566
Optical input power (dBm)*	64814 and 64820: -5 to +10 All other: -10 to +10	-5 to +10
Optical output power (dBm)	See ordering information	See ordering information
Accuracy of output power (dB)	± 0.5	± 0.5
Uniformity maximum (dB)	1	1
Optical isolation (dB)	> 30	> 30
Optical return loss (dB)	> 45	> 40
Noise figure (dB)*	< 5.5	< 5.5
Polarization mode dispersion (ps)	0.4	1.0
Polarization dependence gain (dB)	0.3	0.5
Pump leakage (dBm)	-30 (At input and output)	-30 (At input and output)
Optical connector type	SC/APC, SMF	SC/APC, SMF, other types available upon request
Electrical specifications		
Power supply type	230 VAC	230 VAC or 48 VDC
Supply voltage AC (V)	100 - 240 (Frequency 50/60 Hz)	100 - 240 (Frequency 50/60 Hz)
Supply voltage DC (V)	-	36 - 75
Number of power supplies	1	1 or 2
Mechanical specifications		
Physical dimension (H x W x D mm)	43.6 x 483 x 252 43.6 x 483 x 490 †	43.6 x 483 x 350 (1U) 88 x 483 x 350 (2U)
General		
Storage temperature (°C)	-40 to +85	-40 to +85
Operating temperature (°C)	-5 to 55	0 to 50
Storage humidity (%)	0 to 95	0 to 95
Operating relative humidity (%)	0 to 85 (Non-condensing)	0 to 95 (Non-condensing)
Communications connectors		
RS232	64652 to 64655: 1 port, DB9 connector (38400 bps baud rate) All other: 1 port RJ45 connector (38400 bps baud rate)	1 port, RJ45 connector (38400 bps baud rate)
Ethernet	1 port, RJ45 connector (10/100 Mbps)	1 port, RJ45 connector (10/100 Mbps)

Differences in 880-series specifications from 800-series

Optical specifications EYDFA	
Optical wavelength (nm)	1545 to 1560
Optical input power (dBm)*	-5 to +10
Noise figure (dB)	Typ. 5
Uniformity (max. dB)	1.5
Optical isolation (dB)	> 30
General	
Operating temperature range (°C)	0 - 50
Dimensions (H x W x D mm)	88 x 350 x 304

* Test condition where Input power = 0 dBm at 1550 nm and measured within operating temperature range.

† Only applicable for item no.: 64656 - 64657

edfa - ordering information

Applications

- Long-haul Telecommunications
- CATV Systems
- P2P/PON FTTH/FTTB Networks

Features

- High saturation output power
- CATV field-proven low noise figure
- Wide input dynamic range
- Stable output power over wide temperature range
- Control and monitoring with SNMP

600-series

Item no.	Type no.	Output power	Number of outputs	Power consumption (W)*	Height	Notes
64652	EDFA-17-220-SA-01-S	17 dBm	1	< 30	1U	Compact depth
64653	EDFA-17-220-SA-02-S	17 dBm	2	< 30	1U	Compact depth
64654	EDFA-17-220-SA-03-S	17 dBm	3	< 30	1U	Compact depth
64655	EDFA-17-220-SA-04-S	17 dBm	4	< 30	1U	Compact depth
64656	EDFA-19-220-SA-04-S	19 dBm	4	< 75	1U	Web management
64657	EDFA-21-220-SA-04-S	21 dBm	4	< 75	1U	Web management
64814	EDFA-17-230-SA-04-S	17 dBm	4	< 45	1U	Front connectors
64820	EDFA-21-230-SA-04-S	21 dBm	4	< 50	1U	Front connectors

800-series

Item no.	Type no.	Output power	Number of outputs	Power consumption (W)*	Height	Notes
64821	EDFA-17-DUAL-SA-01-S	17 dBm	1	< 20	1U	Dual PSU, front connectors
64824	EDFA-17-DUAL-SA-04-S	17 dBm	4	< 30	1U	Dual PSU, front connectors
64825	EDFA-19-DUAL-SA-08-S	19 dBm	8	< 65	2U	Dual PSU, front connectors
64826	EDFA-21-DUAL-SA-04-S	21 dBm	4	< 55	1U	Dual PSU, front connectors
64827	EDFA-21-DUAL-SA-08-S	21 dBm	8	< 80	2U	Dual PSU, front connectors
64830	EDFA-21-DUAL-SA-01-S	21 dBm	1	< 25	1U	Dual PSU, front connectors
64831	EDFA-17-DUAL-SA-01-S	17 dBm	1	< 20	1U	Dual PSU, front connectors
64832	EDFA-17-DUAL-SA-02-S	17 dBm	2	< 25	1U	Dual PSU, front connectors
64833	EDFA-17-DUAL-SA-03-S	17 dBm	3	< 25	1U	Dual PSU, front connectors
64834	EDFA-17-DUAL-SA-04-S	17 dBm	4	< 30	1U	Dual PSU, front connectors
64835	EDFA-19-DUAL-SA-04-S	19 dBm	4	< 45	1U	Dual PSU, front connectors
64836	EDFA-21-DUAL-SA-04-S	21 dBm	4	< 55	1U	Dual PSU, front connectors
64837	EDFA-21-DUAL-SA-08-S	21 dBm	8	< 80	1U	Dual PSU, front connectors

880-series

Item no.	Type no.	Output power	Number of outputs	Power consumption (W)*	Height	Notes
64881	EYDFA-21-DUAL-SA-04	21 dBm	4	< 55	1U	Dual PSU, front connectors
64882	EYDFA-21-DUAL-SA-08	21 dBm	8	< 80	2U	Dual PSU, front connectors
64883	EYDFA-21-DUAL-SA-16	21 dBm	16	< 46	2U	Dual PSU, front connectors
64884	EYDFA-19-DUAL-SA-32	19 dBm	32	< 50	2U	Dual PSU, front connectors

Other types available upon request

* Measured maximum consumption.