

## Optical Signal Distribution



### Products:

<b>DEV 2182/opt-50 -</b>	1:8	L-Band Distribution Amplifier Optical Input, 50 Ohm Outputs
<b>DEV 2182/opt-75 -</b>	1:8	L-Band Distribution Amplifier Optical Input, 75 Ohm Outputs
<b>DEV 2183/opt-50 -</b>	2 * 1:8	L-Band Distribution Amplifier Optical Inputs, 50 Ohm Outputs
<b>DEV 2183/opt-75 -</b>	2 * 1:8	L-Band Distribution Amplifier Optical Inputs, 75 Ohm Outputs
<b>DEV 2185/opt-50 -</b>	1:16	L-Band Distribution Amplifier Optical Input, 50 Ohm Outputs
<b>DEV 2185/opt-75 -</b>	1:16	L-Band Distribution Amplifier Optical Input, 75 Ohm Outputs

### Features:

- Series of Distribution Amplifiers with Optical Input(s) for the Frequency Range 950...2150 MHz
- Versions in 50 Ohm with SMA Connectors or in 75 Ohm with Precision F Connectors
- Monitoring Port for Surveillance of the RF Output Signal
- RF Sensing with Adjustable Threshold and Alarm Output
- Optical Monitoring with Alarm Output
- Dual Redundant Power Supplies with Status Alarm Output

### Application Areas:

- Satellite Ground Stations
- Cable Head End Stations with Distant Dish Farms
- Redundant Distributed Dish Sites
- L-Band Transmission over Distances up to 20 km

## DEV 2182/opt-zz / DEV 2183/opt-zz / DEV 2185/opt-zz



Front DEV 2182/opt-zz



Rear DEV 2182/opt-75

### The Situation

In cable head end stations or satellite ground stations, RF signals are to be transported over long distances. With coaxial systems, the signal gets degraded because of frequency dependant losses. Equalisation and amplification of the electrical signal does not really solve this problem.

### DEV worked out a Solution

DEV Systemtechnik has developed a series of L-Band distribution amplifiers with optical inputs for professional use.

Optical transmission, i.e. the conversion of an electrical RF signal into an optical signal and vice versa, permits the transmission of RF signals over longer distances and additionally provides the advantage of galvanic isolation. The instruments of this series supplement the optical products portfolio of DEV Systemtechnik in order to satisfy the requirements of optical transmission on the receiver side especially for a small number of optical links.

### The Technical Concept

The base of the technical concept for the L-Band distribution amplifiers with optical inputs is the utilisation of an optical receiver (which converts the optical signal to an amplified electrical RF signal) in combination with hybrid Wilkinson dividers.

Three models with two selectable output impedances are available: an instrument with 8 outputs as single channel (DEV 2182/opt-zz) or dual channel version (DEV 2183/opt-zz). For more signals per channel, a single channel model with 16 outputs is available in addition (DEV 2185/opt-zz). All instruments are delivered in 1 RU housings with dual redundant AC power supplies, RF monitor port, RF sensing and optical monitoring. All instruments of this series do fit perfectly to the DEV 8125/opt-zz Active Bias Tee with Optical Outputs on the transmitter side.

## Technical Data

### DEV 2182/opt-zz / DEV 2183/opt-zz / DEV 2185/opt-zz L-Band Distribution Amplifiers with Optical Inputs

#### Optical Specifications Input

Wavelength	1150...1600 nm	
Optical sensitivity	<-17 dBm with 36 dB (S+N)/N	
Optical connector	E2000 HRL	(Option 08)
	SC/APC	(Option 09)

#### RF Specifications Outputs

Frequency range	950...2150 MHz	
Number of channels	1	(DEV 2182/opt-zz, DEV 2185/opt-zz)
	2	(DEV 2183/opt-zz)
Number of outputs	8	(DEV 2182/opt-zz)
	2 * 8	(DEV 2183/opt-zz)
	16	(DEV 2185/opt-zz)
Impedance (zz), RF connectors	50 Ohm, SMA (f)	(DEV 218x/opt-50)
	75 Ohm, Precision F (f)	(DEV 218x/opt-75)
Return loss output	>16 dB	(DEV 218x/opt-50)
	>14 dB	(DEV 218x/opt-75)
Isolation between output ports	>25 dB	

#### Monitoring Port

Impedance, RF connector	50 Ohm, SMA (f)
Return loss	>18 dB
Insertion loss	= output level + 10±3 dB
Frequency response	±1,0 dB

## Technical Data (cont.)

### RF Sensing

Adjustable threshold level	-15 dBm > threshold level > -45 dBm
DEV factory setting	-30 dBm
Separate alarm output	Potential free contacts
Contact load	60 V; 0,3 A

### Optical Monitoring

Separate alarm output	Potential free contacts
Contact load	60 V; 0,3 A

### Alarms

Two stage alarm signalisation for power line failure	Potential free contacts
Alarm connector	Sub-D-9 (m)
Contact load	60 V; 0,3 A
B-Alarm	One power supply unit does not deliver any secondary power.
A-Alarm	Both power supply units do not deliver any secondary power.

### Redundant Power Supply

Redundant power supplies	100...260 V AC supplied by two different lines
Power consumption	10 VA

### General Specifications

Housing	19" (483 mm), 1 RU (44 mm), 260 mm depth
Weight	~8 kg
Environmental conditions	ETS 300019 Part 1-3 Class 3.1

### Order Information

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DEV 2183/opt-50	2 * 1:8	L-Band Distribution Amplifier, Optical Inputs , 50 Ohm Outputs
DEV 2183/opt-75	2 * 1:8	L-Band Distribution Amplifier, Optical Inputs , 75 Ohm Outputs
DEV 2185/opt-50	1:16	L-Band Distribution Amplifier, Optical Input , 50 Ohm Outputs
DEV 2185/opt-75	1:16	L-Band Distribution Amplifier, Optical Input , 75 Ohm Outputs

*Please specify the optical connector(s)  
and in case of the DEV 2183/opt-zz / DEV 2185/opt-zz the location of the optical connector(s)  
by choosing one of the following options:*

Option 08	Optical Connectors E2000/HRL (installed at the front side of the instrument)
Option 08b	Optical Connectors E2000/HRL (installed at the rear side of the instrument, DEV 2183/opt-zz and the DEV 2185/opt-zz, only)
Option 09	Optical Connectors SC/APC (installed at the front side of the instrument)
Option 09b	Optical Connectors SC/APC (installed at the rear side of the instrument, DEV 2183/opt-zz and the DEV 2185/opt-zz, only)

### Contact

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