

Signal Distribution with Perfection



Products:

- DEV 2182/zz** - 1:8 L-Band Distribution Amplifier
- DEV 2183/zz** - 2 * 1:8 L-Band Distribution Amplifier
- DEV 2185/zz** - 1:16 L-Band Distribution Amplifier

Features:

- Series of Distribution Amplifiers for the Frequency Range 950...2150 MHz
- 50 Ohm, 75 Ohm, 50-75 Ohm and 75-50 Ohm Versions available
- Monitoring Output at the Front Panel
- LNB Bias Current Supply including Bias Current Monitoring with adjustable Thresholds and Alarm Output
- RF Sensing with adjustable Threshold and Alarm Output
- Dual Redundant Power Supplies with Status Alarm Output
- Optional DC Supply Voltage

Application Areas:

- Satellite Ground Stations
- Cable Head End Stations
- DAB-T with Satellite Input
- SNG Trucks

*Front DEV 2182/zz**Rear DEV 2182/50***The Situation**

In head-ends for CATV the incoming signal is to be divided so that all receivers used in parallel are fed with the same satellite signal. If split passively, the signal level becomes very low, i.e. amplification is necessary.

DEV worked out a Solution

DEV Systemtechnik developed an L-Band distribution amplifier series for the professional use. The amplifier unit realizes a division of one input signal in 8 or 16 equal output signals without insertion loss and with a very good frequency response.

The RF sensing functionality of the amplifier unit permits the monitoring of the RF level at the input of the instrument.

An integrated bias tee at the input of the amplifier unit is capable to supply power to an LNB, the bias current can be monitored.

The Technical Concept

The base of the technical concept is the utilization of an amplifier with hybrid splitters (Wilkinson splitters). The result is a very good VSWR of the inputs and outputs. The outputs are almost completely isolated from each other. The frequency response of the splitter is optimized for a TV transponder channel of 36 MHz.

The L-Band distribution amplifier is available as 1:8 splitter in two versions – either as single channel or as dual channel version. For more signals per channel, a 1:16 splitter is available in addition. All three versions are delivered in 1 RU housings with dual redundant AC power supplies. Optional, dual redundant -48 V DC power supplies are available.

The serial interface of the distribution amplifier permits the easy setup of the RF sensing threshold and of the bias current monitoring interval.

Special requirements are realized on request.

Technical Data

DEV 2182/zz / DEV 2183/zz / DEV 2185/zz L-Band Distribution Amplifiers

RF Specifications

Frequency range	950...2150 MHz	
Number of inputs	1	(DEV 2182/zz, DEV 2185/zz)
	2	(DEV 2183/zz)
Number of outputs	8	(DEV 2182/zz)
	2 * 8	(DEV 2183/zz)
	16	(DEV 2185/zz)
Impedance (zz), connectors	50 Ohm, SMA (f)	(for 50 Ohm inputs/outputs)
	75 Ohm, Precision F (f)	(for 75 Ohm inputs/outputs)
Damage level	+10 dBm	
Nominal input level	-10 dBm	
Return loss	>14 dB	
Insertion loss	0±3 dB	
Frequency response	±1.0 dB	(950...2150 MHz)
	±0.3 dB	(within any 36 MHz interval)
Isolation between output ports	>25 dB	
Intermodulation distortion	<-40 dBc	(two tones @ -13 dBm)
Group delay	<5 ns	
Noise figure	<10 dB	

Monitoring Port(s)

Impedance, connector	50 Ohm, SMA (f)
Return loss	>18 dB
Frequency response	= input level ±1.0 dB

Bias & Bias Current Alarm

Bias	15+3/-0 V; max. 500 mA (per channel)	
Adjustable level setting:		
• Upper alarm level	100...500 mA	(DEV factory setting: 350 mA)
• Lower alarm level	0...300 mA	(DEV factory setting: 100 mA)
Alarm thresholds adjustment	Upper and lower alarm level is adjustable (for each channel) using a standard terminal application via RS 232 interface(s) (Sub-D 9 (f) connector(s)) at the front side of the instrument.	
Alarm indication	via LED and via potential free contacts	

RF-Sensing

Adjustable threshold level	0 dBm > threshold level > -45 dBm (DEV factory setting: -30 dBm)	
Alarm threshold adjustment	Threshold level is adjustable (for each channel) using a standard terminal application via the RS 232 interface(s) (Sub-D 9 (f) connector(s)) at the front side of the instrument.	
Alarm indication	via LED and via potential free contacts	

Technical Data (cont.)

Redundant Power Supply

Redundant power supplies	100...240 V AC supplied by two different lines OR -36...-60 V DC supplied by two different lines (Option 14)
Power consumption	<40 VA

Potential Free Contacts

Alarm connector	Sub-D-9 (m)
Contact load	60 V; 300 mA

Two Stage Alarm Signalization for Power Line Failure:

B-Alarm	One power supply unit does not deliver any secondary power.
A-Alarm	All power supply units do not deliver any secondary power.

Alarm Signalization for Bias Current and/or RF Sensing and/or secondary power fail:

Amplifier Alarm	Bias current not within bias current monitoring interval and/or RF level below threshold level and/or secondary power fail.
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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

DEV 2182/50	1:8	L-Band Distribution Amplifier, 50 Ohm Input and Outputs
DEV 2182/75	1:8	L-Band Distribution Amplifier, 75 Ohm Input and Outputs
DEV 2182/50-75	1:8	L-Band Distribution Amplifier, 50 Ohm Input, 75 Ohm Outputs
DEV 2182/75-50	1:8	L-Band Distribution Amplifier, 75 Ohm Input, 50 Ohm Outputs
DEV 2183/50	2 * 1:8	L-Band Distribution Amplifier, 50 Ohm Inputs and Outputs
DEV 2183/75	2 * 1:8	L-Band Distribution Amplifier, 75 Ohm Inputs and Outputs
DEV 2183/50-75	2 * 1:8	L-Band Distribution Amplifier, 50 Ohm Inputs, 75 Ohm Outputs
DEV 2183/75-50	2 * 1:8	L-Band Distribution Amplifier, 75 Ohm Inputs, 50 Ohm Outputs
DEV 2185/50	1:16	L-Band Distribution Amplifier, 50 Ohm Input and Outputs
DEV 2185/75	1:16	L-Band Distribution Amplifier, 75 Ohm Input and Outputs
DEV 2185/50-75	1:16	L-Band Distribution Amplifier, 50 Ohm Input, 75 Ohm Outputs
DEV 2185/75-50	1:16	L-Band Distribution Amplifier, 75 Ohm Input, 50 Ohm Outputs

Option 14 DC supply voltage instead of AC supply voltage

Contact

DEV Systemtechnik GmbH & Co. KG
Grüner Weg 4A
D-61169 Friedberg
Phone: +49 (0) 6031 18999-0
Fax: +49 (0) 6031 18999-15
info@dev-systemtechnik.com
www.dev-systemtechnik.com

DEV America
4695 MacArthur Court, 11th Floor
Newport Beach, CA 92660, USA
Phone: (949) 798-6120
Fax: (949) 798-6121
info@dev-america.com
www.dev-america.com

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