

## Active Dual Channel Bias Tee



### Products:

<b>DEV 8125/50 -</b>	L-Band Bias Tee, Active, 2 Channels, 50 Ohm
<b>DEV 8125/75 -</b>	L-Band Bias Tee, Active, 2 Channels, 75 Ohm
<b>DEV 8125/50-opt -</b>	L-Band Bias Tee, Active, 2 Channels, 50 Ohm Inputs, Optical Outputs
<b>DEV 8125/75-opt -</b>	L-Band Bias Tee, Active, 2 Channels, 75 Ohm Inputs, Optical Outputs

### Features:

- Series of Active Dual Channel Bias Tees for the Frequency Range 950...2150 MHz
- Versions in 50 Ohm with SMA Connectors or in 75 Ohm with Precision F Connectors
- Versions with RF Outputs or Optical Outputs
- LNB Bias Current Supply and Bias Current Monitoring with Alarm Output
- RF Sensing with Adjustable Threshold and Alarm Output
- Dual Redundant Power Supplies with Status Alarm Output
- Space Requirement only 1 RU

### Application Areas:

- Satellite Ground Stations
- Cable Head End Stations
- Broadcasting Institutions etc.

## DEV 8125

dev



Front DEV 8125/zz-opt



Rear DEV 8125/50-opt

### The Situation

In satellite ground stations the bias current for LNBS has to be provided by special power supplies. These power supplies should be able to monitor the current supplied to the LNBS and that the RF-signal level coming from the LNBS does not fall below a certain level. To preserve the signal level over longer distances, amplification or optical transmission is required.

### DEV worked out a Solution

DEV Systemtechnik has developed a series of active dual channel bias tees for the professional use, which covers all requirements. The instruments can feed two LNBS and can monitor the bias current as well as the RF signal level. To counteract frequency dependant damping of the signal on the way from the antenna to further signal processing, the DEV 8125 is available either with amplified RF outputs or with optical outputs. The models with optical outputs do fit perfectly to the DEV 218x/opt-zz L-Band Distribution Amplifiers with Optical Inputs on the receiver side.

### The Technical Concept

The LNB supply is realised via integrated bias tees. The bias current fed to the LNBS is monitored, if the current exceeds an upper or a lower limit, an alarm will be generated. Also, the incoming RF-signal level is monitored and compared to a lower threshold. If the signal is below the threshold, an alarm will be generated. The instrument is equipped with inputs in 50 Ohm with SMA connectors or in 75 Ohm with precision F connectors.

The instrument is available either with two amplified electrical outputs per channel which are DC free and DC isolated. Alternatively, the instrument is available with a single optical output per channel. Additionally, these optical models are monitoring the laser radiation level and will generate an alarm in case that the level falls below a fixed value.

All RF connectors are located the rear side of the instrument.

The models with optical outputs can be configured to meet the individual requirements. The type of optical connector can be either E2000/HRL or SC/APC and the location of the optical connectors can be either at the front side or the rear side of the instrument.

## Technical Data

### DEV 8125/50 / DEV 8125/75 / DEV 8125/50-opt / DEV 8125/75-opt Active Dual Channel Bias Tees

#### RF Specifications

Frequency range	950...2150 MHz	
Number of channels	2	
Number of inputs per channel	1	
Number of outputs per channel	2 RF outputs 1 optical output	(DEV 8125/50, DEV 8125/75) (DEV 8125/opt-50, DEV 8125/opt-75)
Impedance, RF connectors	50 Ohm, SMA (f) 75 Ohm, Precision F (f)	(DEV 8125/50, DEV 8125/opt-50) (DEV 8125/75, DEV 8125/opt-75)
Damage level	+10 dBm	
Nominal input level	-10 dBm	
Return loss	>14 dB	(DEV 8125/50, DEV 8125/75)
Gain	10 dB	(DEV 8125/50, DEV 8125/75)
Tilt	1 dB	(DEV 8125/50, DEV 8125/75)
Frequency response	±1 dB	(DEV 8125/50, DEV 8125/75)
Isolation	>20 dB	(DEV 8125/50, DEV 8125/75)
Intermodulation distortion	<-40 dBc	(two tones @ -13 dBm) (DEV 8125/50, DEV 8125/75)
Group delay	<5 ns	
Bias	15+3/-0 V; max. 0,5 A per channel	

#### Optical Specifications Output

(DEV 8125/opt-50, DEV 8125/opt-75)

Laser type	DFB	
Laser class (according to IEC 60 825-1)	Class 1M	(low risk to eyes, no risk to skin)
Wavelength	1310±20 nm	
Optical power	<7 dBm	
Optical connector	E2000 HRL SC/APC	(Option 08) (Option 09)

#### Monitoring Port

Impedance, RF connector	50 Ohm, SMA (f)
Return loss	>16 dB
Insertion loss	= input level ±3 dB
Frequency response	±1,0 dB

#### 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

## Technical Data (cont.)

### Bias Current Monitoring

DEV factory settings:

- Upper alarm level 350 mA
- Lower alarm level 150 mA (other values are possible)

Separate alarm outputs Potential free contacts

Contact load 60 V; 0,3 A

### Low Laser Radiation Alarm

(DEV 8125/opt-50, DEV 8125/opt-75)

Separate alarm outputs 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 plus bias

### 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 8125/75	L-Band Bias Tee, Active, 2 Channels, 75 Ohm
DEV 8125/50-opt	L-Band Bias Tee, Active, 2 Channels, 50 Ohm Inputs, Optical Outputs
DEV 8125/75-opt	L-Band Bias Tee, Active, 2 Channels, 75 Ohm Inputs, Optical Outputs

*When ordering a model with optical outputs, please specify the optical connector and the location 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)
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)

### Contact

DEV Systemtechnik GmbH & Co. KG  
Grüner Weg 4A  
D-61169 Friedberg  
Tel.: +49 (0) 6031 18999-0  
Fax: +49 (0) 6031 18999-15  
E-Mail: [info@dev-systemtechnik.com](mailto:info@dev-systemtechnik.com)  
URL: <http://www.dev-systemtechnik.com>

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