The Experts in RF Signal Handling

Active CATV-Band Devices

Product:

DEV 2308 -	8:1	Active CATV-Band Combiner, 75 Ohm
DEV 2316 -	16:1	Active CATV-Band Combiner, 75 Ohm
DEV 2701 -		CATV-Band Amplifier, 75 Ohm
DEV 2708 -	1:8	Active CATV-Band Splitter, 75 Ohm
DEV 2716 -	1:16	Active CATV-Band Splitter, 75 Ohm
DEV 2744 -	4:4	Active CATV-Band Multi Stream Router, 75 Ohm

Features:

- Series of Active CATV-Band Devices (Combiner, Amplifier, Splitter, Combiner/Splitter)
- Impedance 75 Ohm with Precision F (f) Connectors
- Dual Redundant Amplifiers with Monitoring and Alarming Functionality
- Adjustable Amplifier Gain and Slope at the Front Panel
- Monitoring Port at the Front Side of the Instrument
- Dual Redundant Power Supplies with Status Alarm Output

Application Areas:

- Cable Head End Stations
- QAM Signal Distribution
- DVB

Front DEV 2701

Rear DEV 2701

The Situation

In cable head end stations a lot of signals need to be combined, amplified and distributed for CATV or DVB. Amplification and cable equalisation of the signal is necessary. Uptime and failsafe signal transmission is crucial.

DEV worked out a Solution

DEV Systemtechnik has developed a series of active CATV-Band equipment with focus on reliable operation and on premium quality signal transmission.

The Technical Concept

The instruments of this series are available as active 8:1 or 16:1 combiners (DEV 2308, DEV 2316), as pure amplifier (DEV 2701), as active 8:1 or 16:1 splitters (DEV 2708, DEV 2716), or as active 4:4 multi stream router (DEV 2744). The impedance of all RF ports is 75 Ohm with precision F connectors, all ports are DC blocked.

All instruments provide redundant power supplies as well as redundant amplifiers to ensure failsafe signal delivery. The gain and the tilt of the redundant amplifiers can be adjusted at the front side; additionally a monitoring port is located there, which carries the output signal at a reduced level.

In case of a failure of one amplifier the instrument is still working, however the RF signal level is reduced by 6 dB. An alarm is indicated via LEDs and in parallel via potential free contacts at the Alarm connector at the rear side of the instrument. The same alarming functionality is implemented for the redundant power supplies which can be fed from two independent primary power lines.

The potential free contacts can be used e.g. as alarm input to an M&C System.

Technical Data

DEV 2308 / DEV 2316 Active CATV-Band Combiners
DEV 2701 CATV-Band Amplifier
DEV 2708 / DEV 2716 CATV-Band Splitters
DEV 2744 CATV-Band Multi Stream Router

RF Specifications

Frequency range	47…862 MHz	
Number of inputs	1	(DEV 2701, DEV 2708, DEV 2716)
	4	(DEV 2744)
	8	(DEV 2308)
	16	(DEV 2316)
Number of outputs	1	(DEV 2308, DEV 2316)
	4	(DEV 2744)
	8	(DEV 2708)
	16	(DEV 2716)
Impedance, connectors	75 Ohm, Precision F (f)	
Damage level	125 dBµV	
Input signal level	<100 dBµV	
Return loss	>14 dB, typ. 18 dB	
Variable attenuation	0…15±3 dB	
Variable tilt	0…12 dB	
Frequency response	±1,0 dB	(47…862 MHz)
Isolation between equal ports	>20 dB	
Intermodulation distortion 60 dBc at the following conditions	@ output level	
IMA3	<102 dBµV	(DEV 2701, DEV 2708, DEV 2716)
	<112 dBµV	(DEV 2744)
	<118 dBµV	(DEV 2308, DEV 2316)
IMA2	<98 dBµV	(DEV 2701, DEV 2708, DEV 2716)
	<108 dBµV	(DEV 2744)
	<114 dBµV	(DEV 2308, DEV 2316)
CTB 110 channels	<94 dBµV	(DEV 2701, DEV 2708, DEV 2716)
	<104 dBµV	(DEV 2744)
	<110 dBµV	(DEV 2308, DEV 2316)
CSO 110 channels	<96 dBµV	(DEV 2701, DEV 2708, DEV 2716)
	<106 dBµV	(DEV 2744)
	<112 dBµV	(DEV 2308, DEV 2316)
Group delay	<5 ns	
Noise figure	<8 dB	

Monitoring Port

Impedance, connector	75 Ohm, Precision F (f)
Return loss	>18 dB
Frequency response	= output level – 20 dB ±1,0 dB

Technical Data (cont.)

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.
Amplifier Alarm	Potential free SPST contacts MIN and MAX for both amplifiers.
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+) or -36…-60 V DC supplied by two different lines (Option 14-)
Power consumption	<40 VA
General Specifications	
Housing	19“ (483 mm), 1 RU (44 mm), 260 mm depth
Weight	~5 kg
Environmental conditions	ETS 300019 Part 1-3 Class 3.1

Order Information

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DEV 2316	16:1 Active CATV-Band Combiner, 75 Ohm
DEV 2701	CATV-Band Amplifier, 75 Ohm
DEV 2708	1:8 Active CATV-Band Splitter, 75 Ohm
DEV 2716	1:16 Active CATV-Band Splitter, 75 Ohm
DEV 2744	4:4 Active CATV-Band Multi Stream Router, 75 Ohm
Option 14+	Supply Voltage +36…+60 V DC
Option 14-	Supply Voltage -36…-60 V DC

Contact

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