

CATV Back Channel Network



Products:

DEV 2920 - Back Channel Network Upstream Active Chassis

DEV 11-0056 - Active Module

Features:

- /// CATV Back Channel Network for Signal Splitting/Combining
- /// Customer Specific System Configuration
- /// Active Module with Redundant Amplifiers & Adjustable Gain
- /// Remote Monitoring via Ethernet/SNMP
- /// Redundant Power Supplies
- /// A Variety of Passive Splitters/Combiners for establishing the Network is available (subject of different data sheets)

Application Areas:

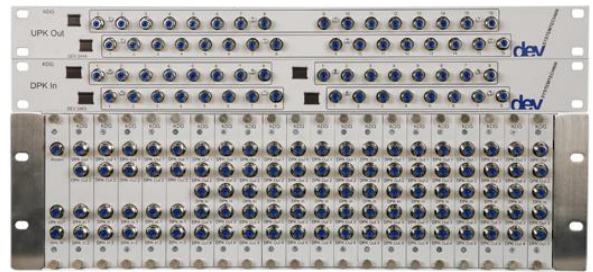
- /// Cable Head End Stations
- /// Digital TV

DEV 2920

dev



Rear DEV 2920



Front DEV 2444, DEV 2463 and DEV 03-0042 (equipped with 1 * DEV 13-0135, 5 * DEV 13-0131 & 15 * DEV 13-0130)

The Situation

Back channels are used to enhance cable head end stations towards broadband bi-directional communication institutions. Flexible signal splitting and combining networks are required to maintain the access to the common telecommunication network with reliable equipment. Remote monitoring capabilities are mandatory.

DEV worked out a Solution

DEV developed for this purpose a system which offers highest possible uptime, complete monitoring functionality, remote access for external fault search and easy maintenance.

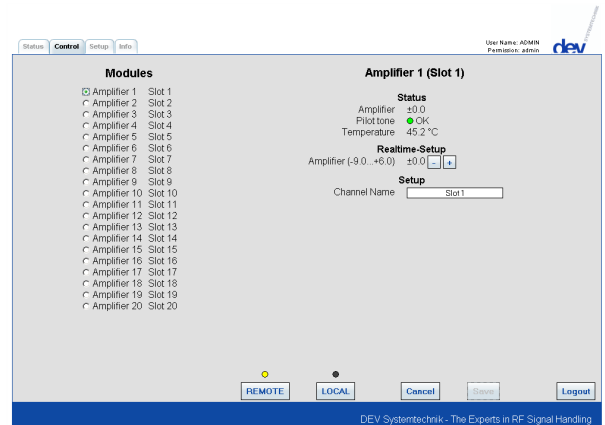
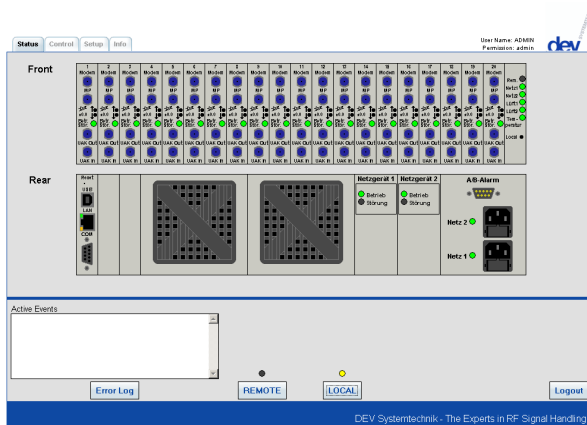
The Technical Concept

The base of the technical concept is the active 3 RU chassis DEV 2920 for the upstream. This chassis provides dual redundant power supplies and a CPU module which manages the remote communication and control of the up to 20 active modules DEV 11-0056 installed in the chassis:

The gain of the active module can be adjusted and the amplifiers of the module are monitored via a *patent pending* pilot tone method.

The passive components of the back channel network are subject of different data sheets. Please refer to the data sheet "DEV 24xx passive CATV-Band Splitter/Combiner" for the 1 RU passive components and to the data sheet "Passive Components" for chassis frame and the single modules of the 3 RU passive components.

The DEV 2920 Web Interface



The Status Tab

The upper part of the Status Tab provides a symbolic view of the instrument from its front side and its rear side which is done to represent the physical indicators on the instrument.

In the lower part of the Status Tab new errors and pending errors are shown in a small Active Events Window. To obtain more details on all errors, the **Error Log** button has to be operated. This will open a comprehensive window with detail information on the detected errors.

The **Remote** button and the **Local** button are installed to define whether the control of the instrument is performed via a remote M&C system using SNMP protocol or locally via the Web Interface. The current operation mode is indicated via the corresponding yellow indicator.

The Control Tab

The Control Tab of the Web Interface provides means to access the functionality of each of the up to 20 active modules. For each module the status can be obtained, the gain level can be adjusted in real-time and a name can be assigned (here named "Slot 1" ... "Slot 20" (default)).

All changes within the Control Tab are applied, if the **Save** button is operated, to discard any changes possibly made, the **Cancel** button is to be actuated.

The rest of the functionality in the lower third of the Control Tab is identical to the functionality of the Status Tab.

Technical Data

DEV 2920 Back Channel Network Upstream Active Chassis

Capacity

Number of slots 20 (plus 2 spare slots)

Remote Communication

Interfaces, connectors

- Ethernet, RJ-45
- serial interface RS 232 (optional RS 422/RS 485), Sub-D-9 (f)
- via Web Interface, Ethernet;
- via SNMP protocol, Ethernet.

Remote control & surveillance, interface

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.

Summary Alarm

Via remote interface and via potential free contacts

Redundant Power Supply

Redundant power supplies

100...240 V AC supplied by two different lines

Power consumption

<50 VA (if the chassis is equipped with 20 * DEV 11-0056)

General Specifications

Housing

19" (483 mm), 3 RU (133 mm), 490 mm depth

Weight

~5 kg (empty chassis)

Environmental conditions

ETS 300019 Part 1-3 Class 3.1

DEV 11-0056 Active Module

RF Specifications

Frequency range

5...65 MHz

Number of inputs

2

(Input, Modem)

Number of outputs

1

Impedance, connectors

75 Ohm, Precision F (f)

Nominal input level

69...75 dB μ V

Nominal output level

90...94 dB μ V

Return loss input

>18 dB

Return loss output

>16 dB

Adjustable gain

7...22 dB @ 0,5 dB steps

Frequency response

\pm 1,0 dB

(5...65 MHz)

\pm 0,3 dB

(within any 2 MHz interval)

Isolation

>24 dB (between Input and Modem port and between Monitor and Output)

Group delay

<3 ns

(within any 2 MHz interval)

Noise figure

<7 dB

Stop band attenuation

>15 dB @ >85 MHz

>30 dB @ >100 MHz

Monitoring Port

Impedance, connectors

75 Ohm, Precision F (f)

Return loss

>16 dB

Insertion loss

= output level – 16 \pm 1 dB

Amplifier Monitoring

Amplifier Monitoring

via *patent pending* Pilot Tone Method

Alarm indication

via LED and via remote interface

General Specifications

Housing

4 HP (20 mm), 3 RU (133 mm), 100 mm depth

Weight

~0,3 kg

Environmental conditions

ETS 300019 Part 1-3 Class 3.1

Order Information

DEV 2920 Back Channel Network Upstream Active Chassis

*Please specify the number **n** (1...22, i.e. max. 20 + max. 2 spares) of Active Modules DEV 11-0056 the DEV 2920 is to be populated with **and** the number **22-n** of blanking plates DEV 55-0014:*

DEV 11-0056 Active Module 5...65 MHz 75 Ohm

DEV 55-0014 Blanking Plate 3 RU 4 HP (to cover an empty slot)

DEV 51-0142 Cable Duct and Labelling Faceplate
(1 RU, intended to be assembled below the active chassis)

Options for DEV 2920:

Option 52 RS 422 instead of RS 232

Option 53 RS 485 instead of RS 232

Contact

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