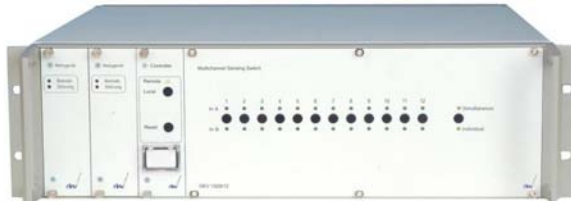


Multi Channel Switches



Products:

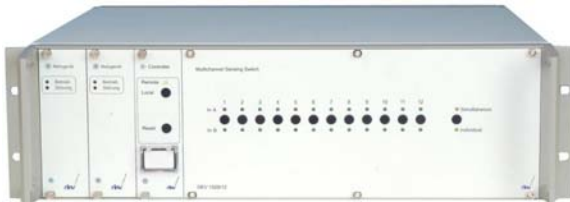
- DEV 1220/xx** - Multi Channel DPST Switch, 50 Ohm SMA
- DEV 1520/50/xx** - Multi Channel L-Band Redundancy Switch, 50 Ohm SMA
- DEV 1520/75/xx** - Multi Channel L-Band Redundancy Switch, 75 Ohm Precision F
- DEV 1530/xx** - Multi Channel CATV-Band Redundancy Switch, 75 Ohm Precision F
- DEV 1720/xx** - Multi Channel CATV-Band Switch with Monitoring Port, 75 Ohm BNC
- DEV 1820/xx** - Multi Channel ASI Redundancy Switch, 75 Ohm BNC

Features:

- /// Series of Multi Channel DPST Switches for different Purposes
- /// Available with 4, 8, 12, or 16 Switch Modules (“/xx”)
- /// Comprehensive Web Interface for Surveillance and Setup of the Instrument
- /// Web Interface Option for comfortable Configuration and Control
- /// Remote Control Protocol Support, e.g. SNMP
- /// Dual Redundant Power Supplies

Application Areas:

- /// Satellite Ground Stations
- /// Cable Head End Stations
- /// Transmission Studios



Front DEV 1520/zz/12



Rear DEV 1520/75/12

The Situation

Different fields of application require the application of switches, where the output is fed by one of two signal sources (DPST, double pole single throw (2:1)) or where the input signal can be routed to one of two output ports (SPDT, single pole double throw (1:2)). Usually, the number of the same kind of switches, which are required, varies from application to application.

DEV worked out a Solution

The DEV 1x20/xx and DEV 1530/xx were developed for the professional use. Basically, the aim of this series of multi channel switches is to cover the requirements for a number of DPST or SPDT switches integrated in a compact rack-mountable chassis.

The instruments support the individual switching of each channel or the simultaneous switching of a group of channels. Instruments with sensing switch modules applied, even provide autonomous switching capability, i.e. based on the RF level measured for each input port, the instrument decides to automatically switch a channel or a group without any external interaction.

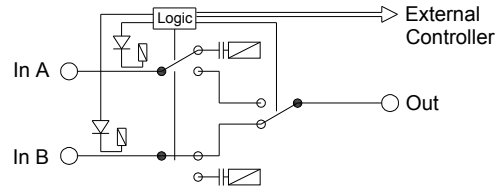
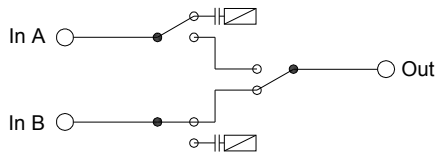
The Technical Concept

The common base of the DEV 1x20/xx and the DEV 1530/xx is a 19" 3 RU chassis prepared for the integration of various switch modules. The field of application is indicated by the different model numbers, please refer to the next page, where the functionality of the different switch modules is explained. The instruments of this series are available with a different number of switch modules installed, indicated by "/xx" which can be either /4, /8, /12, or /16.

There are various possibilities to operate the instrument: First, there is the operation via the push buttons on the instrument, thus enabling the local control. The default Basic Web Interface provides features for checking the health status of the instrument and for changing the basic setup of the instrument. The instrument is (DEV 1520/zz/xx & DEV 1530/zz) or can be equipped with the Web Interface Option (Option 78), which additionally permits the full control of the instrument, in terms of switching and setting up specific parameters.

Additionally, the implementation of protocols (Sandar Prosan, Leitch, QEC, SNMP) provides the remote control and surveillance of the instrument.

Functionality of the Different Switch Modules

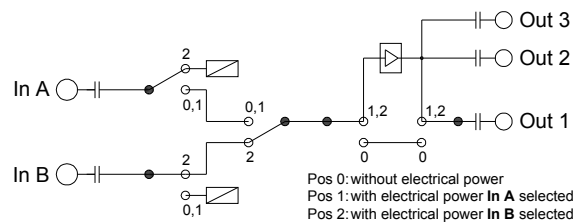
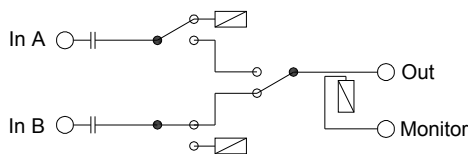


**DEV 1220:
DEV 11-0051 – DPST Switch Module**

For the frequency range DC...2,5 GHz in 50 Ohm with SMA connectors.
The common output port can be switched to one of two input ports (DPST, Double Pole Single Throw (2:1)).
Due to the fact that the signal is routed via relays only, the module can be used in reverse direction as well, i.e. to realise a SPDT (Single Pole Double Throw (1:2)) switch.

**DEV 1520/50, DEV 1520/75, & DEV 1530:
DEV 11-0014, DEV 11-0026, & DEV 11-0034 -
DPST Sensing Switch Module**

For L-Band applications (DC, 950...2150 MHz, DEV 11-0014 (50 Ohm, SMA) and DEV 11-0026 (75 Ohm, Precision F)) or CATV-Band applications (DC, 47...862 MHz, DEV 11-0034 (75 Ohm, Precision F)).
Two input ports can be switched to one output port.
Both input ports are individually monitored for the user defined RF threshold level. Alarming functionality is provided.
The instrument is able to control the switching autonomously.
The module is able to pass an external 10 MHz reference signal.



**DEV 1720:
DEV 11-0031 - CATV-Band Switch Module
with Monitor Port**

For CATV-Band applications (47...862 MHz) in 75 Ohm with BNC connectors.
The output port can be switched to one of two input ports.
A monitoring port at a 20 dB reduced level in comparison to the output signal is realised via an integrated RF coupler. This monitor port can be used for measurements on the output signal while the instrument is in service.

**DEV 1820:
DEV 14-0001 - ASI Redundancy
Switch Module**

For ASI signal applications in 75 Ohm with BNC connectors.
The module combines a 2:1 input selection and a 1:3 active distribution amplifier for ASI signals. One of two inputs feeds the three parallel outputs.
The signal transmission of DC is blocked.

Technical Data

DEV 1x20 / DEV 1530 - Multi Channel Switch Chassis

Capacity

Number of slots for switch modules	4	(DEV 1x20/4, DEV 1530/4)
	8	(DEV 1x20/8, DEV 1530/8)
	12	(DEV 1x20/12, DEV 1530/12)
	16	(DEV 1x20/16, DEV 1530/16)

Remote Communication

Interfaces, connectors

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

Remote control & surveillance, interface

- via SNMP, Ethernet;
- via Sandar Prosan protocol, serial interface; OR
- via Leitch protocol, Ethernet/Telnet (up to 7 sessions) and via serial interface; OR
- via QEC protocol, Ethernet (Telnet port 23) and via serial interface.

Redundant Power Supply

Redundant power supplies
Power consumption

100...240 V AC supplied by two different lines
<50 VA, absolute max. 100 VA

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

All power supply units do not deliver any secondary power.

Summary Alarm

Via remote interface and via potential free contacts

General Specifications

Housing

19" (483 mm), 3 RU (133 mm), 495 mm depth

Weight

~9...12 kg

Environmental conditions

ETS 300019 Part 1-3 Class 3.1

DEV 1220: DEV 11-0051 – DPST Switch Module, DC...2,5 GHz, 50 Ohm, SMA (f)

RF Specifications

Frequency range	DC...2,5 GHz	
Number of inputs	2	
Number of outputs	1	
Impedance, connectors	50 Ohm, SMA (f)	
Damage level	+30 dBm	
Return loss selected path	>14 dB, typical 16 dB	
Return loss not selected path	>14 dB, typical 16 dB	
Insertion loss	<2 dB	
Isolation on/off	>50 dB	
Relay type	latching	
Contact rating	28 V DC, 0,25 A	
Switching cycles	>10E6	(no DC)
	>10E5	(28 V DC, 0,25 A)

Technical Data

DEV 1520/50: DEV 11-0014 – DPST Sensing Switch Module, L-Band, 50 Ohm, SMA (f)

DEV 1520/75: DEV 11-0026 – DPST Sensing Switch Module, L-Band, 75 Ohm, Precision F (f)

DEV 1530: DEV 11-0034 – DPST Sensing Switch Module, CATV-Band, 75 Ohm, Precision F (f)

RF Specifications

Frequency range	DC, 47...862 MHz	(DEV 11-0034)
	DC, 950...2150 MHz	(DEV 11-0014, DEV 11-0026)
Number of inputs	2	
Number of outputs	1	
Impedance, connectors	50 Ohm, SMA (f)	(DEV 11-0014)
	75 Ohm, Precision F (f)	(DEV 11-0026, DEV 11-0034)
Damage level	+10 dBm	(DEV 11-0034)
	+15 dBm	(DEV 11-0014, DEV 11-0026)
Nominal input level	0 dBm	
Return loss selected path	>14 dB, typical 16 dB	
Return loss not selected path	>14 dB, typical 16 dB	
Insertion loss	<2 dB	
Frequency response	±0,5 dB	
Relay type	latching	
Switching cycles	>10E6	(no DC)

RF Sensing

Adjustable threshold level	-10 dBm > threshold level > -50 dBm	(DEV 11-0026)
	-10 dBm > threshold level > -60 dBm	(DEV 11-0014, DEV 11-0034)
DEV factory setting	-30 dBm	
Alarm indication	via LED and via remote interface	

DEV 1720: DEV 11-0031 – DPST Switch Module w/ Monitor Port, CATV-Band, 75 Ohm, BNC (f)

RF Specifications

Frequency range	47...862 MHz
Number of inputs	2
Number of outputs	1
Impedance, connectors	75 Ohm, BNC (f)
Damage level	+30 dBm
Return loss selected path	>23 dB @ 70 MHz
	>18 dB @ 140 MHz
	>14 dB @ 700 MHz, typical 16 dB
Return loss not selected path	>23 dB @ 70 MHz
	>18 dB @ 140 MHz
	>14 dB @ 700 MHz, typical 16 dB
Insertion loss	<2 dB
Isolation on/off	>80 dB @ 140 MHz
	>55 dB @ 700 MHz
Relay type	failsafe
Switching cycles	10E6

Monitoring Port

Impedance, connector	75 Ohm, BNC (f)
Return loss	>18dB
Insertion loss	= output level - 20±3 dB

Technical Data

DEV 1820: DEV 14-0002 - ASI Redundancy Switch Module, 75 Ohm, BNC (f)

Signal type	ASI / 0,8 V
Transmission rate	30...540 MBit/s
Number of inputs	2
Number of outputs	3
Impedance, connectors	75 Ohm, BNC (f)
Input level	100...800 mV
Output level	>600 mV
Isolation on/off	>50 dB
Relay type	failsafe
Switching cycles	10E6

Order Information

The “**xx**” in the following stands for the number of channels, which can be **4, 8, 12, or 16**. Please specify this number for the order of the selected instrument.

DEV 1220/ xx	xx Channel DPST Switch, 50 Ohm SMA
DEV 1520/50/ xx	xx Channel L-Band Redundancy Switch, 50 Ohm SMA
DEV 1520/75/ xx	xx Channel L-Band Redundancy Switch, 75 Ohm Precision F
DEV 1530/ xx	xx Channel CATV -Band Redundancy Switch, 75 Ohm Precision F
DEV 1720/ xx	xx Channel CATV-Band Switch with Monitoring Port, 75 Ohm BNC
DEV 1820/ xx	xx Channel ASI Redundancy Switch, 75 Ohm BNC
Option 52	RS 422 instead of RS 232
Option 53	RS 485 instead of RS 232
Option 78	Web Interface Option (can be ordered multiple times)
Option 83	Chassis delivered with 4 switch modules less (Option 83 can be ordered in different quantities depending on the type of model (“ xx ”): up to 3 times for a 16 channel instrument (/16), up to 2 times for a 12 channel instrument (/12), and max. once for an 8 channel instrument (/8))

Contact

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