

## Universal Switch Chassis 3 RU



The final product may vary from the above image depending on the options selected.

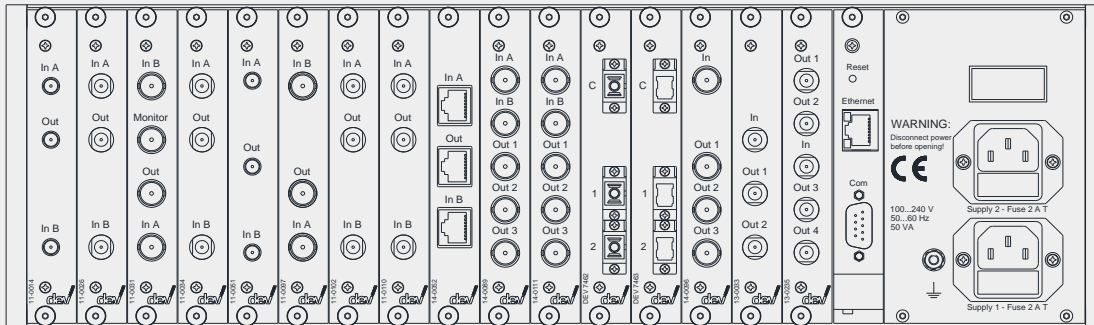
**Product**  
**DEV 1953** Universal Switch Chassis 3 RU

### Modules:

Module	Functionality						Frequency Range					Technical Data on Page
		DPST Switch	DPST Sensing Switch	Passive Splitter	ASI...3G Switch or DA	E1/T1 Switch	Optical Switch	up to 1006 MHz	L-Band	Broadband	ASI / SDI/HD / SDI/3G	
DEV 11-0014			X					X				3
DEV 11-0026			X					X				3
DEV 11-0031		X					X					4
DEV 11-0034			X				X					3
DEV 11-0051		X							X			4
DEV 11-0097		X					X					5
DEV 11-0102			X					X				3
DEV 11-0105			X				X					3
DEV 11-0110		X							X			5
DEV 13-0033				X				X				6
DEV 13-0063				X				X				6
DEV 13-0235				X			X					6
DEV 13-0321				X				X				6
DEV 13-0369						X						6
DEV 13-0370						X						6
DEV 13-0371						X						6
DEV 14-0089				X					X			7
DEV 14-0090				X					X			7
DEV 14-0092				X					X			7
DEV 14-0094				X					X			7
DEV 14-0096				X					X			7
DEV 14-0103				X					X			7
DEV 14-0111					X					X		7

## Technical Data

### DEV 1953 Universal Switch Chassis 3 RU



#### Capacity

Number of Slots 8

#### Remote Communication

Interfaces (Connectors)

- Ethernet (RJ-45)
- Serial Interface RS 232 (Sub-D-9 (f))

Remote Control & Surveillance (Interface)

- via Web Interface (Ethernet)
- via SNMP (Ethernet)
- via Sandar Prosan Protocol (Serial Interface) **OR**
- via Leitch Protocol (Ethernet/Telnet & Serial Interface) **OR**
- via QEC Protocol (Ethernet/Telnet & Serial Interface)

#### Redundant Power Supply

Supply Voltage 100...240 V AC supplied by two different Lines

Power Consumption <50 VA

#### General Specifications

Size 19" (483 mm) Width, 3 RU (133 mm) Height, 495 mm Depth

Weight ~9...12 kg

Environmental Conditions ETS 300019 Part 1-3 Class 3.1E

#### Option 28 Automatic Switch Back / Main Backup Swap

Either functionality can be selected via configuration menu.

Automatic Switch Back:

In combination with sensing switch module(s) (or ASI/SDI switch module(s)) this option enables the autonomous switch back from the secondary to the primary input based on the RF signal level information (on the digital signal quality, respectively) in combination with an adjustable hysteresis (for sensing switch modules) or an adjustable delay (for ASI/SDI switch modules).

Main Backup Swap:

In combination with sensing switch module(s) (or with ASI/SDI switch module(s)), this option enables the dynamic change of main and backup assignment of the primary input and the secondary input.

I.e. the conditions for the autonomous switching from the secondary to the primary input are the same as for the (standard) autonomous switching from the primary to the secondary input.

#### Option 37 TRAC

With "Trap Receiver Action Controller" (TRAC), the device is able to perform switching actions based on industry standard SNMP traps received from any external equipment without additional M&C software. In addition, the IP Monitoring functionality checks permanently the availability of external equipment used in any TRAC configuration. The device is able to command itself and other equipment via SNMP.

#### Option 56 Dig-In 24 V up to 16 Channels

#### Option 57 Dig-In 12 V up to 16 Channels

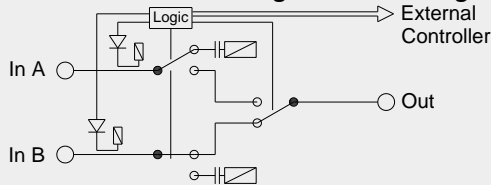
The product can be equipped with a digital interface for 24 V (Option 56) or for 12 V (Option 57) input.

#### Option 85 Chassis configured for additional 4 slots

The capacity of the product can be enhanced to 12 (16) slots with (2 \*) Option 85.

## Technical Data (cont.)

<b>DEV 11-0014</b>	<b>DPST Sensing Switch Module; DC, 950...2150 MHz; 50 Ohm, SMA (f)</b>
<b>DEV 11-0026</b>	<b>DPST Sensing Switch Module; DC, 950...2150 MHz; 75 Ohm, F (f)</b>
<b>DEV 11-0034</b>	<b>DPST Sensing Switch Module; DC, 47...1006 MHz; 75 Ohm, F (f)</b>
<b>DEV 11-0102</b>	<b>DPST High Power Sensing Switch Module; DC, 950...2150 MHz; 75 Ohm, F (f)</b>
<b>DEV 11-0105</b>	<b>DPST High Power Sensing Switch Module; DC, 47...1006 MHz; 75 Ohm, F (f)</b>

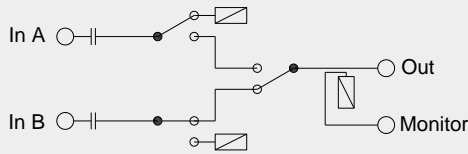


### RF Specifications

Frequency Range	DEV 11-0014, DEV 11-0026, DEV 11-0102: DC, 950...2150 MHz DEV 11-0034, DEV 11-0105: DC, 47...1006 MHz
Number of Inputs / Outputs	2 / 1
Impedance, Connectors	DEV 11-0014: 50 Ohm, SMA (f) DEV 11-0026, DEV 11-0034, DEV 11-0102, and DEV 11-0105: 75 Ohm, precision F (f)
Damage Level	DEV 11-0014, DEV 11-0026: +15 dBm DEV 11-0034: +10 dBm DEV 11-0102, DEV 11-0105: +40 dBm
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	DEV 11-0014: <2.5 dB DEV 11-0026, DEV 11-0034, DEV 11-0102, and DEV 11-0105: <2 dB
Isolation on/off	DEV 11-0014, DEV 11-0026, DEV 11-0102, DEV 11-0105: >45 dB DEV 11-0034: >55 dB
Noise Figure	<2.5 dB
Flatness	±0.5 dB (over entire Band) ±0.3 dB (in any 36 MHz Interval (DEV 11-0014, DEV 11-0026, DEV 11-0102)) ±0.2 dB (in any 8 MHz Interval (DEV 11-0034, DEV 11-0105))
Relay Type	Latching
Switching Cycles	>10E6 (no DC)
<b>RF Sensing</b>	
Adjustable Threshold Level	DEV 11-0014, DEV 11-0026, DEV 11-0034: 0 dBm > Threshold Level > -50 dBm DEV 11-0102: +30 dBm > Threshold Level > -10 dBm DEV 11-0105: +20 dBm > Threshold Level > -10 dBm
Threshold Level Accuracy	±3 dB
Threshold Repeatability	<0.5 dB

## Technical Data (cont.)

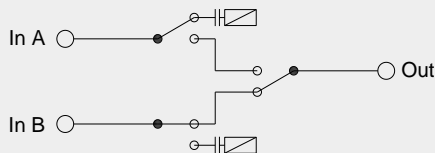
### DEV 11-0031 DPST Switch Module with Monitor Port; 47...1006 MHz; 75 Ohm, BNC (f)



#### RF Specifications

Frequency Range	47...1006 MHz
Number of Inputs / Outputs	2 / 1 + Monitor Port
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 >50 dB @ 1000 MHz
Relay Type	Failsafe
Switching Cycles	>10E6
<b>Monitor Port</b>	
Impedance, Connector	75 Ohm, BNC (f)
Return Loss	>18 dB
Insertion Loss	= Output Level - 20±3 dB

### DEV 11-0051 DPST Switch Module, DC...2500 MHz, 50 Ohm, SMA (f)

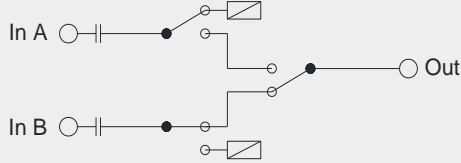


#### RF Specifications

Frequency Range	DC...2500 MHz
Number of Inputs / Outputs	2 / 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	>60 dB (up to 1006 MHz) >40 dB (1006...2500 MHz)
Flatness	±0.8 dB (over entire Band) ±0.5 dB (47...1006 MHz) ±0.3 dB (950...2150 MHz)
Relay Type	Latching
Contact Rating	28 V DC, 250 mA
Switching Cycles	>10E6 (no DC) >10E5 (28 V DC, 250 mA)

## Technical Data (cont.)

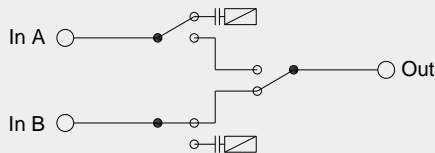
### DEV 11-0097 DPST Switch Module without Monitoring Port; 47...1500 MHz; 75 Ohm, BNC (f)



#### RF Specifications

Frequency Range	47...1500 MHz
Number of Inputs / Outputs	2 / 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 >50 dB @ 1000 MHz
Relay Type	Failsafe
Switching Cycles	10E6

### DEV 11-0110 DPST Switch Module; DC, 47...2500 MHz; 75 Ohm, F (f)

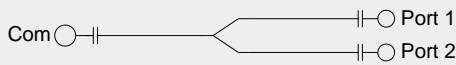


#### RF Specifications

Frequency Range	DC, 47...2500 MHz
Number of Inputs / Outputs	2 / 1
Impedance, Connectors	75 Ohm, precision F (f)
Damage Level	+15 dBm
Nominal Input Level	0 dBm
Return Loss selected Path	>16 dB (DC...2300 MHz) >13 dB (2300...2500 MHz)
Return Loss not selected Path	>14 dB (47...2300 MHz) >10 dB (2300...2500 MHz)
Insertion Loss	<1.2 dB (DC...1006 MHz) <1.5 dB (950...2150 MHz) <1.8 dB (2150...2500 MHz)
Isolation on/off	>60 dB (up to 1006 MHz) >40 dB (1006...2500 MHz)
Flatness	±0.8 dB (over entire Band) ±0.5 dB (47...1006 MHz) ±0.3 dB (950...2150 MHz)
Relay Type	Latching
Contact Rating	60 V DC, 100 mA
Switching Cycles	>10E6

## Technical Data (cont.)

### DEV 13-0033 1:2/2:1 Splitter/Combiner Module, Passive; 950...2150 MHz; 75 Ohm, F (f)



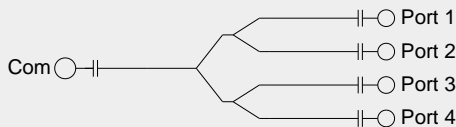
#### RF Specifications

Frequency Range	950...2150 MHz
Number of Inputs / Outputs	1 / 2
Impedance, Connectors	75 Ohm, precision F (f)
Return Loss	>16 dB, typical 18 dB
Insertion Loss	4±1 dB
Flatness	±0.2 dB (within any 36 MHz Interval)
Isolation	>22 dB, typical 25 dB
DC blocked	Yes

### DEV 13-0063 1:4/4:1 Splitter/Combiner Module, Passive; 950...2150 MHz; 75 Ohm, F (f)

### DEV 13-0235 1:4/4:1 Splitter/Combiner Module, Passive; 47...1006 MHz; 75 Ohm, F (f)

### DEV 13-0321 1:4/4:1 Splitter/Combiner Module, Passive; 950...2150 MHz; 50 Ohm, SMA (f)



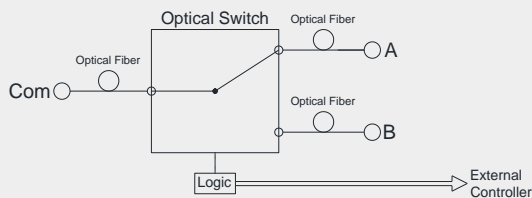
#### RF Specifications

Frequency Range	DEV 13-0235: 47...1006 MHz
	DEV 13-0063, DEV 13-0321: 950...2150 MHz
Impedance, Connectors	DEV 13-0321: 50 Ohm, SMA (f)
	DEV 13-0063, DEV 13-0235: 75 Ohm, precision F (f)
Number of Inputs / Outputs	1 / 4
Impedance, Connectors	75 Ohm, precision F (f)
Return Loss	>14 dB, typical 18 dB
Insertion Loss	7.5±1 dB
Flatness	±0.25 dB (within any 36 MHz Interval)
Isolation	>20 dB, typical 25 dB
DC blocked	Yes

### DEV 13-0369 1:2 Optical Switch Module; 1260...1610 nm; SC/APC

### DEV 13-0370 1:2 Optical Switch Module; 1260...1610 nm; E2000/HRL

### DEV 13-0371 1:2 Optical Switch Module; 1260...1610 nm; FC/APC



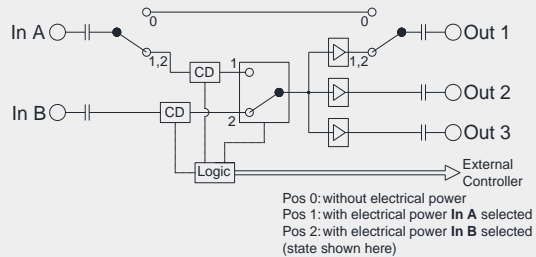
#### Optical Specifications

Number of optical Inputs	1
Number of optical Outputs	2
Wavelength	1260...1610 nm
Optical Connectors	SC/APC (DEV 13-0369), E2000 HRL (DEV 13-0370), FC/APC (DEV 13-0371)
Optical Insertion Loss	<1.5 dB
Isolation in/out	>55 dB
Max. operational optical Power	500 mW / 27 dBm
Switching Type	Latching
Switching Time	3 ms (typical)

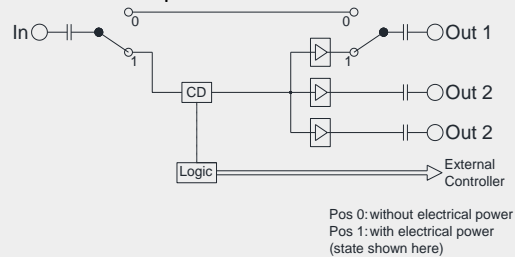
## Technical Data (cont.)

<b>DEV 14-0089</b>	<b>DPST Switch Module with DA 1:3; ASI; 75 Ohm, BNC (f)</b>
<b>DEV 14-0090</b>	<b>DPST Switch Module with DA 1:3; ASI<sup>1</sup> / HD-SDI; 75 Ohm, BNC (f)</b>
<b>DEV 14-0092</b>	<b>Distribution Amplifier 1:3; ASI; 75 Ohm, BNC (f)</b>
<b>DEV 14-0094</b>	<b>DPST Switch Module with DA 1:3; ASI<sup>1</sup> / 3G-SDI; 75 Ohm, BNC (f)</b>
<b>DEV 14-0096</b>	<b>Distribution Amplifier 1:3; ASI<sup>1</sup> / 3G-SDI; 75 Ohm, BNC (f)</b>
<b>DEV 14-0103</b>	<b>Distribution Amplifier 1:3; ASI<sup>1</sup> / HD-SDI; 75 Ohm, BNC (f)</b>

### DPST switch module



### Distribution amplifier



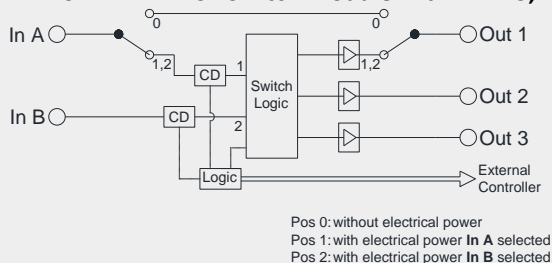
■ The DEV 14-0092, the DEV 14-0103, and the DEV 14-0096 are equivalent to a DEV 14-0089, to a DEV 14-0090, or to a DEV 14-0094, but without switching functionality i.e. the distribution modules provide a single input, only (meaning that "In B" is not available).

### Specifications

Signal Type	DEV 14-0089, DEV 14-0092: ASI; 0.8 V DEV 14-0090, DEV 14-0103: SD-SDI (SMPTE 259M) / HD-SDI (SMPTE 292M); 0.8 V
Transmission Rate	DEV 14-0094, DEV 14-0096: 3G-SDI (SMPTE 424M); 0.8 V DEV 14-0089, DEV 14-0092: ASI DEV 14-0090, DEV 14-0103: ASI <sup>1</sup> / SD-SDI / HD-SDI DEV 14-0094, DEV 14-0096: ASI <sup>1</sup> / SD-SDI / HD-SDI / 3G-SDI
Number of Inputs / Outputs	DEV 14-0092, DEV 14-0103, DEV 14-0096: 1 / 3 DEV 14-0089, DEV 14-0090, DEV 14-0094: 2 / 3
Impedance, Connectors	75 Ohm, BNC (f)
Input Level	300...800 mV
Output Level	>600 mV
Isolation on/off	>50 dB
Relay Type	Failsafe (DEV 14-0089, DEV 14-0090, and DEV 14-0094, only)
Switching Cycles	>10E6 (DEV 14-0089, DEV 14-0090, and DEV 14-0094, only)
Automatic Switching Capability	based on Signal Status (DEV 14-0089, DEV 14-0090, and DEV 14-0094)

Note 1: DEV 14-0090, DEV 14-0094, DEV 14-0096, and DEV 14-0103 deliver an inverted ASI signal on output port 1 (Out 1)

### DEV 14-0111 DPST Switch Module with DA 1:3; E1/T1; 75 Ohm, BNC (f)



### Specifications

Signal Type	E1 or T1
Number of Inputs / Outputs	2 / 3
Impedance, Connectors	75 Ohm, BNC (f)
Input Level	2.37 V (nominal)
Output Level	2.13...2.60 V, typical 2.37 V
Return Loss	>16 dB, typical 18 dB
Isolation on/off	>50 dB
DC blocked	No

## Order Information

### Product

DEV1953 Universal Switch Chassis 3 RU

### Options:

Option 28	Automatic Switch Back / Main Backup Swap
Option 37	TRAC
Option 56	Dig-In 24 V up to 16 Channels
Option 57	Dig-In 12 V up to 16 Channels
Option 85	Chassis configured for additional 4 slots

### Modules

DEV 11-0014	DPST Sensing Switch Module; DC, 950...2150 MHz; 50 Ohm, SMA (f)
DEV 11-0026	DPST Sensing Switch Module; DC, 950...2150 MHz; 75 Ohm, F (f)
DEV 11-0031	DPST Switch Module with Monitor Port; 47...1006 MHz; 75 Ohm, BNC (f)
DEV 11-0034	DPST Sensing Switch Module; DC, 47...1006 MHz; 75 Ohm, F (f)
DEV 11-0051	DPST Switch Module; DC...2500 MHz; 50 Ohm, SMA (f)
DEV 11-0097	DPST Switch Module without Monitor Port; 47...1500 MHz; 75 Ohm, BNC (f)
DEV 11-0102	DPST High Power Sensing Switch Module; DC, 950...2150 MHz; 75 Ohm, F (f)
DEV 11-0105	DPST High Power Sensing Switch Module; DC, 47...1006 MHz; 75 Ohm, F (f)
DEV 11-0110	DPST Switch Module; DC, 47...2500 MHz; 75 Ohm, F (f)
DEV 13-0033	1:2/2:1 Splitter/Combiner Module, Passive; 950...2150 MHz; 75 Ohm, F (f)
DEV 13-0063	1:4/4:1 Splitter/Combiner Module, Passive; 950...2150 MHz; 75 Ohm, F (f)
DEV 13-0235	1:4/4:1 Splitter/Combiner Module, Passive; 47...1006 MHz; 75 Ohm, F (f)
DEV 13-0321	1:4/4:1 Splitter/Combiner Module, Passive; 950...2150 MHz; 50 Ohm, SMA (f)
DEV 13-0369	1:2 Optical Switch Module; 1260...1610 nm; SC/APC
DEV 13-0370	1:2 Optical Switch Module; 1260...1610 nm; E2000/HRL
DEV 13-0371	1:2 Optical Switch Module; 1260...1610 nm; FC/APC
DEV 14-0089	DPST Switch Module with DA 1:3; ASI; 75 Ohm, BNC (f)
DEV 14-0090	DPST Switch Module with DA 1:3; ASI / HD-SDI; 75 Ohm, BNC (f)
DEV 14-0092	Distribution Amplifier 1:3; ASI; 75 Ohm, BNC (f)
DEV 14-0094	DPST Switch Module with DA 1:3; ASI / 3G-SDI; 75 Ohm, BNC (f)
DEV 14-0096	Distribution Amplifier 1:3; ASI / 3G-SDI; 75 Ohm, BNC (f)
DEV 14-0103	Distribution Amplifier 1:3; ASI / HD-SDI; 75 Ohm, BNC (f)
DEV 14-0111	DPST Switch Module with DA 1:3; E1/T1; 75 Ohm, BNC (f)

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