

Intelligent Universal Optribution® Chassis



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

Product:

DEV 4111 Intelligent Universal Optribution® Chassis; 2 Slots

Features:

- Versatile 1 RU Chassis for up to 2 Modules
- Optical Transmitter and Receiver Modules (Separate Optribution® Data Sheet)
- Amplifier Modules with
 - Variable Gain
 - Variable Tilt
 - Monitoring Output
 - RF Sensing
 - LNB Power with Current Monitoring
- Impedance 50 Ohm, SMA (f) or 75 Ohm, F (f)
- 1:8 or 1:16 Distribution
- IRD Controlled Switches
- 1+1 Redundancy for Optical Modules
- Redundant Amplifier for "No single Point of Failure"
- Main Backup Swap
- SNMP Support
- DEV Web Interface
- Signal Recording and Data Backup Feature
- Power Supply Redundancy

Technical Data

DEV 4111 Intelligent Universal Optribution® Chassis; 2 Slots

Capacity

Front Side 2 Slots for Optical Modules or for Amplifier Modules

Redundant Power Supply

Supply Voltage 100...240 V AC supplied by two different Lines
Power Consumption <80 VA

General Specifications

Size 19" (483 mm) Width, 1 RU (44 mm) Height, ~360 mm Depth
Weight ~5 kg (empty Chassis)
Environmental Conditions ETS 300019 Part 1-3 Class 3.1

Option 22: Main Backup Swap

Main Backup Swap enables the dynamic change of main and backup assignment to realize the autonomous switching from the backup link to the main link in addition to the (standard) autonomous switching from the main link to the backup link.

■ Only in combination with a 1+1 Rx redundancy option (Option 44/75/Rx or Option 45/zz/Rx) or with Option 23/zz (redundant amplifier option)

Option 59: CPU Module incl. one Web Interface and SNMP License

The device is equipped with a CPU enabling the control and surveillance via Web Interface & SNMP.

■ Mandatory for 1+1 Rx redundancies and for redundant amplifiers

Remote Communication

Interface (Connector)	• Ethernet (RJ-45)
Remote Control & Surveillance (Interface)	• via Web Interface (Ethernet) • via SNMP (Ethernet)

Optical Modules for the DEV 4111

Please refer to the corresponding Optribution® data sheet for the available optical transmitter modules and optical receiver modules which can be installed in the DEV 4111.

Technical Data (cont.)

L-Band Amplifier Modules for the DEV 4111

Amplifier modules for the DEV 4111 are offered with one or two outputs.

- The amplifier module with one output (DEV 11-0096) is to be applied in combination with Option 8/zz, or with Option 2x8/75, or with one output cabling option, or (two times) in combination with a redundant amplifier option (Option 23/zz, Option 24/zz).
- The amplifier module with two outputs (DEV 11-0081) is to be applied in combination with Option 16/zz, only.

Capacity

Number of Outputs DEV 11-0096: 1; DEV 11-0081: 2

RF Specifications

Frequency Range	700...2300 MHz
Damage Level	+10 dBm @ 50 Ohm / 120 dBμV @ 75 Ohm
Nominal Input Level	-10 dBm @ 50 Ohm / 85 dBμV @ 75 Ohm
Return Loss	>14 dB
Amplifier Gain Variation	0...31 dB
Variable Tilt	0...8 dB
Group Delay	<5 ns
Noise Figure	<10 dB

Monitoring Port

Impedance, Connector	50 Ohm, SMA (f)
Return Loss	>18 dB

LNB Power & Current Monitoring

LNB Power	15+3/-0 V; max. 500 mA
Adjustable Level Setting:	
• Upper Alarm Level	• max. 500 mA (Factory Setting: 350 mA)
• Lower Alarm Level	• min. 50 mA (Factory Setting: 150 mA)
Alarm indication	Via Front Panel LED and with Option 59 via Remote Interface

RF Sensing

Adjustable Threshold Level	0 dBm > Threshold Level > -50 dBm (Factory Setting: -30 dBm)
Threshold Level Accuracy	±3 dB
Threshold Repeatability	<0.5 dB
Alarm Indication	Via Front Panel LED and with Option 59 via Remote Interface

Cabling Options

Cabling options are used for stand alone optical Tx/Rx modules or amplifier modules, to be configured per RF input (Option 4y/I) or per RF output (Option 4y/O).

- Available in 50 Ohm with SMA (f) or in 75 Ohm with F (f) connectors
- Available for DC...3000 MHz, or for 10...1006 MHz, or for DC, 700...2300 MHz

Distribution Options

Distribution options provide a number of RF outputs per RF input.

- Available for optical L-Band Rx modules or for amplifier modules
- Up to 2 times 1:8 distribution or one 1:16 distribution
- A mix with a redundancy option is not allowed

Number of RF Ports	8 or 16 Outputs per Distribution Option
Impedance, Connectors	50 Ohm, SMA (f) or 75 Ohm, precision F (f)
Frequency Response	±1.0 dB (over entire Band)
	±0.3 dB (in any 36 MHz Interval)
Intermodulation Distortion	<-40 dBc @ -10 dBm

Technical Data (cont.)

IRD Controlled Switch Options

Two optical L-Band Rx modules or two amplifier modules feed an IRD controlled switch.

- One 2x8 in combination with single link optical Rx modules or with amplifier modules
- One 4x8 in combination with twin optical Rx modules
- A mix with a redundancy option is not allowed

Number of Inputs (Outputs)	2 or 4 Inputs (8 Outputs) per IRD Controlled Switch
Return Loss	>14 dB (Inputs), >12 dB (Outputs)
Frequency Response	±0.6 dB (in any 36 MHz Interval)
Isolation between Input Ports	>25 dB
Intermodulation Distortion	<-35 dBc @ 85 dBμV
IMA ₃ / IMA ₂ output level	<89 dBμV / <87 dBμV
Switch Control	14 V, 18 V and 0 Hz, 22 kHz at each Output

1+1 Redundancy Options

1+1 redundancy options are used to realize a redundant optical link to a dedicated main link.

- One 1+1 Rx redundancy or one 1+1 Tx redundancy
- Available in 50 Ohm with SMA (f) or in 75 Ohm with F (f) connectors
- Available for 10, 47...1006 MHz or for DC, 950...2150 MHz
- Link gain will be decreased by ~5 dB

Redundant Amplifier Options

Redundant amplifier options are used to realize a redundant backup link to a dedicated main link.

- One redundant amplifier
- Available in 50 Ohm with SMA (f) or in 75 Ohm with F (f) connectors
- Available with dedicated inputs (Option 23/zz) or with integrated 1:2 splitter (Option 24/zz)
- Add 0.5 dB to the frequency response tolerance of amplifier/distribution options

Order Information

Product and Product Options

DEV 4111	Intelligent Universal Optribution® Chassis; 2 Slots
Option 22	Main Backup Swap
Option 59	CPU Module incl. one Web Interface and SNMP License
Option 79	Additional Web License 1 RU
Option 81	Blanking Plate

Optical Modules for the DEV 4111

Please refer to the corresponding Optribution® data sheet for the available optical transmitter modules and optical receiver modules which can be installed in the DEV 4111.

L-Band Amplifier Modules for the DEV 4111

DEV 11-0081	Amplifier Module with Gain and Tilt Variation; 700...2300 MHz; 2 Outputs
DEV 11-0096	Amplifier Module with Gain and Tilt Variation; 700...2300 MHz; 1 Output

Cabling Options

Option 40/I	Input Cabling; DC...3000 MHz; 50 Ohm, SMA (f)
Option 40/O	Output Cabling; DC...3000 MHz; 50 Ohm, SMA (f)
Option 41/I	Input Cabling; 10...1006 MHz; 75 Ohm, F (f)
Option 41/O	Output Cabling; 10...1006 MHz; 75 Ohm, F (f)
Option 42/I	Input Cabling; DC, 700...2300 MHz; 75 Ohm, F (f)
Option 42/O	Output Cabling; DC, 700...2300 MHz; 75 Ohm, F (f)

Distribution Options

Option 8/50	1:8 Distribution; 700...2300 MHz; 50 Ohm, SMA (f)
Option 8/75	1:8 Distribution; 700...2300 MHz; 75 Ohm, F (f)
Option 16/50	1:16 Distribution; 700...2300 MHz; 50 Ohm, SMA (f)
Option 16/75	1:16 Distribution; 700...2300 MHz; 75 Ohm, F (f)

IRD Controlled Switch Options

Option 2x8/75	2x8 IRD Controlled Switch; 950...2150 MHz; 75 Ohm, F (f)
Option 4x8/75	4x8 IRD Controlled Switch; 950...2150 MHz; 75 Ohm, F (f)

1+1 Redundancy Options

Option 44/75/Rx	1+1 Rx Redundancy Kit; 10, 47...1006 MHz; 75 Ohm, F (f)
Option 44/75/Tx	1+1 Tx Redundancy Kit; 10, 47...1006 MHz; 75 Ohm, F (f)
Option 45/50/Rx	1+1 Rx Redundancy Kit; 950...2150 MHz; 50 Ohm, SMA (f)
Option 45/50/Tx	1+1 Tx Redundancy Kit; DC, 950...2150 MHz; 50 Ohm, SMA (f)
Option 45/75/Rx	1+1 Rx Redundancy Kit; 950...2150 MHz; 75 Ohm, F (f)
Option 45/75/Tx	1+1 Tx Redundancy Kit; DC, 950...2150 MHz; 75 Ohm, F (f)

Redundant Amplifier Options

Option 23/50	Redundant Distribution Amplifier Kit; 50 Ohm, SMA (f); Dual Input
Option 23/75	Redundant Distribution Amplifier Kit; 75 Ohm, F (f); Dual Input
Option 24/50	Redundant Distribution Amplifier Kit; 50 Ohm, SMA (f)
Option 24/75	Redundant Distribution Amplifier Kit; 75 Ohm, F (f)

Contact

DEV Systemtechnik GmbH & Co. KG
 Grüner Weg 4A
 61169 Friedberg
 GERMANY
 Phone: +49 6031 6975 100
 Fax: +49 6031 6975 114
 info@dev-systemtechnik.com
 www.dev-systemtechnik.com

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Technical specifications are subject to change