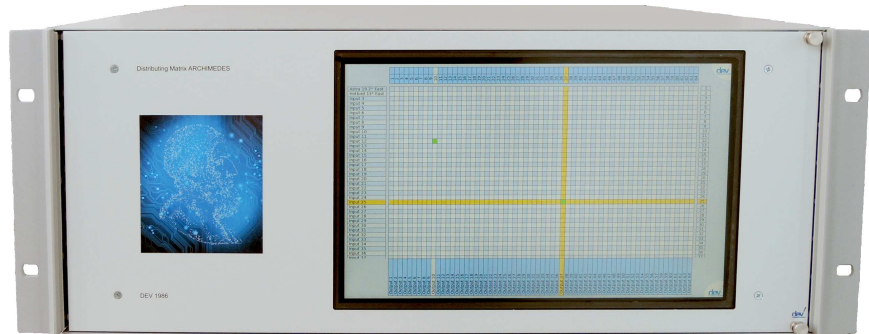# L-Band Distributing Matrix ARCHIMEDES

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

Products:

DEV 1986 mxn Distributing Matrix ARCHIMEDES; 950…2150 MHz; 75 Ohm, F (f)

Standard Configurations: 32x32, 32x64, 64x32 or 64x64

Upgradeable Versions available

Features:

- 64x64 in 4 RU
- Various Input and Output Modules
  - 75 Ohm, F (f) or BNC (f), or 50 Ohm, SMA (f)
  - Optical Inputs
- Variable Gain
- Variable Tilt
- RF Sensing
- LNB Powering, switchable 13/18 V and 22 kHz Tone
- Full Color Multi-Touch Display as Local User Interface
- Integrated TV-Receiver
- Input Channel Redundancy
- Output Channel Redundancy
- Controller Redundancy
- Power Supply Redundancy
- TRAC
- Secure Lock Operation
- SNMP Support
- Easy to use DEV Web Interface
- Signal Recording and Data Backup Feature

The Art of Engineering

Technical Data

DEV 1986/mxn Distributing Matrix ARCHIMEDES

Capacity

Number of	DEV 1986/32x32:	32x32
Inputs (**m**) x Outputs (**n**)	DEV 1986/32x64:	32x64
	DEV 1986/64x32:	64x32
	DEV 1986/64x64:	64x64
	(and Field upgradeable Matrices)	

RF Specifications

Frequency Range	950…2150 MHz
Impedance, Connectors	75 Ohm, precision F (f)
Damage Level	+25 dBm
Operational Input Level	<-5 dBm
Return Loss	>14 dB
Variable Gain	0…+35 dB
Frequency Response	±3.0 dB (over entire Band)
	±0.4 dB (in any 36 MHz Interval)
Isolation	Input/Input, Output/Output: typ. 60 dB
	Input/Output (Crosstalk): typ. 60 dB
	Off: typ. 80 dB
Intermodulation Distortion	<-40 dBc (two Tones @ -8 dBm)
Group Delay Distortion	<7 ns
Noise Figure	<14 dB
OP1dB	0 dBm
Relay Type	Semiconductor

Remote Communication

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

Redundant Power Supply

Supply Voltage	100…240 V AC supplied by two different Lines
Power Consumption	Max. 130 VA in Operation

General Specifications

Size	19" (483 mm) Width, 4 RU (178 mm) Height, 631 mm Depth
Weight	~18 kg (32x32), ~20 kg (32x64, 64x32), ~25 kg (64x64)
Environmental Conditions	ETS 300019 Part 1-3 Class 3.1

Option 20I   Change 4 Input Channels to 50 Ohm, SMA (f)
Option 20O   Change 4 Output Channels to 50 Ohm, SMA (f)

Per Option 20 one module with four channels is equipped with 50 Ohm, SMA (f) connectors instead of 75 Ohm, F (f) connectors.

Option 21I   Change 4 Input Channels to 75 Ohm, BNC (f)
Option 21O   Change 4 Output Channels to 75 Ohm, BNC (f)

Per Option 21 one module with four channels is equipped with 75 Ohm, BNC (f) connectors instead of F (f) connectors.

Option 22I   Change 4 Input Channels to Optical providing LC/APC

Per Option 22I one module with four input channels is equipped with LC/APC optical connectors instead of F (f) RF connectors.

Optical Specifications

Fiber Type	Single Mode 9/125 µm
Connector Type	LC/APC
Wavelength	1100…1650 nm

Technical Data (cont.)

Option 25   Variable Tilt (all Channels)

With Option 25 the device provides tilt control for all paths.

Variable Tilt   0…8 dB

Option 34   LNB Powering (all Channels)

With Option 34 each RF input port of the matrix is capable to deliver LNB power and to select the polarity (vertical (13 V) or horizontal (18 V)) and the band (low band (0 Hz) or high band (22 kHz)) of the LNB. The matrix is delivered with an additional 1 RU power supply.
As Option 34 is per chassis a mix of RF Input Modules with and without LNB Powering is not allowed.
A mix of Optical Input Modules and RF-Input Modules with LNB Powering is allowed.

LNB Power & Current Monitoring
LNB Power   Max 350 mA per Input
Voltage and Tone Control   13 V, 18 V and 0 Hz, 22 kHz
Adjustable Level Setting:
• Upper Alarm Level   • max. 330 mA (Factory Setting: 250 mA)
• Lower Alarm Level   • min.   50 mA (Factory Setting: 100 mA)

Redundant Power Supply
Supply Voltage   100…240 V AC supplied by two different Lines
Power Consumption   <600 VA

General Specifications
Size   19" (483 mm) Width, 1 RU (44 mm) Height, 380 mm Depth
Weight   ~12 kg
Environmental Conditions   ETS 300019 Part 1-3 Class 3.1

Option 37   TRAC

With Option 37 "Trap Receiver Action Controller" (TRAC) the device is able to perform switching actions based on 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 38   Secure Lock Operation

With Option 38 the matrix provides the ability of Secure Lock Operation for multiple user operation. While each user can be configured to operate dedicated inputs and outputs, Secure Lock Operation allows user X to lock a switched path while user Y cannot unlock this path to prevent unwanted service interruptions. Admin user is able to overwrite any path locked by normal users.

Option 39   TV-Receiver

With Option 39 the matrix provides TV view via an integrated TV-Receiver to be operated via the multi-touch display (Option 54). Each matrix input signal can be routed to the TV-Receiver which is capable to play unprotected content. (Option 54 needs to be ordered separately)

Option 48   Input Channel Redundancy

With Option 48 the matrix software provides the ability to configure redundant input channel configurations. Triggered via the integrated RF Sensing functionality an assigned redundancy channel can take over autonomously the signal transport of a main channel.

Option 49   Output Channel Redundancy

With Option 49 the matrix software provides the ability to configure redundant output channel configurations. Triggered via the integrated RF Sensing functionality an assigned redundancy channel can take over autonomously the signal transport of a main channel.

Technical Data (cont.)

Option 52   Redundant Controller

With Option 52 the device is equipped with two controller modules in redundant operation. In case of a malfunction of the main controller, the redundant controller will take over using the same IP settings and the same MAC address.

Option 54   Multi-Touch Display

With Option 54 the device is equipped at the front side with a 10.1" HD full color multi-touch display serving as a local user interface. With the local user interface all relevant functionalities are available to quickly get the status of the matrix, to switch the matrix, to safe or to load switching presets, to lock switched paths, to configure the device IP address, and to use the integrated TV Receiver to check content.

Option 87   8 Input Channels less
Option 88   8 Output Channels less

Per Option 87 or Option 88 the device is delivered with 8 input channels or 8 output channels less. Thus, the standard configurations can be equipped with less input or output channels. This provides the flexibility to configure the device for the current requirements and to keep the option to upgrade the device to an application specific maximum size. The field upgrade can be performed by the customer by ordering the required number of corresponding upgrade kits.

Order Information

Products

DEV 1986/32x32	32x32 Distributing Matrix ARCHIMEDES; 950...2150 MHz; 75 Ohm, F (f)
DEV 1986/32x64U	32x32 Distributing Matrix ARCHIMEDES, Field upgradeable up to 32x64; 950…2150 MHz; 75 Ohm, F (f)
DEV 1986/64Ux32	32x32 Distributing Matrix ARCHIMEDES, Field upgradeable up to 64x32; 950…2150 MHz; 75 Ohm, F (f)
DEV 1986/64Ux64U	32x32 Distributing Matrix ARCHIMEDES, Field upgradeable up to 64x64; 950…2150 MHz; 75 Ohm, F (f)
DEV 1986/32x64	32x64 Distributing Matrix ARCHIMEDES; 950...2150 MHz; 75 Ohm, F (f)
DEV 1986/64Ux64	32x64 Distributing Matrix ARCHIMEDES, Field upgradeable up to 64x64; 950…2150 MHz; 75 Ohm, F (f)
DEV 1986/64x32	64x32 Distributing Matrix ARCHIMEDES; 950...2150 MHz; 75 Ohm, F (f)
DEV 1986/64x64U	64x32 Distributing Matrix ARCHIMEDES, Field upgradeable up to 64x64; 950…2150 MHz; 75 Ohm, F (f)
DEV 1986/64x64	64x64 Distributing Matrix ARCHIMEDES; 950...2150 MHz; 75 Ohm, F (f)

Options

Option 20I	Change 4 Input Channels to 50 Ohm, SMA (f)
Option 20O	Change 4 Output Channels to 50 Ohm, SMA (f)
Option 21I	Change 4 Input Channels to 75 Ohm, BNC (f)
Option 21O	Change 4 Output Channels to 75 Ohm, BNC (f)
Option 22I	Change 4 Input Channels to Optical providing LC/APC
Option 25	Variable Tilt (all Channels)
Option 34	LNB Powering (all Channels)
Option 37	TRAC
Option 38	Secure Lock Operation
Option 39	TV-Receiver
Option 48	Input Channel Redundancy
Option 49	Output Channel Redundancy
Option 52	Redundant Controller
Option 54	Multi-Touch Display
Option 73	Additional Web License (Matrices >= 32x32)
Option 87	8 Input Channels less
Option 88	8 Output Channels less

The Art of Engineering

Order Information (cont.)

Upgrade Kits

DEV 19861	Upgrade Kit for 8 Input Channels; 950…2150 MHz; 75 Ohm, F (f)
Option 20I	Change 4 Input Channels to 50 Ohm, SMA (f)
Option 21I	Change 4 Input Channels to 75 Ohm, BNC (f)
Option 22I	Change 4 Input Channels to Optical providing LC/APC
Option 33	LNB Powering for 8 Inputs
	(Mandatory for Products with applied Option 34, and not available for DEV 19861 in Combination with Option 22I)

DEV 19862	Upgrade Kit for 8 Output Channels; 950…2150 MHz; 75 Ohm, F (f)
Option 20O	Change 4 Output Channels to 50 Ohm, SMA (f)
Option 21O	Change 4 Output Channels to 75 Ohm, BNC (f)

DEV 19863	Input Bridge Block 64x32
	(Mandatory to be applied once for Field upgradeable Matrices with Input Channels > 32 and Output Channels ≤ 32)

DEV 19864	Output Bridge Block 32x64
	(Mandatory to be applied once for Field upgradeable Matrices with Input Channels ≤ 32 and Output Channels > 32)

DEV 19865	Bridge Block 64x64
	(Mandatory to be applied once for Field upgradeable Matrices with Input Channels > 32 and Output Channels > 32)

Configuration Examples:

#	Initial Size	→ Target Size	Required Upgrade Kits:
1.	24x24	→ 32x32	1* DEV 19862, 1* DEV19861
2.	32x64U	→ 32x48	1* DEV 19864, 2* DEV19862
3.	64Ux32	→ 56x32	1* DEV 19863, 3* DEV19861
4.	64Ux64U	→ 56x48	1* DEV 19865, 1* DEV 19864, 1* DEV 19863, 2* DEV 19862, 3* DEV19861

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

Rev. 24-Feb-2015
Technical specifications are subject to change