FlexLink K7A Switch Matrix

Extended L-Band Switch Matrix 8:8 to 64:64, expandable to 256:256

The FlexLink K7A represents a unique, innovative & clever L-Band Switch Matrix system, built into a 6RU/19" rack mount chassis with only 500mm depth. It performs as a scalable distributive switch/routing platform allowing to switch/route any selected input to any or all outputs and can be assembled with various input/output configurations from 8:8 to 64:64 in one matrix chassis and to up to 256:256 (symmetrical & unsymmetrical) with additional matrix chassis and corresponding I/O switch-boards, while the modular concept also allows other input/output configurations (increments of 8).

The FlexLink K7A is future proof coming with widened bandwidth of 850 – 2450MHz supporting the extended L-Band (850 – 2450MHz) frequency range making it a perfect solution also for KA-Band and HTS applications.

This scalable Switch Matrix system offers a maximum in flexibility combined with state-of-the-art functionalities, features, excellent RF performance and various options. All matrix switchboards are hot-swappable while each I/O switchboard is equipped with cascading interfaces allowing to expand an existing system without the need of any other additional devices. This unique expansion concept results in less space requirement, reduced power consumption and avoids additional point of failures.

The flexible modular design makes it possible to mix the input and output connectors with various connector types (50Ohm SMA or BNC, 75Ohm F or BNC as well as optical inputs) giving the operator flexibility for future expansions.

The FlexLink K7A features variable gain control & slope-equalization, RF power monitoring as well as a 10MHz reference signal port. Furthermore, it supports status monitoring of all active components and comes a with 1:1 redundant dual power supply (hot-swappable). Additional flexibility is being provided via available options like switchable LNB-supply, individually selectable and configurable for each input.

A very special and unique optional feature is the “K7A SQA Signal Quality Analyzer”. It is an add-on Spectrum-Analyzer board allowing measurement and monitoring of RF parameters (any input & output of the matrix). It measures parameters like RF power, C/N and more. It is equipped with an RJ45/1000MBit interface allowing IP output streaming (MPTS).

Beyond its state-of-the-art and unique mechanical concept, all the functionalities and options the FlexLink K7A also assures superior and stable RF performance at the highest quality level.

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The FlexLink K7A matrix system can be configured and monitored locally via its front-side 10.4” colored touchscreen. Remote configuration can be done via an Ethernet-Interface (WebGUI, SNMP). RF-Design´s local and remote configuration platform for the FlexLink K7A allows the configuration of all relevant matrix settings including routing/switching settings, cross point locking, signal-path backup routing with reverse switch-back, double back-up storage of all settings/configurations, variable gain control, slope-equalization and of course all available options (if activated).

The configuration software also supports user administration management and user rights assignment, logbook function, storage functions and various parameter monitoring functions for critical RF values but also for each individual switchboard, power supplies and ventilators.

The FlexLink K7A is ideal for flexible signal assignment and perfectly suited for RF distribution applications in Teleports, Satellite Earth Stations as well as Broadcast and CATV/IPTV headend operations.

FEATURES & BENEFITS

Conceptual Features

- Space saving 6RU/19" modular rack mount design
- Extended L-Band frequency 850 – 2450MHz ready for KA-Band and HTS applications
- Up to 64:64 inputs/outputs within one chassis, expansion e.g. to 256:256 possible (symmetrical/unsymmetrical)
- Easy expandable via integrated cascade ports
- Coax inputs & outputs 50/75Ohm SMA(f), F(f) or BNC(f) or optical inputs (mixed input & output configuration)
- 1:1 redundant dual controller card (hot-swappable) *
- 10MHz reference signal port (rear side)
- Beneficial options such as switchable LNB-supply and RF/DVB monitoring*
- Hot-swappable Controller Card and Matrix Switchboards (Input, Output and Center Switchboards)
- 10.4" front-side touchscreen LC-Display for local configuration
- 1000MBit Ethernet-Interface for remote configuration (WebGUI, SNMPv2c)
- 1:1 redundant dual power supply (hot-swappable)

**** upon request only***

Hardware & RF Features

- Variable gain control (@ any input)
- Slope-equalization (@ any input)
- Threshold alarming (local and remote signaling)
- RF power monitoring, dynamic range (@ any input/output)
- Internal monitoring of all active components
- Switching time is 50 ms
- Input connectors available as 50Ohm SMA or BNC, 75Ohm F or BNC or Optical-inputs 1310 – 1550nm increments of 8)
- Output connectors available as 50Ohm SMA or BNC, 75Ohm F or BNC (increments of 8)
- Superior RF performance especially @ Isolation and Frequency Response

Software & Configuration Features

- Local and remote configuration for all relevant settings and adjustments
- Local configuration via 10.4" colored touchscreen LC-Display
- Remote configuration via 1000MBit Ethernet-Interface and RS232 (WebGUI, SNMPv2c)
- User administration with user rights management
- Cross point/routing locking for individual users
- Signal path backup routing with reverse switch-back
- Logbook and storage function
- Various parameter monitoring & error diagnosis functions for critical RF values, all switch-boards, fan speed, psu´s…
- Save operation via double back-up storage for all settings

K7A SQA Signal Quality Analyzer Features*

- RF measurement & monitoring (for any input and output of the matrix system)
- RF parameter measurement RF power, C/N, bandwidth
- Supports a complete scan of all inputs and outputs
- Spectrum analysis remotely via Ethernet-Interface with CMS

TECHNICAL SPECIFICATIONS

General Specifications

Dimensions:	6RU/19”, 400mm deep, 50kg
Switch Matrix Type:	Fan-out/distributive
Configuration Variants:	8:8 – 64:64 to 256:256 (increments of 8), symmetrical & unsymmetrical
Power Supply:	85 – 230, 50/60Hz, 1:1 redundant (hot- swappable)
Power Consumption:	<350W (@64:64 configuration)
Frequency Range:	850 – 2450MHz (extended L-Band)
Available I/O Connectors:	50Ohm SMA(f), 50Ohm BNC(f), 75Ohm F(f), 75Ohm BNC(f)
Optical Input Connectors:	SC/APC, 1100…1650nm
Variable Gain Control:	-20dB to +10dB (1dB steps)
Slope Equalization:	0 to 9dB
10MHz Reference*:	50Ohm SMA(f)*, rear side
RF Power Monitoring:	65dB dynamic range
Input Level Control:	Monitoring threshold adjustment/alarming
Local Configuration:	10.4" Touchscreen LC-Display
Remote Configuration:	RJ45 Ethernet-Interface (WebGUI, SNMPv2c)
Serial Interface:	RS232**
LNB-Supply/10MHz*:	Switchable 13/15/18VDC, 22kHz tone, 400mA current monitoring*

Option/ ** upon request only

RF Specifications

Frequency Range:	850 – 2450MHz (extended L-Band)
Frequency Response:	± 2dB typ. ±3dB max. (@ L-Band) ± 3dB typ. ±4dB max. (@ Extended L-Band), ± 0,25dB max. (@ 40MHz window)
Group Delay Variation (850-2450 MHz):	±2 ns max.
Group Delay Variation (Any width of 36 MHz):	±0.5 ns max.
Noise Figure:	<12dB
Input/Output Return Loss:	14dB min., 16dB typ.
Isolation:	≥60dB typ. (In/Out, In/In, Out/Out)
Return Loss:	14dB min.
Operational Input Power:	-70dBm to -10dBm nominal, 0dBm max. (Recommended)
RF Input Power:	+6dBm max. (damage level, depends on gain setting)
RF Output Power:	+10dBm max. (damage level, depends on gain setting)
IMA3 @ -10dBm:	<60dBc
P1dB:	+8.5dBm
SFDR:	< -70dBm

Optical Specifications (Unit with optical inputs)

Fiber Type:	Single mode 9/125
Optical Input Connector:	SC/APC
Optical Wavelength:	1100…1650nm
Optical Input Power:	-10dBm (min. optical sensitivity) to +10dBm max. (damage level)
SFDR:	-107dB/Hz typ.

Environmental Specifications

Location:	Indoor use only
Operating Temperature:	0°C to 45°C
Storage Temperature:	-10°C to 65°C
Humidity:	90%, non-condensing

ORDER INFORMATION

Chassis

Type	Type No.:	Short Description
FlexLink K7A Main Chassis	9001424	6RU 19" Chassis with redundant Power Supply, Main Controller, Backplane and Center Switch Cards

Module

Module Type	Type No.:	Short Description
K7A-ISB-50S	9001425	FlexLink K7A Input-Card 50Ohm SMA
K7A-ISB-50B	9001426	FlexLink K7A Input-Card 50Ohm BNC
K7A-ISB-75B	9001427	FlexLink K7A Input-Card 75Ohm BNC
K7A-ISB-FO	9001428	FlexLink K7A Input-Card SC/APC
K7A-OSB-50S	9001429	FlexLink K7A Output-Card 50Ohm SMA
K7A-OSB-50B	9001430	FlexLink K7A Output-Card 50Ohm BNC
K7A-OSB-75B	9001431	FlexLink K7A Output-Card 75Ohm BNC

OPTIONS

Type	Type No.:	Short Description
FlexLink K7A LNB-supply/10MHz	9001437	Switchable 13/15/18VDC, 22kHz tone (@any input) and 10MHz external reference signal port (rear side 50Ohm SMA)
FlexLink K7A SQA Option*	900xxxx	Spectrum Analyzer RF 800...2.450MHz, allows monitoring of any input & output of the Matrix

**** Upon request only***

RF-Design GmbH | Marienburger Str. 3 | 64653 Lorsch | Germany
Phone: +49 (0) 6251 80 384 – 0 | E-Mail: contact@rf-design-online.de | Web: www.rf-design-online.de