System 46T

RF/Microwave Switch System 32-channel. Terminated



- Compact RF/microwave switching system only 2U high
- Built-in contact closure counter to monitor switch cycles
- Standard configuration allows up to 32 channels of switching
- Simple control with built-in GPIB/IEEE-488 interface bus
- Channel characterization data storage
- Terminated switching configurations
- Frequency ranges up to 26.5GHz

Terminated Switching Solutions

If your application requires a terminated configuration, the System 46T will meet your needs. This compact switching system leverages the same design technology of our standard unterminated System 46. This terminated version can accommodate up to eight terminated SPDT coaxial microwave relays and four terminated multi-pole coaxial microwave relays.

Maximum Flexibility

In addition to the terminated configurations, the System 46T also has provisions to accommodate up to four

transfer switches (DPDT) as well as frequency ranges up to 26.5GHz. Other options include adding unterminated multi-throw and SPDT switches. Please review the Ordering Information section for allowable configurations.

Simple Operation

The S46T switch system's 32 control channels can be operated via the IEEE-488 interface bus with a minimal set of instructions. This small instruction set ensures the system can be set up and running quickly. Front panel LEDs indicate the status of all relay contacts continuously to allow the user to monitor system operation easily.

Excellent Microwave Switching Performance

Keithley's experience and partnerships with leading manufacturers in the microwave relay industry allow Keithley to offer the lowest insertion loss, VSWR, and crosstalk performance specifications available. Low-loss, semi-flexible RF cables are available as accessories to maximize signal integrity.

Maximum System Up-Time and Enhanced System Performance

The S46T controller automatically counts relay contact closures to allow equipment maintenance personnel to assess when the relays are nearing the end of their mechanical life. In this way, preventive maintenance can be performed in a timely way during scheduled shutdowns, avoiding unplanned shutdowns and the resulting loss of production time.

In addition to counting contact closures, the S46T has a portion of its memory available to store S-parameters or calibration constants for each relay contact or each pathway. If a specific performance parameter is critical, such as Voltage Standing Wave Ratio (VSWR) or insertion loss, the parameter can be stored in memory for use in trend analysis between scheduled maintenance shutdowns. Stored parameters can also be used for compensation to enhance accuracy during RF measurements.

ACCESSORIES AVAILABLE

CABLES, ADAPTERS, TOOLS		SWITCH KITS				
7007-1	Shielded GPIB Cable, 1m (3.3 ft.)	S46T-MSPDT-KIT	Quantity 2, 18GHz Unterminated SPDT	S46T-SPDT-KIT-26	26.5GHz Unterminated SPDT Relay, Spacer	
7007-2	Shielded GPIB Cable, 2m (6.6 ft.)		Relays, Mounting Plate, and Control Cable		Block, and Control Cable Assembly	
7712-SMA-1	SMA Cable, male to male, 1m (3.3 ft.)		Assembly (Note: Kit applicable only for relay	S46T-SPDT-KIT-26T	26.5GHz Terminated SPDT Relay and Control	
CA-404-B	SMA Cable, male to male, RG188 cable, 2m (6.5 ft).		A-D mounting locations)		Cable Assembly	
KPCI-488LPA	IEEE-488 Interface/Controller for the PCI Bus	S46T-SPDT-KIT	18GHz Unterminated SPDT Relay, Spacer	S46T-MSPDT-KIT-26	Quantity 2, 26.5GHz Unterminated SPDT	
KUSB-488B	IEEE-488 USB-to-GPIB Interface Adapter		Block, and Control Cable Assembly		Relays, Mounting Plate, and Control Cable	
\$46-SMA-0.5	DC-18GHz, Low Loss, Semi-Flex SMA-SMA Cable Assembly, 0.152m (6 in.)	S46T-SPDT-KIT-T	18 GHz Terminated SPDT Relay and Control Cable Assembly		Assembly (Note: Kit applicable only for relay A-D mounting locations)	
S46-SMA-1	DC-18GHz, Low Loss, Semi-Flex SMA-SMA Cable Assembly, 0.305m (12 in.)	S46T-SP4T-KIT	18GHz Unterminated SP4T Relay, Mounting Plate, and Control Cable Assembly	S46T-SP4T-KIT-26	26.5GHz Unterminated SP4T Relay, Mounting Plate, and Control Cable Assembly	
\$46-SMA-1.7	DC-18GHz, Low Loss, Semi-Flex SMA-SMA Cable Assembly, 0.518m (20.4 in.)	S46T-SP4T-KIT-T	18GHz Terminated SP4T Relay, Mounting Plate, and Control Cable Assembly	S46T-SP4T-KIT-26T	26.5GHz Terminated SP4T Relay and Control Cable Assembly	
\$46-SMA26-0.5	5 DC-26.5GHz, Low Loss, Semi-Flex SMA-SMA Cable Assembly, 0.152m (6 in.)	S46T-SP6T-KIT	18GHz Unterminated SP6T Relay, Mounting Plate, and Control Cable Assembly	S46T-SP6T-KIT-26	26.5GHz Unterminated SP6T Relay, Mounting Plate, and Control Cable Assembly	
S46-SMA26-1	DC-26.5GHz, Low Loss, Semi-Flex SMA-SMA Cable Assembly, 0.305m (12 in.)	S46T-SP6T-KIT-T	18 GHz Terminated SP6T Relay, Mounting Plate, and Control Cable Assembly	S46T-SP6T-KIT-26T	26.5GHz Terminated SP6T Relay and Control Cable Assembly	
\$46-SMA26-1.7	V DC-26.5GHz, Low Loss, Semi-Flex SMA-SMA Cable Assembly, 0.518m (20.4 in.)	S46T-XFR-KIT	18GHz Transfer Switch, Mounting Plate, and Control Cable Assembly	S46T-XFR-KIT-26	26.5GHz Transfer Switch, Mounting Plate, and Control Cable Assembly	
TL-24	SMA Cable Torque Wrench		,		,	

SWITCHING AND CONTROL





System 46T specifications



System 46T

Ordering Informati

Specifying Standard S46T Model Numbers

Power cord, instruction manual, and rack mount kit



APPLICATIONS

- Cellular and cordless phones
- · Specialized mobile radios
- Base stations
- Specialized antenna systems
- **RF** components, including **RFICs**
- Wireless peripherals, including **Bluetooth devices**
- Broadband wireless transceivers
- High speed digital communications, including SONET speeds 3Gbps and 10Gbps

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RF/Microwave Switch System

32-channel, Terminated



Example 1: Model Number S46T-0A0X00TT0000A

Includes: Terminated SP4T in position B, transfer switch in position D, terminated SPDTs in positions 3 and 4. DC-18GHz frequency range.

Example 2: Model Number S46T-ABC4UU00TTTTB

Includes: Terminated SP4T in position A, terminated SP6T in position B, two unterminated SPDTs in position C, and unterminated SP4T in position D. Unterminated SPDTs in positions 1 and 2, terminated SPDTs in positions 5, 6, 7, and 8. DC-26.5GHz frequency range.

Terminated Relay Specifications

Frequency	y Range	DC-18 GHz	DC-26.5 GHz	
CONNECTOR TYPE		SMA	SMA	
IMPEDANCE		50Ω	50Ω	
CONTACT I	IFE: SPDT	2×10^{6}	2×10^{6}	
	SP4T, SP6T	2×10^{6}	2×10^{6}	
VSWR (max)	DC-3 GHz: 1.20	DC-3 GHz: 1.20	
		3-8 GHz: 1.30	3-8 GHz: 1.30	
		8-12.4 GHz: 1.40	8-12.4 GHz: 1.40	
		12.4-18 GHz: 1.50	12.4-18 GHz: 1.50	
			18–26.5 GHz: 1.80	
INSERTION	LOSS	DC-3 GHz: 0.2	DC-3 GHz: 0.2	
(max.) dB		3-8 GHz: 0.3	3-8 GHz: 0.3	
		8-12.4 GHz: 0.4	8-12.4 GHz: 0.4	
		12.4-18 GHz: 0.5	12.4-18 GHz: 0.5	
			18-26.5 GHz: 0.7	
ISOLATION (min.) dB		DC-3 GHz: 80	DC-3 GHz: 80	
		3-8 GHz: 70	3-8 GHz: 70	
		8-12.4 GHz: 60	8-12.4 GHz: 60	
		12.4-18 GHz: 60	12.4-18 GHz: 60	
			18-26.5 GHz: 50	
ACTUATION	N TIME			
(max.) ms	SPDT	10	10	
	SP4T, SP6T	15	15	

See page 197 for unterminated relay specifications.

Transfer Switch Specifications

Frequency Range	DC-18 GHz	DC-26.5 GHz
CONNECTOR TYPE	SMA	SMA 2.9
IMPEDANCE	50Ω	50Ω
CONTACT LIFE	2.5×10^{6}	2.5×10^{6}
VSWR (max.)	DC-3 GHz: 1.20	DC-3 GHz: 1.20
	3-8 GHz: 1.30	3-8 GHz: 1.30
	8-12.4 GHz: 1.40	8-12.4 GHz: 1.40
	12.4-18 GHz: 1.50	12.4-18 GHz: 1.50
		18–26.5 GHz: 1.70
INSERTION	DC-3 GHz: 0.2	DC-3 GHz: 0.2
LOSS (max.) dB	3-8 GHz: 0.3	3-8 GHz: 0.3
	8-12.4 GHz: 0.4	8-12.4 GHz: 0.4
	12.4-18 GHz: 0.5	12.4-18 GHz: 0.5
		18-26.5 GHz: 0.7
ISOLATION (min.) dB	DC-3 GHz: 80	DC-3 GHz: 80
	3-8 GHz: 70	3-8 GHz: 70
	8-12.4 GHz: 60	8-12.4 GHz: 60
	12.4-18 GHz: 60	12.4-18 GHz: 60
		18-26.5 GHz: 50
ACTUATION TIME	15	15
(max.) ms		



