

AUT Switch Unit

Small Signal Absorptive SPNT PIN Switch

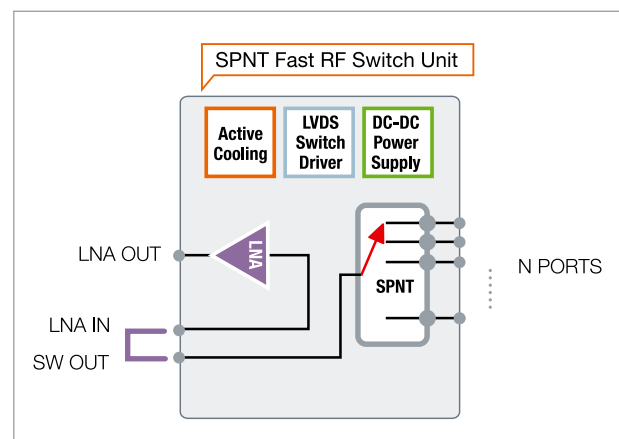


Broadband AUT PIN diode absorptive switches are designed for multi-port antenna measurement. Fast switching RF response time allows on-the-fly RF signal measurements synchronized with the positioning system movement. These RF switches are designed to handle power levels up to 100 mW at a switching time of 50 ns (nanoseconds), and can be operated using remote logic controls. The RF signals can be amplified with an internal broadband LNA.

Main features

- Frequency range: 0.1-50 GHz
- Available configurations: SP4T, SP8T, SP16T, SP32T, SP64T
- Switching time of 50 ns maximum
- Power handling of 0.1 W maximum
- LVDS control logic

Functional Block Diagram



Specifications

EXAMPLE MODEL	OFR-SP4T0140F-1	OFR-SP8T0140F-1	OFR-SP32T0140F-1
Type	SP4T absorptive PIN switch with Low Noise Amplifier, 0.5-40 GHz	SP8T absorptive PIN switch with Low Noise Amplifier, 0.5-40 GHz	SP32T absorptive PIN switch with Low Noise Amplifier, 0.5-40 GHz
Operation Frequencies	0.5-40 GHz	0.5-40 GHz	0.5-40 GHz
Switching Time	50 ns	50 ns	50 ns
Unit Insertion Loss	<ul style="list-style-type: none"> • 3.0 dB typical (0.5-18 GHz) • 7.5 dB typical (18-40 GHz) 	<ul style="list-style-type: none"> • 3.5 dB typical (0.5-18 GHz) • 9.0 dB typical (18-40 GHz) 	<ul style="list-style-type: none"> • 6.5 dB typical (0.5-18 GHz) • 13.0 dB typical (18-40 GHz) • 19.0 dB typical (40-50 GHz)
Switch Power Handling	0.1 W max	0.1 W max	0.1 W max
Amplifier Gain	30 dB typical	30 dB typical	30 dB typical
Amplifier Gain Flatness	± 2.2 dB	± 2.2 dB	± 2.2 dB
Amplifier Noise Figure	4.5 dB typical	4.5 dB typical	4.5 dB typical
Switch Isolation	<ul style="list-style-type: none"> • 100 dB typical (0.5-1 GHz) • 85 dB typical (1-18 GHz) • 70 dB typical (18-40 GHz) 	<ul style="list-style-type: none"> • 100 dB typical (0.5-1 GHz) • 85 dB typical (1-18 GHz) • 70 dB typical (18-40 GHz) 	<ul style="list-style-type: none"> • 100 dB typical (0.5-1GHz) • 85 dB typical (1-18 GHz) • 70 dB typical (18-40 GHz) • 65 dB typical (40-50 GHz)
Connectors	2.92 mm (F)	2.92 mm (F)	2.92 mm (F)
Power Supply	24 V, 600 mA max	24 V, 600 mA max	24 V, 600 mA max
Switch Control	LVDS logic, RG45 connector	LVDS logic, RG45 connector	LVDS logic, RG45 connector
Dimensions	124 x 56 x 133 [mm] (W x H x L)	155 x 56 x 133 [mm] (W x H x L)	257 x 86 x 183 [mm] (W x H x L)

Model index for AUT switch units

PART NUMBER	FREQUENCY BAND	DESCRIPTION
OFR-SP4T0105F-1	0.1-0.5 GHz	RF SP4T absorptive PIN switch 0.1-0.5 GHz without LNA
OFR-SP4T0518F-1	0.5-18 GHz	RF SP4T absorptive PIN switch 0.5-18 GHz with 26 dB gain LNA
OFR-SP4T0140F-1	0.5-40 GHz	RF SP4T absorptive PIN Switch 0.5-40 GHz with 30 dB gain LNA
OFR-SP4T0140F-2	0.5-40 GHz	RF SP4T absorptive PIN Switch 0.5-40 GHz with 42 dB gain LNA
OFR-SP4T0150F-1	0.5-50 GHz	RF SP4T absorptive PIN Switch 0.5-50 GHz with 30 dB gain LNA
OFR-SP8T0120F-1	0.1-20 GHz	RF SP8T absorptive PIN switch 0.1-20 GHz with 26 dB gain LNA
OFR-SP8T0518F-1	0.5-18 GHz	RF SP8T absorptive PIN switch 0.5-18 GHz with 26 dB gain LNA
OFR-SP8T0140F-1	0.5-40 GHz	RF SP8T absorptive PIN switch 0.5-40 GHz with 29 dB gain LNA
OFR-SP8T0140F-2	0.5-40 GHz	RF SP8T absorptive PIN switch 0.5-40 GHz with 42 dB gain LNA
OFR-SP8T0150F-1	0.5-50 GHz	RF SP8T absorptive PIN switch 0.5-50 GHz with 30 dB gain LNA
OFR-SP16T0518F-1	0.5-18 GHz	RF SP16T absorptive PIN switch 0.5-18 GHz with 26 dB gain LNA
OFR-SP16T0140F-1	0.5-40 GHz	RF SP16T absorptive PIN switch 0.5-40 GHz with 30 dB gain LNA
OFR-SP16T0140F-2	0.5-40 GHz	RF SP16T absorptive PIN switch 0.5-40 GHz with 42 dB gain LNA
OFR-SP16T0150F-1	0.5-50 GHz	RF SP16T absorptive PIN switch 0.5-50 GHz with 30 dB gain LNA
OFR-SP32T0518F-1	0.5-18 GHz	RF SP32T absorptive PIN switch 0.5-18 GHz with 26 dB gain LNA
OFR-SP32T0140F-1	0.5-40 GHz	RF SP32T absorptive PIN switch 0.5-40 GHz with 30 dB gain LNA
OFR-SP32T0140F-2	0.5-40 GHz	RF SP32T absorptive PIN switch 0.5-40 GHz with 42 dB gain LNA
OFR-SP32T0150F-1	0.5-50 GHz	RF SP32T absorptive PIN switch 0.5-50 GHz with 30 dB gain LNA
OFR-SP64T0518F-1	0.5-18 GHz	RF SP64T absorptive PIN switch 0.5-18 GHz with 26 dB gain LNA



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