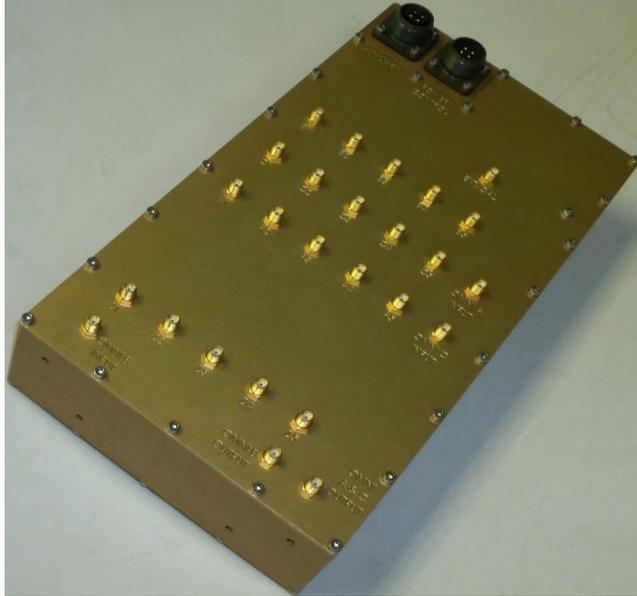


High-Speed DF Antenna Band Switch

1 – 6000 MHz

Product Code: DF-A0054

VERSION: 1.5



PRODUCT DESCRIPTION:

The DF-A0054 is a 4-band, 5-channel DF switch. It is particularly suitable for band selection on the DF-A0095 direction finding antenna. The switch is designed to be mounted internally within the weatherproof cavity in the antenna.

The switch comprises 5 parallel channels, each equipped with input power limiters, ESD protection, low noise amplifier and band switch. A “calibration band” can also be selected, providing a balanced 5-way split of an internally generated or externally supplied calibration signal, for chain and receiver calibration. Each channel features a low-noise amplifier, within the calibration chain, to help overcome switch and cable loss.

The switch accepts a very wide input voltage range and is controlled via EIA-485 (RS-485). All switching is solid state for rapid band change and unlimited switching cycles.

PRODUCT FEATURES:

- 4-band, 5-channel switch
- Low noise amplifier on each channel
- Wideband internal noise source for chain calibration
- External injection mode for chain calibration
- High-speed solid state switching
- Limiter and ESD protection on each input in order to allow operation in adverse EM environments

APPLICATIONS:

- DF band switching for Alaris’ range of DF antennas, particularly, the DF-A0095

SPECIFICATIONS:

Electrical: DF chain

Frequency range	1 – 6000 MHz	
Frequency bands	Band A: 1 – 500 MHz	
	Band B: 110 – 1400 MHz	
	Band C: 500 – 3600 MHz	
	Band D: 2000 – 6000 MHz	
Input VSWR	< 2.5:1	
Gain (typical)	100 MHz	9 ± 2 dB
	3000 MHz	8 ± 2 dB
	6000 MHz	8 ± 2 dB
Noise figure	< 10 dB	
OIP3 (typical)	100 MHz	30 dBm
	3000 MHz	25 dBm
	6000 MHz	22 dBm
Maximum input level	30 dBm CW, 45 dBm at 1% duty factor in 1µs pulse	
Input connectors	SMA female	
Output connectors	SMA female	

Electrical: CAL chain

Amplitude imbalance	< 2 dB	
Phase imbalance	< 15°	
Gain (typical)	100 MHz	-11 ± 1 dB
	3000 MHz	-13 ± 1 dB
	6000 MHz	-12 ± 1 dB
Max input level	20 dBm	
Internal noise source output level	+45 to +70 dB ENR	
Input connector	SMA female	

Electrical – monitoring:

Frequency range:	OMNI 1	1 - 3600 MHz
	OMNI 2	1 - 6000 MHz
Input connectors	2 x SMA female	
Output connectors	2 x SMA female	
Input VSWR	< 2.5 :1	
Gain:	OMNI 1	10 ± 1 dB
	OMNI 2	10 ± 1 dB
Maximum input level	30 dBm CW, 45 dBm at 1% duty factor in 1µs pulse	
DC power injection	13.8 V on OMNI 1	

Power and control:

Power supply	19 – 36 V DC, 1 A	
Control	EIA-485 (RS-485)	
Total switching time (for RS-485, 115.2 kbps)	< 150 µS	
Connector	MS3102A-14S-2P	

Mechanical:

Dimensions	317 mm x 168 mm x 80 mm	
Total mass	< 4 kg	
External material	Aluminium	

Environmental: designed to meet the following specifications

Temperature range	-20 °C to +70 °C	
Vibration	0.02 g ² /Hz, 2 – 300 Hz	
Shock	40 G for 10 ms	
Thermal shock	-20 °C to +70 °C	
Water ingress rating	IP54	