

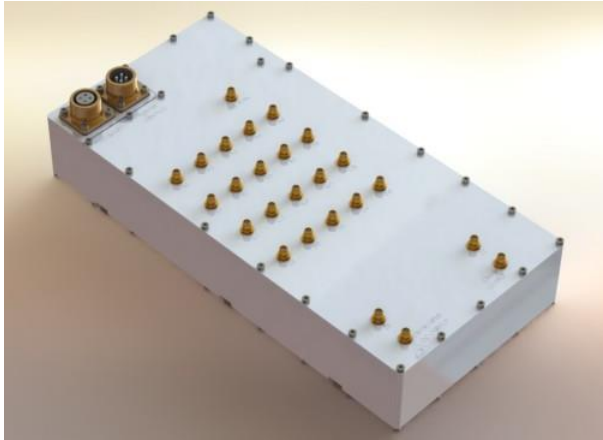
High-Speed DF Antenna Commutating Switch

1 – 6000 MHz

Product Code: DF-A0063

VERSION: 1.4

SPECIFICATIONS:



PRODUCT DESCRIPTION

The DF-A0063 is a high-speed, 4-band, 5 to 2 commutating switch intended for direction finding applications. It accepts four frequency bands, each with 5 antenna elements, and routes any two elements of a selected band to either of the two outputs. The switch is controlled via hardwired logic lines or an EIA-485 (RS-485) serial interface to allow remote control over a distance of up to 500 m. All switching is solid state for rapid commutation and unlimited switching cycles.

The DF-A0063 includes an internal noise source as well as an external input for chain calibration purposes. Either the internal noise source or the external calibration input may be selected to simultaneously inject a balanced signal in place of the antenna inputs and thereby correct errors caused by variations in the systems RF path.

All inputs of the DF-A0063 are equipped with limiters to allow it operate in harsh EMC environments.

PRODUCT FEATURES:

- DF switch
 - 4-band, 5 to 2 commutating switch
 - External injection mode for chain calibration
 - Internal chain calibration noise source
 - Low noise amplifier on each channel
 - High-speed solid state switching
- Monitoring
 - Single channel amplifier
 - Low noise pre-amplifier on input
 - DC-injection to power upper stages
- Advanced input stages:
 - Limiter on each input to allow operation in adverse EMC environments
 - ESD protection
- Advanced output stages:
 - Output amplifiers for long cables
 - Cable slope correction on amplifiers
 - ESD protection

APPLICATIONS:

- DF band switching, commutation and monitoring channel amplification for our range of DF antennas, particularly DF-A0062 (5-element DF interferometer optimized for a 2-channel receiver)

Product codes:		
DF-A0063		5 to 2 commutating switch
Electrical – DF chain:		
Frequency range		1 – 6000 MHz
Frequency bands		Band A: 1 – 500 MHz; Band B: 100 – 2000 MHz; Band C: 500 – 3600 MHz; Band D: 2000 – 6000 MHz
Channels per band		5
Input VSWR		< 3:1
Gain	100 MHz	10 ± 2 dB
	3 GHz	12 ± 2 dB
	6 GHz	9 ± 3 dB
Noise figure		< 13 dB
OIP3 (typical)	100 MHz	30 dBm
	3 GHz	27 dBm
	6 GHz	22 dBm
Maximum input level		30 dBm CW, 45 dBm pulse
Electrical – cal chain		
Gain		< 3 dB
Amplitude imbalance		< 30°
Phase imbalance		< 30°
Maximum input level		20 dBm
Internal noise source power output (min.)		30 dB ENR
Electrical - monitoring:		
Frequency range		1 – 6000 MHz
Input VSWR		< 3 : 1
Gain	100 MHz	13 ± 3 dB
	3 GHz	15 ± 3 dB
	6 GHz	13 ± 4 dB
Noise figure		< 13 dB
OIP3 (typical)	100 MHz	27 dBm
	3 GHz	25 dBm
	6 GHz	20 dBm
Maximum input level		30 dBm CW, 45 dBm pulse
DC power injection		+15 V DC, 300 mA (max.)
Power and control interface		
Power supply		19 – 36 V DC, 1.5 mA (max.)
Control interface		EIA-485 (RS-485), hardwired lines
Switching time		< 50 µS
Time to receive control byte (RS-485, 115.2 kbps)		< 100 µS
Total switching time		< 150 µS
External strobe latency		< 5 µS
Mechanical:		
RF connectors	input	22 x SMA female
	output	3 x SMA female
Dimension		317 mm x 168 mm x 80 mm
Total mass		< 4 kg
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