

# High-Speed DF Antenna Band Switch

20 – 6000 MHz

Product Code: DF-A0064

VERSION: 1.6



## PRODUCT DESCRIPTION:

The DF-A0064 is a high-speed, 4-band switch intended for direction finding applications. It accepts four frequency bands, each with five antenna elements, and outputs the elements of any one band to the corresponding five RF outputs. The switch is controlled via 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 and unlimited switching cycles.

The DF-A0064 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 system's RF path.

All inputs of the DF-A0064 are equipped with limiters to allow it operate in harsh EMC environments.

## PRODUCT FEATURES:

- DF switch
  - 4-band 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 and monitoring channel amplification for our range of DF antennas, particularly DF-A0062 and DF-A0066 (5-element DF interferometers)
- For outdoor applications, DF-A0064 should be ordered in conjunction with DF-A0057-03 (outdoor housing for DF switches)

## SPECIFICATIONS:

Product codes:		
DF-A0064		4-Band, 5-Channel, 22-input switch
Electrical – DF chain:		
Frequency range		20 – 6000 MHz
Frequency bands		Band A: 20 – 500 MHz; Band B: 100 – 1400 MHz; Band C: 500 – 3600 MHz; Band D: 2000 – 6000 MHz
Channels per band		5
Input VSWR		< 2.5:1
Gain	100 MHz	13 ± 2 dB
	3 GHz	17 ± 2 dB
	6 GHz	17 ± 2 dB
Noise figure		< 10 dB
OIP3 (typical)	100 MHz	30 dBm
	3 GHz	25 dBm
	6 GHz	22 dBm
Maximum input level		30 dBm CW, 45 dBm pulse
Electrical – cal chain:		
Amplitude unbalance		< 2 dB
Phase unbalance		< 10°
Maximum input level		30 dBm
Internal noise source power output		58 ± 10 dB ENR
Electrical - monitoring:		
Frequency range		20 – 6000 MHz
Input VSWR		< 2.5 :1
Gain	100 MHz	14 ± 2 dB
	3 GHz	18 ± 2 dB
	6 GHz	18 ± 4 dB
Noise figure		< 13 dB
OIP3 (typical)	100 MHz	28 dBm
	3 GHz	23 dBm
	6 GHz	20 dBm
Maximum input level		30 dBm CW, 45 dBm pulse
DC power injection		+13.8 V DC, 150 mA (max.)
Power and control interface:		
Power supply		19 – 36 V DC, 700 mA at 24 V
Control interface		EIA-485 (RS-485)
Switching time		< 50 µS
Time to receive control byte (RS-485, 115.2 kbps)		< 100 µS
Total switching time		< 150 µS
Mechanical:		
RF connectors	input	22 x SMA female
	output	6 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		0.02g <sup>2</sup> /Hz, 2 – 300 Hz
Shock		40 G for 10 ms
Thermal shock		-20 °C to 70 °C
Water ingress rating		IP54