

GRIFFIN Redundancy Switch Modules

RF, ASI & optical options

ETL's Griffin chassis are designed to give total flexibility in managing RF, ASI & optical signals. Different modules can be fitted dependent on application, which can be switched independently (individual mode) or together (simultaneous mode).



GRF-010-XXXX

- 2x1 RF Redundancy switch module
- RF level detection for auto switchover
- 850 - 2450 MHz operating frequency range
- DC & 10MHz Pass on all ports
- Full range of RF connectors and impedances



GRF-011-XXXX

- 2x1 RF Redundancy switch module
- RF level detection for auto switchover
- DC - 2450 MHz operating frequency range
- DC & 10MHz Pass on all ports
- Full range of RF connectors and impedances



GRF-050-XXXX

- 2x1 RF Redundancy switch module
- DC - 2450 MHz operating frequency range
- Latching relay switch
- DC & 10MHz Pass on all ports
- Full range of RF connectors and impedances



GRF-087-XXXX

- 2x1 ASI Redundancy switch module
- ASI operating signal type
- 1:3 distribution amplifier on the output
- Level detection for auto switchover
- Failsafe relay switch and amplifier by-pass



GRF-200-XXXX*

- 1x2 RF Redundancy SPDT TX module
- 850 - 2150 MHz operating frequency range
- Solid state switch for fast switchover
- Full range of RF connectors and impedances



GRF-201-XXXXXX*

- 1x2 RF Redundancy SPDT RX module
- 850 - 2150 MHz operating frequency range
- Solid state switch for fast switchover
- Beacon Receiver Ports
- Full range of RF connectors and impedances



GRF-202-XXXXXX

- 2x1 Optical Redundancy switch module
- 1240nm to 1640nm optical wavelength
- Latching relay switch
- Less than 1.8dB insertion loss



GRF-204-XXXXXX

- 2x2 Optical Redundancy switch module
- 1240nm to 1640nm optical wavelength
- Latching relay switch
- Less than 1.8dB insertion loss

*RF modules for GRF-C910-1U chassis only



GRIFFIN Redundancy Module Options ■

RF Parameters					
Model Numbers		GRF-010-XXXX	GRF-050-XXXX	GRF-011-XXXX	
Function		2 x 1 RF Redundancy switch to the output. Switch over based on RF level detection. Manual switch over is also available. Not bidirectional.	2 x 1 RF Redundancy switch to the output. Manual switch.	2 x 1 RF Redundancy switch to the output. Switch over based on RF level detection. Manual switch over is also available. Not bidirectional.	
Capacity		2 inputs, 1 output			
Module Slots Used		1			
RF Connectors		BNC 50, SMA 50Ω, N-type 50Ω			
Frequency		850 to 2450 MHz	DC to 2450 MHz	DC to 2450 MHz	
Switch Type		Latching relay switch			
Contact Rating		28 V DC, 250 mA			
Switching Cycles		>10E6 (no DC) >10E5 (28 V DC, 250 mA)			
Insertion Loss		2 ± 1 dB Maximum Typical 1 dB, Passive RF Path			
Flatness	Full band	± 1 dB	± 1 dB	± 1 dB	
	Any 40MHz	± 0.25 dB	± 0.25 dB	± 0.25 dB	
Isolation	Min.	45 dB	45 dB	45 dB	
	Typ.	60 dB	60 dB	60 dB	
Input Return Loss	50Ω SMA, 50Ω N-type, 50Ω BNC	14 dB minimum, 16 dB typical			
	75Ω BNC 2150MHz	12 dB minimum, 16 dB typical	14 dB minimum, 16 dB typical	14 dB minimum, 16 dB typical	
	75Ω BNC 2450MHz:	12 dB minimum, 14 dB typical	12 dB minimum, 14 dB typical	12 dB minimum, 14 dB typical	
	75Ω F-Type 2150MHz	12 dB minimum, 16 dB typical	14 dB minimum, 16 dB typical	14 dB minimum, 16 dB typical	
	75Ω F-Type 2450MHz	12 dB minimum, 14 dB typical	12 dB minimum, 14 dB typical	12 dB minimum, 14 dB typical	
Output Return Loss	50Ω SMA	14 dB minimum, 16 dB typical			
	50Ω N-type				
	50Ω BNC				
	75Ω BNC				
	75 Ω F-Type				
Input RF Level Detection		0 to -50 dBm	-	0 to -50 dBm RF Detection from 10-2450MHz	
RF Ports		DC and 10MHz Pass	DC and 10MHz Pass	DC and 10MHz Pass. 10MHz will register on RF detection	
Damage Level		10 dBm (10mW) max. total RF power, at any RF port	30 dBm max. total RF power, at any RF port	10 dBm (10mW) max. total RF power, at any RF port	
Spec. Version		1.2	1.1	1.1	



GRIFFIN Redundancy Module Options ■

RF Parameters		
Model Numbers	GRF-200-XXXX	
Function	GRF-201-XXXXXX	
Capacity	1 x 2 RF redundancy switch TX module. Unity gain and fast switchover solid state switches.	2 x 1 RF redundancy switch, SPDT RX module. 12dB gain. Solid state switches for fast switch over. 2-way splitter on input ports.
Module Slots Used	1 inputs, 2 output	2 inputs, 1 output
RF Connectors	1	
Frequency	BNC 50/75Ω, SMA 50Ω, F 75Ω N-type 50Ω (available as a special option)	
Switch Type	850 to 2150 MHz	
Gain	Solid state switch	
Isolation	-	12dB ± 0.5
Flatness	30 dB	
Insertion Loss	50Ω SMA, 50Ω N-type, 50Ω BNC	Over full band ±0.75 dB Over any 36 MHz ±0.25 dB
	75Ω BNC, 75Ω F-type	Over full band ±1.2 dB Over any 36 MHz ±0.5 dB
Input Return Loss	50Ω SMA, 50Ω N-type, 50Ω BNC	< 2 dB
	75Ω BNC, 75Ω F-type	< 3 dB
Output Return Loss	50Ω SMA, 50Ω N-type	16 dB typical, 14 dB minimum
	50Ω BNC, 75Ω BNC	14 dB typical, 12 dB minimum
	75 Ω F-Type	14 dB typical, 10 dB minimum
Switchover Time	50Ω SMA, 50Ω N-type	16 dB typical, 14 dB minimum
	50Ω BNC	14 dB typical, 12 dB minimum
	75Ω BNC, 75Ω F-Type	10 dB typical, 8 dB minimum
Switching Time	<150ns. Drop out time between switching from one path to another.	
Input RF Power	<20ms. Time for path to switch from receipt of switch control input at parent chassis.	
DC Consumption	16 dBm	
Spec. Version	3W	
	1.1	1.1



GRIFFIN Redundancy Module Options ■

RF Parameters		
Model Numbers	GRF-087-B7B7	
Function	2 x 1 ASI Redundancy switch to the output with 1:3 distribution amplifier. Switch over based on Carrier Presence. Manual switch over is also available. Not bidirectional	
Capacity	2 inputs, 3 outputs	
Module Slots Used	1	
RF Connectors	BNC 75Ω	
Switch Type	NON Latching and failsafe bypass	
Signal Type	ASI/SD-SDI/HD-SDI/3G-SDI	
Input Level	300-800 mV	
Output Level	>600 mV	
Isolation on/off	>50 dB	
Switching Cycles	>10E6 (no DC)	
Spec. Version	1.0	
Technical Specifications - Optical Modules		
Model Numbers	GRF-202-XXXXXX	GRF-204-XXXXXX
Function	2 x 1 Optical Redundancy switch. Single mode fibre. Latching	
Optical Wavelength	1240nm to 1640nm	
Module Slots Used	1	
Connectors	SC-APC & FC-APC	
Optical Insertion Loss	<1.8 dB	
Optical Return Loss	40 dB	
Optical Isolation	Typical 75 dB Minimum 60 dB	
Switching Time	Typical 5ms. Minimum 15ms. From receipt of switchover command to parent chassis.	
Monitoring	Optical switch current	
Spec. Version	1.1	1.0

Please see individual datasheets for Griffin redundancy switch module options and RF specifications.

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.

Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.

Note 3: Switch functionality is determined by modules in use.