

Diplexer/Triplexer

Application

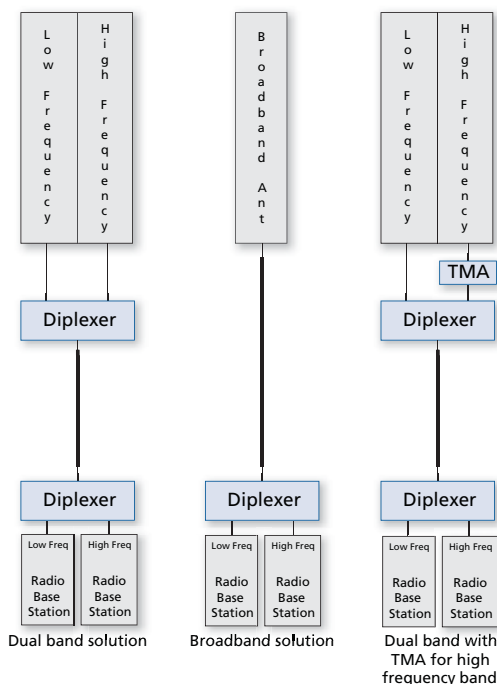
The RFS family of diplexers and triplexers is designed to enable feeder sharing of several systems on the same site. Focusing at the highest technical performance standard and at easy installation, RFS have developed a broad range of innovative products for cellular band, GSM 900, GSM 1800, PCS 1900 and UMTS 2100, covering frequency bands from 806 to 2170 MHz.

The following schemes indicate some typical configurations for the dual band diplexers and the triplexer. In order to keep the schemes simple the shown sites have single-polarized antennas and single diplexers are used. Sites with dual-polarized antennas will require double diplexers, which are available in one enclosure or with flexible dual mounting bracket. Variants including DC pass for TMAs are also available.

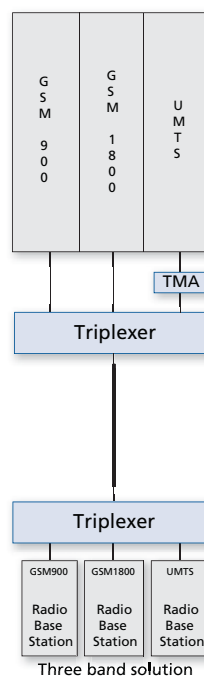
Features & Benefits

- Frequency ranges from 806–2170 MHz
- Low level of insertion loss
- High isolation between bands
- DC pass versions are available
- Compact and low weight
- Reduction in numbers of feeders
- Hardly no impact on the uplink and downlink signals
- Re-use of site installations without visible add on
- Less installation time and fast roll out

2 Systems with Diplexers - one feeder solution



3 Systems with Triplexers - one feeder solution



Diplexer/Triplexer

Selection Guides

Diplexer SMR 800/900

MOUNTING OPTION	
FD809060	Indoor with ground strap
FD809060-1	Indoor with mounting
FD809060-2	Outdoor

Diplexer GSM 900/1800

MOUNTING OPTION	
DBC-1	Outdoor
DBC-2	Indoor

Diplexer 1710-1880 / 1920-2170

	NO DC PASS	DC PASS IN 3G/UMTS PATH	DC PASS GSM1800 PATH	FULL DC PASS
Outdoor Usage				
FDDW6505/1D-3	•			
FDDW6505/2D-3		•		
FDDW6505/3D-3			•	
FDDW6505/4D-3				•
Rack Usage				
FDDW6505/1R-0	•			
FDDW6505/2R-0		•		
FDDW6505/3R-0			•	
FDDW6505/4R-0				•

Diplexer 806-960 / 1710-2170

	FULL DC PATH	DC PASS IN HIGH FREQUENCY BAND	DC PASS IN LOW FREQUENCY BAND
Bottom Short Neck Connector			
FDGW5504/1C-3	•		
FDGW5504/2C-3		•	
FDGW5504/3C-3			•
Bottom Long Neck Connector			
FDGW5504/1C-3L	•		
FDGW5504/2C-3L		•	
FDGW5504/3C-3L			•
In-line Connector			
FDGW6004/1C-3L	•		
FDGW6004/2C-3L		•	
FDGW6004/3C-3L			•

Triplexer 870-960 / 1710-1880 / 1920-2170

DC PASS IN UMTS BAND	
FGDW5005S-3	•

Diplexer/Triplexer

Diplexer for SMR 800 and 900

	FD809060	FD809060-1	FD809060-2
Low band Frequency band, MHz	806-869	806-869	806-869
High band Frequency band, MHz	896-940	896-940	896-940
Insertion Loss, dB (max)	0.35	0.35	0.35
Low band/high band isolation, dB (min)	60	60	60
Peak Power Common Port, W	13500	13500	13500
Indoor/outdoor	Indoor with ground strap	Indoor with mounting	Outdoor with mounting

Diplexer for GSM900 and DCS1800

	DBC-1	DBC-2
Low band Frequency band, MHz	870-960	870-960
High band Frequency band, MHz	1710-1880	1710-1880
Low band Insertion loss, dB	0.3	0.3
High band Insertion loss, dB	0.3	0.3
Low band/high band isolation, dB	55	55
DC pass	Full DC pass	Full DC pass
PIM, COM port @ 2 x 43 dBm, dB	-107	-107
Peak Power Common Port, W	250	250
Indoor/outdoor	Outdoor	Indoor

Diplexer for DCS1800 and UMTS

	FDDW6505/1D-3	FDDW6505/2D-3	FDDW6505/3D-3	FDDW6505/4D-3
Low band Frequency band, MHz	1710-1880	1710-1880	1710-1880	1710-1880
High band Frequency band, MHz	1920-2170	1920-2170	1920-2170	1920-2170
Insertion Loss, dB (max)	0.5	0.5	0.5	0.5
Low band/high band isolation, dB (min)	65	65	65	65
DC pass	No	High pass band	Low pass band	Full DC pass
PIM, reflected @ 2 x 43 dBm, dB	-115	-115	-115	-115
Peak Power Common Port, W	1000	1000	1000	1000
Indoor/outdoor	Outdoor	Outdoor	Outdoor	Outdoor

Diplexer for DCS1800 and UMTS, rack mount

	FDDW6505/1R-3	FDDW6505/2R-3	FDDW6505/3R-3	FDDW6505/4R-3
Low band Frequency band, MHz	1710-1880	1710-1880	1710-1880	1710-1880
High band Frequency band, MHz	1920-2170	1920-2170	1920-2170	1920-2170
Insertion Loss, dB (max)	0.5	0.5	0.5	0.5
Low band/high band isolation, dB (min)	65	65	65	65
DC pass	No	High pass band	Low pass band	Full DC pass
PIM, reflected @ 2 x 43 dBm [dBm]	-115	-115	-115	-115
Peak Power Common Port, W	1000	1000	1000	1000
Indoor/outdoor	Indoor	Indoor	Indoor	Indoor

Diplexer for Cellular Band, CDMA 850, GSM900 and DCS1800, PCS1900, UMTS

	FDGW5504/1C-3	FDGW5504/2C-3	FDGW5504/3C-3
Low band Frequency band, MHz	806-960	806-960	806-960
High band Frequency band, MHz	1710-2170	1710-2170	1710-2170
Insertion Loss, 806-960 MHz, typ, dB	0.2	0.2	0.2
Insertion Loss, 1710-2170 MHz, DC Pass, typ, dB	0.3	0.3	
Insertion Loss, 1710-2170 MHz, DC Block, typ, dB			0.4
Low band/high band isolation, dB	65	65	65
DC pass	High and low pass bands	High pass band	Low pass band
PIM, max @ 2 x 43 dBm, dB	-112	-112	-112
Low band port Peak Power, W	15000	15000	15000
High band port Peak Power, W	8000	8000	8000
Indoor/outdoor	Outdoor	Outdoor	Outdoor

Diplexer/Triplexer

Long Neck Diplexer for Cellular Band, CDMA 850, GSM900 and DCS1800, PCS1900, UMTS

	FDGW5504/1C-3L	FDGW5504/2C-3L	FDGW5504/3C-3L
Low band Frequency band, MHz	806-960	806-960	806-960
High band Frequency band, MHz	1710-2170	1710-2170	1710-2170
Insertion Loss, 806-960 MHz, typ, dB	0.2	0.2	0.2
Insertion Loss, 1710-2170 MHz, DC Pass, typ, dB		0.3	0.3
Insertion Loss, 1710-2170 MHz, DC Block, typ, dB			0.4
Low band/high band isolation, dB	65	65	65
DC pass	High and low pass bands	High pass band	Low pass band
PIM, max @ 2 x 43 dBm, dB	-112	-112	-112
Low band port Peak Power, W	15000	15000	15000
High band port Peak Power, W	8000	8000	8000
Indoor/outdoor	Outdoor	Outdoor	Outdoor

In-Line Long Neck Diplexer for Cellular Band, CDMA 850, GSM900 and DCS1800, PCS1900, UMTS

	FDGW6004/1C-3L	FDGW6004/2C-3L	FDGW6004/3C-3L
Low band Frequency band, MHz	806-960	806-960	806-960
High band Frequency band, MHz	1710-2170	1710-2170	1710-2170
Insertion Loss, 806-960 MHz, typ, dB	0.2	0.2	0.2
Insertion Loss, 1710-2170 MHz, DC Pass, typ, dB	0.3	0.3	
Insertion Loss, 1710-2170 MHz, DC Block, typ, dB			0.4
Low band/high band isolation, dB (min)	65	65	65
DC pass	High and low pass bands	High pass band	Low pass band
PIM, max @ 2 x 43 dBm, dB	-112	-112	-112
Low Band Port Peak Power, W	15000	15000	15000
High Band Port Peak Power, W	8000	8000	8000
Indoor/outdoor	Outdoor	Outdoor	Outdoor

Triplexer for GSM 900, GSM 1800 and UMTS

	FGDW5005S-3
Low band Frequency band, MHz	870-960
Mid Frequency Band, MHz	1710-1880
High band Frequency band, MHz	1920-2170
Insertion Loss Low Frequency Band, dB (max)	0.2
Insertion Loss Mid and High Frequency Bands, dB (max)	0.5
Isolation between bands, dB (min)	50
PIM, COM port @ 2 x 43 dBm, dBm	-110
DC pass	UMTS band
Peak Power GSM900, W (max)	150
Peak Power GSM1800, W (max)	150
Peak Power UMTS, W (max)	300
Indoor/outdoor	Outdoor

