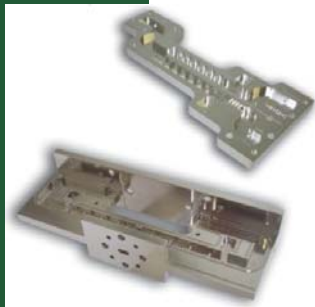


## Multiplexers and Diplexers



Our Diplexer and Multiplexer products use several design structures.

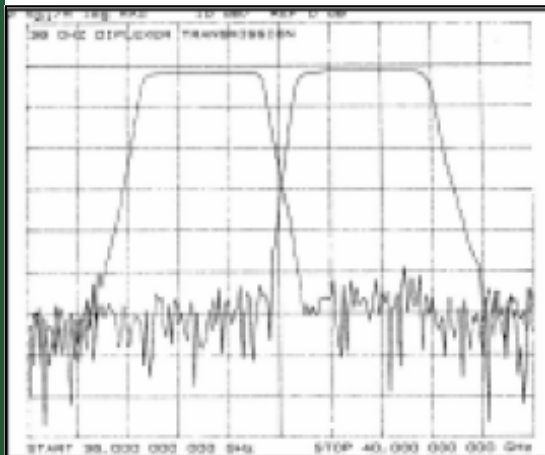
The range extends from Lumped Element Diplexers at 300 MHz through to 60 GHz devices based on Exact Filter Technology.

Our principal's design experience and production facilities have allowed us to supply Diplexers with near contiguous passbands meeting the most demanding technical requirement.

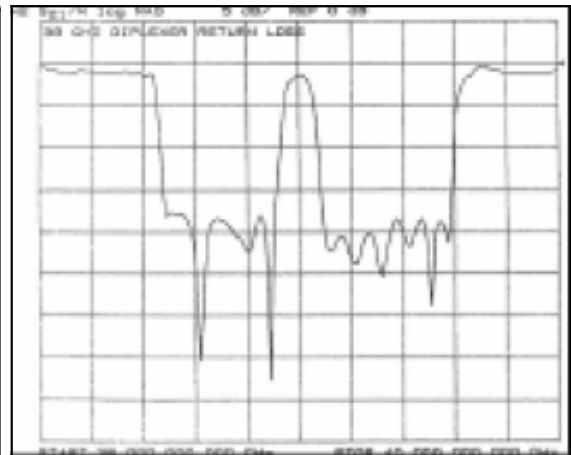
### Multiplexer Technologies

- Waveguide
- Suspended Substrate
- Lumped Element
- Cavity
- Compline
- Interdigital

### Typical performance indicators



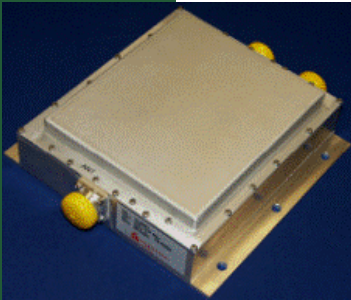
38 GHz Diplexer - Transmission



38 GHz Diplexer - Return Loss

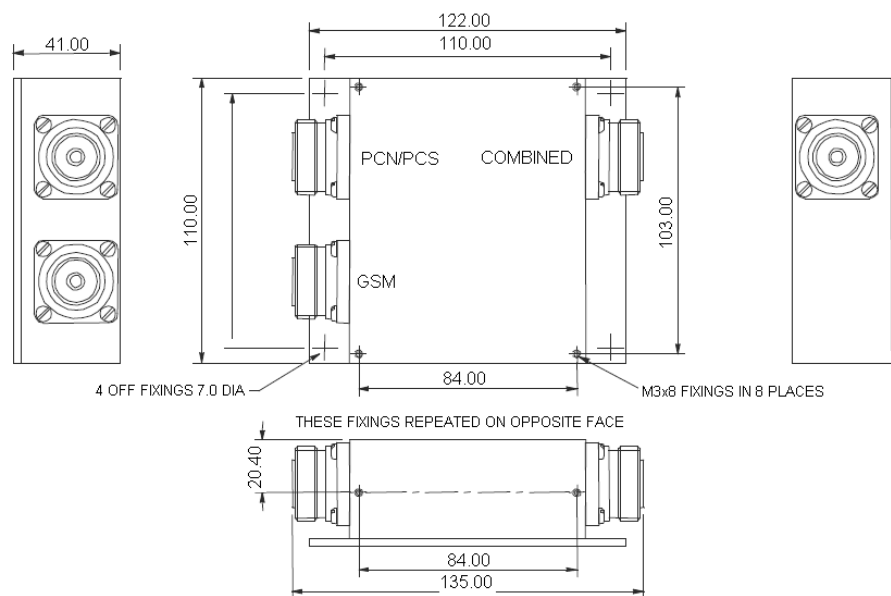
The graphs showing Transmission and Return Loss give some indication of the benefits of using Exact Filter Technology (low Insertion Loss) and High Isolation with excellent symmetry.

# Diplexer



DrawCom's range of cellular diplexers offers a compact solution to allow the co-siting of two different frequency bands on to one common output. Designed using high performance filters - either bandpass or highpass/lowpass - these units provide excellent inter-band isolation, low insertion loss and good intermodulation performance. All are sealed to IP65 as standard. Alternative configurations are available.

Specifications: CDMA-GSM / DCS-UMTS	
Diplexer Type	Low Pass / High Pass Filter
Part No.	<b>80-030404</b> (Flush Lid) <b>80-030407</b> (Extended Lid)
Lower Passband	800 - 1000 MHz
Higher Passband	1710 - 2170 MHz
Insertion Loss	<0.3dB – 800 – 1000MHz Typical: 0.15dB <0.3dB – Lower band Typical: 0.25dB <0.5dB – Higher band Typical: 0.4dB
Return Loss	> 20dB (at both bands)
Isolation	> 47dB (between all paths)
Power Handling	200W (Low Pass) CW 100W (High Pass) CW
Passive Intermodulation Levels	< -110dBm (3 <sup>rd</sup> order @ 2x43 dBm carriers)
DC Pass	Supplied in both bands
Dimensions (LxWxH)	114 x 114 x 41mm (extended lid)
Connectors	7/16 DIN (female) all ports
Finish	Silver Plated Aluminium
Operating Temperature	-20 to +60°C
Operating Humidity	10 to 95%



80-030407

### Specifications: DCS / UMTS

<b>Part No.</b>	<b>16-042901</b>
<b>Lower Passband</b>	1710 – 1880MHz
<b>Higher Passband</b>	1920 – 2170MHz
<b>Power Handling</b>	150W (Lower Band) CW 80W (Higher Band) CW
<b>Insertion Loss, (Both Bands)</b>	<0.3dB Typical <0.5dB at Band edges
<b>Return Loss</b>	<18dB
<b>Group Propagation Time</b>	<100nS
<b>Rejection</b>	>55dB between Bands
<b>Impedance</b>	50 Ohms
<b>Passive Intermodulation Levels</b>	<-153dBc (3 <sup>rd</sup> order @ 2x20W carriers)
<b>Temperature Range</b>	-33 to +55°C
<b>RF Connectors</b>	"N" Type
<b>Dimensions</b>	200mm x 230mm x 65mm (includes mounting)
<b>Weight</b>	4.0kg

### Specifications: GSM / UMTS

<b>Part No.</b>	<b>16-042901</b>
<b>Lower Passband</b>	880 – 960MHz
<b>Higher Passband</b>	1920 – 2170MHz
<b>Power Handling</b>	150W (Lower Band) CW 80W (Higher Band) CW
<b>Insertion Loss, (Both Bands)</b>	<0.4dB Lower Band <0.6dB Higher Band
<b>Return Loss</b>	<20dB
<b>Group Propagation Time</b>	<100nS
<b>Rejection</b>	> 60 dB Lower band from Higher Band > 80 dB Higher band from Lower Band
<b>Impedance</b>	50 Ohms
<b>Passive Intermodulation Levels</b>	<-153dBc (3 <sup>rd</sup> order @ 2x20W carriers)
<b>Temperature Range</b>	-320 to +65°C
<b>RF Connectors</b>	7/16 DIN
<b>Dimensions</b>	237mm x 148mm x 46mm
<b>Weight</b>	4.0kg

### Specifications: DCS / UMTS

<b>Diplexer Type</b>	Diplexer with DC Pass
<b>Part No.</b>	<b>16-031001</b>
<b>Lower Passband</b>	1710 – 1880 MHz
<b>Higher Passband</b>	1920 – 2170 MHz
<b>Power Handling</b>	150W (Lower path) CW 80W (Higher path) CW
<b>Insertion Loss, (Both Bands)</b>	<0.3dB Typical <0.5dB at Band edges
<b>Return Loss</b>	<20dB
<b>Group Propagation Time</b>	<100nS
<b>Rejection</b>	>60dB between bands
<b>Impedance</b>	50 Ohms
<b>Passive Intermodulation Levels</b>	<-153dBc (3 <sup>rd</sup> order @ 2x20W carriers)
<b>Temperature Range</b>	-33 to +55°C
<b>RF Connectors</b>	7/16 DIN Female
<b>Outline</b>	220 x 188.5 x 61mm (excluding Connectors)
<b>Weight</b>	4.0kg
<b>DC Pass</b>	1000mA at UMTS Port

# MI-201xx: Diplexer 1800/2100



## Specifications

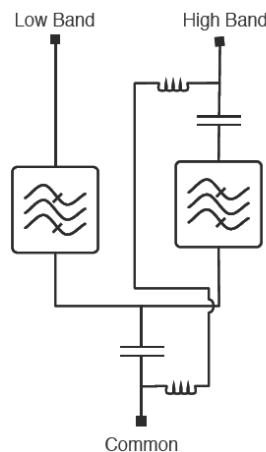
1800	
Frequency Band	1710 - 1880 MHz
Insertion Loss	0.15 dB typical, 0.4 dB max.
Return Loss	18 dB
Rejection 1920 - 1980 MHz	55 dB
Rejection 2110 - 2170 MHz	60 dB
COntinuous Average Power	250 W
Intermodulation, 2x43 dB, TX Carrier BTS port	-116 dB,
2100	
Frequency Band	1920 - 2170 MHz
Insertion Loss	0.15 dB typical, 0.4 dB max.
Return Loss	18 dB
Rejection 1710 - 1880 MHz	55 dB
COntinuous Average Power	250 W
Intermodulation, 2x43 dBm, TX Carrier BTS port	-116 dBm
Environmental	
Operating Temperature Range	-40 to +65°C
Operation	ETS 300 019-1-4
Storage	ETS 300 019-1-1
Ingress Protection	IP67
Electrical	
DC By Pass	3A
AISG Pass	Yes
Lightning Protection	3 kA 10/350 μs, 10 kA 8/20 μs
Mechanical	
Dimensions (WxHxD)	142x150x50 mm
Connectors	7/16 female, long neck
Mounting	Hose clamps or wall mount
Volume	1.3 l
Weight	2.5kg
Colour	NCS 1502-R

## ORDERING INFORMATION

Part No.  
MI-20101  
MI-20102

DC/AISG  
Common - High Band  
Common - Low Band

MI-20101



MI-20102

