**Description:**

Sinclair's receiver multicouplers allow for two to eight (depending on the model ordered) receivers to be connected to a single antenna line, conserving valuable tower space and lowering system maintenance costs.

This series of expandable multicouplers consists of an integral preselector which provides nearly 40 dB attenuation close to the band center; a hybrid power divider providing 2, 4, 8 or 12 isolated receiver outputs; and a power supply operating on 115 or 230 VAC.

Sinclair manufactures a variety of receiver multicouplers for frequencies from VHF to 960 MHz. In addition, alternate power sources, connectors, preselectors and mechanical configurations are available to suit specific system requirements.
### Sample Specifications

#### Electrical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>RM201-104G1B</th>
<th>RM201-108G1B</th>
<th>RM305-104G1B</th>
<th>RM305-108G4B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range, MHz</td>
<td>138 to 159</td>
<td>138 to 159</td>
<td>406 to 450</td>
<td>406 to 512</td>
</tr>
<tr>
<td>Input VSWR (max)</td>
<td>1.5:1</td>
<td>1.5:1</td>
<td>1.5:1</td>
<td>1.5:1</td>
</tr>
<tr>
<td>Input Connectors</td>
<td>N (female)</td>
<td>N (female)</td>
<td>N (female)</td>
<td>N (female)</td>
</tr>
<tr>
<td>Output Connectors</td>
<td>BNC (female)</td>
<td>BNC (female)</td>
<td>BNC (female)</td>
<td>BNC (female)</td>
</tr>
<tr>
<td>Bandwidth, MHz</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Isolation Rx to Rx, dB</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Output VSWR</td>
<td>1.5:1</td>
<td>1.5:1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>System gain (min), dB</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Noise figure (amplifier typ), dB</td>
<td>1.9</td>
<td>1.5</td>
<td>0.8</td>
<td>0.8</td>
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<tr>
<td>Noise figure (system typ), dB</td>
<td>4.7</td>
<td>4.7</td>
<td>4.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Third order intercept - amplifier, dBm</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>1 dB Compression point, dBm</td>
<td>25</td>
<td>25</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Number of channels</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>115 VAC</td>
<td>115 VAC</td>
<td>115 VAC</td>
<td>115 VAC</td>
</tr>
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</table>

#### Mechanical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>RM201-104G1B</th>
<th>RM201-108G1B</th>
<th>RM305-104G1B</th>
<th>RM305-108G4B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length/Height, in (mm)</td>
<td>1.78 (45)</td>
<td>1.78 (45)</td>
<td>1.78 (45)</td>
<td>1.78 (45)</td>
</tr>
<tr>
<td>Width, in (mm)</td>
<td>19 (483)</td>
<td>18 (483)</td>
<td>19 (483)</td>
<td>19 (483)</td>
</tr>
<tr>
<td>Depth, in (mm)</td>
<td>10 (254)</td>
<td>10 (254)</td>
<td>10 (254)</td>
<td>10 (254)</td>
</tr>
<tr>
<td>Weight, lbs (kg)</td>
<td>5.5 (2.5)</td>
<td>5.5 (2.5)</td>
<td>5.5 (2.5)</td>
<td>5.5 (2.5)</td>
</tr>
<tr>
<td>Actual Shipping weight, lbs (kg)</td>
<td>10 (4.54)</td>
<td>10 (4.54)</td>
<td>10 (4.54)</td>
<td>10 (4.54)</td>
</tr>
<tr>
<td>Shipping dimensions, in (mm)</td>
<td>22x19x4 (559x457x102)</td>
<td>22x18x4 (559x457x102)</td>
<td>23x18x4 (584x457x102)</td>
<td>23x18x4 (584x457x102)</td>
</tr>
</tbody>
</table>

### RM415-108G1B

#### Electrical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range, MHz</td>
<td>806 to 821</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input VSWR (max)</td>
<td>1.5:1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Connectors</td>
<td>N (female)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Connectors</td>
<td>BNC (female)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bandwidth, MHz</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolation Rx to Rx, dB</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output VSWR</td>
<td>1.5:1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System gain (min), dB</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise figure (amplifier typ), dB</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise figure (system typ), dB</td>
<td>4.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third order intercept - amplifier, dBm</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 dB Compression point, dBm</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply voltage</td>
<td>115 VAC</td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

#### Mechanical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length/Height, in (mm)</td>
<td>1.76 (44)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width, in (mm)</td>
<td>19 (483)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth, in (mm)</td>
<td>10 (254)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight, lbs (kg)</td>
<td>4.5 (2.04)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Actual Shipping weight, lbs (kg)</td>
<td>10 (4.54)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shipping dimensions, in (mm)</td>
<td>23x18x4 (584x457x102)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Diagram:**

![Diagram](image)
Model | Ranges (MHz)
--- | ---
RM4(AA-W)(BB)(X)(Z)(Y)(C) | 806-901

(AA-W) Preselector Option (BW - Frequency Sub-band)
(BB) Number of Receiver Multicoupler Channels
(X) Amplifier Option
(Z) Type of Amplifier
(Y) Power Supply Option
(C) Output Connector Option

**Installation**

These are low profile rack mountable units which require a minimum rack space of 1.75” H x 19” W x10” D. All unused output ports should be terminated in 50 ohms to maintain the specified gain/bandwidth response - although the 2-3 dB variation in the passband which may result in open ports will not render the system inoperable.

Extension cables from the output should not be left open-circuited, as an adverse length could reflect a short circuit condition at the output port and cause gain and isolation imbalance in the remaining receiver ports.

**Tuning Instructions:**

The receiver multicoupler may be retuned to any frequency within the specified band of the model being used-by retuning of the preselector only.

The amplifier and hybrid power divider require no adjustments.

Each amplifier is factory aligned to meet all specifications within the originally ordered frequency band without retuning.

**SPECIFICATIONS - REFER TO FOLLOWING ENCLOSED SPECIFICATION SHEETS**

The low profile power supply furnished is capable of delivering 300 mA @ 12 VDC and under normal operating conditions should also require no maintenance. If this power supply is not used, the power requirement for the amplifiers is 12 VDC @ 230 -240 mA depending upon the model receiver multicoupler being used.

**Retuning Instructions:**

To retune the receiver multicoupler, the only adjustment required is the retuning of the preselector.

The preselector has 4 to 6 tuning screws depending upon the model and may be retuned either by tuning them (out of the system) or through the complete multicoupler system. In either case final tuning adjustments should be made through the complete system.
Typical test equipment set-up is shown below:

Adjust all tuning screws beginning with the center screws first for maximum response (minimum insertion loss) at the desired center frequency \( (f_0) \). Repeat adjustments on all screws until the desired response is obtained for (bandpass, insertion loss or gain, and VSWR).

The final preselector response curves should be approximately as shown depending upon the model receiver multicoupler being tuned.
Compact Preselectors

<table>
<thead>
<tr>
<th>MODEL</th>
<th>FREQ MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP40615CL</td>
<td></td>
</tr>
</tbody>
</table>

Center 835.000 MHz  Span 50.000 MHz

1: Mkr (MHz) dB  2: Mkr (MHz) dB

1: 827.7500 -0.880  2: 842.2500 -0.932

FP40615CL
PS-151 Power Supply

Electrical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage (V)</td>
<td>105-132 VAC, 60 Hz</td>
</tr>
<tr>
<td>Output Voltage (V)</td>
<td>12 ± 4%</td>
</tr>
<tr>
<td>Output Current (A)</td>
<td>0.3</td>
</tr>
<tr>
<td>Current Limit (ADC)</td>
<td>0.45</td>
</tr>
<tr>
<td>Short CCT, Current (ADC)</td>
<td>1</td>
</tr>
<tr>
<td>Output Noise (mVRMS)</td>
<td>0.6</td>
</tr>
<tr>
<td>Transient Recovery Time (μs)</td>
<td>10</td>
</tr>
<tr>
<td>Load Regulation (%)</td>
<td>0.09</td>
</tr>
<tr>
<td>Line Regulation (%)</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Mechanical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length, in. (cm)</td>
<td>4.9 (12.5)</td>
</tr>
<tr>
<td>Width, in. (cm)</td>
<td>3.1 (7.9)</td>
</tr>
<tr>
<td>Depth, in. (cm)</td>
<td>1.525 (3.9)</td>
</tr>
<tr>
<td>Weight, lbs. (kg)</td>
<td>0.95 (0.43)</td>
</tr>
</tbody>
</table>

General Description:

The low profile power supply furnished is capable of delivering 200 mA @ 12 VDC and under normal operating conditions should require no maintenance. If this power supply is not used, the power requirement for the amplifiers are 12 VDC @ 40 ma to 170 ma depending upon the model amplifier being used.
Amplifiers

130-190 MHz (8016507):

**Key Features:**
- Wide frequency range: 130 - 190 MHz
- High Gain: 22 dB
- Low Noise Figure: 1.6 dB
- High PNPL: 27 dBm
- High OIP3: 42 dBm
- Impedance: 50 Ohm
- Single DC Supply: 210 mA @ +12V
- RF Connectors: Type-N female
- DC Power Connector: Feed Through

400-500 MHz (8016484):

**Key Features:**
- Wide frequency range: 400 - 500 MHz
- High Gain: 23 dB
- Low Noise Figure: 0.8 dB
- High PNPL: 24 dBm
- High OIP3: 40 dBm
- Impedance: 50 Ohm
- Single DC Supply: 220 mA @ +12V
- RF Connectors: Type-N female
- DC Power Connector: Feed Through

800-900 MHz (8016395):

**Key Features:**
- Wide frequency range: 800 - 900 MHz
- High Gain: 19 dB
- Low Noise Figure: 0.8 dB
- High PNPL: 25 dBm
- High OIP3: 39 dBm
- Impedance: 50 Ohm
- Single DC Supply: 220 mA @ +12V
- RF Connectors: Type-N female
- DC Power Connector: Feed Through

**Tuning Instructions:**
The amplifiers require no adjustments. The only repair that is normally required on these units is that due to lightning damage, in which case it is recommended that these units be returned to the factory for repair.

Each amplifier is factory aligned to meet all specifications within the operating band without retuning.

**Receiver Power Splitters**
- RXPD2B: 2-Way Power Splitter, 100-512 MHz, BNC Connector
- RXPD4B: 4-Way Power Splitter, 5-500 MHz, BNC Connector
- RXPD4N: 4-Way Power Splitter, 5-500 MHz, N Connector
- PD4(900)B: 4-Way Power Splitter, 806-960 MHz, BNC Connector
- RXPD8B: 8-Way Power Splitter, 5-700 MHz, BNC Connector
- RXPD8N: 8-Way Power Splitter, 150-500 MHz, N Connector
- PDB(900)B: 8-Way Power Splitter, 806-960 MHz, BNC Connector

**50 Ohm Termination Loads (30-1000 MHz)**
- T5001: Termination, 50 ohm, 1/4 wave, BNC-male connector
- T5002: Termination, 50 ohm, 1/4 wave, N-male connector
**Attenuators (Pads) (30-1000 MHz)**

- **AT2** Attenuator, 2 dB, BNC-M/BNC-F
- **AT3** Attenuator, 3 dB, BNC-M/BNC-F
- **AT4** Attenuator, 4 dB, BNC-M/BNC-F
- **AT5** Attenuator, 5 dB, BNC-M/BNC-F
- **AT6** Attenuator, 6 dB, BNC-M/BNC-F
- **AT7** Attenuator, 7 dB, BNC-M/BNC-F
- **AT8** Attenuator, 8 dB, BNC-M/BNC-F
- **AT9** Attenuator, 9 dB, BNC-M/BNC-F
- **AT10** Attenuator, 10 dB, BNC-M/BNC-F

**Replacement Units**

**Power Supplies:**

- 115 VAC PS-151-115
- 220 VAC PS-151-220
- 12 VDC PS-168
- 24 VDC PS-156
- 48 VDC PS-158
- 115 VAC, CE Certified PS-151-110-CE
- 220 VAC, CE Certified PS-151-220-CE
- 12 VDC Termination Block 90A5141
- 115/220 VAC 353709-11 for RM2 Series; 353709-12 for RM3 Series; 353709-13 for RM4 Series; 353709-14 for 700 MHz Series

**Preselectors:**

**VHF Band:**

- **FP20401B-1-1** Preselector, 1 MHz BW, compact, 138-150 MHz
- **FP20401B-2-1** Preselector, 1 MHz BW, compact, 150-160 MHz
- **FP20401B-3-1** Preselector, 1 MHz BW, compact, 160-174 MHz
- **FP20401B-3-2.5** Preselector, 2.5 MHz BW, compact, 160-174 MHz
- **FP20401B-4-1** Preselector, 1 MHz BW, compact, 174-222 MHz
- **FP20401T-1-1** Preselector, 1 MHz BW, compact, 138-150 MHz
- **FP20401T-2-1** Preselector, 1 MHz BW, compact, 150-160 MHz
- **FP20401T-3-1** Preselector, 1 MHz BW, compact, 160-174 MHz
- **FP20401T-4-1** Preselector, 1 MHz BW, compact, 174-222 MHz
- **FP20402N-1-0.5** Preselector, 0.5 MHz BW, compact, 130-150 MHz
- **FP20402N-1-1** Preselector, 1.0 MHz BW, compact, 130-150 MHz
- **FP20402N-1-2** Preselector, 2.0 MHz BW, compact, 130-150 MHz
- **FP20402N-2.0.5** Preselector, 0.5 MHz BW, compact, 150-174 MHz
- **FP20402N-2-1** Preselector, 1.0 MHz BW, compact, 150-174 MHz
- **FP20402N-2-2** Preselector, 2.0 MHz BW, compact, 150-174 MHz
UHF Band:

FP30401B-1-1  Preselector, 1 MHz BW, compact, 406-450 MHz
FP30401B-1-3  Preselector, 3 MHz BW, compact, 406-450 MHz
FP30401B-1-5  Preselector, 5 MHz BW, compact, 406-450 MHz
FP30401B-2-1  Preselector, 1 MHz BW, compact, 450-480 MHz
FP30401B-2-3  Preselector, 3 MHz BW, compact, 450-480 MHz
FP30401B-2-5  Preselector, 5 MHz BW, compact, 450-480 MHz
FP30401B-3-1  Preselector, 1 MHz BW, compact, 480-512 MHz
FP30401B-3-3  Preselector, 3 MHz BW, compact, 480-512 MHz
FP30401B-3-5  Preselector, 5 MHz BW, compact, 480-512 MHz
FP30401T-1-1  Preselector, 1 MHz BW, compact, 406-450 MHz
FP30401T-1-3  Preselector, 3 MHz BW, compact, 406-450 MHz
FP30401T-1-5  Preselector, 5 MHz BW, compact, 406-450 MHz
FP30401T-2-1  Preselector, 1 MHz BW, compact, 450-480 MHz
FP30401T-2-3  Preselector, 3 MHz BW, compact, 450-480 MHz
FP30401T-2-5  Preselector, 5 MHz BW, compact, 450-480 MHz
FP30401T-3-1  Preselector, 1 MHz BW, compact, 480-512 MHz
FP30401T-3-3  Preselector, 3 MHz BW, compact, 480-512 MHz
FP30602N-1-2  Preselector, 2 MHz BW, compact, 450-470 MHz
FP30602N-2-2  Preselector, 2 MHz BW, compact, 470-512 MHz
FP30802N-1-4  Preselector, 4 MHz BW, compact, 450-470 MHz
FP30802N-3-5  Preselector, 5 MHz BW, compact, 380-430 MHz

800 MHz Band:

FP40615CLB-1  Combline Preselector with right angle BNC connectors, 15 MHz BW, 821-849 MHz
FP40615CLB-2  Combline Preselector with right angle BNC connectors, 15 MHz BW, 806-821 MHz
FP40615CLB-3  Combline Preselector with straight BNC connectors, 15 MHz BW, 853-863 MHz
FP40615CLB-4  Combline Preselector with straight BNC connectors, 15 MHz BW, 821-849 MHz
FP40615CL-5   Combline Preselector with right angle BNC connectors, 15 MHz BW, 850-865 MHz
FP40615CLB-6  Combline Preselector with BNC connectors, 15 MHz BW, 865-880 MHz

Preamplifiers:

8016507  GasFET Amplifier, 130-190 MHz
8016484  GasFET Amplifier, 400-500 MHz
8016395  GasFET Amplifier, 800-900 MHz