### 6-Port Antenna

**Frequency Range**
- 698–960
- 1710–2690
- 1710–2690

**Dual Polarization**
- X
- X
- X

**HPBW**
- 65°
- 65°
- 65°

**Adjust. Electr. DT**
- 1°–12°
- 2°–12°
- 2°–12°

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### 6-Port Antenna 698–960/1710–2690/1710–2690 65°/65°/65° 16/16/16dBi 1°–12°/2°–12°/2°–12°

<table>
<thead>
<tr>
<th>Type No.</th>
<th>80010691v01</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lowband</strong></td>
<td><strong>R1, connector 1–2</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>MHz</th>
<th>698 – 806</th>
<th>790 – 862</th>
<th>824 – 894</th>
<th>880 – 960</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gain at mid Tilt (dBi)</strong></td>
<td></td>
<td>15.3</td>
<td>15.6</td>
<td>15.9</td>
<td>16.2</td>
</tr>
<tr>
<td><strong>Gain over all Tilts (dBi)</strong></td>
<td></td>
<td>15.2 ± 0.4</td>
<td>15.6 ± 0.3</td>
<td>15.8 ± 0.5</td>
<td>16.1 ± 0.3</td>
</tr>
</tbody>
</table>

**Horizontal Patterns:**
- **Azimuth Beamwidth:**
  - 71 ± 2.2
  - 69 ± 1.1
  - 68 ± 1.1
  - 67 ± 1.4
- **Front-to-Back Ratio, Total Power, ± 30°:**
  - > 24
  - > 26
  - > 26
  - > 28
- **Cross Polar Discrimination over Sector:**
  - > 8.5
  - > 10.0
  - > 10.5
  - > 9.5

**Vertical Patterns:**
- **Elevation Beamwidth:**
  - 10.8 ± 0.9
  - 10.1 ± 0.5
  - 9.9 ± 0.7
  - 9.2 ± 0.4
- **Tilt Accuracy:**
  - < 0.6
  - < 0.5
  - < 0.4
  - < 0.3
- **First Upper Side Lobe Suppression:**
  - > 15
  - > 18
  - > 17
  - > 19
- **Upper Side Lobe Suppression, 20° Sector above Main Beam:**
  - > 15
  - > 18
  - > 17
  - > 18

**Cross Polar Isolation (dB):**
- > 30

**Port to Port Isolation (dB):**
- > 32 (R1 // Y1, Y2)

**Max. Effective Power per Port (W):**
- 400 (at 50 °C ambient temperature)

**Max. Effective Power Port 1–2 (W):**
- 800 (at 50 °C ambient temperature)

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Values based on NGMN-P-BASTA (version 9.6) requirements.

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All specifications are subject to change without notice.
The latest specifications are available at www.kathreinusa.com
### Lower highband

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain at mid Tilt dBi</td>
<td>15.4</td>
<td>15.8</td>
<td>15.8</td>
<td>15.3</td>
<td>16.3</td>
<td></td>
</tr>
<tr>
<td>Gain over all Tilts dBi</td>
<td>15.4 ± 0.5</td>
<td>15.8 ± 0.3</td>
<td>15.8 ± 0.4</td>
<td>15.3 ± 0.7</td>
<td>16.2 ± 0.3</td>
<td></td>
</tr>
</tbody>
</table>

**Horizontal Pattern:**

- **Azimuth Beamwidth:** ° 61 ± 5.8 61 ± 4.5 62 ± 2.9 64 ± 8.0 60 ± 2.9
- **Front-to-Back Ratio, Total Power, ± 30° dB:** > 24 > 24 > 24 > 24 > 23
- **Cross Polar Discrimination over Sector dB:** > 7.5 > 7.5 > 9.0 > 7.5 > 8.0

**Vertical Pattern:**

- **Elevation Beamwidth:** ° 10.9 ± 0.8 10.0 ± 0.8 9.4 ± 0.8 8.4 ± 0.9 7.7 ± 0.4
- **Electrical Downtilt continuously adjustable °:** 2.0 – 12.0
- **Tilt Accuracy °:** < 0.5 < 0.6 < 0.5 < 0.4 < 0.3
- **First Upper Side Lobe Suppression dB:** > 18 > 18 > 17 > 15 > 18
- **Upper Side Lobe Suppression, 20° Sector above Main Beam dB:** > 18 > 18 > 15 > 15 > 19
- **Cross Polar Isolation dB:** > 28
- **Port to Port Isolation dB:** > 32 (Y1 // R1, Y2)
- **Max. Effective Power per Port W:** 200 (at 50 °C ambient temperature)
- **Max. Effective Power Port 3–4 W:** 400 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

### Upper highband

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain at mid Tilt dBi</td>
<td>15.1</td>
<td>15.4</td>
<td>15.4</td>
<td>15.1</td>
<td>15.6</td>
<td></td>
</tr>
<tr>
<td>Gain over all Tilts dBi</td>
<td>15.1 ± 0.5</td>
<td>15.4 ± 0.3</td>
<td>15.3 ± 0.4</td>
<td>15.1 ± 0.5</td>
<td>15.5 ± 0.4</td>
<td></td>
</tr>
</tbody>
</table>

**Horizontal Pattern:**

- **Azimuth Beamwidth:** ° 60 ± 6.1 60 ± 4.0 61 ± 4.4 62 ± 6.3 60 ± 3.8
- **Front-to-Back Ratio, Total Power, ± 30° dB:** > 24 > 24 > 26 > 23 > 22
- **Cross Polar Discrimination over Sector dB:** > 8.0 > 9.0 > 8.5 > 6.5 > 8.5

**Vertical Pattern:**

- **Elevation Beamwidth:** ° 10.9 ± 0.7 10.2 ± 0.5 9.6 ± 0.8 8.4 ± 0.6 7.8 ± 0.7
- **Electrical Downtilt continuously adjustable °:** 2.0 – 12.0
- **Tilt Accuracy °:** < 0.4 < 0.4 < 0.3 < 0.3 < 0.5
- **First Upper Side Lobe Suppression dB:** > 19 > 19 > 19 > 17 > 18
- **Upper Side Lobe Suppression, 20° Sector above Main Beam dB:** > 18 > 18 > 15 > 14 > 18
- **Cross Polar Isolation dB:** > 28
- **Port to Port Isolation dB:** > 32 (Y2 // R1, Y1)
- **Max. Effective Power per Port W:** 200 (at 50 °C ambient temperature)
- **Max. Effective Power Port 3–4 W:** 400 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.
6-Port Antenna

### Electrical specifications, all systems

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance</td>
<td>50</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt; 1.5</td>
</tr>
<tr>
<td>Return Loss</td>
<td>&gt; 14</td>
</tr>
<tr>
<td>Interband Isolation</td>
<td>&gt; 32</td>
</tr>
<tr>
<td>Passive Intermodulation dBc</td>
<td>&lt; ~150 (2 x 43 dBm carrier)</td>
</tr>
<tr>
<td>Polarization</td>
<td>+45, –45</td>
</tr>
<tr>
<td>Max. Effective Power for the Antenna W</td>
<td>900 (at 50 °C ambient temperature)</td>
</tr>
</tbody>
</table>

Values based on NGMN-P-BASTA (version 9.6) requirements.

### Mechanical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>6 x 7-16 female long neck</td>
</tr>
<tr>
<td>Connector Position</td>
<td>bottom</td>
</tr>
<tr>
<td>Adjustment Mechanism</td>
<td>3x, Position bottom continuously adjustable</td>
</tr>
<tr>
<td>Wind load (at Rated Wind Speed: 150 km/h)</td>
<td>N</td>
</tr>
<tr>
<td>Max. Wind Velocity</td>
<td>km/h mph 200</td>
</tr>
<tr>
<td>Height / Width / Depth</td>
<td>mm</td>
</tr>
<tr>
<td>Category of Mounting Hardware</td>
<td>M (Medium)</td>
</tr>
<tr>
<td>Weight</td>
<td>kg</td>
</tr>
<tr>
<td>Packing Size</td>
<td>mm</td>
</tr>
<tr>
<td>Scope of Supply</td>
<td>Panel and 2 units of clamps for 42–115 mm</td>
</tr>
</tbody>
</table>

### Accessories (order separately if required)

<table>
<thead>
<tr>
<th>Type No.</th>
<th>Description</th>
<th>Remarks mm</th>
<th>inches</th>
<th>Weight approx. kg</th>
<th>lb</th>
<th>Units per antenna</th>
</tr>
</thead>
<tbody>
<tr>
<td>731651</td>
<td>1 clamp</td>
<td>Mast diameter: 28 – 60</td>
<td>1.1 – 2.4</td>
<td>0.8</td>
<td>1.8</td>
<td>2</td>
</tr>
<tr>
<td>85010002</td>
<td>1 clamp</td>
<td>Mast diameter: 110 – 220</td>
<td>4.3 – 8.7</td>
<td>2.7</td>
<td>6.0</td>
<td>2</td>
</tr>
<tr>
<td>85010003</td>
<td>1 clamp</td>
<td>Mast diameter: 210 – 380</td>
<td>8.3 – 15.0</td>
<td>4.8</td>
<td>10.6</td>
<td>2</td>
</tr>
<tr>
<td>737978</td>
<td>1 downtilt kit</td>
<td>Downtilt angle: 0° – 11°</td>
<td>4.3</td>
<td>9.5</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

### Accessories (included in the scope of supply)

<table>
<thead>
<tr>
<th>Type No.</th>
<th>Description</th>
<th>Remarks mm</th>
<th>inches</th>
<th>Weight approx. kg</th>
<th>lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>738546</td>
<td>1 clamp</td>
<td>Mast diameter: 42 – 115</td>
<td>1.7 – 4.5</td>
<td>1.1</td>
<td>2.4</td>
</tr>
</tbody>
</table>

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

**Material:**

- **Reflector screen:** Aluminum.
- **Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.
- **All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:**

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.
Any previous data sheet issues have now become invalid.

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Mounting Hardware
Clamp Included in the Scope of Supply

<table>
<thead>
<tr>
<th>Suitable for mast diameter (mm)</th>
<th>42 – 115 [1.65 – 4.53]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna – mast distance (mm)</td>
<td>20 – 25 [0.79 – 0.98]</td>
</tr>
<tr>
<td>Material of clamp and screws</td>
<td>Hot-dip galvanized steel / stainless steel</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>1.1 [2.43]</td>
</tr>
</tbody>
</table>

Suitable for mast diameter (inches): 1.65 – 4.53
Antenna – mast distance (inches): 0.79 – 0.98

Material of clamp and screws: Hot-dip galvanized steel / stainless steel
Weight: 2.43 lbs

Please note: Kathrein does not recommend to use counter nuts. The additional nuts supplied are only meant as spares.
Description of the adjustment mechanism (protective cap removed):

1. Adjustment wheel with twist-lock function.
2. Downtilt spindle with integrated scale.
3. Thread for fixing the protective cap or the RCU (Remote Control Unit).
4. Gearwheel for RCU power drive.

To set the downtilt angle exactly, you must look horizontally at the scale. The lower edge of the gearwheel must be used for alignment.

Manual adjustment procedure:

1. Remove the protective cap.
2. Set downtilt angle by rotating the adjustment wheel.
3. Screw on the protective cap again.

Optional: RCU (Remote Control Unit) for remote-controlled downtilt adjustment:

For a description of RCU installation please refer to the respective data sheet.
General Instructions for Feederline Installation for Triple- and Quad-band Antennas

Please note: To avoid any damage to the interfaces, please ensure that only suitable tools are used. To tighten the feederline connector interfaces, we strongly recommend using a special Kathrein installation tool (as shown below) in combination with a standard torque-wrench.

Description of bottom end cap (exemplary picture):

There are eight feederline connectors and four adjustment mechanisms located at the bottom of the antenna.

Installation of the feederline connector and RCU (optional):
In order to protect the adjustment mechanism the protective caps have to be attached during feederline installation!

For the feederline installation carefully put the connector in place and hand-screw the nut.

Use a torque-wrench to finish installation.

After feederline installation, the optional remote control units (RCU) R1, B1 and Y1 can be mounted if required. For a full description of RCU installation please refer to the respective data sheet.

Kathrein installation set: Type No. 85010077
Set has to be ordered separately!
Set consists of three spanners of 27, 32 and 41 mm width.

1/2” square actuation according to DIN 3120 Form C

These tools are suitable for 7-16 connectors with a wrench size of 27 or 32 mm, and the RCU attachment nut with a wrench size of 41 mm.

Tighten nuts within a torque range of 25 – 33 Nm depending on connector manufacturers’ specifications, respectively the RCU nut with a torque range of 15 – 18 Nm.