






## Antenna and Cable Options Summary


Virtual Access offers a variety of antennas as every 3G/4G wireless deployment is different. When selecting an antenna for your device, you should consider factors such as the installation environment, mounting options and the distance between router and antenna location. For detailed information on a specific antenna, download the antenna's pdf from our website.

We provide most antennas with a cable length of up to 5 meters. We recommend you keep the cable length as short as possible to minimise cable-caused attenuation.

### GENERAL PURPOSE ANTENNAS

Part Number		Description																								
160-00002		<p><b>3G SMA Hinged Antenna</b></p> <ul style="list-style-type: none"> <li>• Designed for 3G and 4G GSM, 2.4GHz, WiFi applications</li> <li>• Wide band efficiency response on nearly all 2G/3G/4G frequency bands worldwide</li> </ul> <table border="0"> <tr> <td>Dimensions:</td> <td>157 x 21mm</td> </tr> <tr> <td>Mounting method:</td> <td>Direct contact</td> </tr> <tr> <td>Connector:</td> <td>SMA FME/TNC</td> </tr> <tr> <td>Frequency:</td> <td>850/900/1800/1900/2100MHz</td> </tr> <tr> <td>VSWR:</td> <td>≤ 2</td> </tr> <tr> <td>Gain:</td> <td>2.5dBi</td> </tr> <tr> <td>Max input power:</td> <td>50W</td> </tr> <tr> <td>Input impedance:</td> <td>50Ω</td> </tr> <tr> <td>Polarization:</td> <td>Vertical</td> </tr> <tr> <td>Antenna length:</td> <td>140mm</td> </tr> <tr> <td>Storage temperature:</td> <td>-30° to +70°C</td> </tr> <tr> <td>Operating temperature:</td> <td>-30° to +75°C</td> </tr> </table>	Dimensions:	157 x 21mm	Mounting method:	Direct contact	Connector:	SMA FME/TNC	Frequency:	850/900/1800/1900/2100MHz	VSWR:	≤ 2	Gain:	2.5dBi	Max input power:	50W	Input impedance:	50Ω	Polarization:	Vertical	Antenna length:	140mm	Storage temperature:	-30° to +70°C	Operating temperature:	-30° to +75°C
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160-00012		<p><b>CDMA450 Antenna</b></p> <ul style="list-style-type: none"> <li>• High performance on all common 2G, 3G, 4G bands worldwide</li> <li>• Delivers wider coverage areas and more reliable connections for automotive and industrial applications</li> </ul> <table border="0"> <tr> <td>Dimensions:</td> <td>205 x 12mm</td> </tr> <tr> <td>Mounting method:</td> <td>Direct contact</td> </tr> <tr> <td>Connector:</td> <td>SMA male</td> </tr> <tr> <td>Frequency:</td> <td>450-470MHz</td> </tr> <tr> <td>Gain:</td> <td>3.0dBi</td> </tr> <tr> <td>Max power:</td> <td>30W</td> </tr> <tr> <td>Input impedance:</td> <td>50Ω</td> </tr> <tr> <td>Polarization:</td> <td>Linear</td> </tr> <tr> <td>VSWR:</td> <td>1:2.0</td> </tr> </table>	Dimensions:	205 x 12mm	Mounting method:	Direct contact	Connector:	SMA male	Frequency:	450-470MHz	Gain:	3.0dBi	Max power:	30W	Input impedance:	50Ω	Polarization:	Linear	VSWR:	1:2.0						
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160-00029		<p><b>4G LTE Antenna</b></p> <ul style="list-style-type: none"> <li>•Designed primarily for use with CDMA routers</li> <li>•SMA male connector</li> </ul> <p>Dimensions: 157 x 21 x hinge 37mm  Mounting method: Screw mount  Connector: SMA male connector  Frequency: 700MHz - 2Ghz  Gain: 5dB  Max power: 50W  Impedance: 50Ω  VSWR: 1:2.0</p>
160-00037		<p><b>Miniature Hinged Screw Mount Monopole Antenna</b></p> <ul style="list-style-type: none"> <li>•Ideal for 2.4GHz wireless applications such as Bluetooth and wireless LAN</li> </ul> <p>Dimensions: 28.5 x 17.2mm  Cable: 2.5 or 0.5m RG 316 (not on all versions)  Connector: SMA male connector  Mounting method: Screw mount  Temperature range: -40° to +85°C  Frequencies: 2400-2500MHz  Gain: 1.8dBi  Polarization: Vertical</p>
160-00039		<p><b>Miniature Straight Screw Mount Monopole Antenna</b></p> <ul style="list-style-type: none"> <li>•Ideal for 2.4GHz wireless applications such as WiFi, Zigbee and Bluetooth</li> <li>•Durable in high temperature environments</li> </ul> <p>Dimensions: 30 x 7.8mm  Connector: SMA male connector  Mounting method: Screw mount  Temperature range: -40° to +150°C  Frequencies: 2400-2500MHz  Gain: LTE: 1.3dBi  Polarization: Vertical</p>

VEHICLE ANTENNAS		
Part Number		Description
160-00019		<p><b>3G Magnetic Antenna</b></p> <ul style="list-style-type: none"> <li>•Ideal for restricted operating areas and for portable operation</li> <li>•Supports cellular GSM and 3G networks</li> </ul> <p>Dimensions: 290 x 45mm  Cable: 5m RG174  Connector: SMA male connector  Mounting method: Magnetic  Temperature range: -45° to +75°C  Frequencies: 850/900/1800/1900/2100MHz  Gain: 3dBi  VSWR: ≤1.5:1</p>

<p>160-00027</p>	 <p>A black rectangular antenna with a SMA male connector and adhesive tabs. The text 'THIS SIDE FACES THE SKY' is printed on the top surface.</p>	<p><b>MA.208 Stream Cellular Antenna</b></p> <ul style="list-style-type: none"> <li>• Supports GPS/LTE/GSM/UMTS</li> <li>• Low profile, heavy duty fully IP67 waterproof external M2M antenna</li> </ul> <p>Dimensions: 35 x 35 x 45mm  Cable: No cable included  Connector: SMA male connector  Mounting method: Adhesive  Temperature range: -40° to +85°C  Frequencies: 698-969/1710-2690MHz  Gain: 3.5dBi  VSWR: ≤3.6MHz</p>
<p>160-00081</p>	 <p>A black, vertically oriented dipole antenna with a SMA male connector at the bottom.</p>	<p><b>Ultra-wideband LTE Dipole Terminal Antenna</b></p> <ul style="list-style-type: none"> <li>• RoHS compliant</li> <li>• Highest efficiency for worldwide LTE and WiFi</li> </ul> <p>Dimensions: 218 x 58mm  Connector: SMA male connector  Mounting method: Screw mount  Temperature range: -40° to +85°C  Frequencies: Various, refer to supplier datasheet  Polarization: Linear</p>
<p>160-00041</p>	 <p>A black rectangular antenna with a SMA male connector and adhesive tabs. The text 'THIS SIDE FACES THE SKY' is printed on the top surface.</p>	<p><b>Wideband LTE Ibar Antenna</b></p> <ul style="list-style-type: none"> <li>• External adhesive mount antenna for automotive and telematics applications</li> <li>• Covers all cellular, ISM and WiFi working frequencies in the 700-6000 MHz spectrum</li> </ul> <p>Dimensions: 176 x 59 x 11.6mm  Connector: SMA male connector  Mounting method: Adhesive  Temperature range: -40° to +85°C  Frequencies: Various, refer to supplier datasheet  Polarization: Linear</p>
<p>160-00051</p>	 <p>A black, dome-shaped antenna with a SMA male connector. The text 'THIS SIDE FACES THE SKY' is printed on the top surface.</p>	<p><b>Stingray Glassmount Antenna</b></p> <ul style="list-style-type: none"> <li>• Combination high performance GPS/cellular antenna for AVL or fleet management</li> <li>• Attach to glass or under a dashboard</li> </ul> <p>Dimensions: 55 x 1.8mm  Connector: Standard 1-10m RG174 cables and connectors  Mounting method: Adhesive  Temperature range: -40° to +85°C  Frequencies: 10MHz min  Gain: 30dBi  VSWR: ≤2.0  Polarization: RHCP</p>

**SUBSTATION ANTENNAS**





Part Number		Description
160-00057		<p><b>CMO 4G Multiband MIMO Puck Antenna</b></p> <ul style="list-style-type: none"> <li>• Ideal for outdoor cabinets</li> <li>• Fully waterproof when mounted</li> </ul> <p>Dimensions: 102 x 33.5mm  Connector: SMA male connector  Mounting method: Heavy duty screw mount  Temperature range: -40° to +85°C  Frequencies: 690-800/800-960/1710-2170/2500-2700MHz  Gain: 1/2.5/3.8/5dBi  VSWR: &lt;2.5:1-3.0:1  Polarization: Linear</p>
160-00018		<p><b>Wall Mount Flexible Whip Monopole Antenna</b></p> <ul style="list-style-type: none"> <li>• High performance on all common 2G/3G/4G bands worldwide</li> <li>• Delivers wider coverage areas and more reliable connections for automotive and industrial applications</li> </ul> <p>Dimensions: 248 x 5mm  Base diameter: 17.08 x 0.2mm  Whip diameter: 4 x 0.2mm  Mounting method: Direct contact  Connector: SMA male  Frequency: 698-969/1710-2690MHz  Gain: 2.5dBi  Input power: 2W  Input impedance: 50Ω  Polarization: Linear  Temperature: -40° to +85°C  Humidity: Non-condensing 65 to 95 RH</p>
160-00048		<p><b>Omni Directional Outdoor All Weather Antenna</b></p> <ul style="list-style-type: none"> <li>• Designed for metering, industrial/environmental, remote asset monitoring</li> <li>• UV resistant fibreglass outdoor LTE band 31/CDMA/ISM 6dBi</li> </ul> <p>Dimensions: 1094mm  Connector: N-type female, U-bolt  Mounting method: Wall mount, bracket included  Temperature range: -40° to +85°C  Frequencies: 450-470MHz  Gain: 6dBi  VSWR: 1.5:1  Polarization: Vertical</p>

160-00033		<p><b>Olympian 2 in 1 Antenna</b></p> <ul style="list-style-type: none"> <li>• Compact, high performance, combination LTE and GPS/GLONASS screw mount antenna for external use on vehicle and outdoor assets worldwide</li> </ul> <p>Dimensions: 248H x 50Dmm  Connector: SMA male connector  Mounting method: Heavy duty screw mount  Temperature range: -40° to +85°C  Frequencies: LTE/2G/3G4G: 698/960/1710-2170/2500-2800MHz;  GPS: 1575.42MHz; GLONASS: 1602MHz  Gain: LTE: varies depending on cable length;  GPS-GLONASS: 2dBic  VSWR: LTE: &lt;3; GPS-GLONASS: &lt;1.5-2.0  Polarization: LTE: Linear; GPS-GLONASS RHCP</p>
160-00092		<p><b>G Multiband External Wall Mount Omni Antenna</b></p> <ul style="list-style-type: none"> <li>• Waterproof compact</li> <li>• Suitable for 4G/LTE, 3G and GSM bands</li> </ul> <p>Dimensions: 2159 x 34mm + L-bracket  Connector: N-female connector  Mounting method: Mounting bracket  Temperature range: -40° to +85°C  Frequencies: 690-960/1710-2170/2500-2700MHz  Gain: 2-3dBi  Polarization: Linear-Vertical</p>
160-00076		<p><b>FGO Penta-band High Gain Omni Antenna</b></p> <ul style="list-style-type: none"> <li>• Ideal for fringe networks</li> <li>• Supports GSM, 3G and 4G/LTE operations</li> </ul> <p>Dimensions: 390 x 32mm  Connector: N-female connector  Mounting method: Mounting bracket  Temperature range: -40° to +70°C  Frequencies: 690-960/1710-2170/2500-2700MHz  Peak gain: 5dBi  VSWR: &lt;2.0:1  Polarization: Linear</p>
160-00078		<p><b>Permanent Mount External Antenna</b></p> <ul style="list-style-type: none"> <li>• Ideal for outdoor cabinets, vehicles, transport, utilities</li> <li>• IP67</li> </ul> <p>Dimensions: 79.45H x 42Dmm  Connector: SMA male connector  Mounting method: Heavy duty screw mount  Temperature range: -40° to +85°C  Frequencies: 450, 460, 470MHz  Gain: -3.23, -2.65, -2.72dBi  Polarization: Vertical</p>

## Custom Length Antenna Extension Cables

Virtual Access offers a variety of custom length extension cables for the 160-00064 WMO wall-mount multi-band omni antenna only.

Note: in the cable part number, xx refers to the length of cable required. For example, a 10 metre BWL195 SMA male connector cable will have a part number 840-00022-10.

VA Model Number		Description
840-00022-xx		<p><b>BWL195 SMA male connector</b></p> <ul style="list-style-type: none"> <li>• Low loss 50 Ohm coaxial cable</li> <li>• SMA male to SMA male connector</li> </ul> <p>Outer diameter: 4.95mm                      Minimum bend radius: 25/50mm                      Attenuation per metre at 2GHz: 0.48dB</p>
840-00023-xx		<p><b>BWL195 N type connector</b></p> <ul style="list-style-type: none"> <li>• Low loss 50 Ohm coaxial cable</li> <li>• N type male to SMA male connector</li> </ul> <p>Outer diameter: 4.95mm                      Minimum bend radius: 25/50mm                      Attenuation per metre at 2GHz: 0.48dB</p>
840-00024-xx		<p><b>BWL400 N type connector</b></p> <ul style="list-style-type: none"> <li>• Ultra low loss 50 Ohm coaxial cable</li> <li>• N type male to SMA male connector</li> </ul> <p>Outer diameter: 10.30mm                      Minimum bend radius: 50/100mm                      Attenuation per metre at 2GHz: 0.19dB</p>
840-00029-xx		<p><b>RG58 SMA-F to SMA-M connector</b></p> <ul style="list-style-type: none"> <li>• Low loss 50 Ohm coaxial cable</li> <li>• SMA female to SMA male connectors</li> </ul> <p>Outer diameter: 4.95mm                      Minimum bend radius: 4.95mm                      Attenuation per metre at 2GHz: 0.75dB</p>