

## Excellent Integrated System Limited

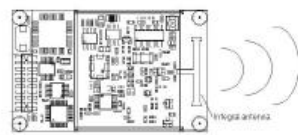

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Antenna	Specs	Applications	Image
<b>NZH2400</b> The NZH is indicated by the suffix 'A' on an AeroComm transceiver part number, example AC5124C-10A	<ul style="list-style-type: none"> <li>Integral strip dipole</li> <li>FCC, IC &amp; ETSI</li> </ul>	<p>For use when no external antenna is allowed. AeroComm provides several versions of transceivers with an integral strip dipole antenna. The antenna element is part of the circuit board assembly. Benefits of an integral antenna include cost efficiency and elimination of external antennas that may break or are not suited for the application. However, consideration must be given to certain tradeoffs.</p> <p>1 – The range achieved by integral antennas are typically not as long as those achieved with external antennas such as a ½ wave dipole rubber whip antenna.</p> <p>2 – The antenna performance can be effected by near field objects that attenuate the signal and further reduce range. The OEM must consider the mechanical mounting of the antenna, spacing the antenna away from mating circuit boards and objects such as batteries, etc.</p> <p>3 – The enclosure material that the transceiver is packaged within may attenuate the signal.</p> <p>4 – The radiation pattern of the integral strip dipole is directional; the OEM must consider antenna orientation within the enclosure as well as the location of other transceivers.</p>	
Nearson S151 0600-00012 – 5" lead, MMCX plug, 90° swivel <b>0600-00011</b> – 5" lead, MMCX plug, straight <b>0600-00010</b> – RP-SMA connector, 90° swivel	<ul style="list-style-type: none"> <li>7 inches tall, rubber whip</li> <li>5 dBi gain</li> <li>omni</li> <li>FCC, IC &amp; ETSI approved</li> </ul>	<p>The S151 series are excellent antennas for mobile or fixed applications seeking short to medium range. They are small and light for portable devices; yet provide the performance to meet most standard fixed locations.</p> <p>The S151 provides excellent antenna gain considering its size. The S151 are cost-effective for high volume applications.</p>	

<p><b>S181</b></p>	<ul style="list-style-type: none"> <li>• 4 inches tall, rubber whip</li> <li>• 2 dBi gain</li> <li>• omni</li> <li>• FCC, IC &amp; ETSI</li> </ul>	<p>The S181 antenna is similar in appearance to the S151, however, due to its shorter size, it provides less gain. Suitable for shorter range applications where the longer S151 is unacceptable. The S181 are cost-effective for high volume applications. They are available with self-contained mounting hardware for permanent attachment or with screw-on bases for removable attachment.</p>	<p><b>181 Series</b></p> <p>4.2"</p> 
<p>High gain fiberglass omni <b>SG102-2450</b> 6 dBi 16 inches N Female only</p> <p><b>SG103-2450</b> 8.5 dBi 22 inches N Female only</p> <p><b>SG104-2450</b> 11 dBi 42 inches N Female only</p>	<ul style="list-style-type: none"> <li>• Not agency approved</li> <li>• Require OEM to make cable terminated in N-Male to connect to antenna, and RP-SMA plug to attach to transceiver patch cable.</li> </ul>	<p>Good for base stations High gain with an omni pattern Outdoor usage Omnidirectional coverage Ultra-violet resistant fiberglass radome Die casting mounting base with rugged structure design</p>	 <p>unit: in.(mm)</p>

High gain patch 10 dBi gain with SMA female connector. Nearson PN <b>PA10</b>	<ul style="list-style-type: none"> <li>Not agency approved</li> </ul>	High gain in a small, compact housing. Easy installation for indoor and outdoor applications. Size 4.7 x 4.7 x 1.1 inches 60° beam width Linear polarization ABS enclosure Operating temp 020° to +65°C	
Small patch 3 dBi gain 6 inch RG316 cable SMA plug male	<ul style="list-style-type: none"> <li>Not agency approved</li> </ul>	Moderate gain in a very small, compact housing. Easy installation for indoor and outdoor applications. Size 1.8 x 1.8 x 5/8 inches 60° beam width Linear polarization ABS enclosure Operating temp 020° to +65°C 3M double sided acrylic tape for mounting	
Window clip mount	<ul style="list-style-type: none"> <li>Not agency approved</li> </ul>	<p>A) Application: 890M~960MHZ 1710M~1880MHz Standard Connector: FME (Female) Impedance: 50 ohms VSWR: Less than 2.0 Cable: RG174A/U, 2.8 Meter Length Gain: 0 dBi @890~960 MHz 2 dBi @1710~1880 MHz</p> <p>B) Application: 890M~960MHZ 1710M~1880MHz Standard Connector: FME (Female) Impedance: 50 ohms VSWR: Less than 2.0</p>	  <p>(A) (B)</p>

		<p>Cable: RG174, 2.8 Meter Length Gain: 0 dBi @890~960 MHz 2 dBi @1710~1880 MHz</p>	
Truck / van roof mount		<p>Permanent Vehicle Roof Mount Antenna Option Series 181 antenna available in 2.4-2.5 GHz and 5.x GHz actual antenna height 5 1/2" with mount 5 3/4" Offered with SG316 cable assembly (Variable length) from N bulkhead to termination SMA, MMCX, or MCX Delivered with 'bell housing' weather overmold, locking washer, gasket 'o' ring</p>	
Magnet mount Model 110		<p>A) Magnetic mount antenna Series 181 antenna available in 2.4-2.5 GHz and 5.x GHz detachable from magnetic mount with a SMA connector. actual antenna height 5 1/2" with mount 7 1/4" standard cable is SG316 Variable length lead termination to SMA, MMCX, or MCX</p> <p>B) Mini Magnet Mount Antennas Application: VHF (142M~148MHZ) UHF (420M~470MHz) Connector: TNC, BNC, Mini-UHF, SMA, FME Impedance: 50 ohms VSWR: Less than 1.5:1 Cable: RG174 A/U, 8 ft 4 in. Length Base Diameter: 1.1 in. Magnetic Strength: 5.5 lb. Gain: 0 / 2 dBi 180 degree swivel available as shown in the picture</p>	

Cable specifications	Cable Type	Frequency (MHz)	Attenuation dB/100ft.	Outside Diameter (in.)	Cost/ft.
Low Loss	LMR-100A	2500	39.80	0.1250	\$0.30
	LMR-195	2500	19.00	0.1875	\$0.37
	LMR-200	2500	16.90	0.1875	\$0.37
	LMR-240	2500	12.90	0.2500	\$0.47
	LMR-300	2500	10.40	0.3125	\$0.53
	LMR-400	2500	6.80	0.3750	\$0.64
	LMR-500	2500	5.50	0.5000	\$1.05
	LMR-600	2500	4.40	0.5000	\$1.30
	LMR-900	2500	2.63	0.6250	\$3.70
	LMR-1200	2500	2.30	0.8750	\$4.85
	LMR-1700	2500	1.70	1.2500	\$7.80
Braided Type	RG-178	2500	82.00		
	RG-316	2500	42.35	0.0980	
	RG-58	2500	25.35	0.1950	
	RG-223	2500	22.35	0.2120	
	RG-142	2500	21.40	0.1950	
	RG-213	2500	12.70	0.4050	
	RG-214	2500	12.65	0.4250	
	RG-393	2500	12.55	0.3900	

### MMCX connector installation instructions

There is some 'finesse' required to properly install the MMCX plug into the MMCX receptacle.

1 – AeroComm has many customers using the radios in rugged applications (oil & gas wells, vehicle telemetry, auto repair shops, etc) without any significant failure of the MMCX connector.

2 - The MMCX connection is not designed to take the stress from the antenna to the board. The antenna has a mechanical base that should rigidly attach to an enclosure and there should not be tension on the antenna cable where it plugs into the transceiver.

3 - There are several manufacturers of MMCX components, it is possible that a MMCX 'plug' and a MMCX receptacle are within allowed tolerances, however, there is a tight fit when inserting the plug. You may feel resistance when installing the antenna and hence push hard to insert the plug. This can stress the connector, the solder joints and in certain cases cause the MMCX receptacle to shear from the transceiver itself.

4 – The preferred installation method that does not stress the antenna connection:

-hold the transceiver (use ESD protection) by the MMCX receptacle between your thumb and pointer finger.

-hold the antenna cable by the MMCX plug between your thumb and pointer finger.

-push in the plug until you feel slight resistance, then twist the MMCX plug slightly as if you were screwing in a light bulb. It should snap in with slight pressure.