

Cellular / GPS

The **Laser Clear*** transparent antenna is an innovation bought about by the need for discreet and high performance antennas used on cellular systems.

Since its original conception as a UHF (460MHz) antenna for unmarked police vehicles, this planar and transparent antenna, designed to be mounted inside the windshield, has been engineered to give exceptional multi-band performance.

Its patented construction uses a conductive element on a clear and flexible substrate. The geometry of the circuit is designed to give broad-band performance on 806-960MHz (CDMA & GSM). There is also a window of low VSWR on the 1575MHz GPS as well as the 1710-1850MHz and 1850-1990MHz bands.

For vehicle tracking and similar functions a low-profile splitter / amplifier is available. The output from this is two separate cables which go to the respective GPS receiver and cell-phone. The GPS side of the circuit has a built-in LNA providing 23dB gain in addition to the antenna's passive gain (4.5dBi).



"If you haven't seen our Laser Clear products, then we've done a good job"

TRANSPARENT

hence virtually invisible. Using our patented and proprietary manufacturing procedure, which forms a conductive circuit on a clear polyester backing.

THEFT & VANDAL PROOF

being mounted on the inside of the windshield there is no opportunity for theft or vandalism. No problems with wind noise or car wash problems.

EXCELLENT PERFORMANCE

compared to currently available "on-glass" wire antennas, superior performance in the order of 3~10dB is achieved through the geometry of the printed circuit artwork and the direct connection of the antenna to the coaxial cable as against the through-glass capacitive coupling used by external "on-glass" antennas.

MULTI FUNCTION

the multi-band capabilities of this design enable utilising CDMA-GSM-GPS devices and negates the need for multiple antennas. Other uses such as PORTABLE EFTPOS, DATA-MODEMS, VENDING MACHINES, PARKING-METERS, VEHICLE and INVENTORY TRACKING, are being identified on a regular basis.

Electrical

Radiator: 2 x full-wave loop with common center element @ 900MHz. Multiple wavelengths @ GPS and 1800MHz.

Gain: 4.5dBi @ CDMA - GSM900
6.5dBi @ GSM1800
5.0dBi @ GPS +23dB LNA

VSWR: <2:1 for specified ranges

VSWR: <1.5:1 @ Band Centers (TX & RX)

Polarisation: Mixed

Max Power: 10 Watts

Mechanical

Radiating Element: Copper plated (10~15um) silver ink track.

Substrate: Clear Polyester/Mylar film (180um).
Not affected by UV

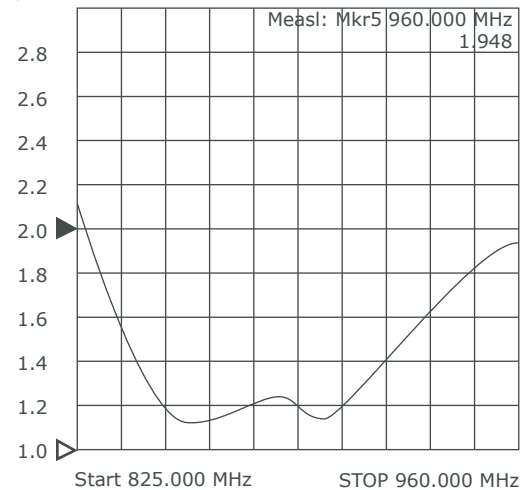
Adhesive/Dielectric: 3M 467 Epoxy. This adhesive gets stronger over time and is not affected by UV.

Cable & Connector

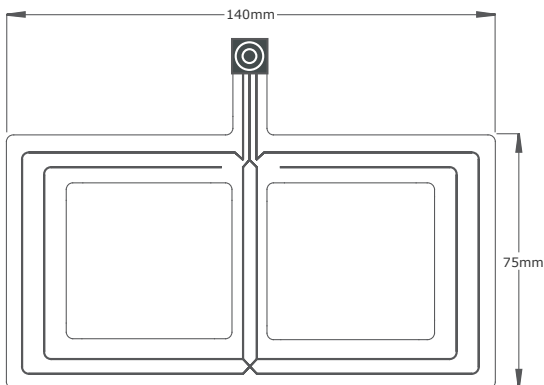
1 metre RG174 terminated with proprietary *Snap-On* coaxial connector for antenna end and FME female for equipment or extension cable.

3 metres RG58 Low Loss extension cable terminated with FME male and FME female.

▶ 1: Reflection SWR 0.2 / Ref 1.000
▶ 2: Transmission Log Mag 10.0 dB / Ref 0.00 dB

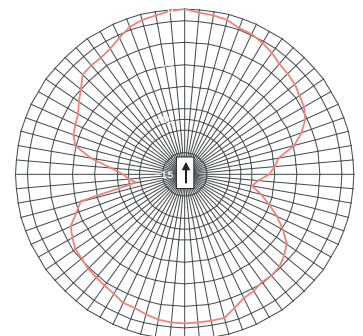
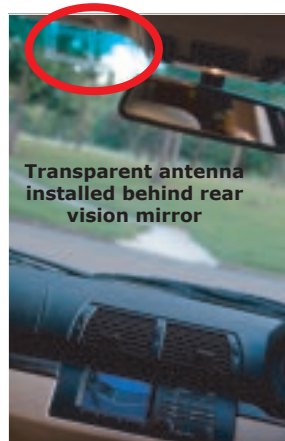


VSWR
825 - 960MHz



Typical Dimensions
(actual dimension varies for different design center frequencies)

Note: adhesive backing paper on antenna is not yet removed in this photo.



900MHz Azimuth
Typical Front Windshield Location