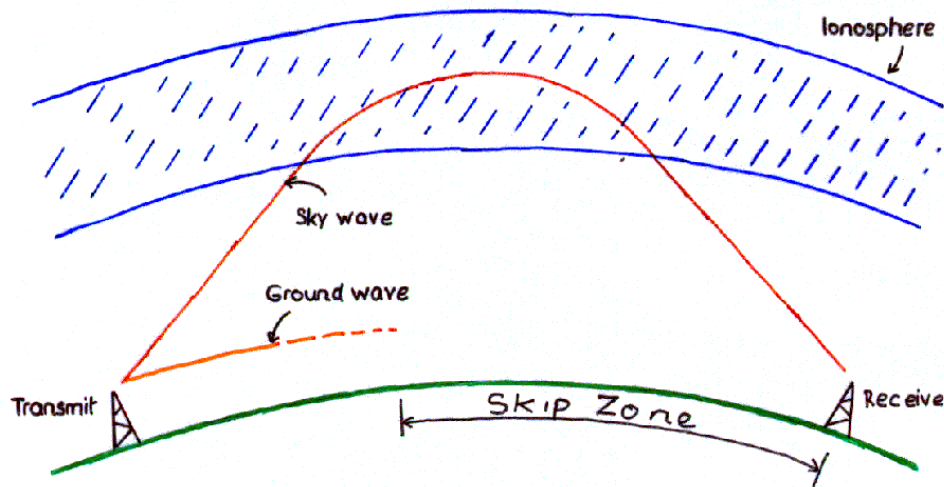




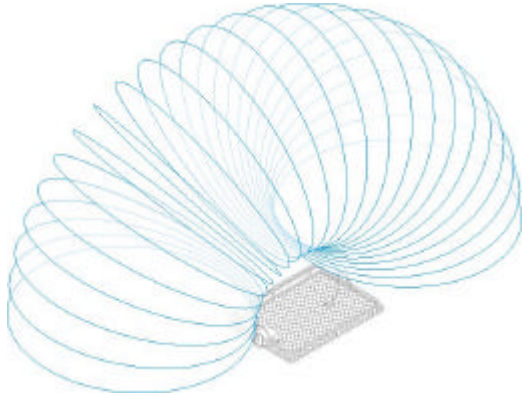
Q-MAC Launches New Antenna to revolutionise Vehicle HF communications.

Perth, Australia

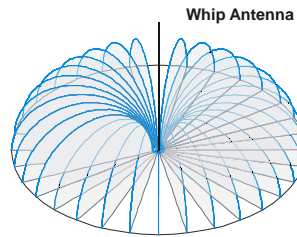
Leading designer and manufacturer of HF transceivers Q-MAC Electronics in Perth Western Australia has unveiled it's latest product offering. Labelled the ML-90, the new antenna provides high quality communications from 0-1000Kms+. The ML-90 Vehicle Roof Rack Magnetic Loop Antenna is a major breakthrough in mobile communications over HF.



The ML-90 Magnetic Loop Antenna is without doubt the best type of antenna for NVIS (near vertical incidence skywave) operations. Skip zones are eliminated and coverage (with the correct selection of frequency) is from 0 to 1000Km or more. Within this range it is significantly more efficient than any whip-type vehicle antenna, producing considerably more transmit and receive power. The actual gain over whip antenna systems varies between +10dB to +14dB. The benefit to the user is that it radiates significantly more power, and magnifies received signal strength, giving overall performance much higher than can be achieved from any vehicle whip antenna system.



ML-90 Emission Pattern



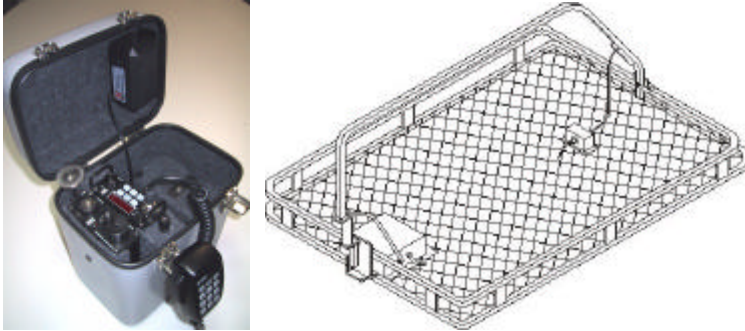
HF Signal Propagation for Whip Antenna

The ML-90 is available in 2 systems configurations.

1 Permanent Installations where a traditional installation of a Q-MAC HF-90 dashboard mounted transceiver is connected to the roof rack antenna.



2 Removable installations where a Q-MAC HF-90 portable transceiver package is connected to the roof rack antenna. The removable package provides the ability to use the HF-90 both in the vehicle connected to the ML-90 Antenna and removed from the vehicle in a self-contained package containing an end fed broadband antenna.



The roof rack has been designed by Q-MAC Electronics Pty Ltd as integral part of the antenna design and forms part of the overall emitting solution. The ground plane is a heavy-duty aluminium mesh floor, which is welded to the frame bars that maximizes current within the radiating loop. The ML-90 isolates ignition noise from the vehicle providing a greater clarity in communications as well as providing nulling of noise from adjacent power lines.

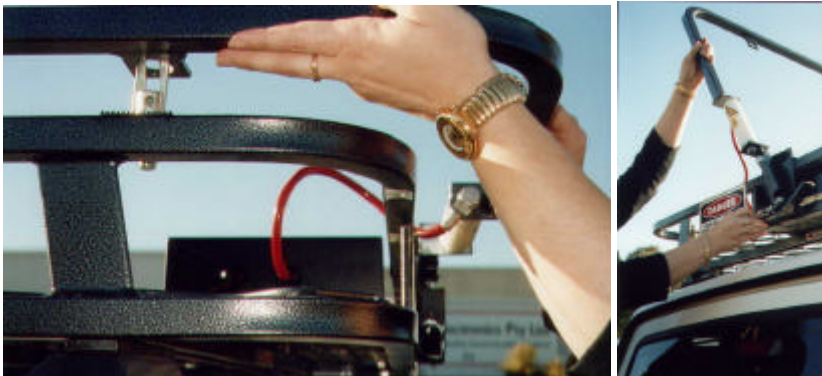
The ML-90 can be fitted to almost any surface. The core rack comes in 2 sizes and a range of mounting bracket options. Solutions are available that will allow non-destructive clamping to the roofs of 4WD's, sedans, buses, trucks and prime movers. It is designed for minimum wind noise and has a polycarbonate wind deflector to improve fuel economy over conventional designs.



Both packages feature;

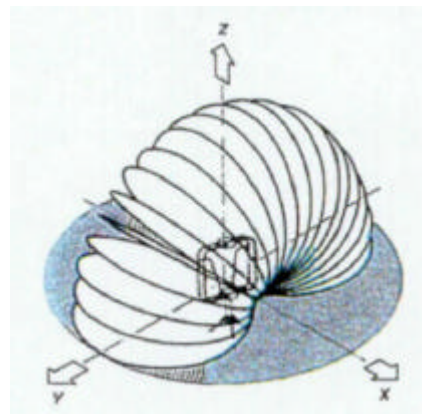
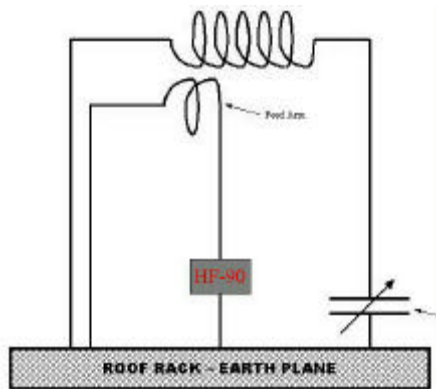
- Highly efficient antenna, radiating 10dB to 14dB more than whip antennas. Equivalent to a 500-Watt transmitter with a whip antenna.
- Simpler installation – no need to weld on a mounting plate for a whip, and no separate tuner to install – therefore installation is quicker & cheaper, and the system can be moved simply between vehicles.
- Free roof rack with every package! The antenna can be used as a conventional roof rack for storing luggage (excluding fuel).
- Simple storage. The radiating element of the ML-90 folds down for simple storage.
- Eliminates Skip Zones. An HF system that can be used in ranges from 0-1000Kms and more.
- Reduced power line noise.
- RF ground of system is independent from the vehicle body therefore significant reduction in vehicle induced ignition noise.
- Automatic tuning

When not in use the Antenna element can be easily folded down and locked in to position by one person.



HOW DOES IT WORK

A magnetic loop antenna is fundamentally a large radio frequency tuned circuit in which the inductor takes the form of a large single turn coil. Unlike most tuned circuits it is designed to minimise resistive and skin effect losses by using thick conductors, but quite unlike most tuned circuits the ML-90 it is designed to *optimise* radiation loss. In fact the radiation loss is the *purpose* of this tuned circuit. The magnetic loop is generally a high-Q tuned circuit, with a Q of typically 200 or more and this results in limited bandwidth (<50kHz) and high circulating current (>20 amperes).

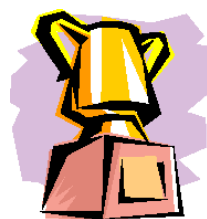


THE Q-MAC Electronics Pty Ltd ML-90 Vehicle Roofrack Magnetic Loop Antenna System is protected by Australian Innovation Patent No 2001100423.

Company Information

Q-MAC Electronics is a leading designer and manufacturer HF Transceivers. The Flagship product the "HF-90" is undisputed to be the world's smallest high performance HF SSB Transceiver. The HF-90 and Q-MAC Electronics have been awarded many accolades not the least being the support of thousands of users in over 60 Countries world wide. The HF-90 is one of the most versatile HF Transceivers available which are suited to civilian and military/paramilitary applications.

Q-MAC was established in 1994 specifically in order to bring to market a high quality niche-market communications product. The company operates from a sound financial base as is committed to a long-term strategy, which includes re-investment in research and development and in marketing its product internationally. Export sales account for 90% of its total revenue stream. Q-MAC is currently well represented by an international dealer network on every major continent, which has been key to the tremendous success of the product.



For more information on the ML-90 or other Q-MAC Products such as

HF-90 Compact Transceiver

HF-90 Manpack

HF-90 Portable

HF-90 Base Station

HF-90 Vehicle Packs

HF-90 500Watt Base Station

HF-90 Frequency Hopping

HF Antennas

Power Supplies for Remote Use (Solar Panels and Hand Crank Generators)