

2018 Mobile magnetic loop HF antenna



- Highly efficient - radiates 10 dB to 14 dB more than a whip antenna
- True NVIS operation virtually continuous HF coverage from 0 to 1000 km +
- Noise reduction - increased immunity to ignition and power line noise
- Covert - easily disguised for covert applications
- Simple design - mechanically simple and robust folding mechanism
- Simple installation - does not require welding or mounting plates



www.barrettcommunications.com.au

BCB20181/6

HF Radio Communications

2018 Mobile magnetic loop HF antenna

Applications

- Border Patrol
- Customs
- Military
- Police
- Mining, Oil & Gas
- Aid & Relief
- Peace Keeping
- Paramilitary
- Emergency Services
- Conservation

High performance

The 2018 mobile magnetic loop HF antenna is significantly more efficient than any whip type vehicle antenna, producing considerably more transmit and receive power. The received signal relative to whip antenna systems varies between +10 dB and +14 dB. Base antenna RF currents in a typical whip system are in the order of 1.5 Amps, whereas the antenna current in the Barrett 2018 approaches 15 Amps.

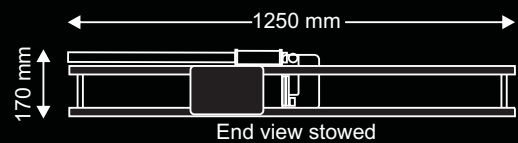
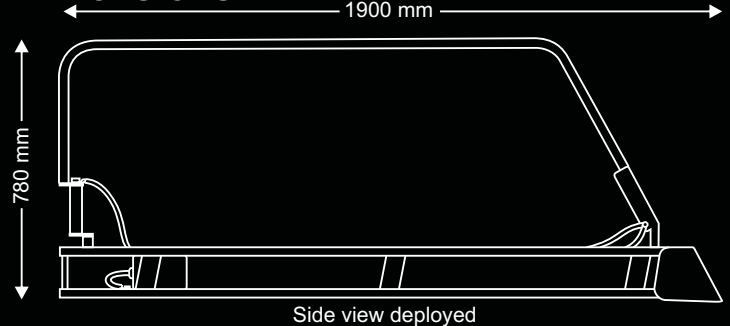
The 2018 antenna includes a built-in broadband scan amplifier which allows it to be used with systems containing Automatic Link Establishment (ALE) and multi-frequency networks operating in a Selective Calling scan group.

The radiation pattern of the 2018 antenna has low angle nulls toward each side of the vehicle, effectively reducing noise from adjacent power lines which commonly affect vehicles driving on remote roads that have high voltage distribution lines in close proximity.

All terrain coverage and continuous short range HF coverage

As the 2018 predominantly radiates RF energy towards the ionosphere it is without doubt the best type of antenna for vehicular NVIS (Near Vertical Incidence Sky wave) operations and is effective in overcoming the skip zone common in whip based antenna systems providing superior operation in the range 30 to 150 kms. For the same reason the 2018 antenna is highly effective for communication in mountainous areas.

Dimensions



Rugged construction

The 2018 Mobile magnetic loop HF antenna has been integrated in a roof rack. The ground plane for the antenna is a heavy duty aluminium mesh floor, which is welded to the frame bars, maximising current within the radiating loop. Using a closed magnetic loop antenna design, the antenna effectively shields and isolates vehicle ignition noise thus providing greater clarity in communications.

The roof rack is field proven in some of the world's worst remote area conditions and is designed to withstand rough corrugated, pot holed and unsealed roads.

Mounting hardware sets are available to suit most types of vehicles, including Land Rover Discovery, Toyota Land Cruiser, Toyota Prado, Nissan Patrol and Mitsubishi Pajero. Custom brackets can be made for all types of military vehicles.

Specifications

Frequency range	3.9 MHz to 12.2 MHz for the standard size rack
Power supply	12 V to 13.8 V DC (provided from the transceiver)
Supply current	≤1.5 Amps peak, ≤400 mA standby
Input impedance	50 ohm typically with <2:1 SWR
Power rating	125 W PEP
Polar radiation	Less than 5 dB variation at angles above 45°, maximum power radiated towards zenith
Tune signal	Varies depending on transceiver used
Tune power	2 to 15 W
Control	From transceiver
Tune time	Within 3 seconds
Tuning method	Continuously variable tuning
Drive method	Precision stepper motor
Tune point	Peak antenna current
Antenna bandwidth	40 kHz @ 3.9 MHz 280 kHz @ 12.2 Mhz
Scan amplifier noise	<11 dB above thermal
Receive 3rd order intercept	>25 dBm
1 dB compression	>+10 dBm
Temperature	Operating -30°C to 60°C Storage -30°C to 80°C
Humidity	95% non-condensing
Environmental rating	MIL-STD 810G (immersion). Fitted with a pressure equalising breather to equalise pressure without allowing the ingress of moisture. MIL-STD 810G Method 516.6 for shock MIL-STD 810G Method 514.6 for vibration MIL-STD 810G Method 510.5 for dust

Head Office:

Barrett Communications Pty Ltd
47 Discovery Drive, Bibra Lake,
WA, 6163 AUSTRALIA
Toll Free Tel: 1800 999 580
Tel: +618 9434 1700
Fax: +618 9418 6757
email: information@barrettcommunications.com.au

European Office:

Barrett Europe Limited
Unit 9, Fulcrum 2, Solent Way,
Whiteley, Hampshire PO15 7FN
UNITED KINGDOM
Tel: +44 (0) 1489 880 332
Fax: +44 (0) 1489 565 422
email: uksales@barrettcommunications.com.au

Americas Office:

Barrett Communications USA LLC
1000 North West Street, Suite 1200
Wilmington, Delaware 19801-1058
UNITED STATES OF AMERICA
Tel: +1 703 291 0414
Fax: +1 703 291 4950
email: sales@barrettusa.com

