Dual Band Antenna for the UHF Band and GPS

DESCRIPTION

- This active antenna has been designed for use on the TETRA band and GPS.
- The antenna consists of a high-performance 3 dBd glass fibre- encapsulated antenna element and an active GPS antenna. The latter is built into the bottom part of the antenna together with a diplex filter. Only one down lead cable is therefore necessary.
- The antenna element is a colinear antenna for the UHF band frequency range within 380 - 430 MHz.
- The GPS antenna has a full hemispherical coverage and a built-in high-gain, low-noise amplifier.
- The necessary supply voltage (5 V DC) for the amplifier is delivered through the down lead coaxial cable. Up to 30 m of RG 214/U coaxial cable can be used between the antenna and the receiver/transceiver.
- By careful choice of materials, the CXL 70-3/GPS 4/... is designed to withstand the roughest of climate conditions, ensuring many years of trouble-free service.

ORDERING

Type	Product No.	Description	Frequency
CXL 70-3/GPS 4/TETRA-l	112000052		380 - 400 MHz
CXL 70-3/GPS 4/TETRA-h	112000053		410 - 430 MHz
PRO-DIPX 1000/1550-DC-H HP	200001998	Diplexer	

SPECIFICATIONS

Electrical	
Model	CXL 70-3/GPS 4/...
Frequency	380 - 400 MHz, 410 - 430 MHz
Antenna Type	Collinear antenna element / Quadrifilar Helix Active antenna
Max. Input Power	25 W
Polarisation	Vertical
3 dB Beamwidth, E-Plane	30 °
3 dB Beamwidth, H-Plane	Omnidirectional
Impedance	50 Ω
Gain	3 dBd (5.2 dBi)
VSWR	< 2.0:1
Bandwidth	14 - 20 MHz dependent on model

Mechanical	
Connection(s)	N(f)
Materials	Radome : Polyurethane-coated glass fibre Mounting bracket : Seawater resistant aluminium, epoxy-coated
Colour	White (RAL 9003)
Wind Area	0.076 sq. m / 0.82 sq. ft
Wind Load	97 N (160km/h)
Height	1950 mm / 76.77 in.
Weight	3 kg / 6.61 lb
Mounting	On 27 - 65 mm dia. mast tube

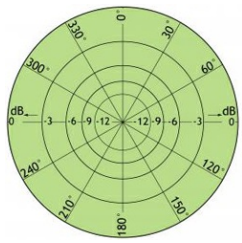
GPS Antenna	
P1dB (GPS Amplifier)	Approx. +10 dBm
Gain (GPS)	> 32 dBi
Noise Figure (GPS Amplifier)	< 3 dB (typ.)
Gain (GPS Amplifier)	> 30 dB (typ.)
Selectivity (GPS Amplifier)	> 20 dB down @ ± 100 MHz
VSWR (GPS Amplifier)	< 2:0:1
Frequency (GPS)	1575 MHz
Power Supply (GPS)	5 +/-0.5 V DC (3 V and 12 V respectively available on request)
Current Consumption (GPS Amplifier)	Approx. 44 mA
Polarisation (GPS)	RHCP
Impedance (GPS)	50 Ω

Environmental	
Operating Temperature Range	-30°C to +70°C

ADDITIONAL DATA

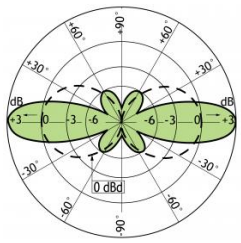
TYPICAL RADIATION PATTERN (H-PLANE)

UHF BAND



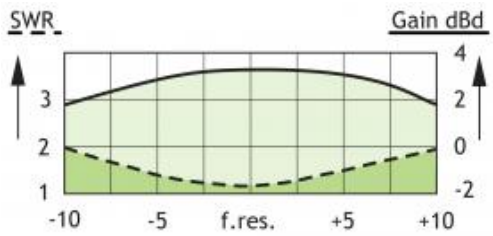
TYPICAL RADIATION PATTERN (E-PLANE)

UHF BAND

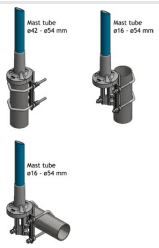


TYPICAL GAIN AND SWR CURVES

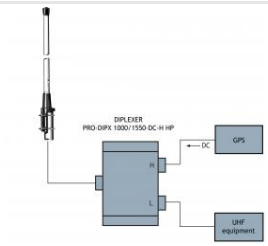
UHF BAND



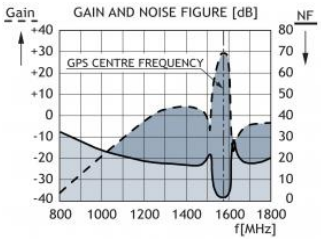
MULTI-PURPOSE MOUNTING BRACKET



WIRE DIAGRAM



TYPICAL CURVE FOR GPS



TYPICAL RESPONSE CURVES AND RADIATION PATTERN
FOR THE GPS-PART (1575 MHz)
VERTICAL RADIATION PATTERN