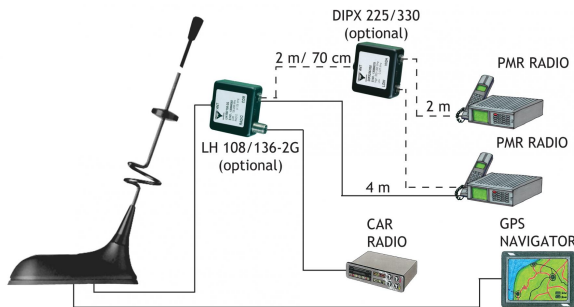


# GPS-C MHU 3/FM

## GPS Antenna with Whip for the 160 MHz, 450 MHz and FM Bands

### DESCRIPTION

- External antenna whip mounted on the GPS-Combi mount.
  - Black-chromed, conical stainless steel whip.
  - Easily removable for car wash.
- GPS-antenna for fixed installations.
  - Full hemispherical coverage.
  - Built-in high gain, low noise amplifier.
  - Right-Hand Circularly Polarized antenna (RHCP).
  - 5 V supply voltage (3 V respectively 12 V available on request).
  - DC supply via RF-connector.
  - Unity gain for the 160 MHz band and 3 dB gain for the 450 MHz band.



### ORDERING DESIGNATIONS

TYPE	PRODUCT NO.
GPS-C MHU 3/FM	132000072
LH 108/136-1G (optional)	200000769
LH 108/136-2G (optional)	200000762
DIPX 225/330-FME (optional)	200000670

Not every combination of frequency pairs can be delivered. When ordering, please state frequencies between 140 - 170 MHz and 400 - 470 MHz.

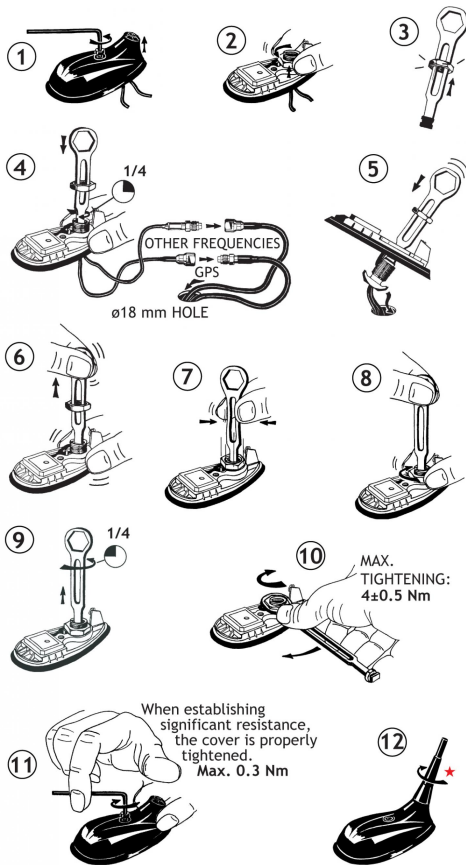
### SPECIFICATIONS FOR WHIP

ELECTRICAL	
MODEL	GPS-C MHU 3/FM
ANTENNA TYPE	Tripple-frequency mobile antenna
FREQUENCY	160 MHz: F.res. within: 140 - 170 MHz 450 MHz: F.res. within: 400 - 470 MHz FM band: 88 - 108 MHz
IMPEDANCE	Nom. 50 Ω
POLARIZATION	Vertical
GAIN	160 MHz: 0 dB (acc. to EIA RS-329-1) 450 MHz: 3 dB (acc. to EIA RS-329-1)
SWR	≤ 1.5 @ f.res. on both bands
MAX. POWER	25 W
MECHANICAL	
MATERIALS	Black-chromed, conical stainless steel Black-chromed brass
COLOUR	Black
HEIGHT	Approx. 450 mm (dep. on freq.)
WEIGHT	Approx. 60 g (dep. on freq.)
MOUNTING	On the GPS-Combi mount

### SPECIFICATIONS FOR GPS-COMBI MOUNT

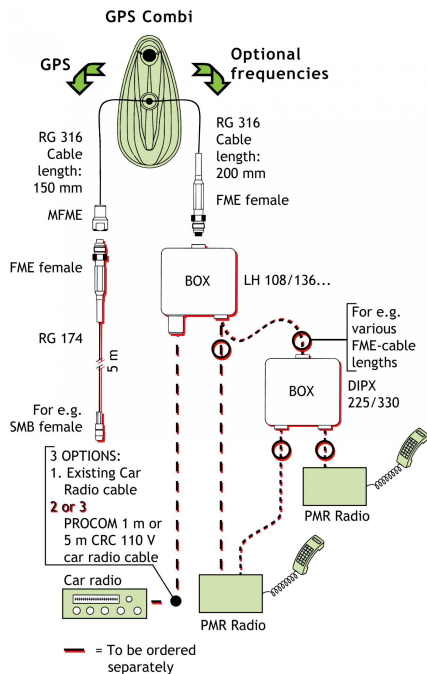
ELECTRICAL GENERAL SPECIFICATIONS	
MODEL	GPS-COMBI MOUNT
ANTENNA TYPE	Active patch antenna
FREQUENCY	1575 MHz
IMPEDANCE	Nom. 50 Ω
POLARIZATION	Circular right-hand
COVERAGE	Hemispherical
GAIN	28 dBic in axial direction (typ.)
CROSS-POLARISATION ATT.	> 10 dB (typ.)
SELECTIVITY	> 45 dB down @ ± 45 MHz
BUILT-IN AMPLIFIER	
GAIN	> 30 dB (typ.)
NOISE FIGURE	< 1 dB (typ.)
P <sub>1</sub> dB	Approx. +7 dBm
SWR (output)	≤ 2.0
SUPPLY VOLTAGE	5 ± 0.5 VDC (3 V resp. 12 V on request)
CURRENT CONSUMPTION	Approx. 25 mA
MECHANICAL (ONLY FOR THE GPS-PART)	
MATERIALS	Cu-nite brass Stainless steel Reinforced thermoplastic
ANTENNA COLOUR	Black
TEMP. RANGE	-35° C → +75° C
CONNECTOR	FME (male for GPS) + FME (female for mobile antenna)
RECOMMENDED INSTALL. TORQUE	4 ± 0.5 Nm
DIMENSIONS (H x L)	Approx. 30 x 89 mm
ROOF THICKNESS	Max. 2.5 mm
WEIGHT	Approx. 114 g
MOUNTING	∅18.0 mm dia. hole for roof thickness up to 2.0 mm ∅18.5 mm dia. hole for roof thickness 2.0 - 2.5 mm. Tools for mounting included

## MOUNTING INSTRUCTIONS

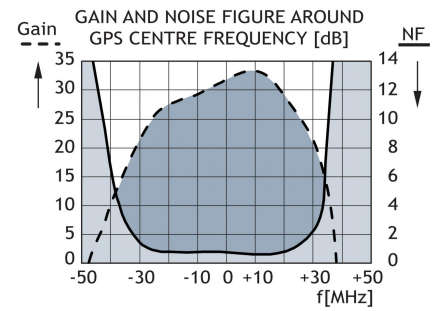
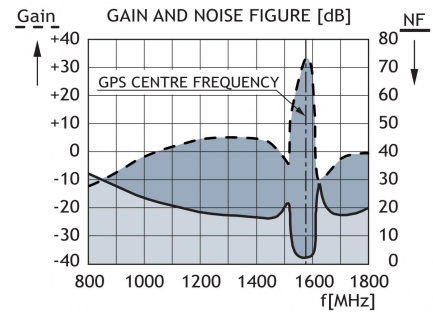


★ The whip should always be dismantled during car wash.

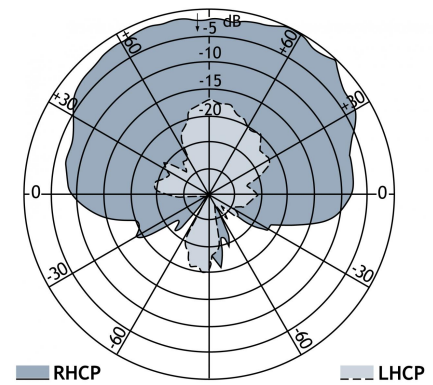
## CABLE MOUNTING



## TYPICAL RESPONSE CURVES



## VERTICAL RADIATION PATTERN



## TUNING INFORMATION

The GPS-C MHU 3/FM cannot be tuned to any pair of frequencies in the two bands. Further, the antenna must be equipped with a different kind of adjustment disc depending on the frequency pair in question.

The antenna can be used without adjustment disc, with a small adjustment disc or with a large adjustment disc. All adjustment disc types are supplied with the antenna.

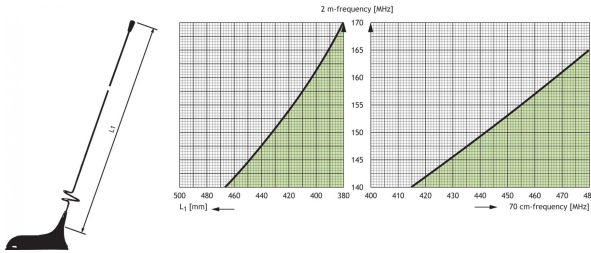
Use the diagrams below as follows

1. Draw a horizontal line through the point on the vertical axis which corresponds to the 2 m-frequency in question.
2. The drawn horizontal line intersects the shaded area over a certain band of 70 cm-frequencies.  
If the 70 cm-frequency to be covered is not included in the shaded area, try another diagram (another adjustment disc type). If the 70 cm-frequency is not covered in any of the diagrams, coverage of the frequency pair in question is not possible using this type of antenna. Please note, however, that taking into account the inherent bandwidth of the antenna ( $\pm 2$  MHz in the 2 m-band and  $\pm 12$  MHz in the 70 cm-band) the combination area may be increased considerably.

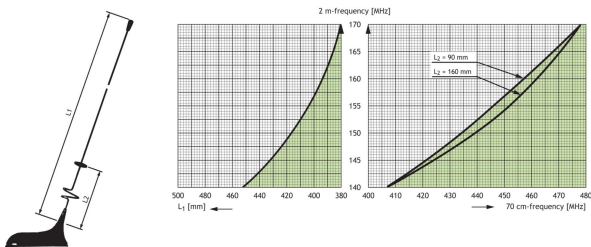
For the relevant diagram

3. Read the total length L1 on the left horizontal axis and cut the whip to this length.
4. Locate the 70 cm-frequency in question on the right horizontal axis and read the corresponding length L2 from the curves in the shaded area.

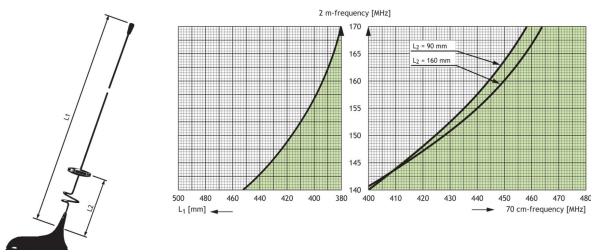
### WITH NO ADJUSTMENT DISC



### WITH THE SMALL ADJUSTMENT DISC



### WITH THE LARGE ADJUSTMENT DISC



Use an SWR-meter to fine-tune the settings



PROCOM A/S reserve the right to amend specifications



without prior notice.  
19/12/13