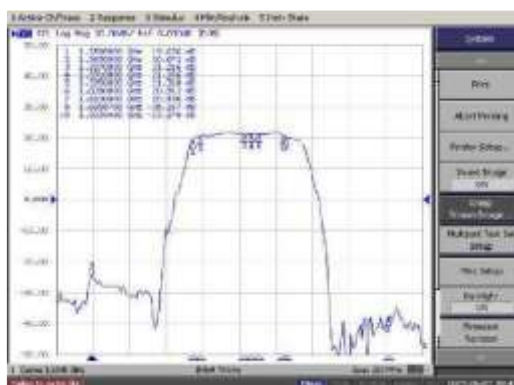


T-BP660 Low Profile Antenna

TETRA-DVB-T /GPS-GLONASS / WLAN / LTE-5G

Train classified for:
EN 50155:2018
CEI EN 50121-3-2:2018
EN 61000-4-2 - 6
EN 50124
EN 50122-1
EN 60068-2-1; 2-2; 2-30
EN 61373

MOUNT TYPE	Low Profile Antenna with GPS, WLAN and LTE
GPS/GNSS/GALILEO antenna part:	
ANTENNA TYPE	Active planar patch antenna
POLARISATION	RHC (Right Hand Circular)
FREQUENCY	1580 MHz \pm 1,023 MHz
BANDWIDTH	\pm 28 MHz
IMPEDANCE	Nom. 50 Ω
VSWR	Less than 2.0
CURRENT ABSORTION	10 \pm 1 mA at 2.7 V / 16 \pm 1 mA at 5.0 V
GAIN AMPLIFIER	18 \pm 1 mA at 2.7 V / 22 \pm 1 mA at 5.0 V
GAIN PATCH ANT.	2 dB
NOISE FIG.	1.7-2.1 dB
POWER SUPPLY	2.7 \div 5.1 V
TETRA+WLAN+LTE ANTENNA PART:	1/4 λ Antenna Vertical
POLARISATION	1: 380 \div 690 MHz
FREQUENCY	2: 690 \div 790 MHz
	3: 790 \div 960 MHz
	4: 1710 \div 2700 MHz
	5: 3300 \div 4900 MHz
	6: 4900 \div 6425 MHz
IMPEDANCE	Nom. 50 Ω
VSWR	< 2.0
GAIN (dBi)	1: 3 ; 2: 5 ; 3: 5 ; 4: 6 ; 5: 8 ; 6 : 7.5
EMMISSION	Omnidirectional
MAX POWER	800 Watt
DC GROUNDED	
MATERIALS Base:	Aluminium alloy EN AW-6082 with Surtec650
Radome:	ASA
Colour:	RAL7043 (Dark Grey)
DIMENSIONS	100x256x160 (width-lenght-height)
WEIGHT	1500 g
MOUNTING	Rooftop
PROTECTION CLASS	IP68
OPERATING TEMPERATURE	-45° - +85° C (GPS -30° - +80° C)
STORAGE TEMPERATURE	-45° - +85° C (GPS -30° - +80° C)
CABLE / CONNECTOR	GPS: mm 180 \pm 20 RG 316 / TNC (m) TETRA+LTE+WLAN: N (f)



Electromagnetic Compatibility Tests

CEI EN 50155:2018

CEI EN 50121-3-2:2018

- EN 61000-4-2 (Electrostatic discharge immunity test)
- EN 61000-4-3 (Radiated, radio-frequency, electromagnetic field immunity test 80-2700 MHz)
- EN 61000-4-3 (Radiated, radio-frequency, electromagnetic field immunity test 5.1 -6 GHz)
- EN 61000-4-4 (Electrical fast transient/burst immunity test)
- EN 61000-4-6 (Immunity to conducted disturbances, induced by radio-frequency fields)

High-voltage-protection

DIN EN 50124 VDE 0115-107-1:2006-04

High-current-protection

DIN EN 50122-1 VDE 0115-3 2011-09

Insulation tests

13.4.9.2 Insulation measurement test

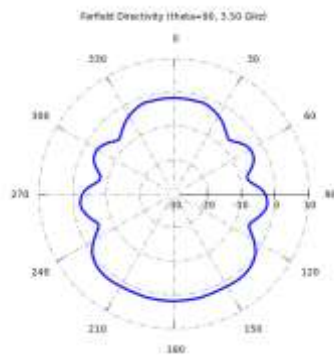
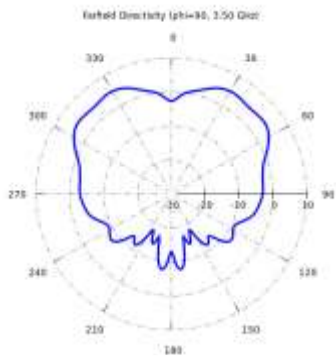
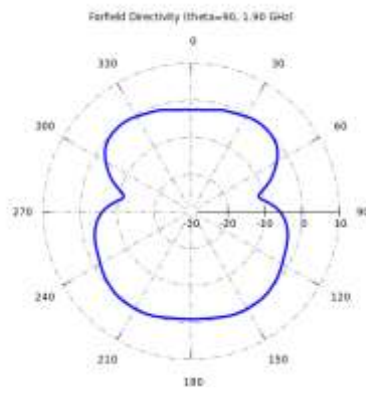
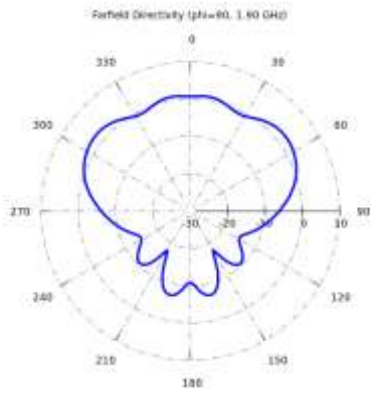
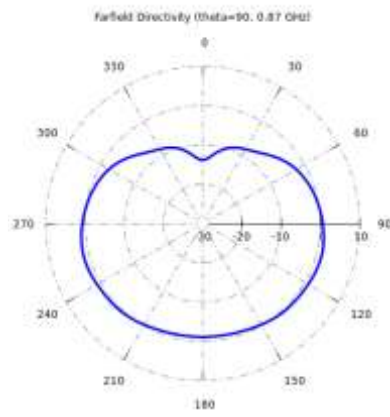
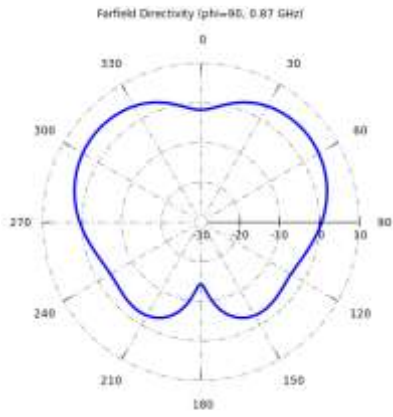
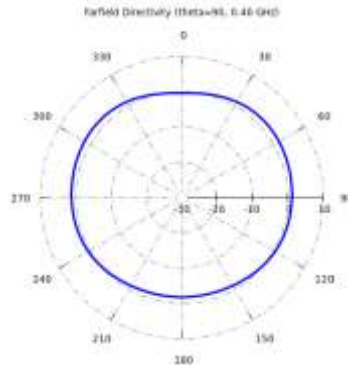
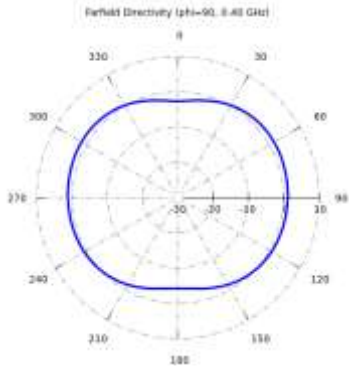
13.4.9.3 Voltage withstand test

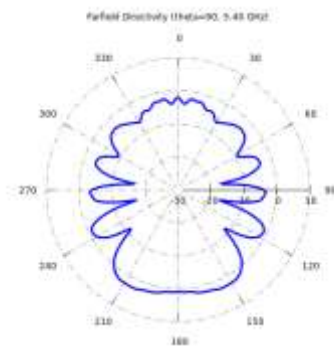
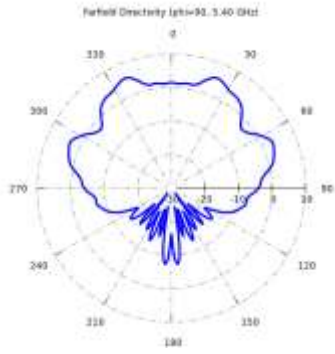
Environmental tests

- EN 60068-2-1, Test A: Par. 13.4.4 – Low Temperature Start-up Test
- EN 60068-2-2, Test B: Par. 13.4.5 – Dry Heat Test
- EN 60068-2-30, Test Db: Par. 13.4.7 – Cyclic Damp Heat Test

Vibration and shock tests

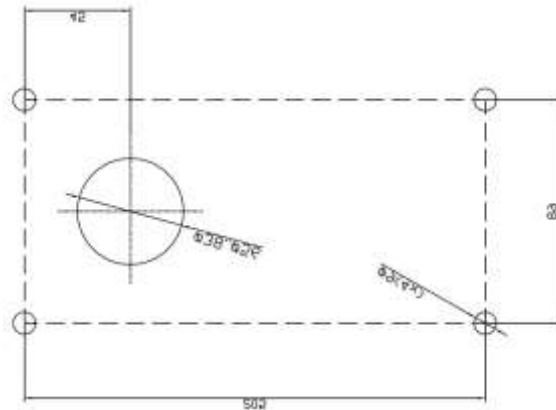
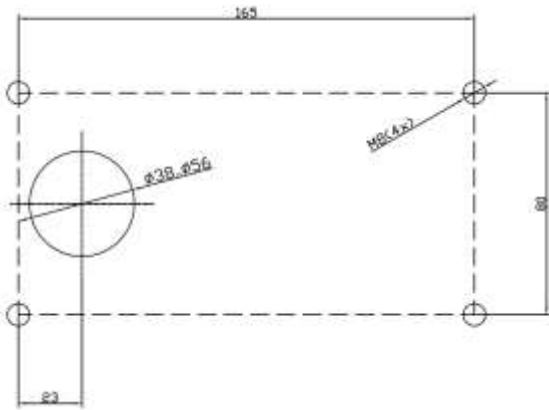
- EN 61373: 2010, Clause 9 Par. 13.4.11.2 – Simulated Long-life Test
- EN 61373: 2010, Clause 10 Par. 13.4.11.3 – Shock Testing
- EN 61373: 2010, Clause 8 Par. 13.4.11.4 – Functional Random Vibration Test



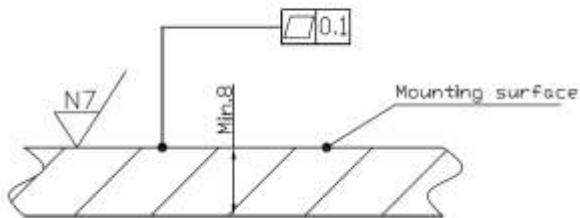


Drilling of threaded hole for top side mounting

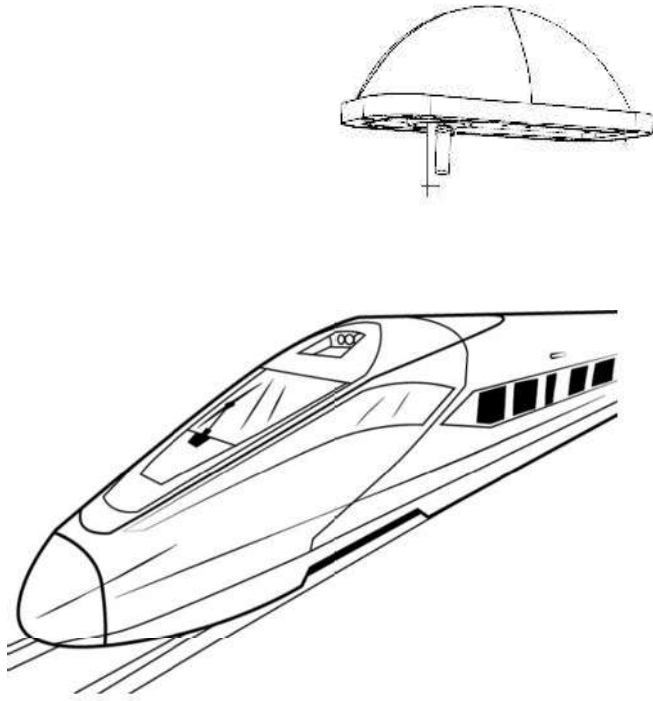
Drilling of boreholes for bottom side mounting



The area of the roof where the antenna is mounted has to be planar and stable.



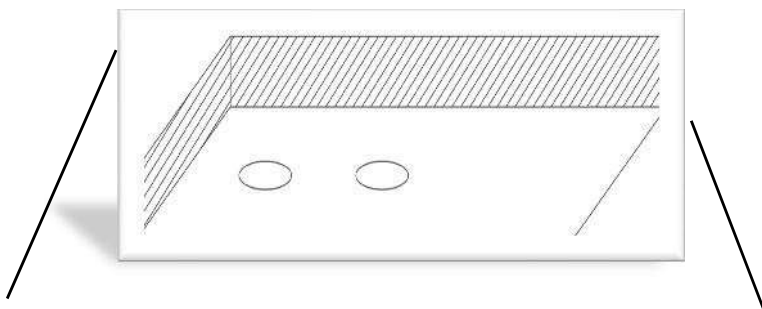
MOUNTING



1. The copper busbar have a cross sectional area sufficient to discharge the short circuit with the overhead line. The contact surface of all components must not be contaminated and must be perfectly electrical conductive. The copper busbar must be mechanically fixed to a nearby rigid element.

2. The copper face must face the copper busbar.

MOUNTING SURFACE



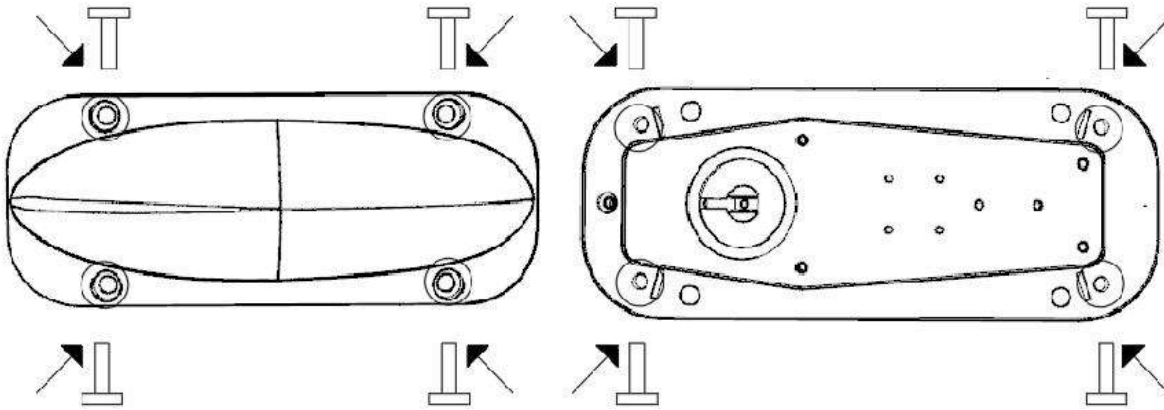
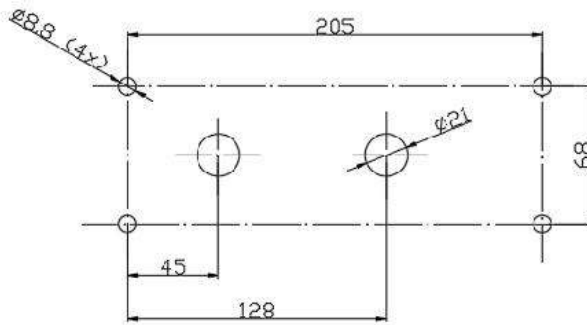
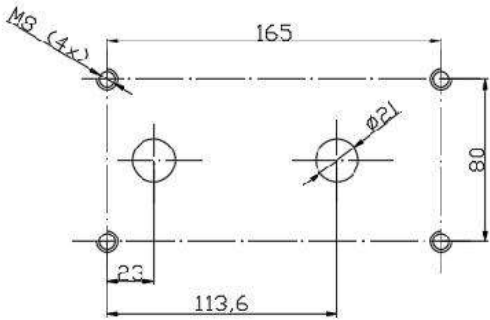
The area of the roof where the antenna is mounted must be stable and flat

1. The thickness must be less than the length of the grounding kit.

HOLE DRILLING FOR MOUNTING

1.

2.



1. Drilling the threaded hole for top side mounting.
2. Drilling of boreholes for bottom side mounting.

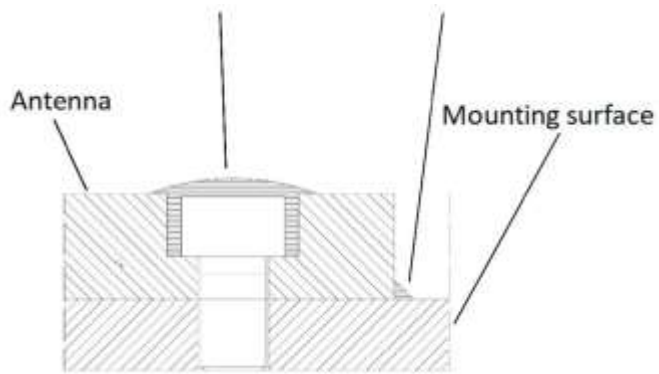
ROOF PREPARATION

1. Clean the area where the antenna will be mounted to ensure good electrical contact.
2. Clean and remove dust from the mounting area.

MOUNTING

1. Place the antenna holes over the holes drilled on the roof.
2. Place the screws on top.
3. Tighten securely

Seal the antenna perimeter and the four screws with silicone



Warning

Do not use acetic silicone. Not suitable for this surface because it corrodes.