OnBoard SMD GSM/NB-IoT
Datasheet

Rev 2.0
2018-11-02

General information

Antenna optimized for pentaband operation in the GSM, UMTS and NB-IoT systems.

OnBoard SMD GSM/NB-IoT is a ground plane dependent antenna mounted directly on the PCB of a device, by SMT.

Frequency	824-960 MHz, 1710-2170 MHz
Impedance	50 Ω
Return loss	< -6.2 dB
Total efficiency	> 50% (-3 dB)
Dimensions (LxBxH)	50 x 25 x 10 mm (1.969 x 0.984 x 0.394 in)
RoHS status	Compliant with EU directive 2011/65/EU (RoHS 2)
Shelf life	10 years
MSL	Level 1, unlimited
Mechanical resistance	Immunity to vibrations IEC/EN 60068-2-6, Fc test Immunity to shock IEC/EN 60068-2-27, Ea test

Applications

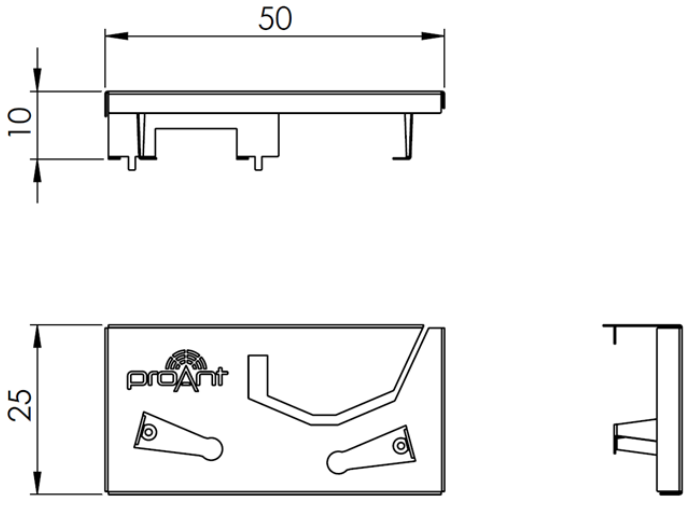
IoT-devices

M2M-commmunications

Telemetric

Automated meter reading

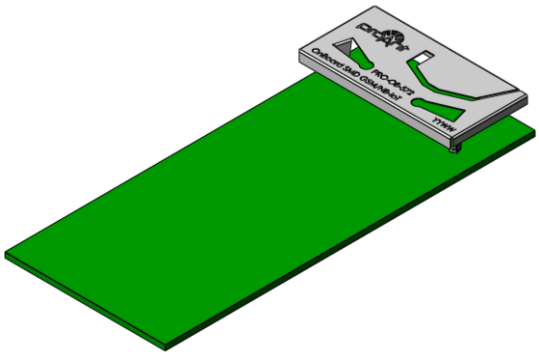
Alarms



www.proant.se
Proant AB
Gräddvägen 15A, 90620 Umeå, Sweden
Phone: +46 (0)90 40150

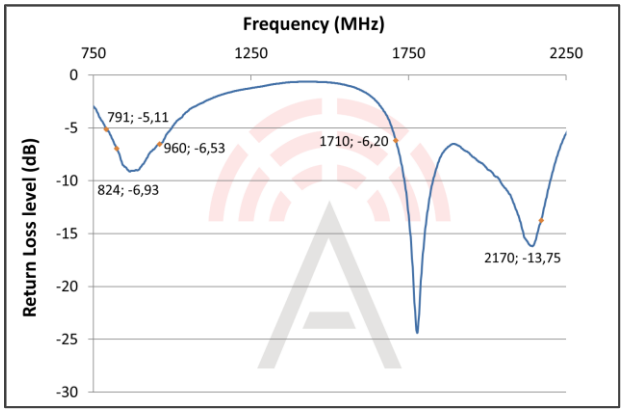
Electrical performance

Measurement setup

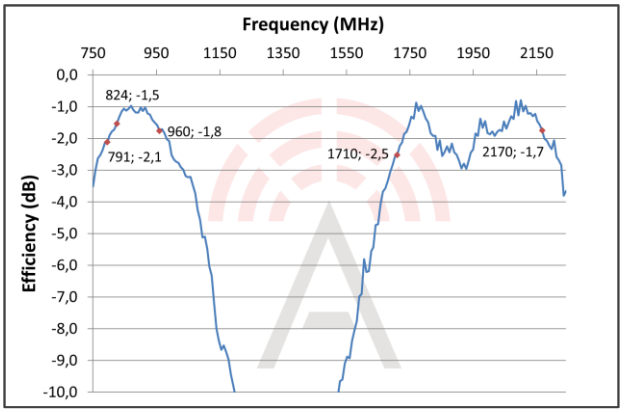


The antenna measurements were done with the OnBoard SMD GSM/NB-IoT evaluation board – measured in free space.

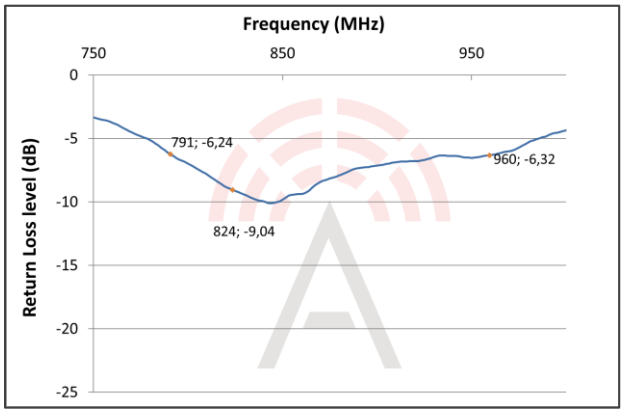
Return loss, GSM/UMTS



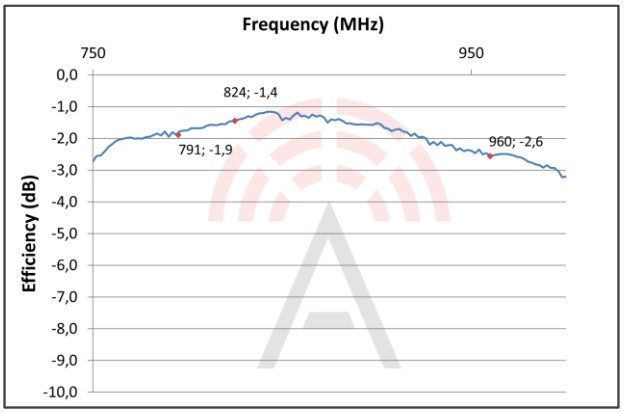
Total radiation efficiency, GSM/UMTS



Return loss, NB-IoT

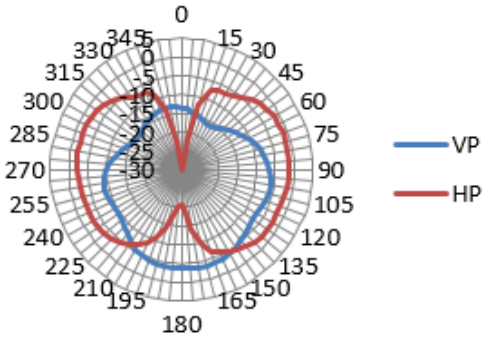


Total radiation efficiency, NB-IoT

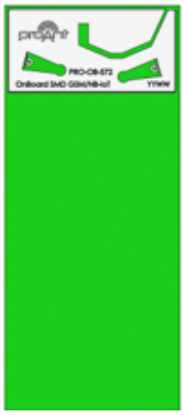


Radiation pattern, GSM/UMTS 890 MHz

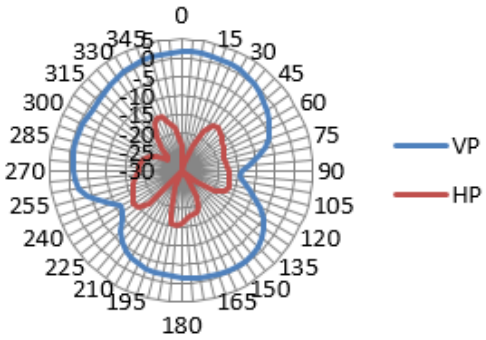
H-plane



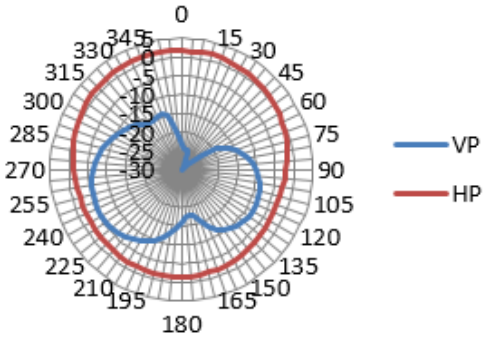
Board rotation



V0-plane

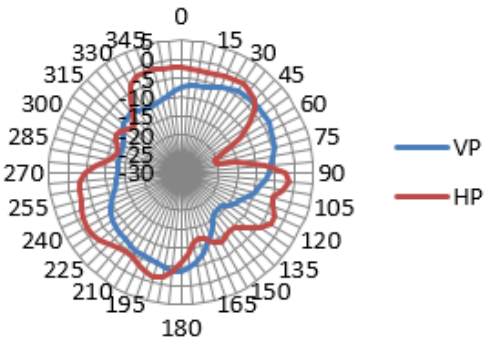


V90-plane

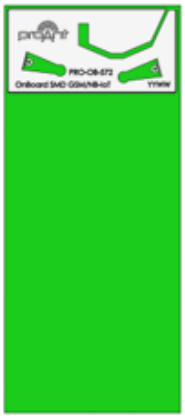


Radiation pattern, GSM/UMTS 1800 MHz

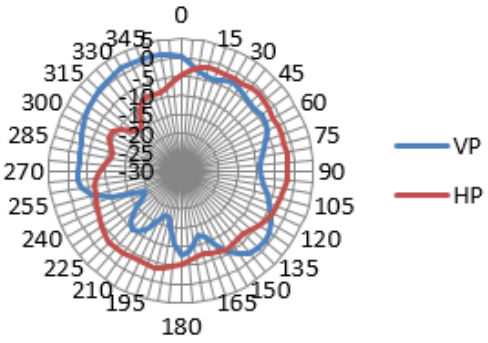
H-plane



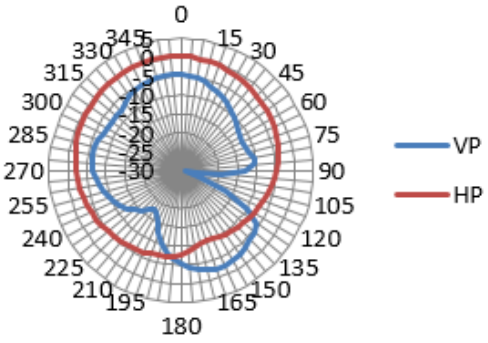
Board rotation



V0-plane

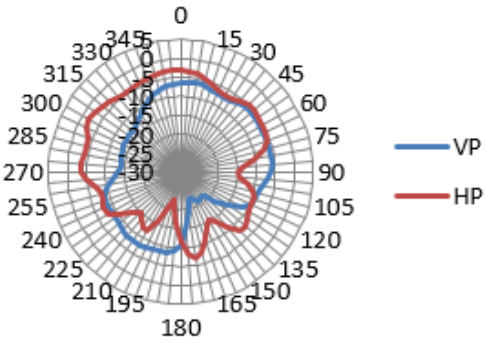


V90-plane

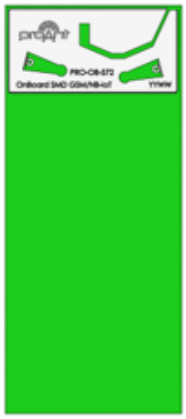


Radiation pattern, GSM/UMTS 1900 MHz

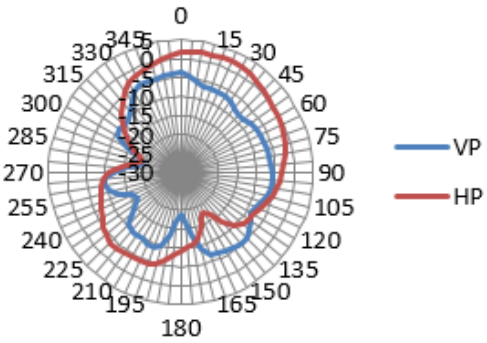
H-plane



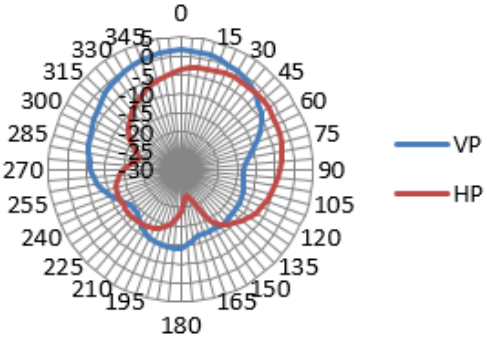
Board rotation



V0-plane

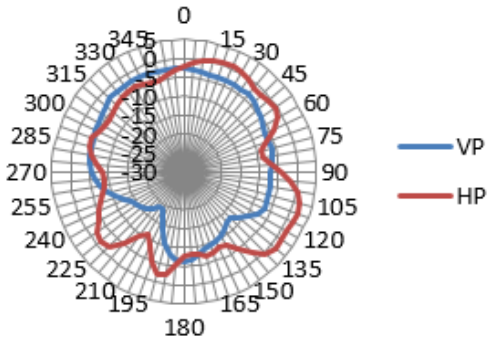


V90-plane

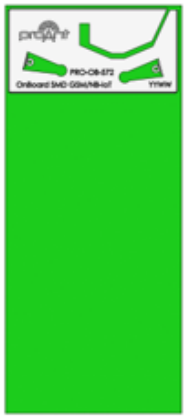


Radiation pattern, GSM/UMTS 2100 MHz

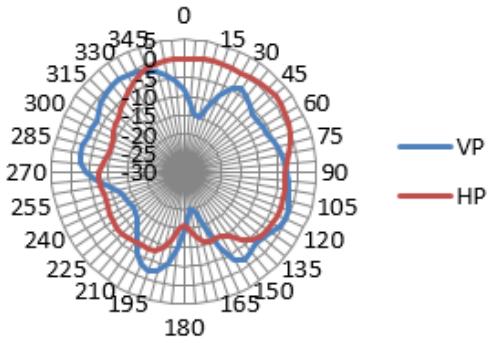
H-plane



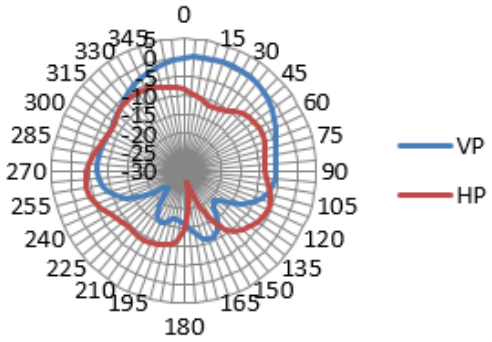
Board rotation



V0-plane

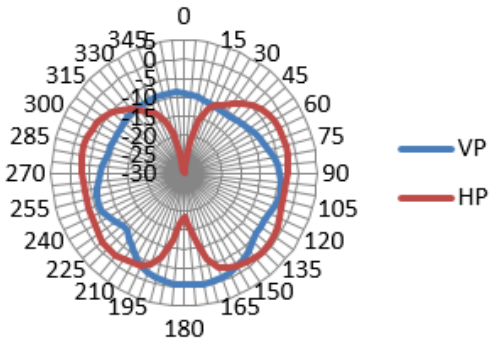


V90-plane

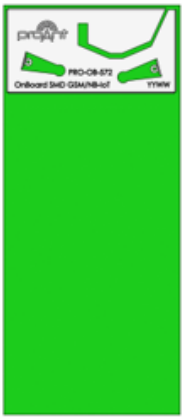


Radiation pattern, NB-IoT 880 MHz

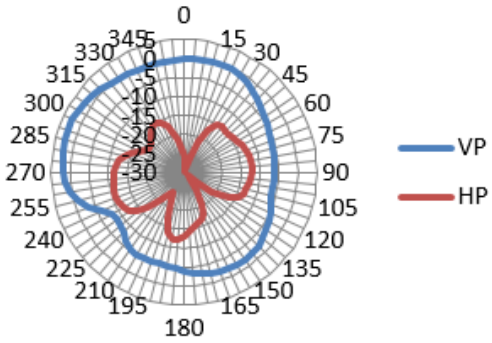
H-plane



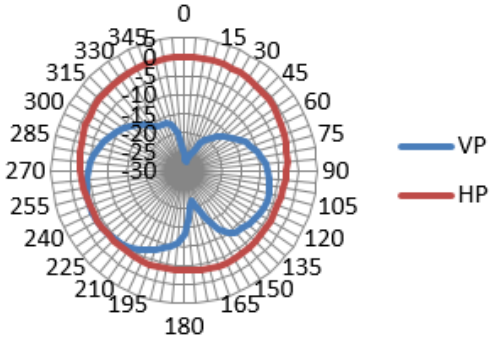
Board rotation



V0-plane



V90-plane



Intended applications

The antenna is optimized for pentaband operation in the GSM, UMTS and NB-IoT systems, which is defined by several frequency bands. Some of the supported bands are:

GSM/ GPRS/ EDGE	GSM 850 (824 – 894 MHz)
	GSM 900 (880 – 960 MHz)
	GSM 1800 (1710 – 1880 MHz)
	GSM 1900 (1850 – 1990 MHz)
UMTS/	Band 1 (1920 – 2170 MHz)
LTE	Band 2 (1850 – 1990 MHz)
	Band 3 (1710 – 1880 MHz)
	Band 4 (1710 – 2155 MHz)
	Band 5 (824 – 894 MHz)
	Band 6 (830 – 883 MHz)
	Band 8 (880 – 960 MHz)
NB-IoT	Band 8 (880 – 960 MHz)
	Band 20 (791 – 862 MHz)

Ordering information

Part number	Part name	Details
PRO-OB-572	OnBoard SMD GSM/NB-IoT	Antenna for NB-IoT and GSM.
PRO-EB-575	Evaluation board, Onboard SMD GSM/NB-IoT	Evaluation board with PRO-OB-572 for GSM/UMTS applications.

For information on sales, delivery terms and conditions and prices, please visit the Proant website (www.proant.se) for a complete list of distributors.

Proant offers consultation with design-in of the InSide antennas. Proant have all necessary capabilities for antenna design including anechoic chamber and prototype workshop. Please send your requests to info@proant.se.

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