OnBoard™ SMD GSM/NB-IoT Datasheet

Rev 3.2
2019-09-25

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.

Technical data	
Frequency	791 - 960, 1710 - 2170 MHz
Impedance	50 Ω
Return loss*	< -6.1 dB, NB-IoT < -5.1 dB, GSM/UMTS
Total efficiency*	> -2.6 dB (55%), NB-IoT > -3.0 dB (50%), GSM/UMTS
Gain*	Max 2.8 dBi, NB-IoT Max 2.8 dBi, GSM/UMTS
Dimensions (LxWxH)	50.00 x 25.00 x 10.00 mm (1.969 x 0.984 x 0.394 in)
RoHS status	Compliant with EU directive 2011/65/EU and 2015/863
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

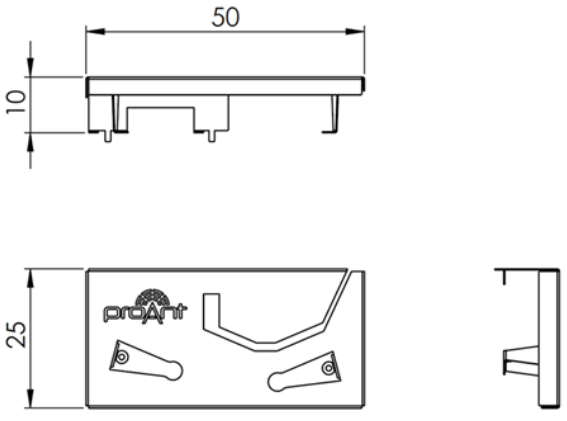
IoT-devices

M2M-commmunications

Telemetry

Automated meter reading

Alarms

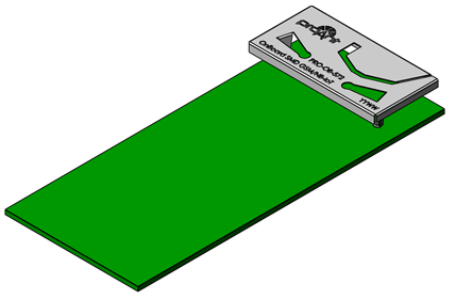


Antenna drawing. Above dimensions are given in millimeter.

**Measured on Proant evaluation board.*

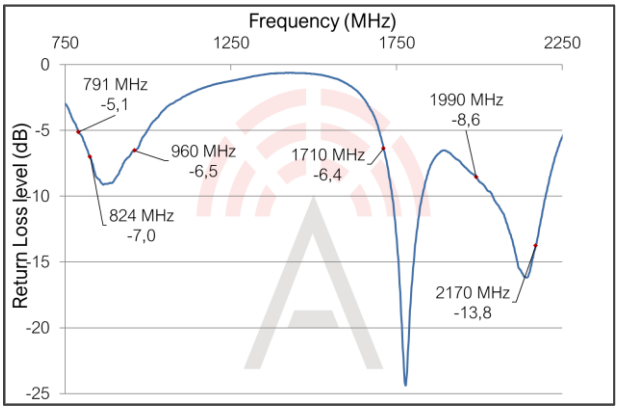
Electrical performance, *GSM/UMTS*

Measurement setup

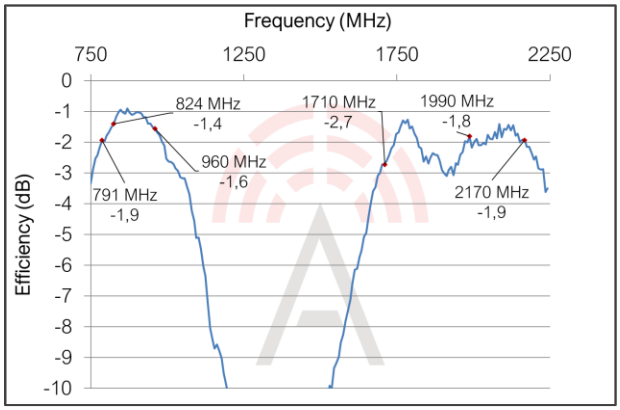


The antenna measurements were done with the OnBoard SMD GSM/NB-IoT evaluation board (120 x 52 mm) - measured in free space.

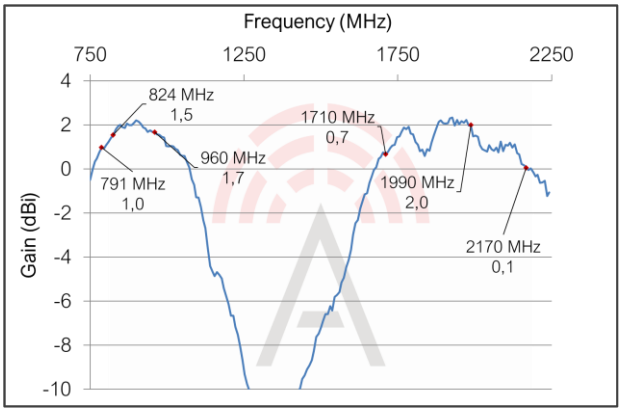
Return loss



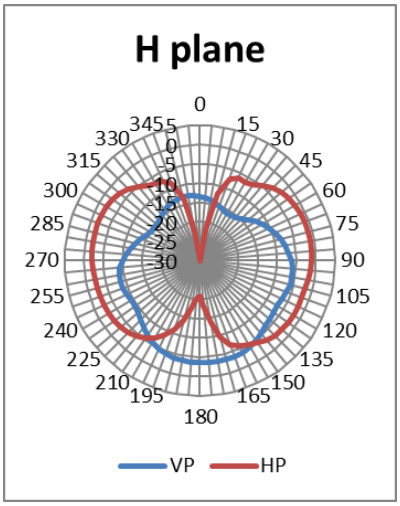
Total radiation efficiency

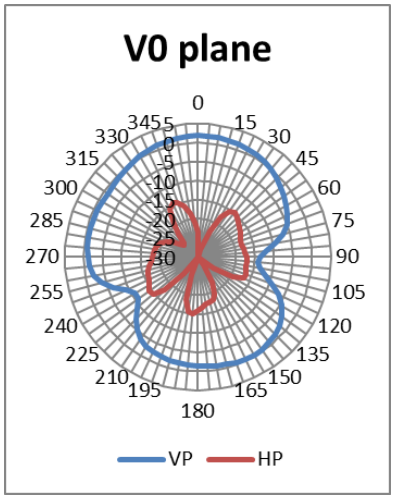


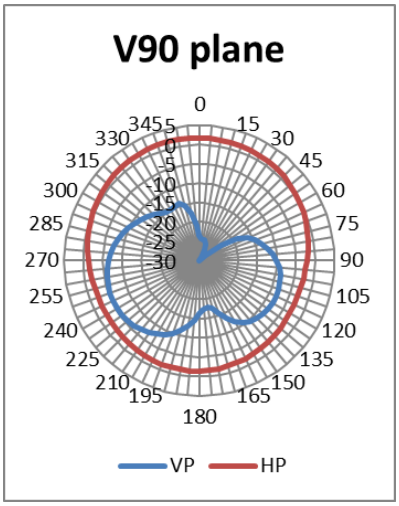
Maximum radiation gain



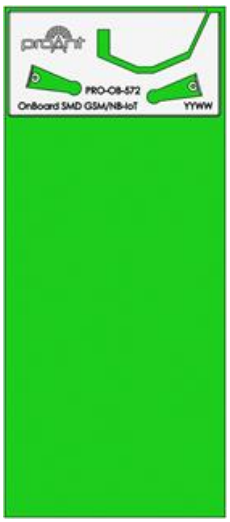
Radiation pattern, GSM/UMTS 890 MHz



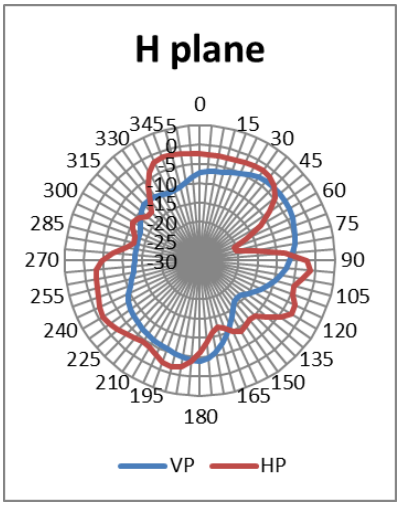


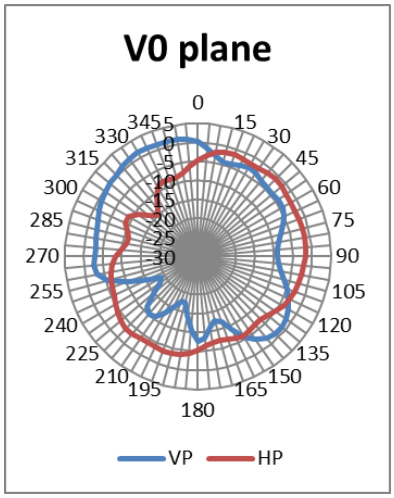


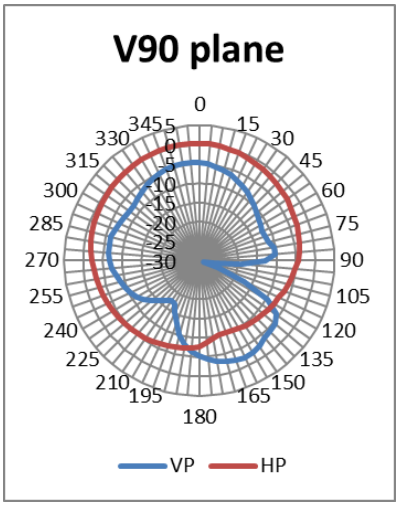
Board rotation



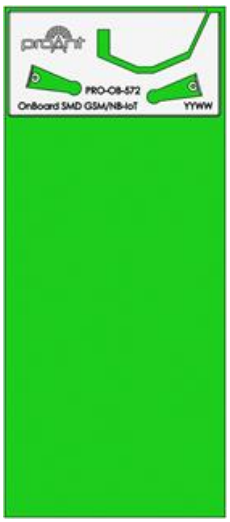
Radiation pattern, GSM/UMTS 1800 MHz



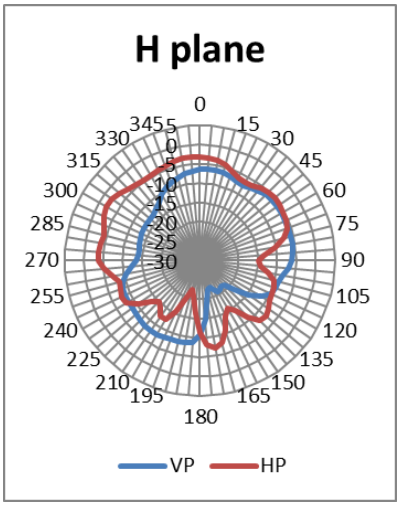


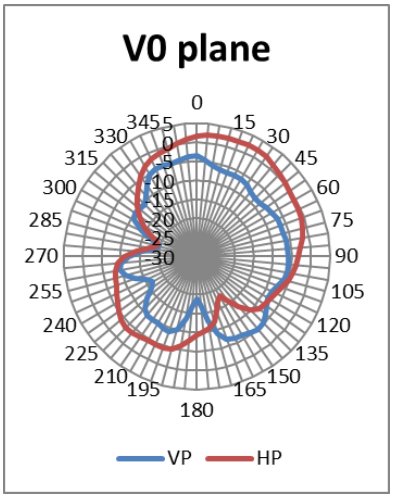


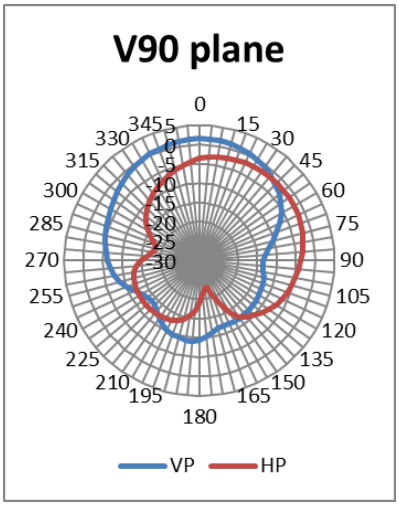
Board rotation



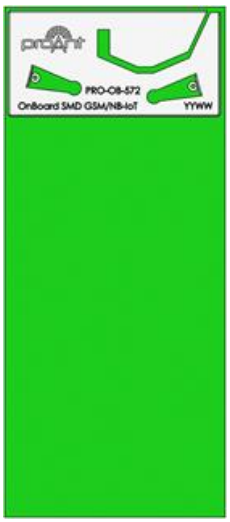
Radiation pattern, GSM/UMTS 1900 MHz



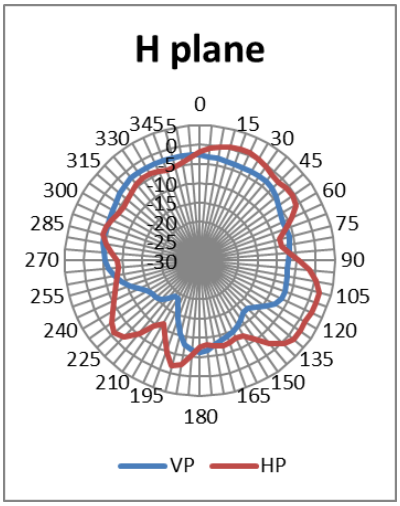


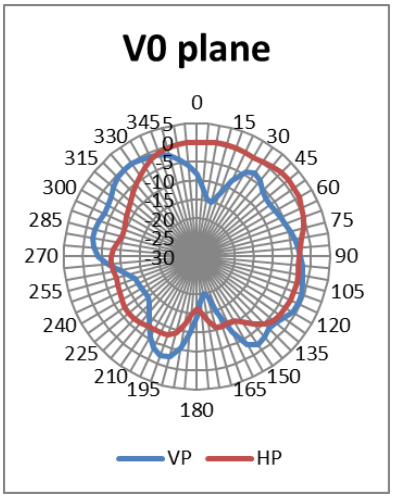


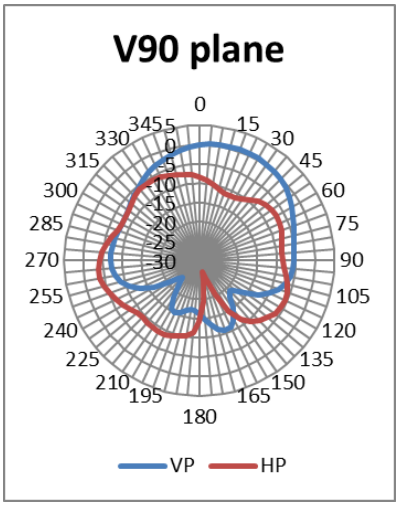
Board rotation



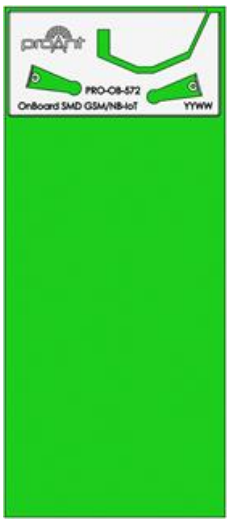
Radiation pattern, GSM/UMTS 2100 MHz





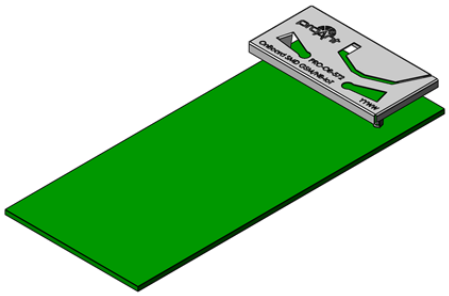


Board rotation



Electrical performance, *NB-IoT*

Measurement setup



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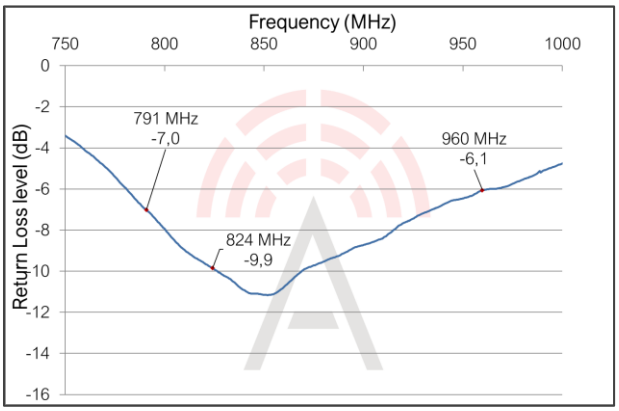
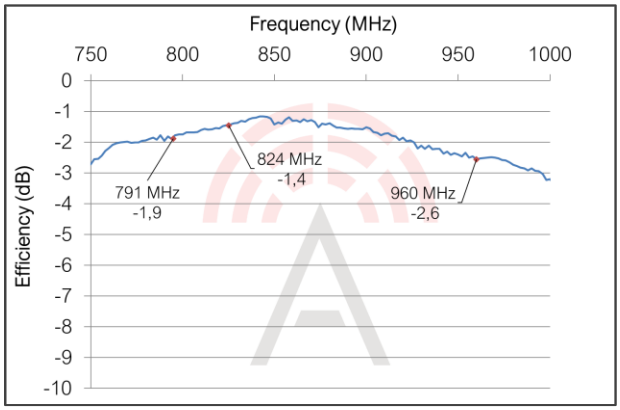
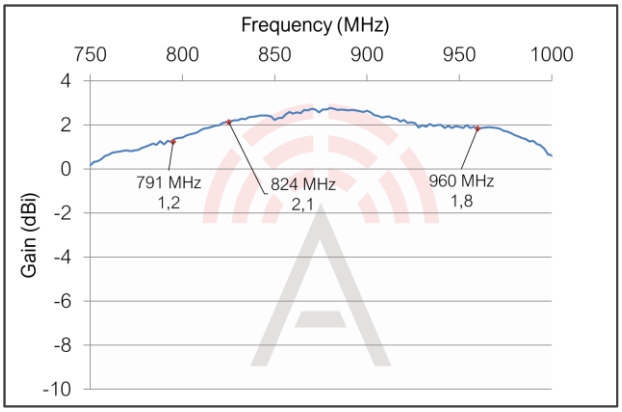
Return loss



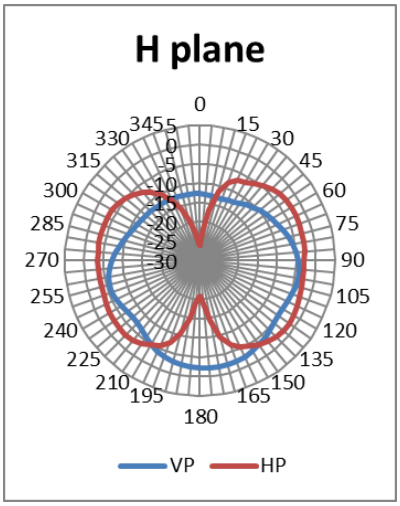
Total radiation efficiency

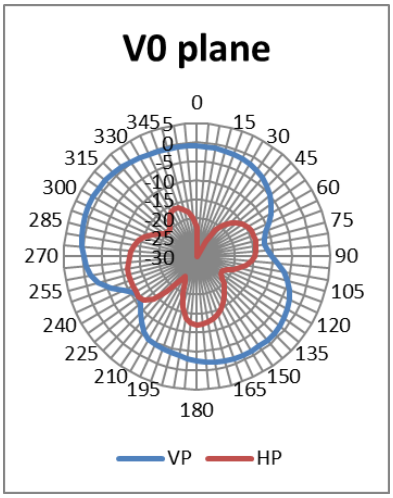


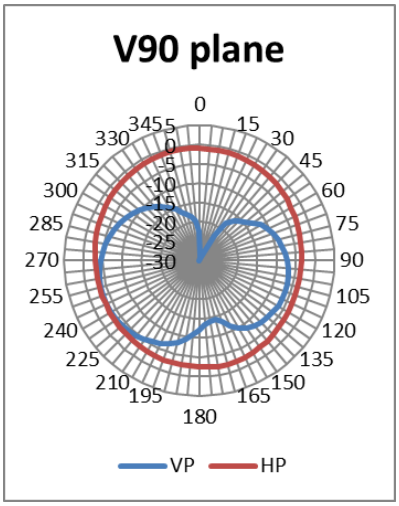
Maximum radiation gain



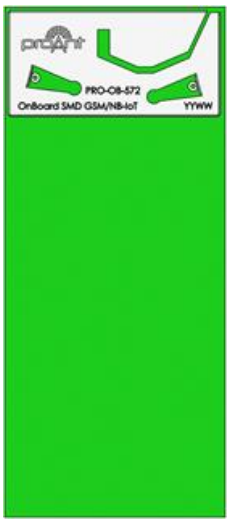
Radiation pattern, NB-IoT 800 MHz



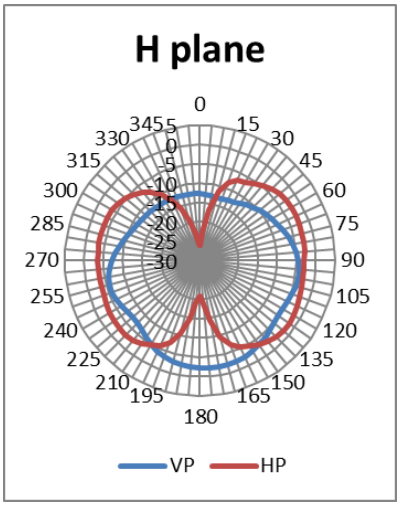




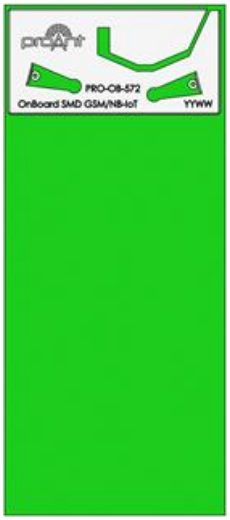
Board rotation

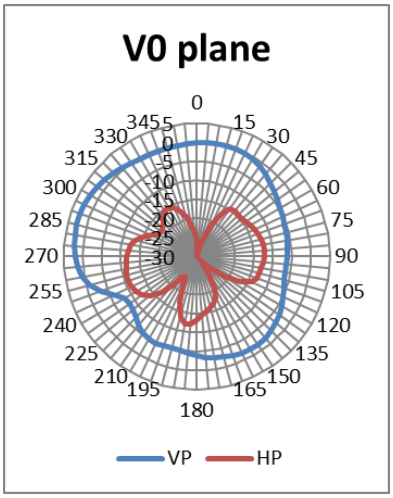


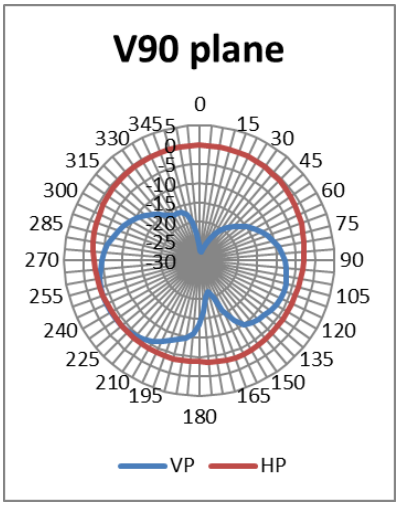
Radiation pattern, NB-IoT 880 MHz



Board rotation







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/UMTS.
PRO-EB-575	Evaluation board, Onboard SMD GSM/NB-IoT	Evaluation board with PRO-OB-572 for NB-IoT and 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 OnBoard SMD antennas. Proant have all necessary capabilities for antenna design including anechoic chamber and prototype workshop. Please send your requests to info@proant.se.

Disclaimer

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