

# NB-IoT Tester

Designed for testing NB-IoT and Cat-M Networks



- \* Measures signal strength and signal quality
- \* Presents digital signals like; RSSI, RSRP, RSRQ and SNR
- \* Easy readout for fast and effective installations
- \* Built in SIM-card holder
- \* Timer-recording, showing min/max signal level
- \* Input for external antenna
- \* Very easy to handle and operate
- \* Built in rechargeable battery pack

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Internet of Things (IoT) is the new technology, exploding in terms of connected devices globally. But how are these IoT devices getting physically connected to the Internet ?

One way, which is becoming standard within Europe (EU) is via NB IoT (Narrow Band IoT)/LTE Cat-M. Telecom operators like Deutsche Telekom, Vodafone, Proximus and many others are leading the way and are setting up new networks to comply with this new standard. IoT devices (like electricity-, gas- and water- meters) which are setup with NB IoT/Cat-M can be easily connected, via the Narrow Band on the 4G network, to Internet. The connected devices will then automatically report and send measured data to the assigned operators. - There is one small obstacle though and that regards the signal strength needed to do this connection. In most cases this is not a problem. Signal coverage is good enough over most areas. But many of these devices will be placed in cellars or deep within huge buildings. Others will be quite far away from the main transmitters and at the limit of their coverage. Such jobs will require a signal-meter for doing a less time consuming and fully operational installation.

The NB IoT Tester has been designed for this purpose and it is fully skilled for testing and analyzing the digital signal levels in the air. Signal strength is measured in dBm. The presented Digital- and quality- levels are; RSSI, RSRP, RSRQ and SNR. The unit displays the real time values in numerical form but also in the shape of thermometer scales. These are all easily readout with low values in red and acceptable values in green. The NB IoT Tester is easy to learn and operate. It is handled with just a few buttons and the measured results are being presented on a Color LCD.

The unit can be setup for timer recordings which is very valuable when having to measure in small/closed compartments (which could be for ex. steel capsulated) or for problem solving (for ex. knowing that there's a drop of signal level at nighttime). The NB IoT Tester will record and present max and min values for the setup test period.

The NB IoT Tester has a built in antenna similar to the one used in the various devices made to be connected to NB IoT/Cat-M. This make the NB IoT Tester very reliable and accurate when judging if a site has good enough signal level (or not) for installing a new device. The NB IoT Tester also has a separate input for connecting a stand-alone antenna (larger antenna). This in order to setup and make fully operational installations on sites where the signal level is too low for using built in, internal, antennas.

The unit is powered via the internal Li-ion battery pack (rechargeable). This will give the unit an operational time of more than 12 hours when fully charged. It will take about 10 hours to fully charge the meter when being drained. The NB IoT Tester is charged with the enclosed mini-USB charger.

The unit is made in a hard plastic shell, placed in a rubber boot for shock protection. The design is very solid and has been used earlier for other purposes. It's reliable and well proven.

### Technical specification

3GPP Release	Release 13 (2G/3G/4G LTE Cat NB1, NB2, LTE Cat-M1, GPRS, EDGE)
Downlink Peak Rate	Up to 588Kbit/s
Uplink Peak Rate	Up to 1119Kbit/s
IoT bands	B1/ B2/ B3/ B4/ B5/ B8/ B12/ B13/ B18/ B19/ B20/ B25/ B26/ B28 and B39 for Cat-M.
GSM bands	850/ 900/ 1800/ 1900MHz
Signal level readout	-51dBm to -135dBm
Digital readout	RSSI, RSRP, RSRQ and SNR
GPS	GPS/GLONASS/BDS/Galileo/QZSS
Latency	0s-10s
Latency test	Yes
Receive Bandwidth	180 kHz
Transmit Power	23 dBm
Built in SIM-card reader	Yes
Input impedance	SMA connector, 50 ohm
Digital readout	RSSI, RSRP, RSRQ and SNR showing strength, quality and min/ max hold values:
Memory	SD-card with built in SD-cardreader
	Firmware upgrade via micro-USB connector.
Display	Color LCD 320x160 pixels.
Battery	Built in, rechargeable batterypack
Battery capacity	3200mAh.
Power consumption	Max 300mA peaks.
Operational fully charged	10 hours
Charging time (drained)	6 hours
Powersupply/charger	Input: 220V, output 5V, 2 amp, micro-USB
Weight	0.3kg
Size	185x115x50mm.
Accessories:	Powersupply Rubber-case Antenna Owners manual

