

NEMO HANDY™

Nemo Handy™ 2.60 for Nokia N95/N95 US is a state-of-the-art handheld tool for testing mobile application QoS/QoE and measuring the air interface of EGSM/GPRS/EDGE/WCDMA/HSDPA/Wi-Fi 802.11b/g wireless networks. Nemo Handy's extensive application testing features are complete with voice and video streaming quality MOS testing, cell and timeslot testing, and full application level metrics on voice and video calls, FTP/HTTP data transfers, HTML/WAP browsing, SMS/MMS messaging, email POP3/SMTP, and ping.



Mobile features

- **Nokia N95:** HSDPA/WCDMA 2100, GSM/EGSM/GPRS/EGPRS 850/900/1800/1900,
- **Nokia N95 US:** HSDPA/WCDMA 850/1900, GSM/EGSM/ GPRS/EGPRS 850/900/1800/ 1900
- HSDPA (Category 6: PS UL/DL=384/3.6 Mbits, CS 64 (video calls)),
- EGPRS (Class B, Multislot class 32): DL/UL=296/177.6 kbps, Timeslots 5+3, max. 6
- GSM/EDGE (Simple class A, Multislot class 11, DL/UL: 177.6/ 118.4 kbps)
- DTM (Multislot class 11: DL/UL 118.4/118.4 kbps)
- HR/FR/EFR(GSM)/ AMR(GSM) speech codecs,
- Integrated GPS receiver

Nemo Handy not only *provides you with the best real-time measurement visualization on the handheld market*, it also *enables you to build your own custom real-time views with stackable bar and line graphs for all the relevant network parameters supported by the terminal's trace interface*. Supported terminals include Nokia N95, N95 US, N80, N75, 6120 and 6121.

Nemo Handy measurement data *provides you with a complete and detailed picture of the radio interface and the quality of the tested applications*. The comprehensive radio interface data recorded with Nemo Handy is optimal for network planning, roll-out, tuning, verification, optimization, and maintenance. Application performance metrics are vital in mobile service benchmarking and QoS/QoE evaluation. Nemo Handy can be used either as a regular phone with the application logging in the background, or as an active measurement tool with real-time data views and a built-in script editor that *enables you to create and modify scripts on the go*. Nemo Handy's small size and extensive measurement capabilities make it also the ideal tool for performing indoor measurements.

All network parameters supported by the terminal's trace interface, including signaling messages, are logged and made available for post-processing with Anite's Nemo Analyze™ and Nemo Outdoor™. However, Nemo Handy's *full and proven compatibility with 3rd party tools* enables also post-processing with any other tool supporting the Nemo file format.

The most widely deployed handheld measurement tool in the world.

Key Benefits

- **Technological leader** – Nemo Handy has set the standard for handheld network measurement devices since 2005 and continues to do so today as the most widely deployed handheld measurement tool in the world.
- **Newest technologies** – Every major new wireless technology is always supported
- **Best real-time data visualization on the handheld market** – Nemo Handy's state-of-the-art real-time data views can be customized with Nemo Handy Configuration Editor to display all the relevant network parameters supported by the terminal's trace interface
- **Comprehensive logging** – All network parameters supported by the terminal's trace interface, including signaling messages, are logged and made available for post-processing
- **Ease of use** – Intuitive user interface makes all operations from timeslot testing to creating complex measurement scripts time-effective and easy.
- **Vendor independence** – Full and proven compatibility with 3rd party tools

Key Features

- Symbian-based application
- E.g. 1 GB MiniSD card can store up to 100 hours of measurement data
- Nemo Handy can be equipped with a GPS receiver to collect geographical coordinates
- Supports measurements on EGSM/GPRS/EDGE/WCDMA/HSDPA/Wi-Fi 802.11b/g networks
- Voice and video streaming quality measurements based on MOS
- Automated service testing with scripts: voice quality, voice call, video call, FTP, HTTP, HTML browsing, WAP browsing, send/receive email, MMS, SMS, and ping
- Scripts can be created and modified with Nemo Handy's built-in script editor
- Real-time statistics
- Log file upload to server via email, FTP, or Bluetooth
- Indoor map with markers and geodetic coordinates
- Forcing commands for channel lock, scrambling code lock, system lock, and cell barring
- Scripts can be locked to a specific system, channel or scrambling code.
- Conditional, system-triggered scripts
- BTS information, i.e. serving cell name, site name, distance to serving cell, and cell ID, can be displayed based on a BTS file.
- Possibility to force time synchronization to occur based on GPS each time before logging begins

- Cell and timeslot testing
- Textual markers can be added to the log file
- User-definable audio notifications w/ speech generator
- Other handy details, including circular log file, user-definable UI font size, background light on/off, display freeze, integrated help, etc.

Examples of Supported Parameters

- **Serving cell information:** Cellular system, Channel number, Cell ID, MCC, MNC, LAC, Packet data tech.
- **UMTS Parameters:** Initial TX power, RACH TX power, Preamble count, AICH status, Ec/NO for active/monitored set, RSCP for active/monitored set, TX power, BLER (DL), SIR, Percentage of UL/DL power-up commands, Carrier RSSI, Scrambling code for active/neighbor set, Compressed mode indication, RRC state, RLC UL/DL Throughput
- **HSDPA Parameters:** MAC BLER, CQI, Modulation, 16QAM/QPSK ratio %, Coding, Number of codes, HS-DSCH activity rate, MAC throughput DL, Transport block size
- **GSM Serving Cell RF Parameters:** DL DTX, RX level (full/sub), RX quality (full/sub), C1 & C2, MS power level, Packet channel coding (UL/DL), Timing advance, Used timeslots, FER, MAIO, HSN, RLT, C/I, AMR parameters, Link quality estimate
- **GSM Serving Channel Information:** BSIC, Number of timeslots (UL/DL), Channel number, Hopping channels
- **Additional GSM Cell Information:** Emergency call support, IMSI attach detach procedure allowed, Half rate channels supported, C2 broadcast supported, SI 7&8 broadcast supported, Cell broadcast supported, Call re-establish supported, Early class mark sending supported, 2-Ter messages supported, Multi band reporting, GPRS supported
- **User Level Data Information:** Application data throughput UL/DL
- **AMR Parameters:** Channel type, Link quality estimate (LQE), AMR initial codec, AMR ICMI, AMR codecs, AMR codec UL/DL, AMR hysteresis 1-3, AMR threshold 1-3, Voice codec distribution, Coding scheme distribution
- **GPS Information:** Status, latitude and longitude, height, distance, velocity, number of satellites
- **WLAN Parameters:** SSID, Channel number, RSSI, Access point MAC address, Application throughput, Security mode, Transfer rate
- **Full Application Level Metrics:** for voice/video calls, PDP context, FTP, HTTP, WAP/HTML, SMS/MMS, email, ping, and inter-system and intra-system cell reselections and handovers.

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