

Anite



NEMO
OUTDOOR™

PRODUCT DESCRIPTION

Nemo Outdoor™ 5.40 is a pioneering and leading-edge network measurement and optimization solution for perfecting the air interface of wireless networks. It collects measurement results and geographical coordinates, and these measurement results further provide valuable information for **network planning, roll-out, tuning, verification, optimization, maintenance, and benchmarking purposes**. Nemo Outdoor is always among the first-to-market with support for **the very latest technologies**, currently supporting measurements on LTE, WiMAX, HSDPA, HSUPA, HSPA+, TD-SCDMA, UMA, CDMA2000, 1xEV-DO (Rel. 0 and Rev. A), TETRA, cdmaOne, GSM, GPRS, EDGE, and WCDMA networks. What is more, DVB-H measurements are supported.

Nemo Outdoor provides our customers with the **flexibility** and **choice** to meet the specific and growing needs of the ever-evolving markets. Its powerful platform is expandable beyond current trends to those of the future, and all of this materializes on one **single platform**. With Nemo Outdoor you can perform not only **drive testing** but also **QoS** and **benchmarking** measurements on every standard network technology and on **multiple simultaneous data connections**. This empowers the operators to reach both optimal network performance and **time- and cost-effectiveness**.

Nemo Outdoor is extremely **easy to set up, configure and use**. Furthermore, Nemo Outdoor's utterly **customizable** and smooth user interface offers the users the possibility to customize data views and workspaces for their specific needs at any given time. This flexibility further manifests itself in the open file format (ASCII) which enables customers to integrate in their optimization processes the use of not only the upscale Anite's post-processing tool Nemo Analyze™, but also those of third-party vendors. In addition, Nemo Outdoor's import/export feature allows for all user settings to be transferred to or from another computer.



Cost-effective, extensive and versatile network measurement and optimization on a single, flexible platform

Through our close cooperation with several mobile and scanner manufacturers we ensure that our customers always get to select amongst the latest test equipment. Currently Nemo Outdoor supports more than 200 test terminals and scanning receivers, a figure which is constantly on the increase to meet the rapidly changing customer needs for optimal satisfaction.

PLATFORM

- **Nemo Outdoor 5.x**

Including:

- Measurement
- Voice phones 1 license
- Basic Data (HTTP, HTTP Browsing, FTP, Ping, Ping trace route, iPerf, SMS)
- E-mail testing
- MMS testing
- WAP testing
- PoC (PTT)
- GPS Handler

HANDLERS

- RunCom WiMax
- Nokia/ EADS TETRA
- Beceem WiMax
- DVB-H
- Sagem OT460
- Sagem OT468
- Sagem OT490
- Nokia 6230i
- Nokia 6086
- Nokia N92
- Nokia N92 DVB-H
- Motorola V3X
- Qualcomm
- Qualcomm HSDPA
- Qualcomm HSPA+
- Motorola V3XX (US)
- Motorola V9 (US)
- Nokia N85
- Nokia N85US
- Nokia N95
- Nokia N95US
- Nokia N96
- Nokia N96US

- Nokia N97
- Nokia N97US
- Nokia 6120
- Nokia 6121
- Nokia 6720
- Nokia 6720US
- Qualcomm HSPA
- Qualcomm CDMA2000
- Qualcomm EVDO
- Application Handler
- PCTEL LX Series
- PCTEL EX Series
- PCTEL PCT Series
- Anritsu Scanners
- Anritsu MS2721B + DVB-H analyzer
- DRT 4301A WiMax
- Motorola V9 RAZR2 NA
- Nokia 3500
- Datang
- Leadcore
- Sagem OT590R (GSM-R)
- Nokia HSUPA NoRM6
- Anritsu MS2721B Spectrum analyzer
- Rohde & Schwarz TSMQ scanner
- Rohde & Schwarz TSML-C
- Rohde & Schwarz TSML-G
- Rohde & Schwarz TSML-W
- Rohde & Schwarz TSML-GW

OTHER SUPPORTED FEATURES

- Video Streaming Quality
- Voice Quality (up to 5 VQ connections)
- Voice Quality (up to 6 VQ connections)
- Nemo Outdoor Multi License (up to 6 voice and up to 5 data connections)
- Indoor
- Nemo Outdoor 5.x Playback including the Indoor option
- Carrying case for Nemo Outdoor Multi

- PCTEL C/I single band
- PCTEL C/I dual band
- PCTEL GSM BCCH Decoding (dual band)
- PCTEL GSM BCCH Decoding (single band)
- Layer 3 decoding GSM/WCDMA
- Layer 3 decoding WCDMA
- Anritsu, GSM Measurement Software and Antenna Option (900 MHz/1800 MHz for vehicle installation)
- Anritsu, Two Carrier Measurement
- Anritsu and Antenna (900 MHz/1800 MHz for vehicle installation)
- Anritsu, Two Carrier Measurement
- Measurement Software N80 in Chinese
- Measurement Software N95 in Chinese

NEMO OUTDOOR SUPPORTED VENDORS AND CHIPSETS

- Anritsu (GSM/WCDMA scanners, DVB-H analyzer)
- Beceem
- Digital Receiver Technology (Wimax scanner)
- Motorola
- Nokia
- PCTEL LX/EX/ PCT series
- Qualcomm
- RunCom
- EADS
- Sagem
- Rohde & Schwarz

TERMINALS AND SCANNERS IN NEMO OUTDOOR 5.40

TETRA	<i>EADS THR880, THR880i, TMR880 Nokia THR850</i>
GSM	<i>PCTEL SeeGull LX, EX, PCT-510 SAGEM OT260, OT268, OT460, OT590 (GSM-R) Rohde & Schwarz TSML-G Nokia N85 GSM</i>
GPRS	<i>SAGEM OT290, OT298</i>
EDGE	<i>Nokia 3500, 6125, 6230, 6230US SAGEM OT490, OT498</i>
PoC	<i>Nokia 6230i</i>
WCDMA 2100	<i>Anritsu ML8720B Merlin U530 Motorola E1000, V3X Nokia 6280, 6630, 6680, 7376 (2100 AWS), N80 PCTEL LX, EX, 06110 WCDMA 2100 EX Mini, 06113 WCDMA AWS EX Mini, PCT-505 Qualcomm TM6200, TM6250 Samsung ZV10, Z105, Z107, Z140, Z500, SGH-T639 terminal (T-Mobile) Vodafone 3G Rohde & Schwarz TSML-W</i>
WCDMA 1900	<i>Nokia N75</i>
GSM/WCDMA dual-mode	<i>Anritsu ML8720C, ML8740A, ML8740B PCTEL LX, 06112 WCDMA 850/1900 EX Mini, WCDMA 900/2100 EX Mini</i>
CDMA2000	<i>Rohde & Schwarz TSML-C</i>
CDMA2000 1xEV-DO Rel 0	<i>LG KX206, VX8000, VX8100, VX8300, VX8350, C270, C676, C680, LHD 200E Motorola V3C PCTEL LX PCTEL EX Zapp Telemodem Z020</i>
CDMA2000 1xEV-DO Rev A	<i>Kyocera KPC650 Pantech PX-500 Rev A UTStarcom Audiovox PC5740, PC5750 Novatel Ovation MC727 Huawei C7600 Sierra Wireless Compass 597</i>
DVB-H	<i>Anritsu MS2721B LG U900, KU950 Nokia N92 Samsung P920, P940</i>
UMA	<i>Nokia 6086, 6136</i>
HSDPA	<i>Huawei E169, E220 LG KF700 Merlin U740, U870, X950 D, Express Motorola RAZR V9, V9US, V3XX Nokia 6120, 6121, N85, N85 US, N95, N95US, N96, N96US, N97, N97US Option GlobeTrotter 3G+, Express 7.2, GT MAX E, GT MAX 7.2 Ready, HSDPA 7.2 Ready, GlobeSurfer iCON 7.2</i>

Qualcomm TM6275, TM6280
Samsung ZX20, Z560, Z720, A707, G800, SGH-U900 Soul
Sierra Wireless Aircard 850, 860

HSUPA

Huawei E180, E270, E870 Express
Novatel Ovation MC930D, MC990D
Nokia 6720, 6720US
Option GlobeTrotter HSUPA, iCON 401, iCON452
Qualcomm MSM7200 TM
Sierra Wireless Aircard 880, 881, 885 Compass

HSPA+

Huawei E182E, E270+, E1820
Novatel Ovation MC996D
Sierra Wireless HSPA+ USB 307

**TD-SCDMA,
GSM/TD-SCDMA**

Datang DTM 8101, DTM 8120
Leadcore LC 8130E
PCTEL EX

WiMAX

Beceem BCS200
ZTE TU25
DRT 4301A+
Motorola PCCW200
PCTEL EX
Zyxel MAX-100

LTE

PCTEL EX LTE Single Band Upper 700C
PCTEL EX LTE Single Band Lower 700MHz - A/B/C EX Mini
PCTEL EX LTE Single Band 2100 MHz EX
PCTEL EX LTE Dual Band LTE Lower 700-B/C/AWS 2100MHz Mini
PCTEL EX LTE Dual Band 2100/2600 MHz
PCTEL EX LTE Dual band 2600/1800
PCTEL EX LTE Dual Band Upper 700-C/AWS 2100 MHz EX Mini
PCTEL EX LTE Dual Band LTE Lower 700-B/C/AWS 2100MHz Mini

**Rohde & Schwarz
TSMQ**

GSM, CDMA, EVDO, WCDMA, spectrum scanning, CW scanning

Application testing

Any voice and data-capable terminal

**Voice Quality
testing (PESQ)**

Nokia 6120, 6121, 6720, 6720US, N85, N85US, N95, N95US, N96, N96US, N97, N97US
LG C676, C680, KX206
Datang DTM 8120, Leadcore LC 8130E
Samsung SGH-U800

NEMO OUTDOOR KEY BENEFITS

- **Powerful platform-based tool** – All the latest customer needs can be met by adding options to the utterly flexible and expandable Nemo Outdoor platform
- **Comprehensive and cost-effective** – Drive testing, QoS and benchmarking measurements can all be carried out on a single platform. The Multi-Data functionality in Nemo Outdoor allows up to five concurrent data measurements to be performed simultaneously, and the Nemo Outdoor Multi option allows the simultaneous use of up to six test terminals and two scanners
- **Centralized solution** – All of the test devices among the extensive selection can be connected to a single laptop
- **Extremely easy to set up, configure and use** – The time from receiving the product to using it is only a matter of a couple of hours. Hence, the customer is able to focus on the actual task at hand
- **Latest technologies** – Nemo Outdoor is always among the first to market with support for the newest technologies
- **Fully customizable user interface** – The user is able to tailor the user interface to suit their specific needs at a given time

NEMO OUTDOOR KEY FEATURES

- **Multiple simultaneous data transfers on a single terminal** – Nemo Outdoor enables the user to perform multiple data transfers on each test mobile in use simultaneously
- **Benchmarking for better performance** – Measurements can be carried out on multiple networks and even on multiple technologies simultaneously for ultimate network performance. The Nemo Outdoor Multi and Multi Lite options offer variety in terms of size and weight, with a possibility even to take Multi Lite as carry-on baggage on an aircraft
- **QoS measurements** – Voice quality, video quality, video call quality and Psytechnics PVI video streaming quality measurements are supported
- **Extensive scripting** – With Nemo Outdoor scripting is made diverse and extensive with, for example, time- and technology-based conditional blocks, loops and more
- **Frequency scanning on Sagem and pilot and frequency scanning on Nokia terminals** – No need to use a separate fast frequency scanner to perform scanning and missing neighbor detection on both GSM and WCDMA bands simultaneously, which adds to **cost-effectiveness and increases user convenience**
- **Missing neighbor detection using a Nokia terminal** – no need for a separate scanner to be used simultaneously
- **Measurement lists** – The user is able to create compilations of scripts into large-scale measurement lists for extensive and powerful measurements
- **Measurement file uploading** – Measurement files can be sent directly from the Nemo Outdoor user interface to an FTP server for storage
- **Automatic device detection** – Multiple devices can conveniently be added to the system in user-defined order

- Supports both *circuit-switched* and *packet-switched measurements*
- *Indoor option* – It is also possible to use Nemo Outdoor with the indoor option on a tablet PC, and to view the results on an indoor map in Nemo Outdoor
- *Instant playback functionality* – It is possible to see the measurement results immediately after a measurement through Nemo Outdoor’s playback function and user-configurable data views and work space
- *Drag and drop functionality* – Parameters can conveniently be added to data view windows without having to go into trouble with recreating, for example, a graph window
- *Configurability* – The user can tailor the various data views based on their own needs. *Grids, Graphs and map windows* can be colored based on user-defined criteria, and *graphs* support multiple layers for viewing results in a single graph. Another example of the customizability of Nemo Outdoor’s data views is the possibility to save a measurement route, or *route plan*, for later use, and to follow the measurement route through waypoints in real time during measurements
- *End-to-end SMS and MMS application testing* offers the user more diverse and accurate possibilities for data testing
- *User-defined parameters* from signaling messages can be searched and displayed in info view and graph side panel
- *Forcing features* – Channel/scrambling code locking, band locking, handover control, timeslot testing and cell barring are available in Nemo Outdoor
- *Cell testing* – The surrounding cells of a location can be tested through an automated list of test calls that are locked to a cell at a time
- *Missing neighbor detection* – Real-time missing neighbor detection can be performed with the possibility to detect both GSM/WCDMA missing neighbors at the same time
- *UMTS Pilot Pollution Analysis* - Nemo Outdoor enables Pilot Pollution Analysis measurements in real time using UE or a scanning receiver.
- *Google Earth map* – Nemo Outdoor maps can be exported to Google Earth maps.

WORKING WITH NEMO OUTDOOR

Nemo Outdoor is a comprehensive solution offering its user a broad selection of options all on the same platform. Yet Nemo Outdoor has been designed to offer the user a pleasant experience with its highly intuitive user interface. The Nemo Outdoor measurement system consists of test mobiles and/or scanning receivers and a GPS receiver with antennas, a PC or a Tablet PC with the Windows® operating system and the Nemo Outdoor measurement software, and connecting cables between the mobiles/scanners/GPS and the PC. With the robust Nemo Outdoor Multi and compact Multi Lite options it is possible to connect up to six terminals, two scanning receivers, and a GPS receiver simultaneously to the Nemo Outdoor measurement system.

HARDWARE AND SOFTWARE REQUIREMENTS

- PC (IBM or Dell recommended) with 32-bit Windows® XP Professional or 32-bit Windows® Vista.
- Pentium III processor, minimum 1GHz, preferably 1.7 GHz for single mobile measurements
- For multi data measurements Intel® Core Duo processor T2500 2.00GHz recommended
- For voice quality measurements with USB sound card Intel® Core Duo processor T2500 2.00GHz or higher required
- 512MB RAM minimum, 1GB RAM recommended
- 100 MB of free hard disk space for installation and use; 1 GB recommended
- One parallel port or USB port for copy protection module (if applicable)
- Depending on the mobile used, one USB port or one to two serial ports per mobile
- Depending on the scanner used, one USB port or one serial port per scanner
- One serial port for each voice quality audio module
- One RS232 serial port or USB port for an external GPS receiver
- Display resolution 1024 x 768 with 256 colors, 1280 x 1024 recommended
- Internet Explorer 4.0 or higher for viewing the help file
- For up to four channel voice quality measurements with a USB sound card Intel® Core Duo processor T2500 2.00GHz or higher required
- For up to six channel voice quality measurements with a USB sound card Intel® Quad Core processor Q9100 2.26GHz or higher required

APPLICATION TESTING

Nemo Outdoor enables network operators to test their network using *the same application protocols as their customers and, therefore, provides results that correspond with the end-user experience*. Nemo Outdoor supports e-mail, SMS, MMS, WAP, PoC, Iperf for UDP/TCP testing, ping trace route testing, FTP and HTTP file transfers, HTTP Browsing, RTSP streaming, video streaming, video streaming quality, video call, video call quality, voice quality, ICMP ping, measurements. The information provided by Nemo Outdoor assists in the verification and troubleshooting of new services reducing the time-to-market.



Application tests can be performed either manually or automatically by taking advantage of user-definable scripts. For all protocols, key performance indicators, such as data throughput, access time and success rate can be recorded simultaneously with the full radio network information.

All services are supported in a single product, Nemo Outdoor, providing an easy-to-use, consistent interface for configuring the different applications. Different applications, such as voice, SMS and packet-switched data can be launched in one measurement session to simulate end-user behavior.

For example, MMS testing allows you to monitor how multimedia messages are transferred in the network. MMS messages can be sent manually and with scripts. In addition to successfully sent/received MMS messages, also sending/receiving attempts and sending/receiving failures are recorded enabling statistical success rate calculations. Nemo Outdoor measures total MMS sending delay. Also separate delays from attach, PDP context activation, logging to MMSC, and message sending/receiving are recorded.

The *end-to-end SMS and MMS application testing* in Nemo Outdoor adds to the extensive testing portfolio. Nemo Outdoor attaches a unique identifier to the messages, which enables the Nemo post-processing tool Nemo Analyze to recognize each individual message, and to calculate the time it took for the message to reach its destination from the time of sending.

BENCHMARKING

Nemo Outdoor prides itself on its impressive benchmarking solutions Nemo Outdoor Multi and Nemo Outdoor Multi Lite. Nemo Outdoor Multi and Multi Lite benchmarking measurements can be performed on **any combination of networks and system technologies** ranging from GSM, WCDMA, 1XEV-DO, and TD-SCDMA to HSPA+, WiMAX and LTE. Nemo Outdoor allows **six simultaneous voice measurements**, and thanks to Nemo Outdoor's Multi Data functionality **up to five concurrent data measurements to be performed simultaneously** (Patented). In addition, it is possible to perform **up to six concurrent voice quality measurements** with Nemo Outdoor Multi, and six voice quality measurements with the Nemo Outdoor Multi Lite option. The network, system technology and measurement mode options also present endless possibilities for combination.

As many as **seven test devices can be connected with Nemo Outdoor at once**, including Nokia, Motorola, and Qualcomm-based terminals, as well as scanning receivers from Anritsu, PCTEL, DRT and Rohde & Schwarz. What is more, they are all conveniently connected to the same Nemo Outdoor platform running on a **single laptop**. Furthermore, combined with Nemo Server, it is also possible to carry out **long-term network performance measurements**.



Nemo Outdoor Multi comes with or without the carrying case



Nemo Outdoor Multi Lite in compact and lightweight casing

All test devices can be connected to Nemo Outdoor Multi and Multi Lite through an onboard USB port while conveniently sharing a car's +12VDC power output. The Nemo Outdoor Multi and Multi Lite units include a built-in 2,500 mAh battery pack which makes it possible to continue measurements also during short power failures. With the high-quality Neutrik USB connectors and the professional lockable USB data cable connection the systems are extremely reliable to use, preventing loose connections between test devices and the main unit. In addition, the fixed holders in the Multi and Multi Lite casings secure the stability of the test terminals.

Nemo Outdoor Multi can also be delivered with an optional tough roll-around carrying case. The system is by default delivered with a car-mounting kit that allows the unit to be semi-permanently mounted into a test vehicle. The Multi system also includes a DC to AC pure sine wave power inverter to supply power for the laptop.

Nemo Outdoor Multi Lite comes in a high quality, ruggedized case which gives maximum protection for the Nemo drive test tool. The compact size of the casing can be taken inside most airlines' aircrafts as carry-on luggage.

	Nemo Outdoor Multi Lite	Nemo Outdoor Multi
Max. number of terminals	6	6
Max. number of scanners	1 external	1 internal
Max. number of voice quality terminals	6	6
Pure sine wave inverter (300W)	No	Yes
Exterior dimensions	50.2 x 40 x 18.8 cm (19.78" x 15.77" x 7.41")	60.4 x 51.0 x 24.6 cm (24.1 x 20.3 x 9.8")
Interior dimensions	45.9 x 32.7 x 17.1 cm (18.06" x 12.89" x 6.72")	55.3 x 45.2 x 20.8 cm (21.9 x 18.0 x 8.4")
Weight (fully loaded)	~10.3kg (22.7lbs)	~25kg (55lbs)
Carry-on luggage	Yes *	No
Back-up battery (Li-ion 2500mAh) / charger	Yes	Yes
Industrial USB 2.0 hub, Digi Hubport 7C	Yes	Yes
Complies with 300 019-2-5 V3.0.0 class T5.1 standard vibration test	Yes	Yes
EMC test directive 95/54/EC, ECE regulation No 10/02 and ISO 7637-2 III		

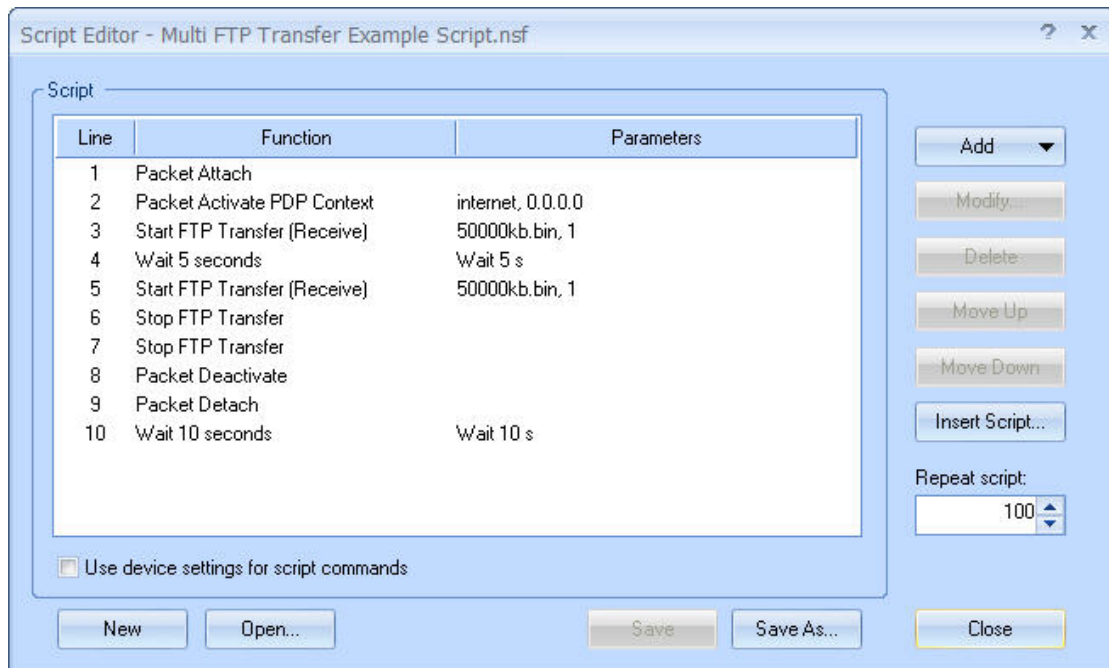
Electrical parts between Nemo Outdoor Multi Lite and Nemo Outdoor Multi are identical including USB hub, PCB, charger, back-up battery, and the TerraTec sound card

* Max. allowance varies depending on airlines

SCRIPTS AND MEASUREMENT LISTS

In Nemo Outdoor measurement *automatization* is enhanced through scripting. By creating and editing script files with Nemo Outdoor's built-in script editor, Nemo Outdoor makes voice and video calls, HTTP/FTP packet data uploads/downloads, HTML/WAP browsing, SMS/MMS messages, emails, and ping measurements according to the user's needs and purposes.

The more advanced scripting features include loops, conditions and waits. The Condition script command can be used, for instance, to create scripts where the type of the detected packet technology determines how the script proceeds. The Loop script command enables scripts where a portion of the script is repeated a number of times before proceeding with the rest of the script. With the Wait script command, the user can create scripts that are not activated before a certain system or bandwidth is active.

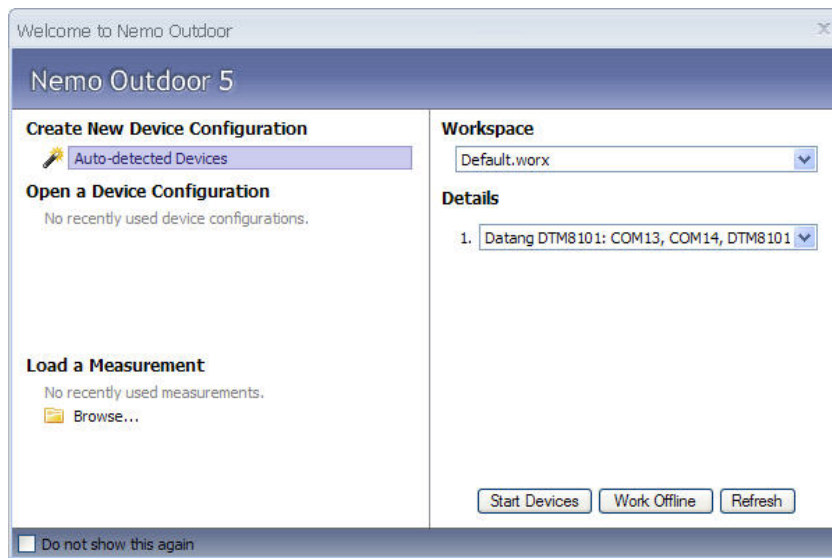


Nemo Outdoor comes with several script examples

Measurement lists are one level higher individual scripts, enabling even larger-scale measurement campaigns for increasing measurement automatization. Measurement lists enable you to run automated measurements with several devices combining multiple scripts. What is more, you can use measurement lists with just one device to run several scripts one after another. However, each measurement is recorded in a separate file. You can also use measurement lists without scripts.

AUTOMATIC DEVICE DETECTION

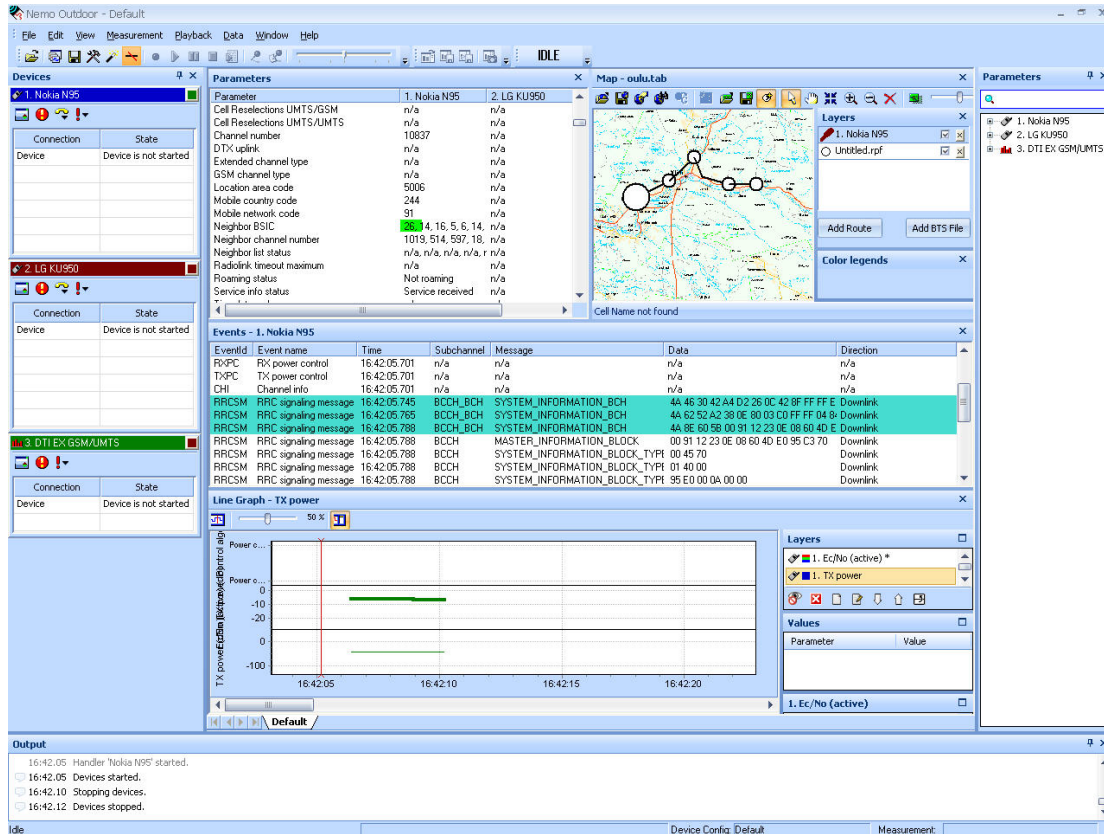
Nemo Outdoor has a flexible and user-friendly user interface which allows users from different levels of experience to have an *easy and smooth access to the system*. The automatic device detection functionality, accessed both through the Welcome page and the menu bar, automatically detects devices connected to the PC and assigns the appropriate, previously created COM port and dial-up information to them. The order of added devices can also be determined by the user, and the user can set the devices to start automatically upon setup. The benefits of this function include, for example, that the reassignment of COM ports to the devices will no longer cause confusion for the user. In addition, the user does not need to spend time on manually going through the procedure, saving valuable time and optimizing the experience of the easy and intuitive use of Nemo Outdoor.



The automatic device detection functionality makes Nemo Outdoor easy to set up and use

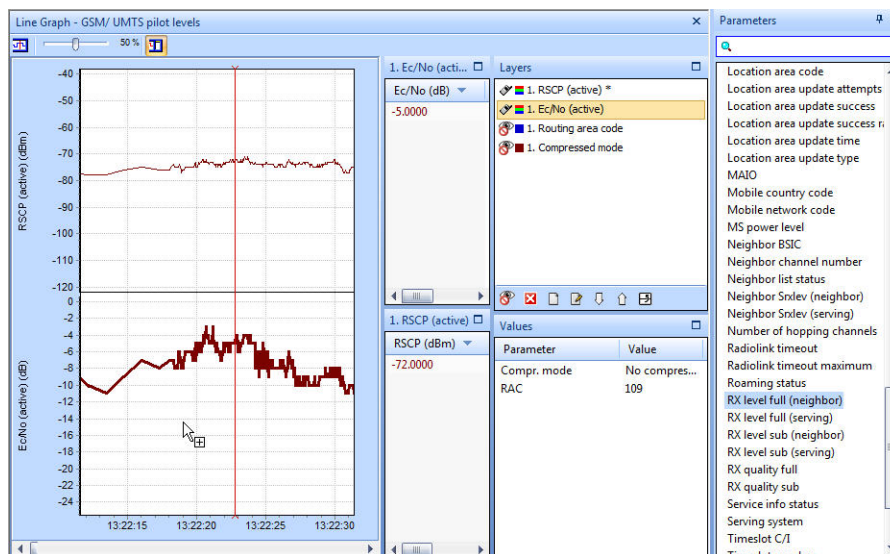
DATA VIEWS AND USER INTERFACE

Nemo Outdoor's flexibility is best displayed and experienced through its class-leading user interface. It is arranged into control and data windows which can further be arranged and adjusted depending on the user needs.



The Nemo Outdoor user interface is extremely flexible

The drag and drop functionality in Nemo Outdoor is one example of convenient organization possibilities in the Nemo Outdoor user interface.



You can drag and drop parameters in graphs, grids, and maps

The Nemo Outdoor user interface is compatible with common Windows® standards. During measurement, users can easily monitor the results and the progress of the measurement process. Through the Nemo Outdoor main window users will easily access all relevant functions. After the initial device setups and configurations the user can save all device-related settings to a hardware configuration file and load the same configuration later on.

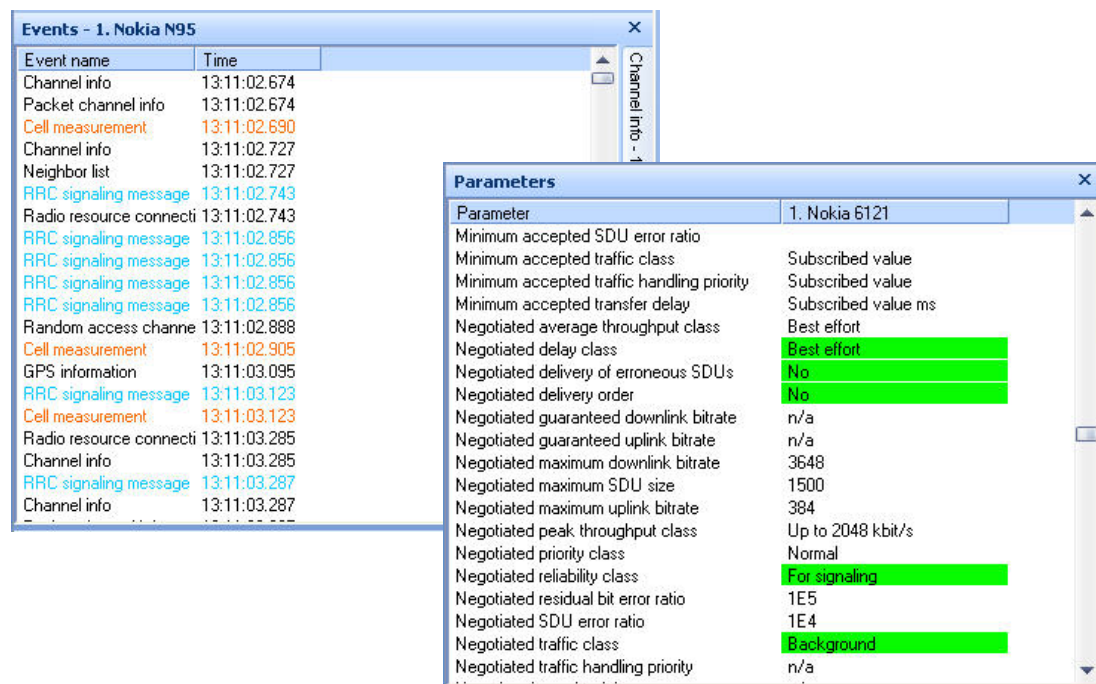
The Nemo Outdoor user interface is first and foremost flexible and organizable to suit each user's specific needs. **Measurement windows** display useful information during the measurement process and during playback. **View groups** allow the organization of measurement windows into different tabs for easier viewing. This is especially useful when there are several graphs and maps open at once in the Nemo Outdoor main window.

Nemo Outdoor offers several methods for viewing measurement results. With graphs the user is able to view any parameter, and the **multi-layer capability of Nemo Outdoor makes it possible to view multiple results in a single graph**. However, **line graphs** are best suited for viewing parameters for which historical (past) values need to be seen, such as serving cell RSSI value. Vertical and horizontal **bar graphs** work especially well with multiple parameters which need to be compared with each other, e.g., RSSI levels for neighboring cells. You can also **configure graph colors** based on the parameter value, or using fixed or algorithmic color sets.



Different graph types in Nemo Outdoor

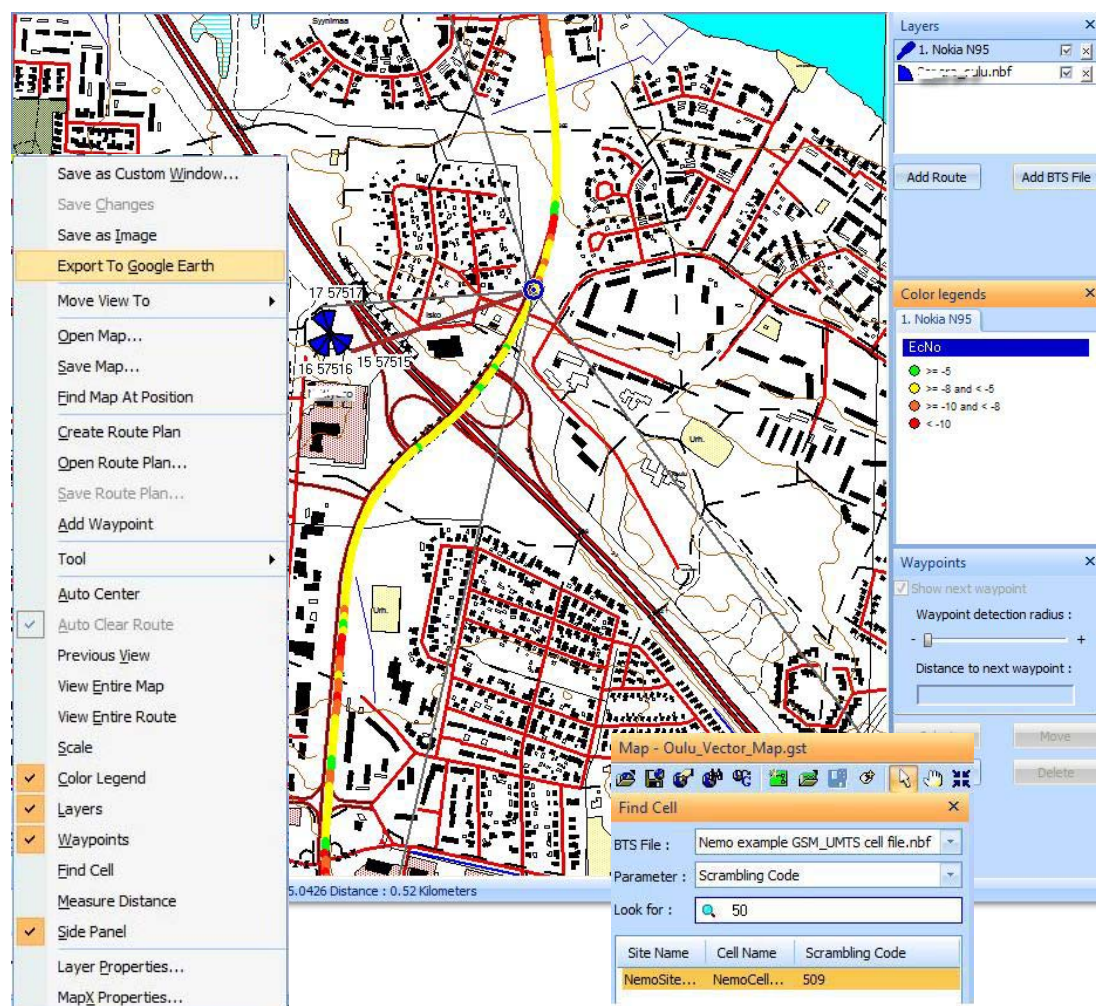
Grids offer more detailed information on the measurement data. **Events grids** list, by default, all measurement events and messages, but the user can configure the view so that only events that are of special interest are displayed. **Parameters grids** display selected network parameters. **Table grids** provide an easy way of simultaneously displaying the same parameter values for multiple instances. For example, the neighbor list of a serving cell can be displayed in a table grid so that each row represents one neighbor and each column represents a parameter value (e.g., system, carrier, scrambling code, etc.). **Packet decoder grids** enable you to view and decode packet capture information on data transfers in playback mode.



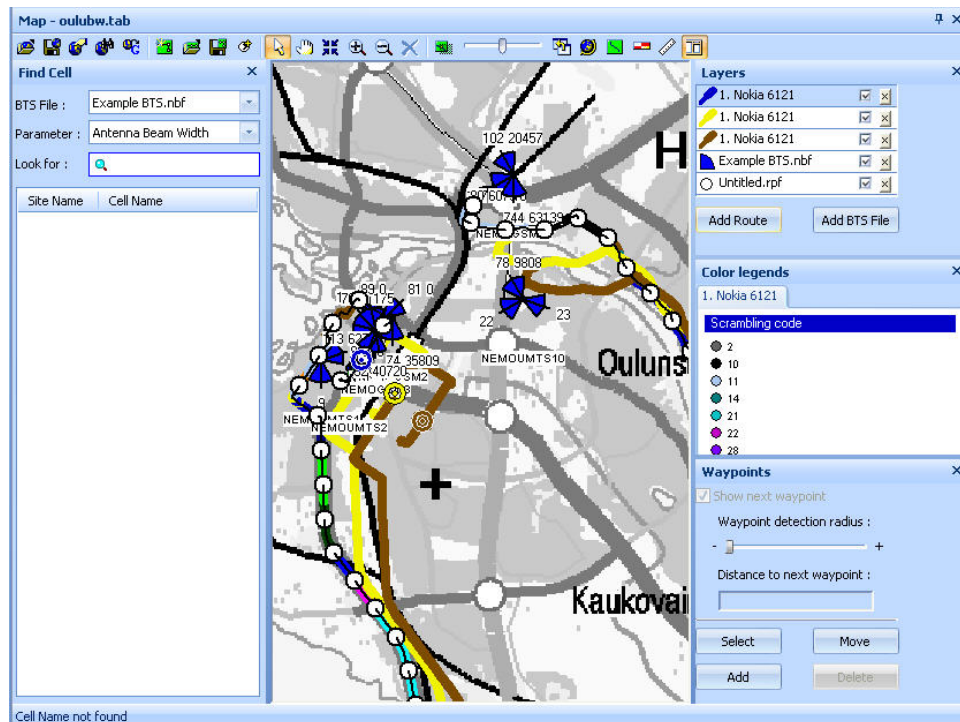
Furthermore, it is possible to copy grid data, such as signaling messages, and export (paste) the data to MS Excel, MS Word, etc. for further analysis. Signaling data can be copied in non-decoded or in decoded format. You can also save the event grid as an image or text file, or export event grid data into CSV and MapInfo .tab format, and export and import user parameters that are decoded from signaling messages.

The **User Parameters** function offers more options for advanced users. Any user-defined string can be searched from decoded messages. The function retrieves the value following the searched string and displays it in the info view and in the graph side panel. To avoid losing these user-defined parameters when updating Nemo Outdoor, it is possible to save them in an .xml configuration file, *Parameters.xml*.

Maps on Nemo Outdoor provide the user with a better understanding of the measurement route and results through visualization. When Nemo Outdoor is used with a GPS receiver and positioning coordinates are collected, the measurement route is drawn on a map and the user can easily correlate events to location coordinates. Nemo Outdoor offers **parameter-based route coloring**, which means that users can observe the values of certain network parameters from the route coloring on the map. Users can define which color refers to which parameter value. This way it is easy to spot the problem areas on a map. To make analysis even simpler, the same route can be drawn several times on the map and different route coloring can be applied to each of them. Also certain events can be shown as icons on the map.



Nemo Outdoor maps can be exported to Google Earth



On a map you can view, for example, base station icons and a route plan

Nemo Outdoor maps can also display a base station overlay. With a user-defined BTS file, the map shows the location of each base station, the defined antennas with antenna directions, and even antenna apertures and cell identifying parameters. During drive testing or playback, a line connecting the current location to the serving and/or neighbor cell (sector) will be drawn automatically (in CDMA systems, even multiple lines can be drawn to active sectors). This provides a highly visual impression of the network operation. For example, it can be instantly seen if a call is connected to a non-optimal cell. Also missing neighbors can be viewed on a map.

Nemo Outdoor supports MapInfo® raster and vector maps. It also supports MapX Geoset files (.gst) which enable the user to open several layers on a map and then save them all in a .gst file to be opened later on. All user-defined map settings, such as, the order of the different map layers and the zoom factor are stored in the .gst file. Nemo Outdoor maps can also be exported to [Google Earth](#) maps.

DECODING

In events and messages grids, the data can be analyzed even more in-depth by **decoding** the individual events and messages simply by double-clicking the event in question. The user can define both the background and text color in event and message grids. This color coding can be done based on a certain message, sub channel or decoded message.

NOTIFICATIONS

Notifications enable the user to add another dimension to the measurement process. Audio prompts help the user during drive testing to immediately notice when something special happens. Nemo Outdoor can be configured to play audio notifications or voice prompts whenever a certain event occurs. The voice prompts are Windows .wav files, and in Nemo Outdoor both female and male default notification sounds are available. However, you can record and use your own voice notifications instead of the default files as well. Custom notifications can also prove useful when creating a script file. For example, the user can set a video call to start only when it is supported by a cellular technology.

NEMO OPEN FILE FORMAT

Nemo Outdoor produces measurement files in an open ASCII file format. Files can be directly utilized in Nemo Analyze as well as in various third party post-processing/analysis tools. This is accomplished without any separate conversion or parsing of the files. Furthermore, measurement files from multiple test drives can be opened in Nemo Analyze as individual files and shown side by side, delta plotted, or used with statistical quality survey report generator without the trouble of combining all measurements into one big and cumbersome file.

A detailed description of the file format is included in the Nemo Analyze product documentation. The file format description contains all recorded events and the related parameters.

NEMO TOOLS

In addition to Nemo Outdoor, Anite Finland Ltd. offers a comprehensive range of tools and software for measuring and analyzing wireless networks for *cost-effectiveness* and *optimal network performance*.

- Nemo Analyze™** Nemo Analyze™ is a powerful and versatile, cutting-edge analysis tool for performing benchmarking, troubleshooting and statistical reporting based on drive test data. The system scales from a standalone tool to an enterprise-level client/server solution and incorporates an innovative, low-maintenance database engine that has been designed and optimized specifically for high-performance post-processing of drive test data.
- Nemo Autonomous™** Nemo Autonomous is a cutting-edge solution for automated large-scale measurements of the air interface of GSM, GPRS, EDGE, WCDMA, and HSDPA wireless networks. With Nemo Autonomous the measurement, troubleshooting, statistical reporting, analysis and benchmarking of networks is made easier, more extensive and cost efficient.
- Nemo Compact-i™** Nemo Compact-i, the first and trendsetting Ultra Mobile PC-type measurement device on the market, broadens the Nemo handheld measurement tool palette to support the CDMA/EV-DO and HSDPA networks. Intelligent and compact computing performance introduced in a package that fits in your pocket.
- Nemo Handy™** Nemo Handy is a lightweight, Symbian-based air interface measurement tool for GSM, GPRS, EDGE, WCDMA, HSDPA, HSUPA and Wi-Fi 802.11 b/g wireless networks.

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