

[PRODUCT SHEET]

Product: QVOICE SMART

Versatile pocket sized 'Measurement Platform' for radio engineers – and even non technical staff

Provided on Nokia N95 mobile phone

Check it out on www.qvoice.com/smart



QVOICE SMART A COMPLETE MEASUREMENT SYSTEM IN YOUR HAND

QVoice Smart is a versatile pocket sized 'Measurement Platform' that engineers – and even non technical staff – can very easily carry and have in hand to make network measurements whenever and wherever the need arises. Measurements can be viewed on the screen in real time, or the fully-computable compressed data files can be automatically transferred to your office for in-depth analysis and statistics reporting. Two data analysis systems are available: Top-of-the-line is QVoice Presentation, a client-server based architecture, with extensive database handling functionality. Or the same processing software can be supplied for notebook use as QVoice Field Analyzer.

QVoice Smart is available in two practical versions:

QVoice Smart Passive

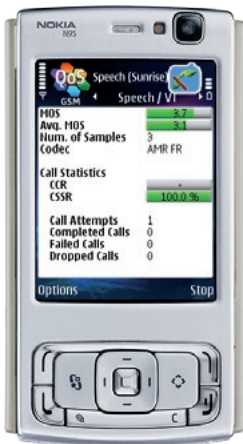
provides users with engineering trace records along with the benefit of real time visualization of the measured data on the display screen. Users can set-up any desired connection such as speech calls or video telephony, exactly as a subscriber would. The important radio trace and layer 3 information is then recorded during the connection sequence.

QVoice Smart QoS

This version has the same trace functionality as QVoice Smart Passive, but comes equipped with additional automatic mobile application tests including speech quality MOS and mobile IP Data Tests (FTP, HTTP, PING, etc.) and SMS/MMS.

QVoice Smart Remote

This adds remote control functionality to the above versions. QVoice Smart units can be configured to execute scheduled measurement tasks through the web-based QVoice Fleet Manager. A robust housing is available to protect the units when operated fully unattended.



Example of
Speech Quality
Display



Example of
User Defined Line
Chart



Example of
Indoor Map

QVoice Smart Features

A compact, light weight, robust, pocket sized measurement application running on Nokia N95 devices, enabling tests of GPRS/EDGE/WCDMA and HSDPA networks in almost any location.

The QoS version, offers automated execution of user controlled pre-programmed scripts. For example HTTP test - pause - FTP test - pause - PING test. This feature is especially valuable when a non technical person is sent out to take network measurements.

QVoice Smart has flexibility where different network technologies are involved. The same FTP tests, for example, can be run over GPRS, EDGE, WCDMA and HSDPA.

A 'Passive Monitoring' mode available in both versions, allows QVoice Smart to be used as a normal subscriber mobile phone. While in use, air interface trace and layer 3 messages are still being recorded.

The Smart phone screen with some unique GUI/MMI functionality was specifically designed to give users the best access to measured results. An example are user definable charts, where the user can select virtually any combination of numerical values for display in a line chart.

Replaying the measured data on QVoice Smart enables on-site trouble shooting without the need of a laptop computer.

User markers can be inserted making it easy to identify special events during post-processing, aiding in the analysis and understanding of the situation.

Mobile application protocol stacks are applied in QVoice Smart which deliver an accurate, subscriber view' of QoS measurements and network performance. The most popular test parameters include real speech quality (MOS), drop call rates, failed call rates, FTP, WAP and HTTP throughputs, PING delays as well as delivery times and success rates for SMS and MMS.

The engineering perspective is also assessed and covers data ranging from signal level, signal quality and interference to serving/neighbour cells and layer 3 messages and RF configuration parameters. This information is essential for effective trouble shooting and network optimization.

The trouble shooting capabilities of QVoice Smart are completed with a versatile set of forcing functions.

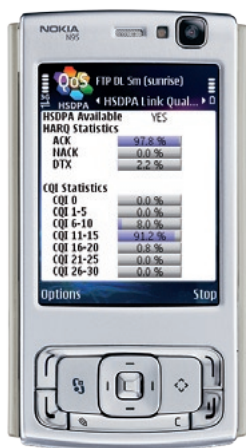
The built-in GPS can be used in conjunction with QVoice Smart to give accurate position information.

For indoor testing, floor plans can be loaded during measurement. Position markers which are being set are available together with the floor plan in QVP for post-processing.

Optionally the measurement data files are automatically uploaded to a FTP server upon completion of the test sequence.

Measured QoS KPIs

	Service Accessibility		Service Integrity	Service Retainability
	Access Time	Access Success Rate		
Speech	Yes	Yes	MOS	Drop Rate
Video Telephony	Yes	Yes	-	Drop Rate
FTP DL/UL	Yes	Yes	Application & IP Throughput	Cut-Off Rate
HTTP	Yes	Yes	Application & IP Throughput	Cut-Off Rate
WAP	Yes	Yes	Application & IP Throughput	Cut-Off Rate
PING	Yes	Yes	Round Trip Time	Failure Rate
SMS	Yes	Yes	Send/Retrieve and End-To-End Time	End-To-End Success Rate
MMS	Yes	Yes	Send/Retrieve and End-To-End Time	End-To-End Success Rate



Example of HSDPA Link Quality Display

Technical Specifications Nokia N95

- EGSM/GSM 850/900/1800/1900 MHz
- WCDMA 2100 MHz
- HSDPA Cat. 6 (3.6Mbps)
- WCDMA
 - PS 384/384 kbps
 - CS Transparent 64kbps (Video Telephony)
 - Multi RAB
- GPRS/EDGE Multislot Class 32:
 - Timeslots 5+1, 3+3
- DTM Multislot Class 11:
 - Timeslots 4+1, 2+3
- Speech Codecs:
 - EFR, FR, HR
 - AMR FR, AMR HR
 - WCDMA AMR
- 3GPP Releases:
 - GERAN 3GPP Rel. 99 (+ GERAN Feature Pack 1)
 - UTRAN 3GPP Rel. 5
 - Core 3GPP Rel. 5



Smart Keeper

Technical Specifications Smart Keeper

- 12 VDC Power Supply
- GPS Module
- Antenna Connector for GSM/WCDMA and GPS
- Hardware Watchdog
- 4-step SIM Switch
- Theft Protection

Features Overview

- GSM/GPRS/EDGE/WCDMA and HSDPA
- Speech, VT, FTP, HTTP, WAP, PING, SMS and MMS Testing
- Radio Interface Trace incl. Layer 3 Signalling
- Automatic Test Sequences (Scripting)
- Non-Referenced Speech MOS Algorithm (based on ITU-T P.563)
- Measurement Data Replay on Handset
- Indoor Maps
- User Definable Line Charts
- User Definable Markers
- Forcing Functions (System, GSM Band, Cell Lock, Override Cell Barring)
- Passive Monitoring Mode
- Automatic or Manual Wireless File Transfer
- Internal or External GPS