Echo Plus – Technical Overview

Advanced mobile network measurement solution

Enhancell Echo mobile network measuring tools run directly on your handset. They are designed for PC-less drive and walk surveys.

With Echo you do not need custom test devices and firmware. This means that you can be assured to see the network exactly as your customers see it.

Having Echo run on commercial phones not only saves you from spending on expensive custom hardware but also allows you to easily transfer licenses from one phone to another.

Automatic software updates guarantee that you are always running the latest software.

Echo Plus

Echo Plus introduces new methods of enabling users conducting surveys and optimizing equipment. It enables the user to control several different Echo devices simultaneously in real time. Only one set of measurement configurations is needed which adds to the efficiency of performing measurements.

Echo Plus includes features such as Remote Start and Logging, Location Ping, Cloud based logging, and Transferable Licensing. With Echo Plus, you can perform multinetwork and service testing with ease. Automatic device discovery makes setting up measurements a breeze.

Echo Plus is a software-only product, and its licensing is delivered via the Cloud service. This cloud-based solution is completely independent of physical production chains. Thus, the deliveries and manufacturing capabilities are stable, swift, and flexible.

Full 5G support

Echo Plus supports measurement for a wide range of 5G parameters ensuring the full advantages of 5G measurement for the users.

Tablet independent

Echo Plus application supports Android 4.3 and newer and Qualcomm chipsets. In addition, Echo Plus does not require a custom ROM, only a free-of-charge community root. Thus, Echo Plus supports a large variety of off-the-shelf tablets and the user has an immediate support for new tablets. Echo Plus supports measurement for technologies including GSM, CDMA, EVDO, WCDMA, HSDPA, HSUPA, HSPA+, LTE/LTE-A, 5G, Wi-Fi and Bluetooth.
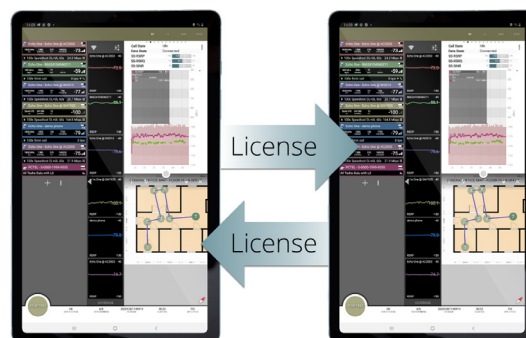
Key benefits

Unparalleled flexibility on license

Echo offers unparalleled flexibility and cost-effectiveness with licenses: all technology functions are included by default and the license transfer is standard from handset to handset.

We support multiple chipset vendors with one universal license. This gives our customers unparalleled advantage when it comes to selecting or upgrading their test devices: no additional costs for a new license! The same license can even be used in tablets with different chipsets.

Echo's cloud-based licensing guarantees the user full control over license transfers, and a real-time view of license usage. To add to the flexibility, both perpetual and rental licenses are available.
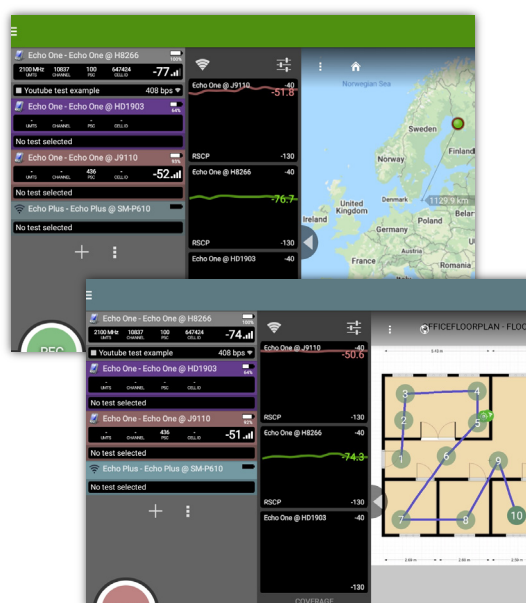
Indoor and outdoor maps

Echo Plus includes support for indoor and outdoor mapping and an offline mode map data caching for outdoor maps.

Echo Plus supports digital images and photos of the floor plan taken with the device as indoor maps. Indoor floor plans include markers and geodetic coordinates (support e.g. for iBwave format). This enables geocoding indoor floor plans on top of Google Maps.

Echo Plus supports Google Maps, OpenStreetMap and ÖPNVKarte as outdoor maps. The positioning of a measurement is based on GPS location. Echo Plus supports both internal GPS and external GPS via Bluetooth. The drive route can be visualized on a map as color-coded parameter values in real-time.
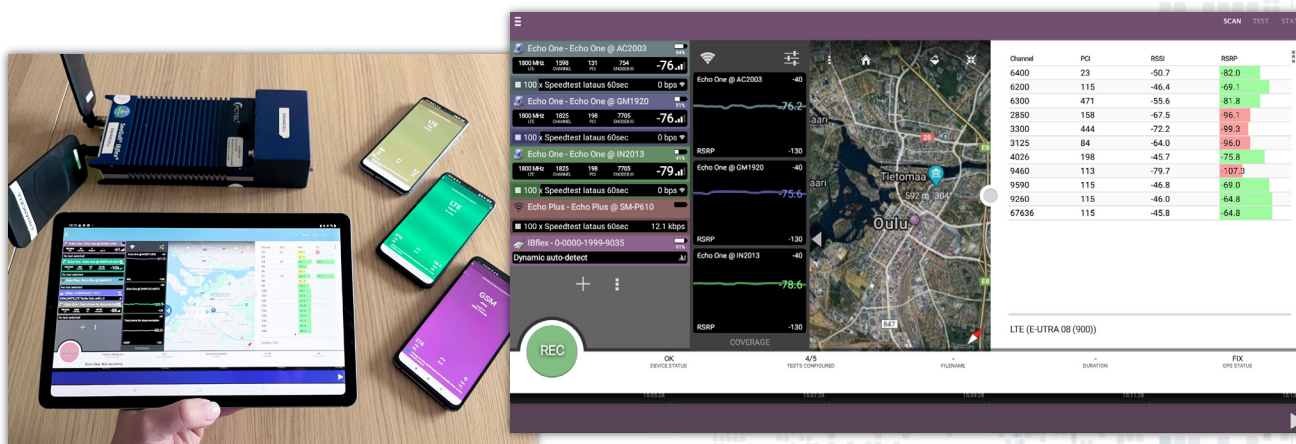
OTT application testing

Echo Plus supports several built-in application testing options. Echo enables the user to test a wide range of applications individually and with scripts.
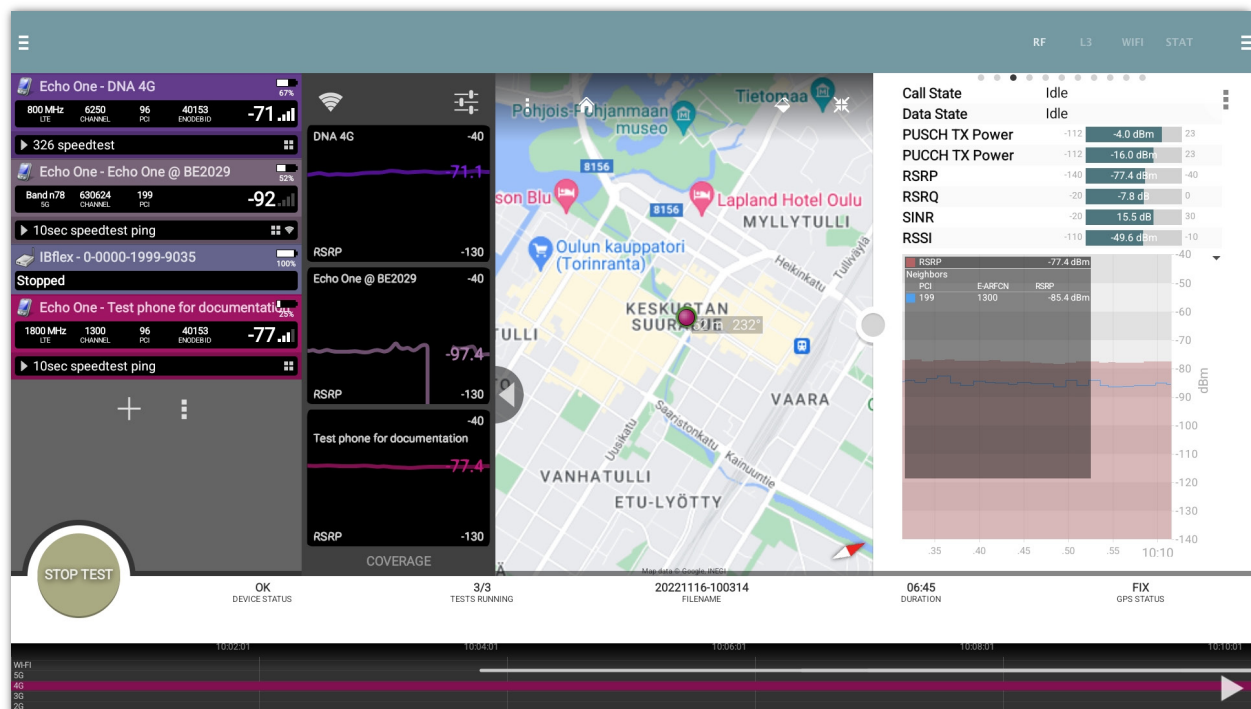
Support for scanners

Echo Plus supports PCTel IBflex®, PCTel HBflex®, PCTel Gflex®, and DRT 4311B scanners, as well as RF Explorer. Scanners can be connected via Bluetooth and RF Explorer via USB OTG cable. All scanning results are displayed on the connected tablet.

Key Features

- Android and Harmony OS supported application supporting Android 4.3 and newer, and Harmony OS
- Capability to control simultaneously several Echo devices and a scanner.
- Connected devices in alphabetical order
- Supports GSM, CDMA, EVDO, WCDMA, HSDPA, HSUPA, HSPA+, LTE/LTE-A, 5G, Wi-Fi and Bluetooth measurement
- Support for Echo Cloud
  - Settings configuration from Cloud
  - License management
  - Automatic log file transfer to Cloud
  - Test and Script synchronization with Cloud
  - Measurement, Script, and Reboot scheduler
  - Indoor map synchronization with Cloud
  - Customized view sharing via Cloud
- Idle and Active testing using manual or scripted mode for voice call, voice quality, FTP, SFTP and HTTP data transfers, iPerf, HTML browsing, YouTube video streaming testing, SMS testing, traceroute testing, ping testing, and two-way ping (TWAMP) testing
- Manual and Scripted tests can be created and modified with built-in script editor in Echo, or in Cloud, from which tests are automatically synchronized to devices
- Option to set scripted tests in parallel
- Support for Google ViSQOL: an objective speech quality model for voice quality testing
- Support for POLQA v3 voice quality testing real-time MOS calculation (optional)
- System lock, band lock, LTE cell lock, and carrier lock (UMTS). (Device-dependent feature.)

- Improved locking function allowing phone forcing without rebooting the device and improved UI for selecting locking
- Phone locking controlled from Echo Studio. Indicator displaying locking status of the phone
- Remote control via Cloud for automated/remote test execution
- Real-time statistics view for monitoring test progress
- Signaling decoder for L3 and RRC signaling messages for signaling decode in real-time. Supports the following view types: line, bar, gauge graphs, and text views
- Layer3: updated RRC decoder for the release 15 with full support for 5G signaling decoding
- User-defined views allowing parameter display in the following view types: line, bar, and text views
- Timeline to replay and pause measurement displays while making measurements and to view test progress in relation to time
- Support for indoor and outdoor mapping. Including offline mode map data caching for outdoor maps
- Indoor floor plans with markers and geodetic coordinates (support e.g. for iBwave format). Enables geocoding indoor floor plans on top of Google Maps
- Automatic deletion of 30-day idle indoor maps
- Support for internal and external GPS via Bluetooth
- Support for PCTel IBflex®, PCTel HBflex®, PCTel Gflex®, DRT 4311B and EPIQ scanners, and RF Explorer. Connected via Bluetooth and RF Explorer via USB OTG cable
- Full support for 5G scanner measurements using PCTel scanners

Echo Cloud

Echo Plus includes the Cloud feature which gives you unparalleled control of your Echo devices from a remote location. Cloud enables:

– Store your log files automatically after recording
– Access measurements easily
– Download your measurements in a multitude of formats
– Configure and reboot Echo devices remotely
– Manage users and licenses
– Two-factor authentication for extra security
– Option to have dedicated private Cloud server in customer's desired geolocation*
– Real-time measurement and test execution control and real-time view of the measurement and key KPIs in Cloud UI

Create and tweak your tests in Cloud. You can access them whenever you want – you can even send test configurations directly to your Echo handheld device.
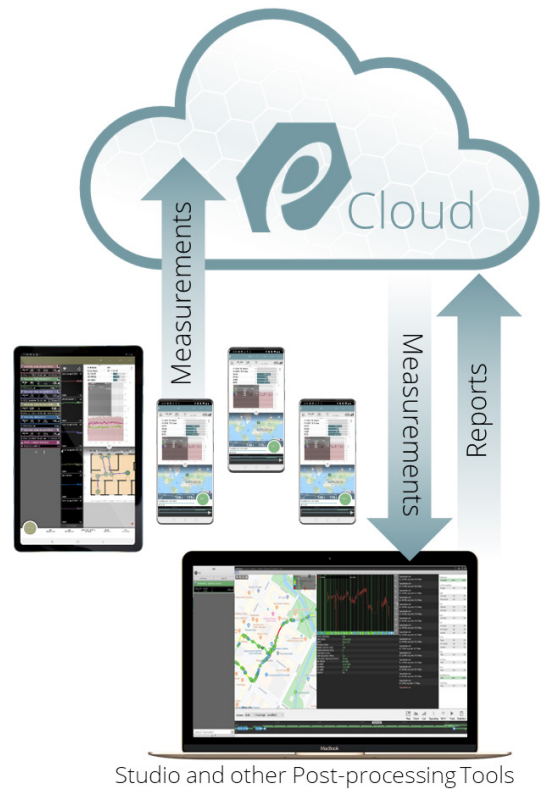
*For more details on the private Cloud server pricing, please contact Enhancell sales.

Studio and other Post-processing Tools

Echo Advantages

– Fully automated update via Cloud ensures that your software is always up to date
– Unique subscription-based pricing allows you to only pay for the licenses you need when you need them.
– Remote configuration via Cloud allows easy control of your Echo fleet
– Log file storage and export in Cloud allows you to make the most out of your data

Data post-processing

Measurement data can be exported directly from Echo devices to Cloud when they are connected. The data can be exported further from Cloud to Echo Studio or any other compliant 3rd party data post-processing software.

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