Network Cell Info

by WiLysis, Inc.  http://wilysis.com

Manual v.3

(!) The free Lite app doesn’t have all the features listed here.

(!) “Pro” features are available only in the Pro Subscription, of the paid app.

http://wilysis.com/networkcellinfo/

Wilysis, Inc. (wilysis.com)
Quick Links

✓ Features comparison: http://goo.gl/8A7PSX

✓ BETA (paid/pro), when available: https://goo.gl/pYWYe9 (lite: https://goo.gl/5XTzON )


✓ FAQ: https://goo.gl/EhDDVx (also FAQ inside app settings / about)

✓ Common measurements database formats: https://goo.gl/jbZKAs

✓ Pro subscription measurements database formats: https://goo.gl/rvpRQf

✓ Phone issues: http://goo.gl/Hy0dx5

✓ Dual SIM issues: Make sure you enable it in the app settings, http://goo.gl/o0SC6j

✓ APP site: http://wilysis.com/networkcellinfo/


Main Common Features

✓ Almost Real-Time (1 sec.) monitoring of cellular and WiFi signals, in Gauge/Raw Tabs (*)
✓ GSM, CDMA, UMTS (WCDMA), IWLAN, LTE, LTE+ support
✓ Dual SIM support (*)
✓ Signal-meter gauges for both SIMs and WiFi (*)
✓ SIM# preference option, for other than Gauge tab
✓ Map with network cellular info and signal-meter gauges
✓ Indication of cell locations (not cell towers) in the Map from Mozilla Location Service (MLS), excl. cdma (*)
✓ Route coloring (in the Map) according to the signal strength, and map markers with location and signal info
✓ Logs, Measurements of cellular signals
✓ Measurements settings (minimum distance, minimum accuracy, motion sensor, etc.)
✓ Database export measurements in KML 2.2, MLS Geosubmit v.2, CLF v.3, OpenCellID csv, CMWF database types
✓ Network information in Status Bar
✓ Sound notifications (on system, cell id changes)
✓ Raw view of network cellular info
✓ Raw zoom view of network cellular info (serving cell only)
✓ Connection statistics
✓ SIM and device info
✓ Tabs: select visible tabs
✓ Map view settings (Normal, Satellite, Terrain, Hybrid)
✓ Gauge tab: option to show only 1 SIM, or 2 SIMs (plus or w/o WiFi)
✓ Raw tab: Maximum neighbor cells to show setting, show 0-ASU cells setting

(*) Notes:
• Data accuracy is dependent on device implementation of Android APIs. Not all manufacturers/devices implement fully/correctly Android APIs.
• For Android < 5.0, Dual SIM is not supported for non-MediaTek devices, due to Android/device limitation.
• You may use Mozilla Stumbler app, to update the Mozilla MLS database in your area.
# Features’ Comparison

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<td>Compact Cell Raw View (1-row per cell)</td>
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</tbody>
</table>

(*) Notes:
- Data accuracy is dependent on device implementation of Android APIs. Not all manufacturers/devices implement fully/correctly Android APIs.
- For Android < 5.0, Dual SIM is not supported for non-Mediatek devices, due to Android/device limitation.
- You may use Mozilla Stumbler app, to update the Mozilla MLS database in your area.
- Low WiFi AP scan period, has diminishing effect on the throughput (Android issue).

(**) xARFCN, Band, Fc, for Android 7+ devices implementing well the corresponding Android API 17+ telephony functions.

(##) If applicable, and assuming the device/manufacturer firmware provides the corresponding functionality to the Android interface.
This is the starting tab showing essential network signal strength and information for the serving cell, as well as the neighbor cells.

The top gauge "Serving Cell" provides the signal strength about the cell you are currently connected to. The other gauges "Neighbor #x" are the signal strengths of the neighbor cells you are most likely to switch to, if you move or if the network judges so.

Additionally this tab provides info on WiFi, and the second SIM of dual SIM (Android 5+) phones (if enabled from the app settings).

(1) App close, App settings, and overflow button for feedback etc.
(2) Available tabs (functionalities)
(3) Signal level, Wireless network type, and Network provider name
(4) SDR: Service Status, Mobile Data and Roaming ON/OFF indications
(5) Signal Strength Gauge and Signal Strength and Quality "LCDs"
(6) Serving cell identification details
(7) Neighbor cell gauges, Band info
(8) Tapping on individual gauge you can turn it off (CPU easing)
(9) WiFi signals information

Note: If some field shows “-” or is empty, it means that Device/Android doesn’t provide that info.

Note: You can find all the acronyms, under the app settings / about / FAQ.
Gauge Tab (2/2)

(1) SIM1 cells’ information

(2) SIM2 cells’ information ** (for dual SIM phones with Android > 5)

(3) WiFi network information

(4) Band information (only for Android 7)

Note: Band info is available only in Android 7 devices (that implement well the Android interface); Android introduced this feature in Android 7 Release.

Note: You can click any gauge to turn it off, to save CPU power.

** Dual SIM functionality is available in Android 5+ devices or in devices with Android 4.2+ having MediaTek processor. This is Android/Device limitation.
Raw tab, provides detailed info on the wireless connection.

1. “Data:” shows whether Mobile or WiFi data are used.

2. This Row shows the current connection info/status [Hint: You can “click” on this row for a more abstract view]

3. This Row shows the serving cell connection status.

4. This and the subsequent rows show the neighbor cells status.

Note: If some field shows “-” or is empty, it means that Device/Android doesn’t provide that info.
Raw Tab ("Pro" only)

This tab shows the Raw Tab in the "Pro" Subscription.

If you have purchased the "Pro" subscription, you can get to this view,

either by long click in one cell entry (preferred), on the normal Raw Tab view,

either by going to app settings -> raw tab -> Pro - Cell list view options -> Compact

Note: In this examples SIM2 shows first, as we have changed it to:
App settings -> General -> SIM# preference -> SIM2
Plot Tab

This tab shows the evolution of the signal strengths of serving and neighbor cells over time, allowing for better network quality exploration, especially when moving.

(1) Y-axis : Signal strength in dBm

(2) X-axis : Time

(3) Plot legends (colors) for Serving (S) and Neighbor (N#) Cells

(4) Signal Strength plots over time

(5) Wireless network type, and Network provider name

(6) Serving cell details

(7) Neighbor cell details in order
Plot2 Tab

This tab is plotting signal strength/quality over time, and it is more tailored for the LTE wireless system.

(1) Wireless network type, Serving cell details

(2) LTE RSSNR over time

(3) LTE RSRP over time

(4) LTE RSRQ over time

(5) Time, and Plot legends

Note: You can click on a point in the graph, and it will show the Y-axis value.
Stats Tab

This tab gives essential information on the robustness and coverage of your network. For example you might have a 4G plan, but the network most of the time connects you to a 2G or 3G wireless network.

(1) Connection statistics on each of 2G, 2.5G, 3G, 3.5G, 4G, or 4G+ technologies, when cellular data are ON or OFF, along with the counted number of samples.

(2) Bar graph

(3) Reset button to reset statistics counters

(4) Checkboxes to control the bar graph
Map Tab (1/2)

Tab where measurements are done, and visual location and cell info is provided.

1. App close, App settings, and overflow button for feedback etc.
2. Wireless network type, and Network provider name
3. Serving cell gauge along with cell info
4. Neighbor #1 cell gauge along with cell info
5. Current location Lat, Lon, with location accuracy in m/ft
6. Number of measurements and cell locations, with distance and accuracy settings
7. Speed in km/h or mph (from settings)
8. Current location
9. Serving cell location not tower location (marker has relevant info)

NOTE! We do not show tower locations, but indications of cell locations from Mozilla MLS database. We do not have tower database.

(a) Measurements taken (markers have also relevant info, and the connecting line is according to signal level)
(b) Start/pause updates
(c) Lock (unlock) the cursor in the center
(d) Clear measurement markers and lines
(e) Clear map completely
(f) Save log files (save the database to the device storage)
(g) Zoom in
(h) Zoom out
(i) Move cursor in the center
Map Tab (2/2)

Tab where measurements are done, and visual location and cell info is provided.

NOTE! We do not show tower locations, but indications of cell locations from Mozilla MLS database. We do not have tower database.

(1) Measurements taken (markers have also relevant info - see it by clicking them, and the connecting line is according to signal level)

(2) Serving cell location not tower location (marker has relevant info)

(3) Compass (it appears when you “turn” the map with two fingers)

NOTE: Map is oriented towards North. Initially compass is not visible. You can change orientation by “turning” the map with the fingers, and the compass will then appear on the top left corner.
Device+SIM Tab (1/2)

This Tab provides information about the SIM(s) and the Device.

(1) Hide sensitive data from displaying (in case you want to take a screenshot)

(2) Refresh the data of the Tab

(3) SIM1 information

(4) SIM2 information (for dual SIM phones with Android > 5)

** Dual SIM functionality is available in Android 5+ devices or in devices with Android 4.2+ having MediaTek processor. This is Android/Device limitation.
Device+SIM Tab (2/2)

This Tab provides information about the SIM(s) and the Device.

(1) Device telephony related information

(2) **API17 cell functionality:** It should be Yes to have the full functionality of the app. Unfortunately, not all API17+ devices implement API17 telephony functions, but some implement only API1 functions! For example, a device not implementing API17 telephony functions does not show neighbors nor PCI for the LTE. Also an Android 7 device not implementing API17 telephony functions does not show LTE band.

(3) Device related information
Settings

In the Settings you can control the app functionalities, and also find useful information in the About section, such as FAQ, Privacy Policy (link), Disclaimer (link), Releases history (Log), etc..

(1) General settings: See later slide

(2) WiFi: See later slide

(3) Measurements: See later slide

(4) Database: Select the database type when saving logs in the Map (see more info in the About / FAQ)

(5) Wireless Systems: Set the LTE thresholds type (for signal level)

(6) Gauge Tab: See later slide

(7) Raw: Change the Raw Tab view (see also Raw Tab)

(8) Map: Select the Map type (normal, satellite, etc.)

(9) Tabs: See later slide

(a) Appearance: See later slide

(b) Notifications: See later slide

(c) About: See later slide
Settings - General

Note: Settings with (R) require restarting the application.

(1) Select single or dual SIM mode (for applicable devices)

(2) Select the preferred SIM number (for applicable devices) - this shows first that SIM in the Gauge/Raw tabs, and also it shows that SIM in the Plot/Stats/Map tabs

(3) You may set the signal refresh rate to a higher value if you want to save battery, but the signal strength refreshing will get obviously slower

(4) (5) Shortcuts to the system network settings and system settings

** Dual SIM functionality is available in Android 5+ devices or in devices with Android 4.2+ having MediaTek processor. This is Android/Device limitation.
**Settings - WiFi**

*Note: Settings with (R) require restarting the application.*

Here you can turn off WiFi Gauge.

In addition you can select the scan period (refresh rate) for Access-Points.

*Note: Selecting a small scan period (more frequent scans) it may deteriorate you data throughput (Android limitation).*
Measurements Settings are affecting the measurements taken in the Map tab.

1. Switch to keep measurements updates (in the Map tab) ON even when leaving the Map tab

2. Set the Motion sensor to reduce collecting measurements when there is no device motion

3. Minimum measurements time interval between consecutive measurements

4. Metric or US measurement system

5. Minimum measurements location distance between consecutive measurements

6. Maximum measurements location accuracy required to take a measurement
Network Cell Info has the capability of exporting the measurements taken in different database formats. Exporting happens by pressing the checkmark button in the Map Tab of the app.

In the app, you can choose the database format by going to the app settings -> database.

There are 6 common formats, given in the following link:

**Common measurements database formats:**
https://goo.gl/jbZKAs

There are also other 2 formats available only in the Pro subscription of the paid app, given in the following link:

**Pro subscription measurements database formats:**
https://goo.gl/rvpRQf
Settings - Wireless Systems

Here you can set the:

- LTE RSRP thresholds
- UMTS neighbors dBm interpretation
Settings - Gauge Tab

Here you can set to show in the Gauges:

- CQI/TA or NID (if applicable, by the device)
## Settings - Raw Tab

In this Settings page, you can control some of Raw Tab options:

- Set the view to “default” or “zoom”
- Set the maximum neighbor cells to show
- Show/hide the 0-ASU cells

In addition, there are 2 other settings applicable only to the Pro subscription of the paid app (else they are grayed-out), that allows to see the cell list in “compact” view, and also choose between xARFCN or Fc in the corresponding “compact” column, see slide 8.
Settings - Map Tab

In the Map Tab settings you can modify the view of the Map tab. More specifically, you can:

- Choose the Map type
- View the Gauges inside or outside the Map
- Set the Text background color
- Hide the clear markers buttons (to avoid deleting by mistake the measurements)
Settings - Tabs

In the Tabs Settings you can control which Tabs to be active (visible), and which to hide (saving time and resources).
Settings - Appearance

TODO

In the Appearance Settings, you can control:

The language (for applicable Android versions)

The “LCD” fonts used in the Gauge Tab

The Screen Orientation (Portrait, Landscape, Auto)

The Soft Keys appearance or not (for applicable devices)

Setting the screen always ON

NOTE: We do not recommend setting the Screen orientation to “Auto”, due to higher memory consumption.
In the Notification Settings, you can:

Enable/Disable the Top bar notifications of the Wireless System Generation (2G, 2.5G, 3G, 3.5G, 4G, 4G+)

Enable/Disable the Android O+ notification sound

Enable/Disable the Network-change Sound notifications: There is Sound notification when the Cell ID changes, and different sound notification when the Wireless System Type changes e.g. from UMTS to LTE

Enable/Disable the Service-State change sound notification: There is Sound notification if the Service-State changes
In the About screen, you can find:

FAQ (Frequently asked questions) section, including list of acronyms

Manual (external link)

Release history (change log)

Privacy policy (external link)

Terms and Conditions (external link)

Licenses’ list

Acknowledgments

Info about the developer of the app

Our email to contact us, if you have any issues with the app

A link to give us a (5*) rating in the Store, which is very important for us to continue the project
System Info/Feedback

If you have any issues with the app, you may send us the system info/feedback to check and provide a fix if it is our issue, and not Android issue.
Thank you for using our applications!

We are constantly developing them to provide you with better experience.

If you are using (especially commercially) the Lite version, please purchase the full version (and the Pro subscription) to support our work.

Your comments are mostly welcome, and your **positive rating** in the Play Store is highly appreciated, and helping us to continue the work!

**Support email:** apps /at wilysis /dot com