

Pilot Pioneer Expert is a multi-technology data analysis and reporting solution supporting 2G/3G/4G/4.5G/4.5Gpro/4.9G/5G network technologies. Pilot Pioneer Expert powerful data processing and analysis helps to accelerate network performance and Quality of Service (QoS) evaluation. The integrated data presentation options, analysis methods, and statistical reports accurately identify the potential root cause and network problems. This accelerates the network tuning and optimization process. Pilot Pioneer Expert supports large volumes data processing, various analysis functions, user-defined KPIs, and filtering functions to allow flexible data analysis.

New Function

5G NR Data Processing

- 5G NR terminal measurements, data decoding and playback
 - Beam coverage measurement interface and map presentation.
 - Displays various types of network message, e.g., registration, access, re-selection, handover, redirect, and interactive operation.
 - Displays various types of parameters, such as measurement, network/cell configuration, throughput, resource scheduling, BLER, BWP, packet loss and service.
 - Displays L1/L2/L3 messages and details, subframe information.
- 5G NR scanner measurements data decoding and playback
 - Displays the peak signal strengths for all 5G Sub-6 GHz frequency bands with the spectrum scan.
 - Displays the top Nth cells in the test area for TopNth Cell Scan.
 - Displays 5G NR beam(s) coverage in map window.
 - 5G spectrum clearance and interference analysis

Measure site spacing

Site spacing of selected/whole region in the map window.

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New data format (*.gen&*.hdf) support

- *.gen data that is collected by the Huawei's proprietary test and measurement tool.
- *.hdf data that is collected by Qualcomm-chipset device.

Generate Statistics Report in Batches

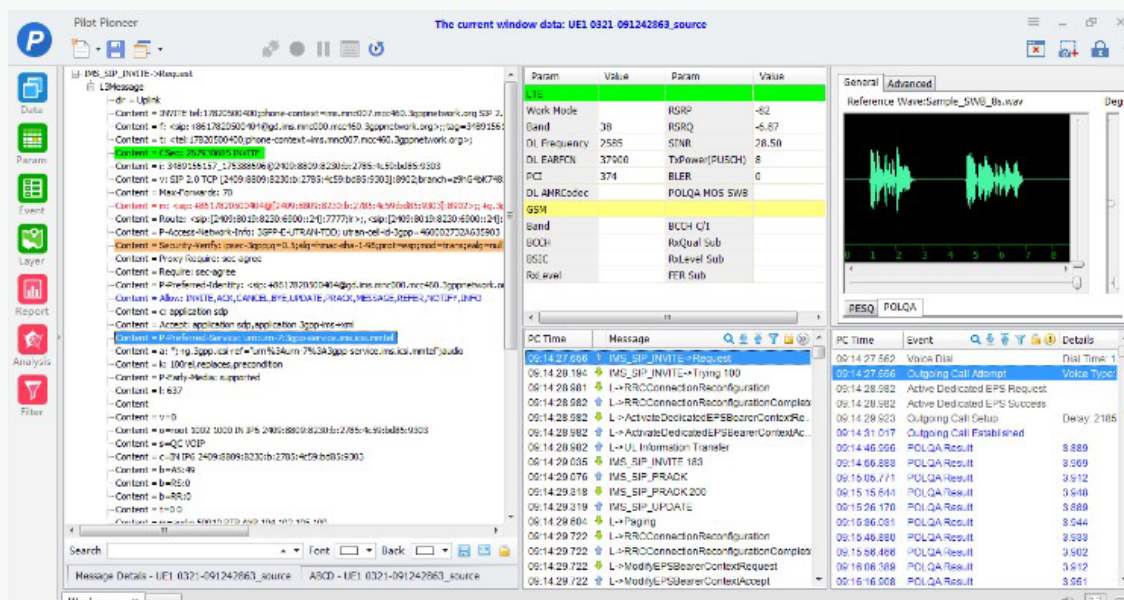
Generate multiple statistics reports simultaneously instead of sequentially to save waiting time.

Trend line analysis between parameters

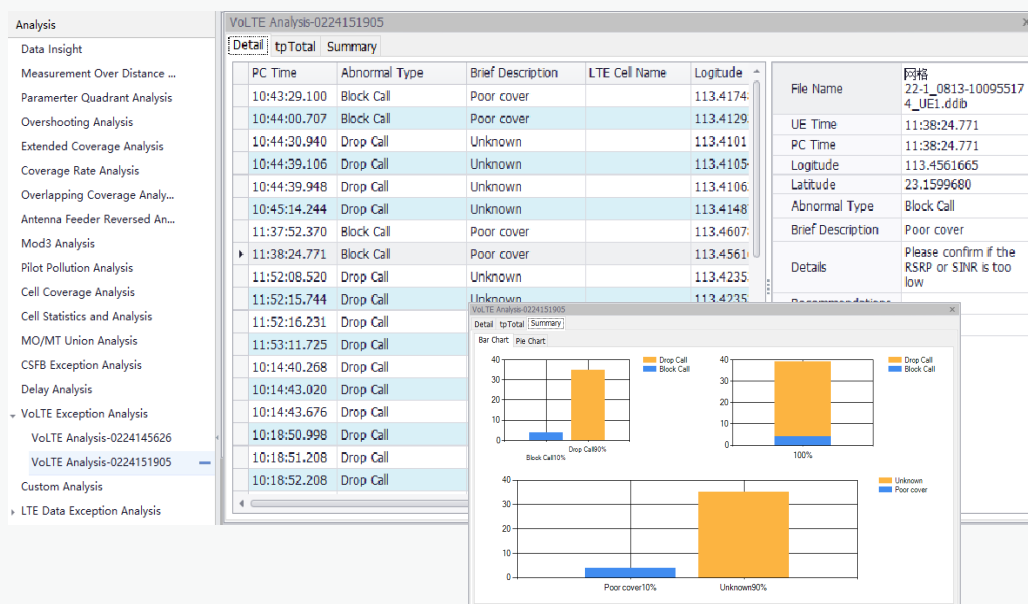
- Compared the measurement trend between the two selected parameters.
- The analysis results include trend chart, the correlation formula, and R-squared value.

VoNR/ViNR/EPS FB/VoLTE Data Analysis

- Qualcomm and HiSilicon chipset-based VoNR/ViNR/EPS FB/VoLTE data analysis.
- SIP message and its detailed decoding, provide corresponding event judgment, and output audio and video call packet loss, delay, jitter, and MOS indicators.
- Data replay with corresponding recorded MOS audio files display, to reflect the actual network status and user's perception.
- Display of time, location, probable root cause and solution recommendation for abnormal events in every phase of voice test.
- Network exceptions summary (e.g. dropped call, blocked call, etc.).
- Customized statistics report.



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Main Features

Multiple Network Technology and Various Data and Application Services

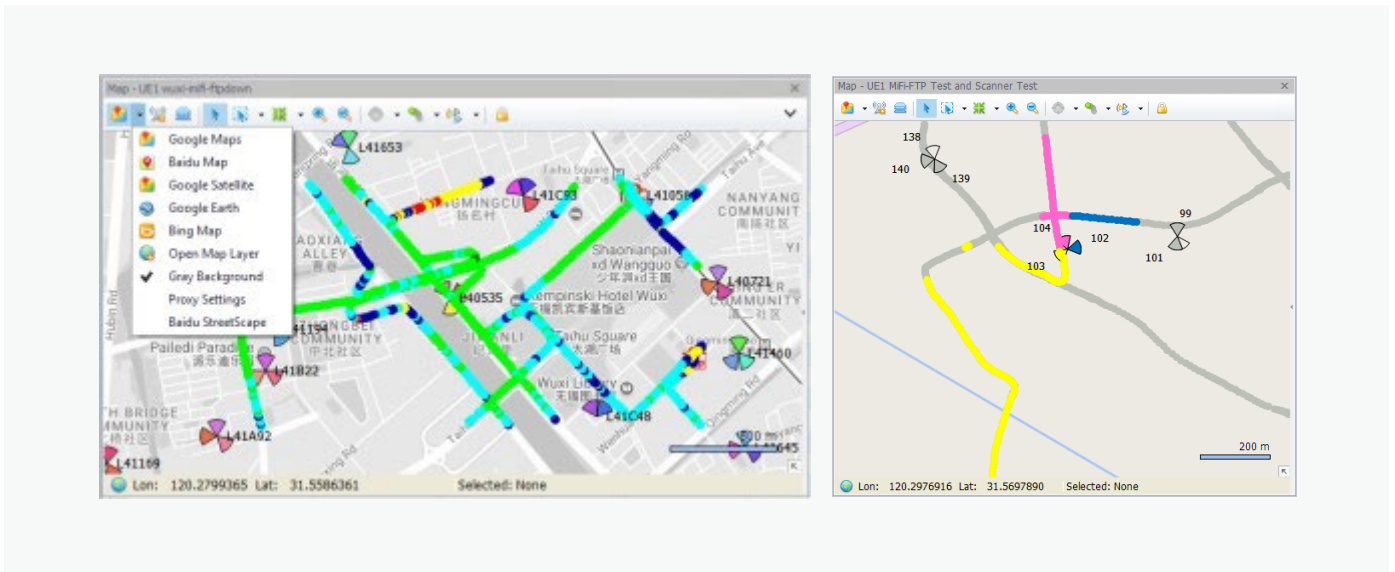
- 2G/3G/4G/4.5G/4.5G Pro/4.9G/5G NR.
- 2G/3G/4G/5G Voice and Audio Quality MOS test.
- FTP, Multi-FTP, Ping, Attach, HTTP, Email, YouTube, etc.
- TCP/IP data collection from data services test.

Outdoor Test Data Analysis

- Applicable to data analysis of outdoor test environments such as highways, high-speed rail, recreational spots, campus, etc.
- Multiple maps supported, e.g. Google Maps, Satellite Maps, Bing Map, and Mapinfo.
- Multi-layer management mode: GPS tracks, parameter coverage routes, site, maps, events, and alarms.

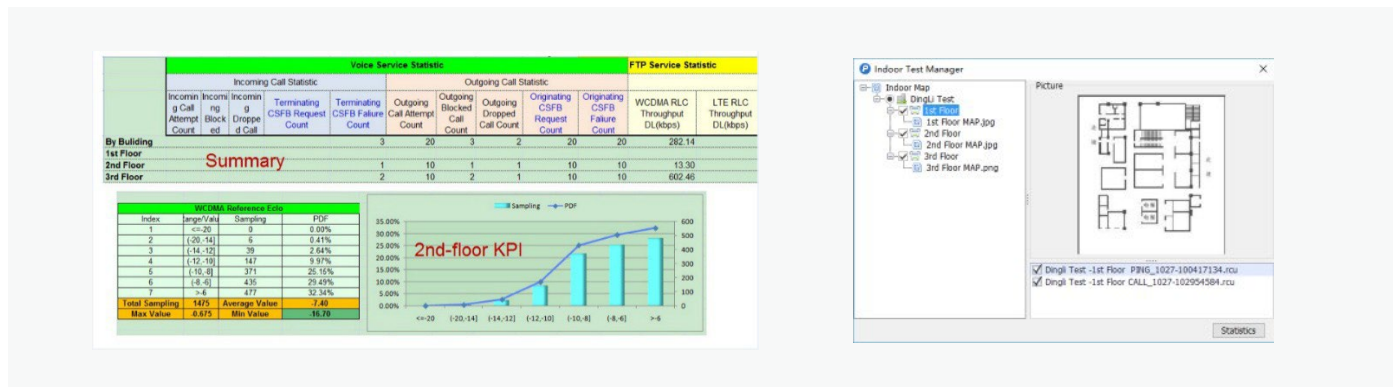
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- Multiple cell site display modes on the Map, comprehensive cell site information management, search, and quick positioning functions.
- Powerful Map functions to facilitate cell coverage analysis, neighbor cell analysis, region analysis, cell line linking, grey background coverage display, etc.
- Various data analysis, e.g. Cell Coverage Analysis, TopN Cell Statistics and Analysis, Overshooting Analysis, Extended Coverage Analysis, Mod3/4/6 Analysis, Antenna Feeder Reversed Analysis, and Pilot Pollution Analysis, Delay Analysis, Difference Value Analysis, Effective Cells Analysis, Cell Handover Analysis, etc.



Indoor Test Data Analysis

- Multiple map sources, e.g. iBwave, standard floor plans, and floor images in the *.jpg, *.png, *.bmp, *.tab formats.
- Indoor test management and test data storage based on building floors.
- Indoor test statistics reports.



Data Replay and Specialized Analysis

- Data replay with corresponding recorded MOS audio files display.
- Auto data synchronization in different windows (e.g. Map, Event, Parameter), and user-defined replay speed and location with the control bar.
- Export data to a third-party data format for extended data analysis.
- Comprehensive data analysis e.g.
 - Interference analysis
 - Cell coverage analysis
 - Service analysis
 - Delay analysis
 - Cell coverage analysis
 - Parameter quadrant analysis
 - Cell statistics and analysis
 - CSFB exception analysis
 - LTE data exception analysis

Flexible and Customized Statistical Reports

- Meet various statistics requirements.
- Pre-define parameters, events, and KPIs for statistics.
- Built in filters for data processing.
- Statistics reports in the MS excel and word formats.
- Various statistics templates.

Various Data Presentation Modes

- Switching among multiple workspaces and multiple terminals' information display, and loading test scenarios in multiple workspaces.
- Data display by Table, Chart, etc.
- Network measurement information display, e.g. radio parameters, network events, service events, and L1/L2/L3 messages.
- Network measurement assistant information display, e.g. test progress, real-time statistics KPIs, device alarm and KPI alarm.
- Assistant data display modes, e.g. freeze screen, capture screen, and export data files.
- Drags parameters from Message Details to Table to conveniently view any measurement updates.

Carrier Aggregation (CA) Data Analysis

- Qualcomm and HiSilicon chipset-based CA data analysis.
- Real-time multi-terminal's monitoring of CA measurement, network resource allocation, network quality, data rate, etc.
- Real-time monitoring of key events, such as secondary component carrier (CC) modification, CA handover, and secondary CC activation.
- Customized CA statistics report.

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NR Throughput - UE1 mmWave 8CC Test									
DL Thr(Mbps)	Total	PCell	SCell1	SCell2	SCell3	SCell4	SCell5	SCell6	SCell7
APP									
SDAP									
PDCP	3475.128								
RLC	3484.373								
MAC	3500.707	492.983	493.098	492.496	492.718	493.540	289.519	347.151	399.202
PHY	3619.232	493.778	493.816	493.775	493.901	493.941	322.433	385.550	442.040
UL Thr(Mbps)	Total	PCell	SCell1	SCell2	SCell3	SCell4	SCell5	SCell6	SCell7
APP									
SDAP									
PDCP	115.123								
RLC	115.951								
MAC	116.710	116.669	0.040	0.000	0.000	0.000	0.000	0.000	0.000
PHY	121.567	121.365	0.202	0.000	0.000	0.000	0.000	0.000	0.000

NB-IoT/eMTC Data Analysis

- Qualcomm and HiSilicon chipset-based NB-IoT data analysis.
- 3GPP Release13 protocol.
- All NB-IoT/eMTC key measurement parameters and messages display.
- One-click export of NB-IoT or eMTC statistics report.
- Dedicated NB-IoT or eMTC data analysis.

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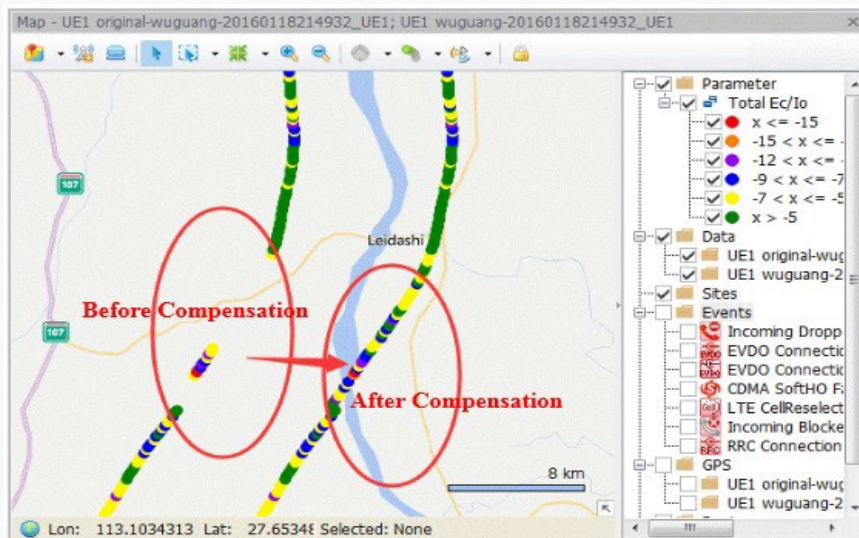
NB-IoT Scan Data Analysis and Statistics

- NB-IoT scan data analysis and display, e.g. pilot pollution analysis, Mod 3 interference analysis, etc
- Data files, statistics report and analysis results export.
- Flexible KPIs statistics.
- Export analysis results from map window to *.MapInfo, *.Google Earth, and *. Shape File formats.
- Support R&S TSME scanner.

GPS Trajectory Compensation

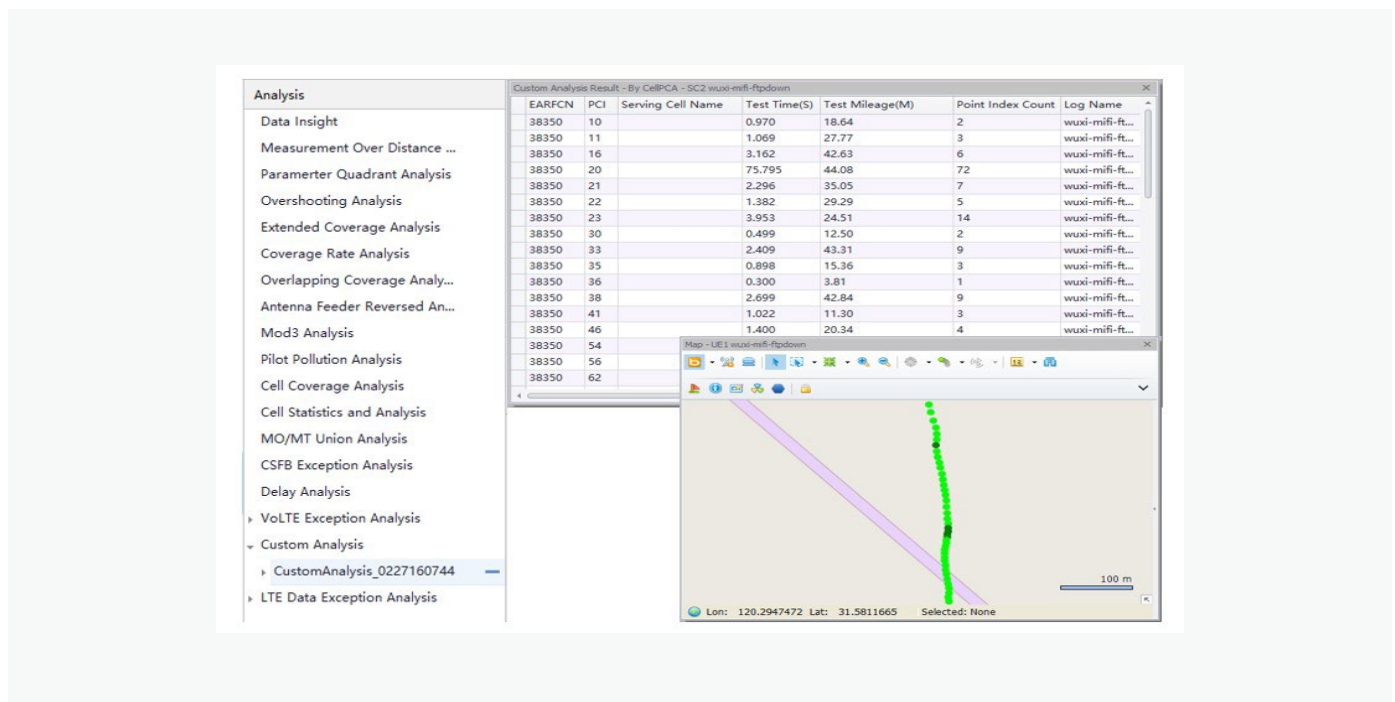
- Intelligent compensation and optimized GPS module are supported for high-speed rail test with continuous and complete GPS trajectory.
- Multi-dimension information display, e.g. the display and multi-layer management of test routes with GPS positioning, routes with parameters plot, cell sites, maps, events, services KPIs, alarms, etc.
- Comprehensive cell site information management and quick search result display on the cell site database.
- Built-in Analysis Engine for multiple map-based analysis, e.g. cell coverage analysis, neighbor cell analysis, region analysis, etc.
- Built-in high-speed rail and urban rail routes database of some regions*.

*Note: Unique to China market only, customers who want to have the access to this function may contact Dingli.



Custom Analysis

- Meets users' various analysis requirements.
- Supports predefined parameters, KPIs, events, etc.
- Supports built-in Filter with conditions for data processing.
- Multiple display modes, e.g. Charts, GIS, etc.



Data Insight Analysis Function

- Analysis engine: supporting smart analysis and data mining.
- Auto problem diagnosis and analysis for the whole data file.
- Large volume of data processing to improve problem location and troubleshooting efficiency.
- Multiple data result display modes (e.g. Table, Map), and auto data synchronization to different windows, e.g. Map, Parameter, Event, etc.

Flexible User-defined Filters

- Basic data filters by parameter, time, region, state, service, Bin, etc.
- Combined data filters.
- Data display, partition, statistics, and analysis based on filters.
- Capabilities of user-defined data files, statistics report and analysis to meet various analysis requirements.

Easy Operation

- Online software update for customers.
- Hard dongle license query and online upgrade.
- One-click backup and restoring of project configuration.
- One-click display of all NB-IoT and eMTC key parameters.
- Movable KPIs display windows.
- Various shortcut keys for easy operation

Product Values

For Network Operators, System Vendors and Service Providers

- Provides flexible authentication modes (such as hard dongle and soft dongle), support multiple commercial test terminals, which provides maximum benefits on the tool investment.
- Multi-technology indoor and outdoor service tests, applicable throughout the network development process.
- Comprehensive data analysis functions to facilitate network problem location and troubleshooting.
- Provides a user-friendly interface for easy operation.

For Engineers

- Simple and easy operation, user-friendly interface for shorter learning curve.
- Specialized technical support and customized services.
- Easy report generation and data analysis to reduce analysis workload.
- Integrated common network problem analysis and troubleshooting ability to improve network optimization efficiency.