Product Overview

Ultra Spectrum is a PC application software developed by **RIGOL** for the DSA1000A, DSA1000 and DSA800 series spectrum analyzer. This software is compatible with the Windows XP, Windows Vista and Windows 7 operation systems.

Ultra Spectrum provides basic mode and advanced mode. Wherein, the basic mode provides the basic control and parameter configuration of the spectrum analyzer as well as the operation and processing of the data acquired from the spectrum analyzer; the advanced mode provides the basic mode functions together with more spectrum and data processing functions.

Product Orientation:

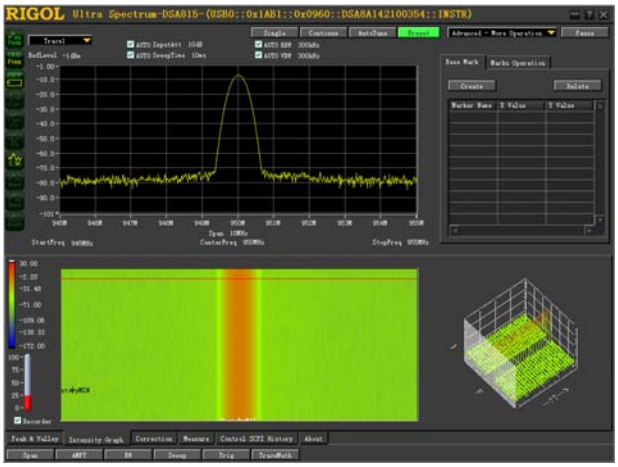
- **Remote Control**
  This software is designed on the basis of the common standard drive VISA. You can build the communication between the software and spectrum analyzer via the USB or LAN interface to control the instrument remotely.

- **Data Storage and Processing**
  This software provides powerful data processing functions (independent from the instrument). You can perform a series of operations (independent from the spectrum analyzer) on the spectral data acquired from the instrument to fulfill various signal measurement and study requirements.

- **Instrument Function Extension and Enhancement**
  The special functions (such as the 3-D intensity graph) of the software extend and enhance the functions of the spectrum analyzer.

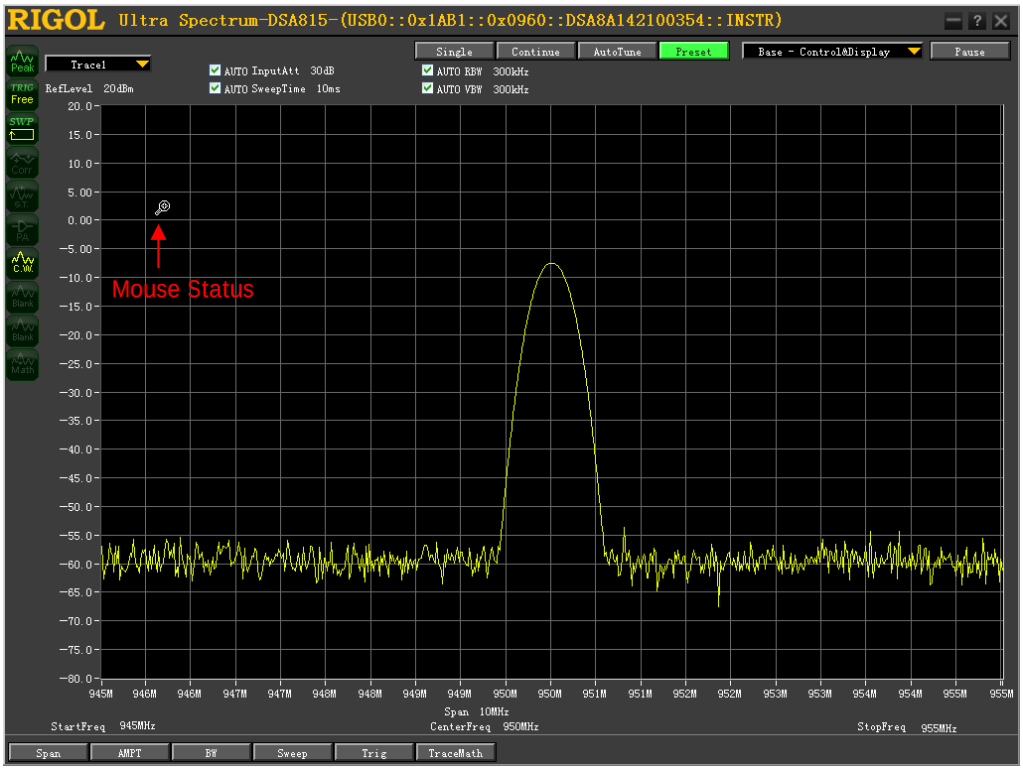
Product Features

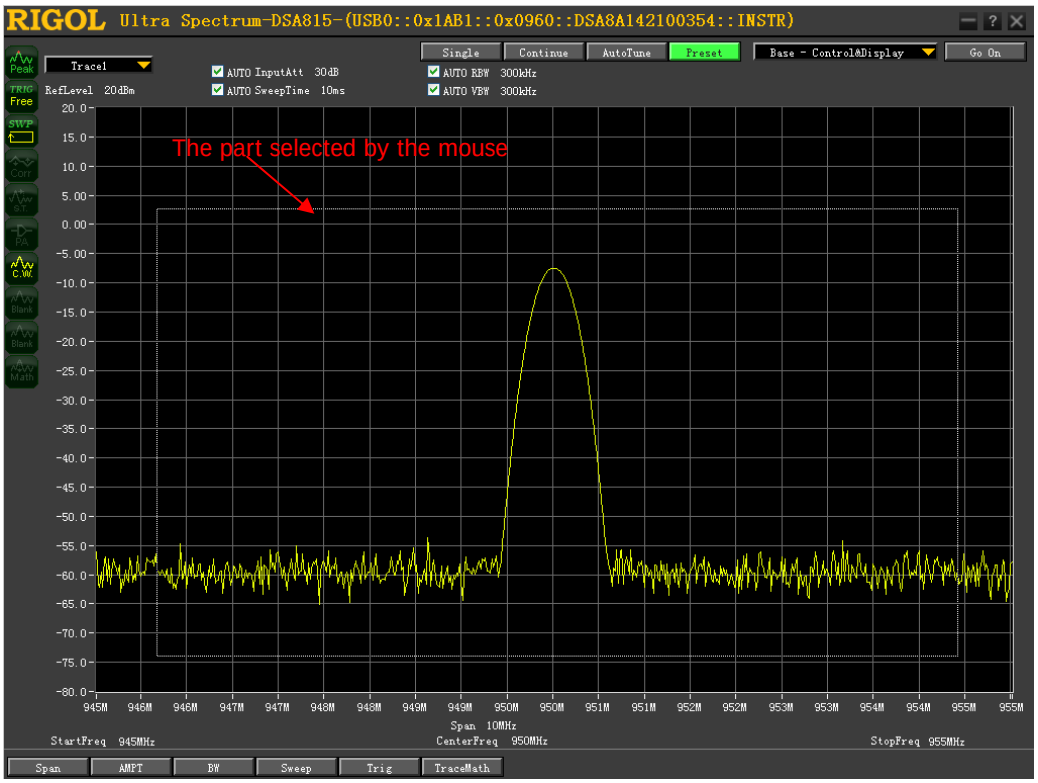
- **Mouse Operation, Easy-to-Use**
- **Various Marker Setting Functions**
- **Powerful Trace Display and Operation Functions**
- **Various Data Storage and Download Functions**
- **Peak and Valley Detect**
- **View History Spectrum Data**
- **Amplitude Correction Data Editing**
- **Various Advanced Measurement Functions**
- **SCPI Command List, Command Log**



1. Mouse Operation, Easy-to-Use

You can use the mouse to modify the span, the amplitude range and the spectrum position, select the spectrum as well as zoom out/in the spectrum. The operation is direct and easy.

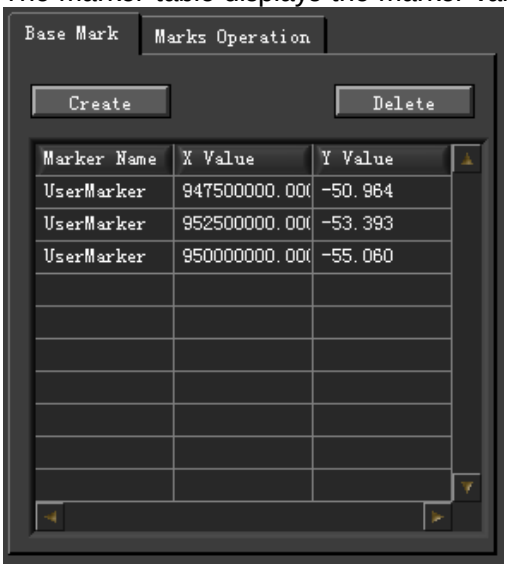




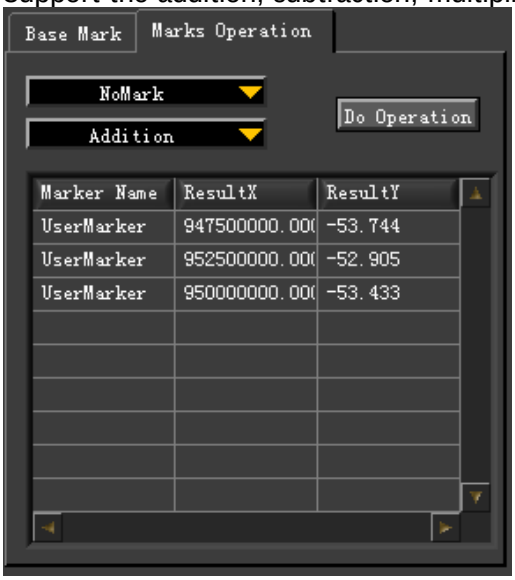
2. Various Marker Setting Functions

- One-click creation; up to 20 markers can be created.
- Provide various marker settings.

- Allow to set the marker value to the center frequency, start frequency, stop frequency, reference level and operand (for marker operation).
- The marker table displays the marker values.

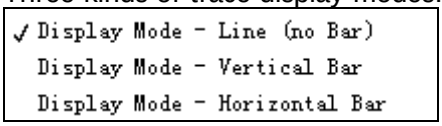


- Support the addition, subtraction, multiplication and division operations between markers.

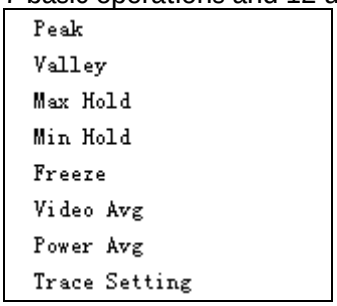


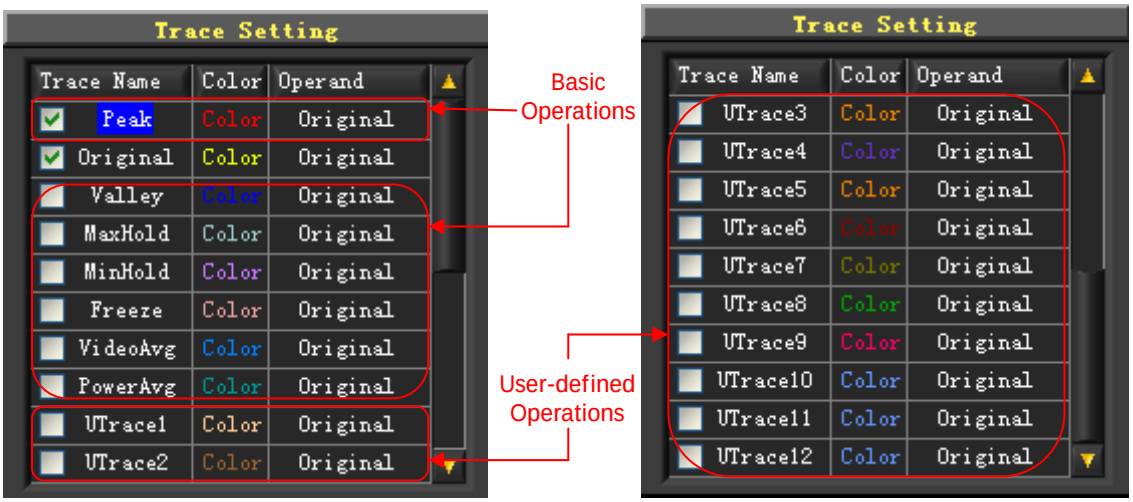
3. Powerful Trace Display and Operation Functions

- Three kinds of trace display modes.



- 7 basic operations and 12 user-defined operations; support easy and quick operation setting.



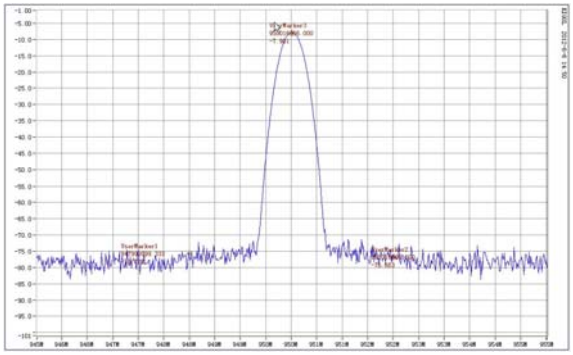


4. Various Data Storage and Download Functions

- Allow to store the instrument data in various formats.

Text (*.csv)	Picture (*.jpg, *.png or *.bmp)
Trace(s) Data P/F Upper Limit-Original P/F Upper Limit-MaxHold P/F Upper Limit-MinHold P/F Upper Limit-Freeze P/F Lower Limit-Original P/F Lower Limit-MaxHold P/F Lower Limit-MinHold P/F Lower Limit-Freeze	Image with Information Save as Image ▸ Inverse / Normal Copy Image to Clipboard(Inverse) Copy Image to Clipboard(Normal)

	A	B
1	Original-Frequency	Original-Amplitude
2	0.00E+00	-3.50E+00
3	8.42E+04	-3.51E+00
4	1.68E+05	-3.54E+00
5	2.53E+05	-3.66E+00



- State storage, loading and synchronization: allow to store the software state in *.txt format and recall the stored state when required; allow to synchronize the software state to the instrument.

Synchronize State to Instrument(Current State)
Synchronize State to Instrument(State File)
Record Current State(State File)

5. Peak and Valley Detect

- Drag the mouse to set the peak and valley limits and the software will search for the peaks and valleys that meet the conditions automatically.

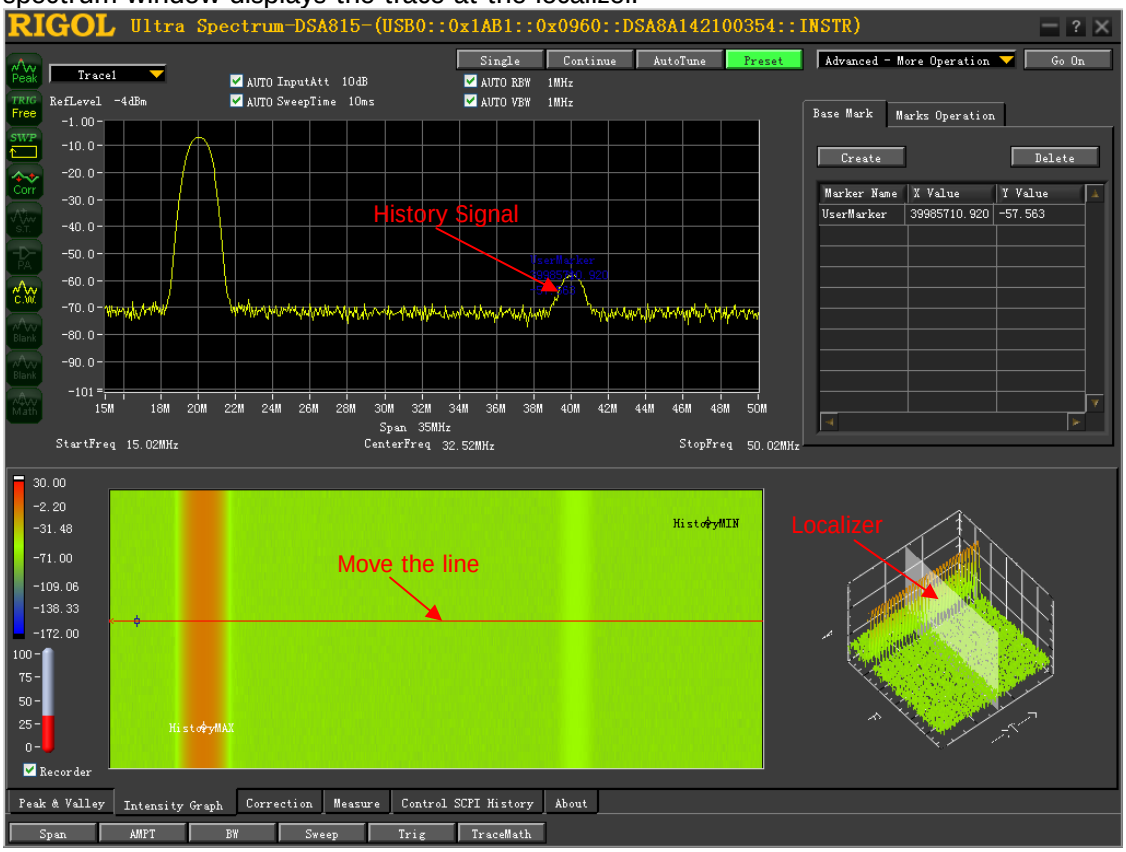
- The peaks and valleys found are marked out on the trace with red dots and blue dots respectively and the coordinate values of the peaks and valleys found are displayed in table form.

- Allow to set the peak or valley value to the center frequency, start frequency, stop frequency or reference level.

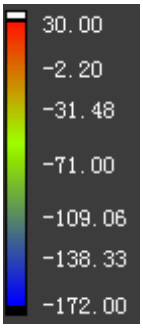
Set to CenterFrequency
Set to StartFrequency
Set to StopFrequency
Set to RefLevel

6. View History Spectrum Data

- Operate the localizer using the mouse to easily view the history spectral data and the spectrum window displays the trace at the localizer.



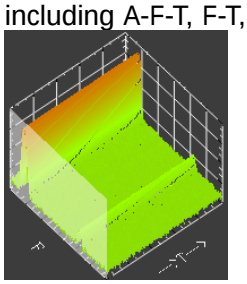
- Allow users to define the color of the waterfall graph and 3-D intensity graph.



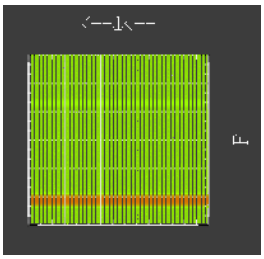
- Waterfall graph:
  - Display the 3-D (“frequency-time-amplitude”) information of the signal.
  - Display the marker point, maximum amplitude point and minimum amplitude point.
  - Easy to view the amplitude distribution of the signal at different frequency to detect abnormal signals.
  - Allow to save the waterfall graph as image (*.jpg, *.png or *.bmp) or text (*.dat or *.csv).
  - Allow to load the waterfall data stored (*.dat).

➚ 3-D Intensity Graph:

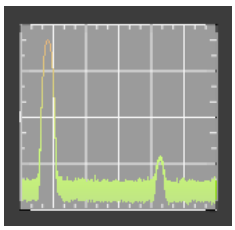
- 3-D intensity display mode of the waterfall graph; provide 4 kinds of display modes including A-F-T, F-T, F-A and T-A.



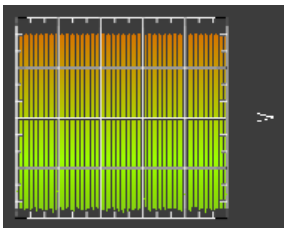
A-F-T Mode



F-T Mode

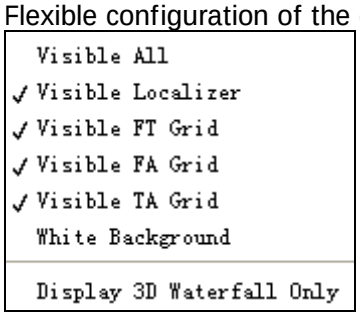


F-A Mode



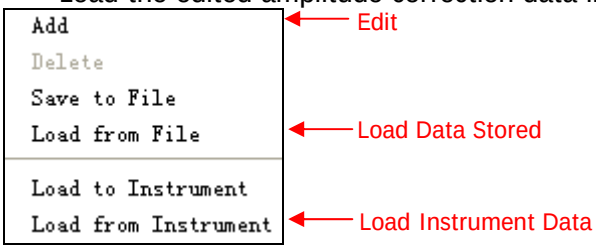
T-A Mode

- Allow to save the 3-D intensity graph as image (*.jpg, *.png or *.bmp).
- Flexible configuration of the display type of the 3-D intensity graph.

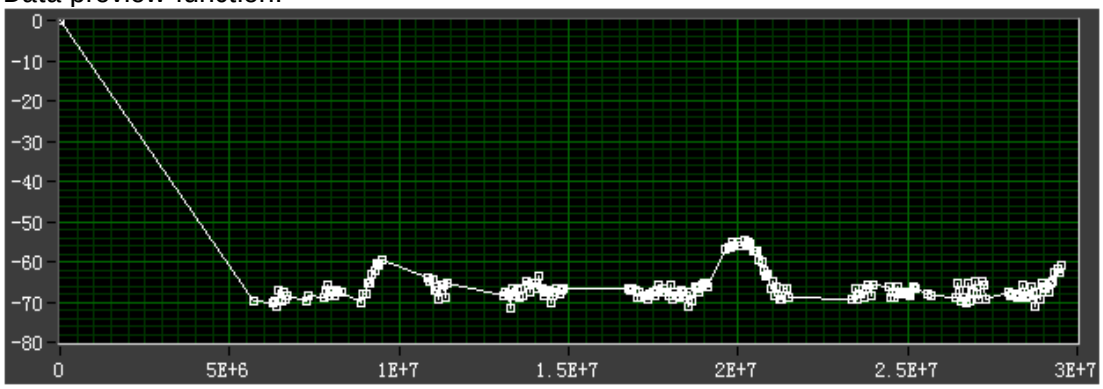


7. Amplitude Correction Data Editing

- Various amplitude correction data editing methods:
  - Edit the correction data in the data table (can be saved as *.csv file);
  - Load the *.csv file stored;
  - Load the edited amplitude correction data in the spectrum analyzer.

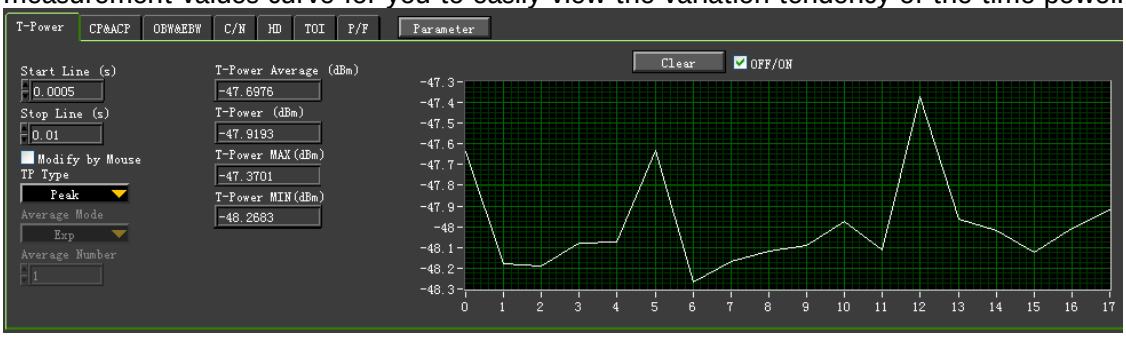


- Data preview function.

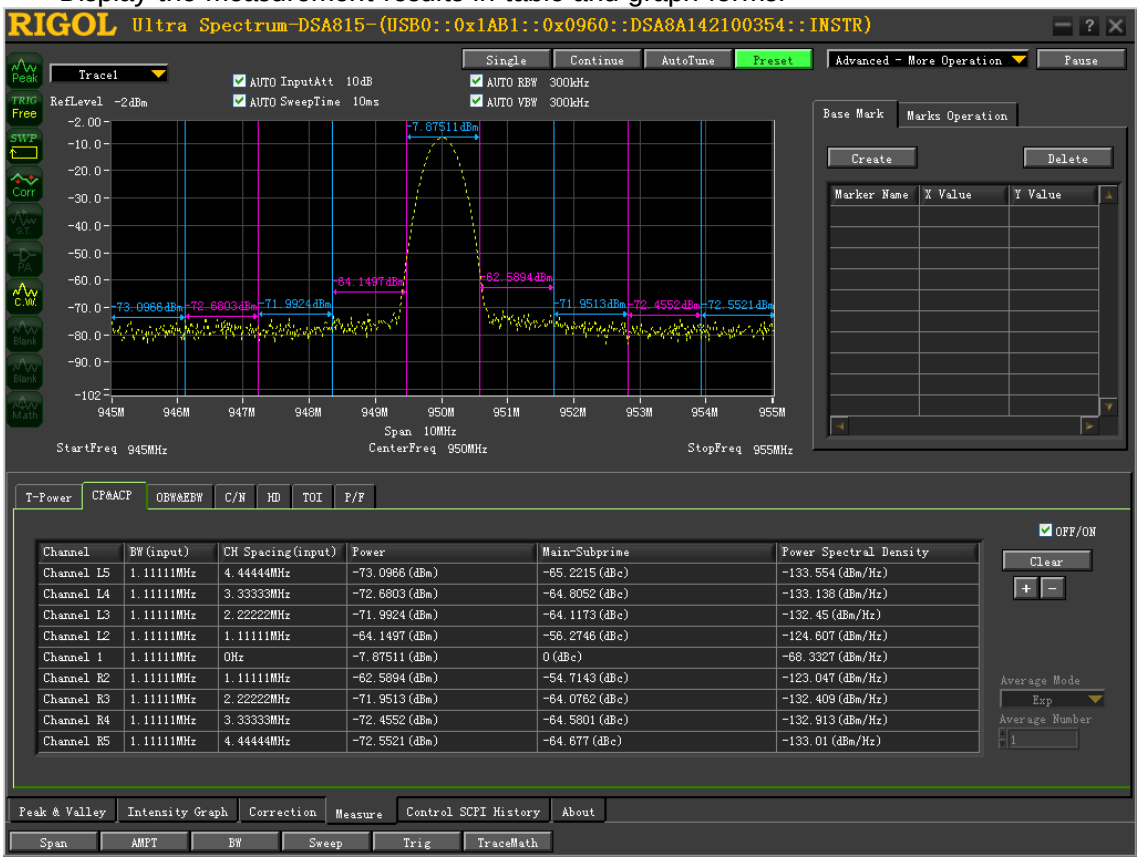


8. Various Advanced Measurement Functions

- Time Power: you can use the mouse to set the start line and stop line; the software draws the measurement values curve for you to easily view the variation tendency of the time power.

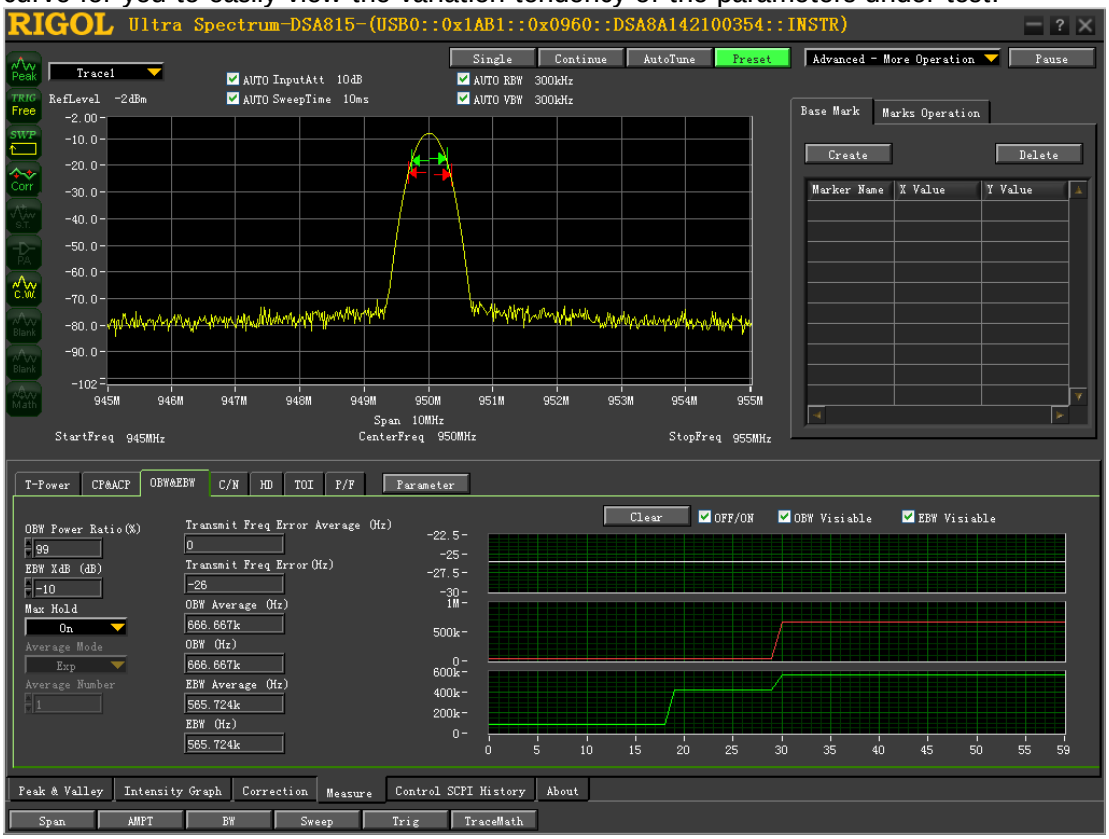


- Channel Power and Adjacent Channel Power:
  - Provide various main channel and adjacent channel creation methods including auto creation, creation on the basis of protocol (29 kinds of protocols) and manual editing method.
  - Display the measurement results in table and graph forms.

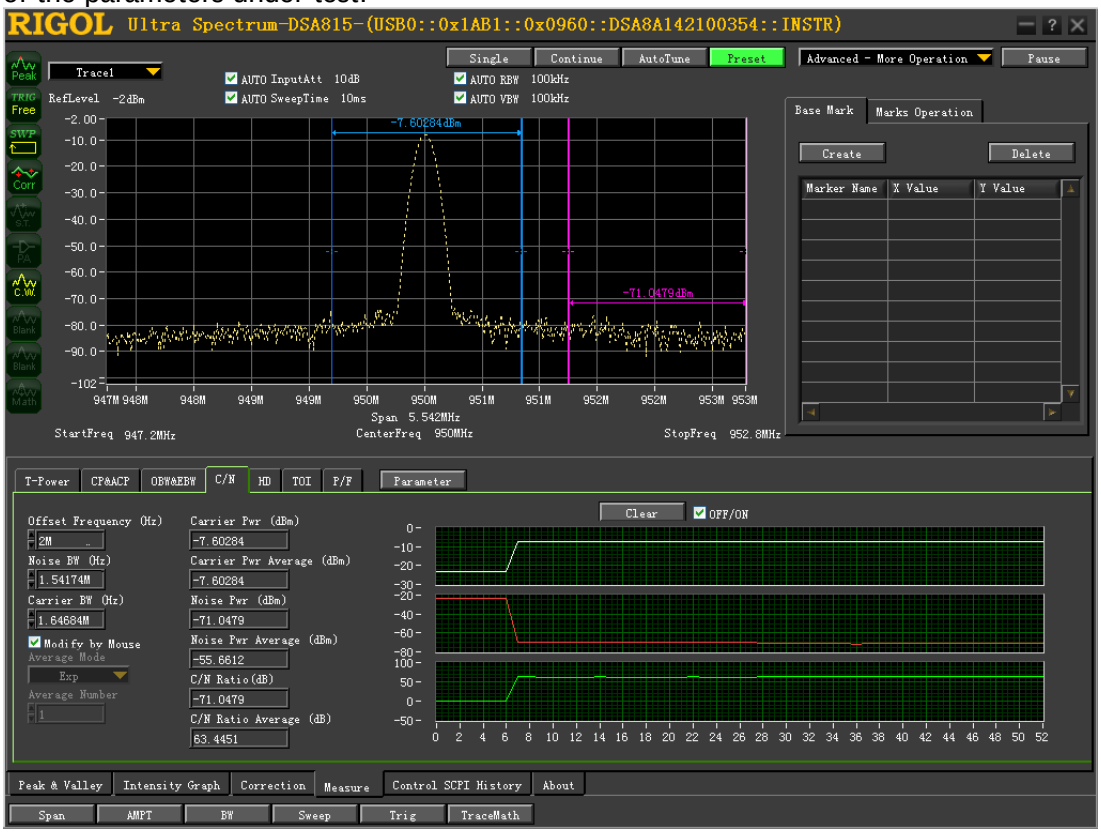


Channel	BW(input)	CH Spacing(input)	Power	Main-Subprime	Power Spectral Density
Channel L5	1.11111MHz	4.44444MHz	-73.0966(dBm)	-65.2215(dBc)	-133.554(dBm/Hz)
Channel L4	1.11111MHz	3.33333MHz	-72.6803(dBm)	-64.8052(dBc)	-133.138(dBm/Hz)
Channel L3	1.11111MHz	2.22222MHz	-71.9924(dBm)	-64.1173(dBc)	-132.45(dBm/Hz)
Channel L2	1.11111MHz	1.11111MHz	-64.1497(dBm)	-56.2746(dBc)	-124.607(dBm/Hz)
Channel 1	1.11111MHz	0Hz	-7.87511(dBm)	0(dBc)	-68.3327(dBm/Hz)
Channel R2	1.11111MHz	1.11111MHz	-62.5894(dBm)	-54.7143(dBc)	-123.047(dBm/Hz)
Channel R3	1.11111MHz	2.22222MHz	-71.9513(dBm)	-64.0762(dBc)	-132.409(dBm/Hz)
Channel R4	1.11111MHz	3.33333MHz	-72.4552(dBm)	-64.5801(dBc)	-132.913(dBm/Hz)
Channel R5	1.11111MHz	4.44444MHz	-72.5521(dBm)	-64.677(dBc)	-133.01(dBm/Hz)

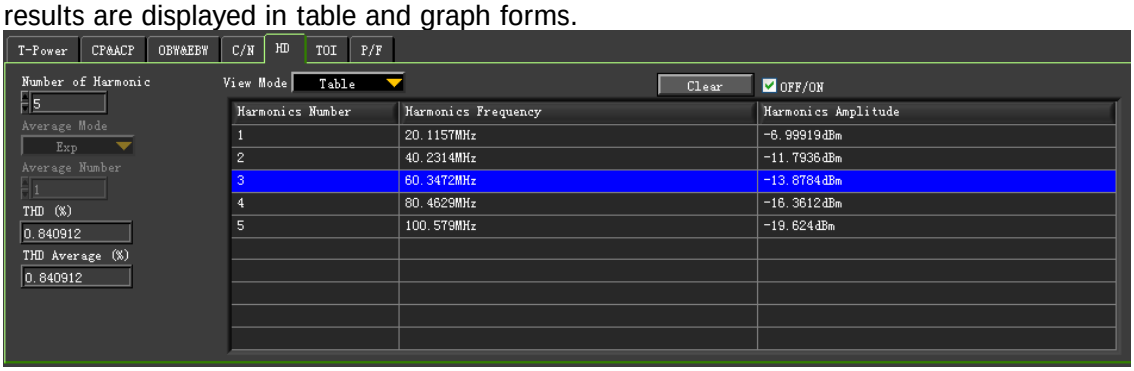
- Occupied Bandwidth and Emission Bandwidth: the software draws the measurement values curve for you to easily view the variation tendency of the parameters under test.



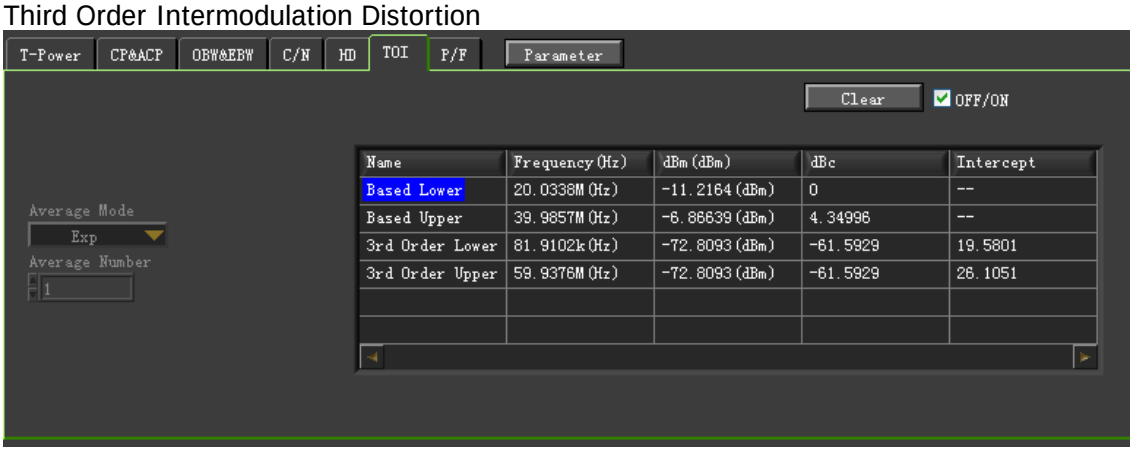
- C/N Ratio: you can use the mouse to set the noise bandwidth and the carrier bandwidth; the software draws the measurement values curve for you to easily view the variation tendency of the parameters under test.



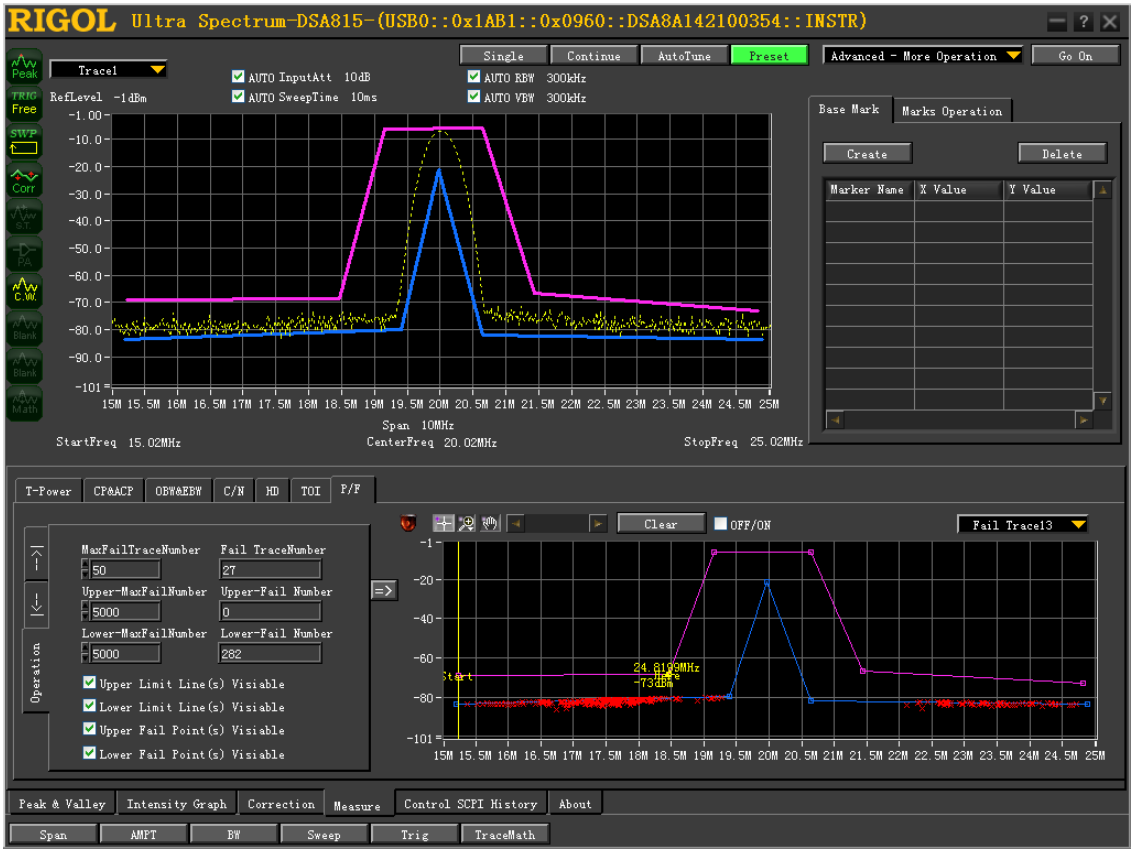
- Harmonic Distortion: up to 10th order of harmonics can be measured; the measurement results are displayed in table and graph forms.



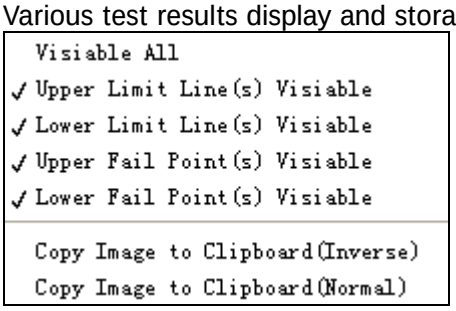
- Third Order Intermodulation Distortion



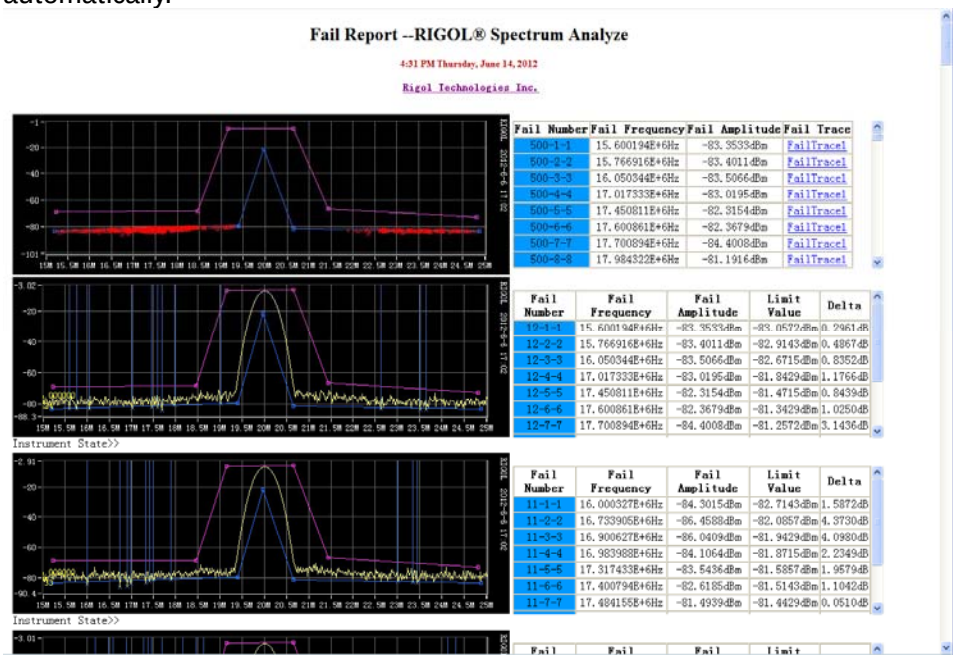
- Pass/Fail Test



- Provide various limits editing methods including manual editing, loading the stored limits file, importing spectral data as limits and generating limits by clicking the spectral window.
- Various test results display and storage modes.

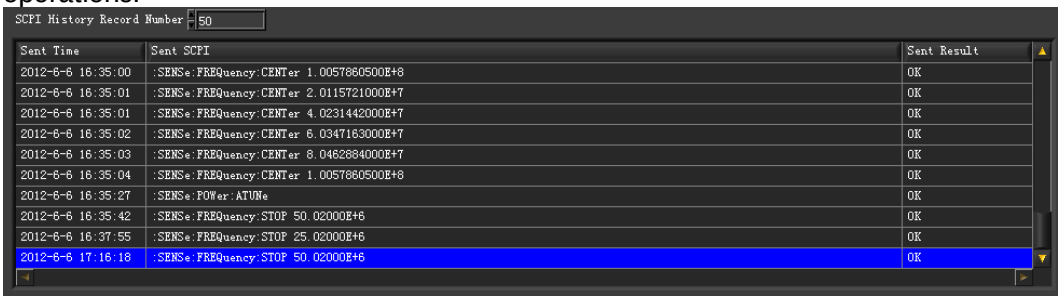


- Create fail report in *.html format; the browser opens the fail report created automatically.

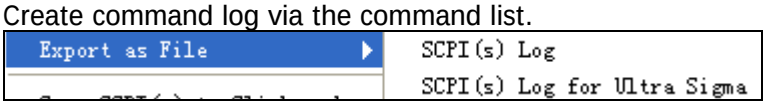


9. SCPI Command List, Command Log

- Display the SCPI command list (including the time, command and sending state) of history operations.



- Create command log via the command list.



- Allow to copy or resend the commands in the list.

For detailed information of Ultra Spectrum, refer to the Ultra Spectrum Help Document.