EMI Meas1ch Software for Pre-check (V1.0)

2012/01/11

ADVANTEST

Over view

This application software is supplied free of cost for the U3800 series Spectrum Analyzer (SA). This software when used with the U3800 series SA with option 28 (EMI Filter) enables the user to measure quick and accurate wide frequency band noise measurements. The graph and frequency - level data list allows the user to perform a pre-compliance evaluation before proceeding to final test by SA or EMI receiver based on this frequency and level data list. Using this software to perform pre-compliance measurement allows problems to be identified and corrected before full qualification testing saving time and measurement cost. This software is the free software.

1. System configuration

Spectrum Analyzer:	U3841/U3851/U3872 with OPT28
	The maximum frequency depends on SA model.
Default setting:	GPIB Command: AT, Trace points: 1001, Input impedance: 50 ohm (Factory setting)
	This software does not change these setting.
Control PC:	Windows XP/2000 English or Japanese
Interface:	GP-IB (National Instruments compatible) or LAN
	(Please refer to LAN GetTrace sample software for LAN connection)

2. Installation

Execute the “setup,exe” file of this software package.

3. Start

Find and open “U3800 EMI_Meas1ch” in the START menu. This will open to the start up display.

4. Select measurement items

a) Select control interface (GP-IB(NI Compatible) or LAN)

If the U3800 is the only instrument on the GPIB bus, the address will be set automatically.

If there are other instruments on bus, set GP-IB address.

If using the LAN interface set the IP address.

b) Select measurement frequency band

The antenna factor and limit line setting file will be automatically changed.

c) Select to use antenna factor file or not

A new correction file can be created or a current file edited using the EDIT menu.

In the VIEW mode, the antenna correction data chat will be displayed on screen

d) Select to use limit line file or not

A new limit line file can be created or a current file edited using the EDIT menu.

e) Set spectrum analyzer setting

- Reference Level (Graph): Select reference level for the graph (80 or 100)

  The spectrum analyzers reference level will be set automatically

- SPA Corr.Factor : Use Correction Factors inside the spectrum analyzer

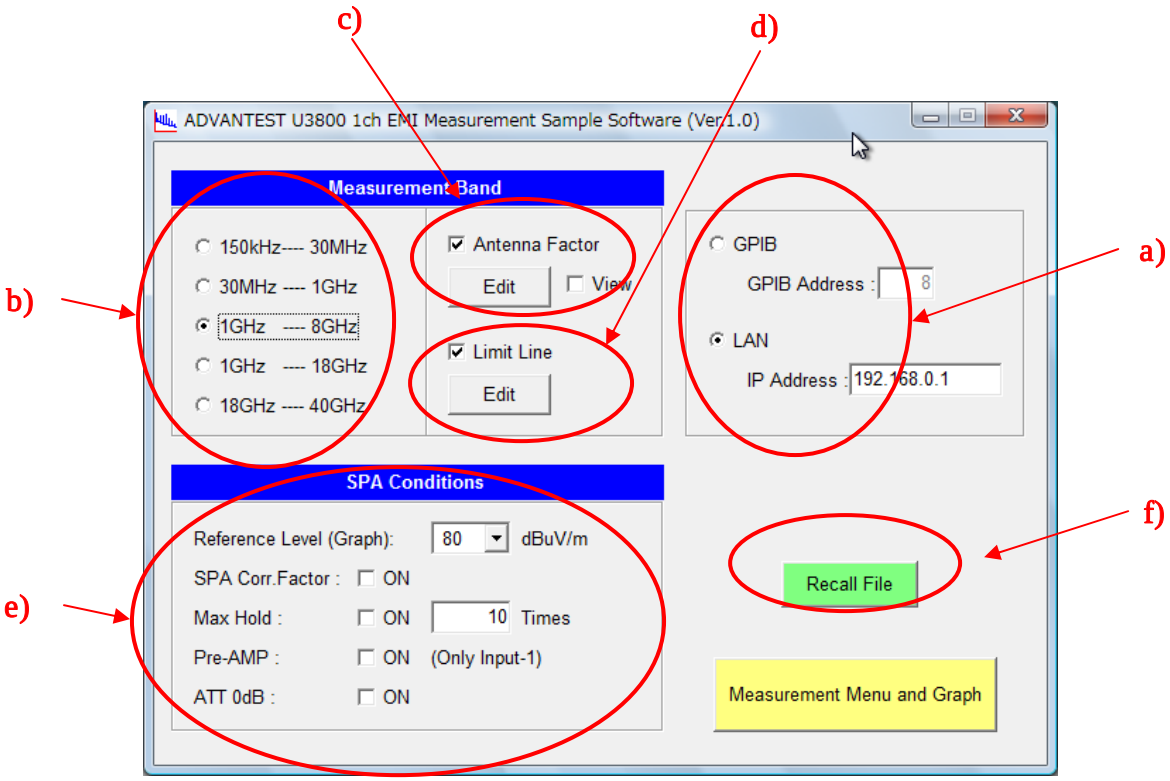
- Max Hold: turns Max Hold on. (Sweeps: 1 to 999 times)

  Input-2 requires two sweeps to eliminate image signals.

- Pre-AMP :Turn on the internal Pre-AMP of the spectrum analyzer (Input 1)

- ATT 0dB : Set Attenuator to 0 dB to improve sensitivity

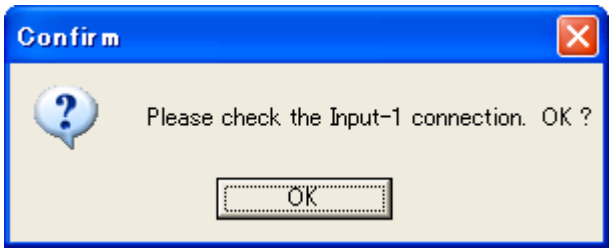
f) Load setting conditions and measurement data file from Recall File menu



5. Measurement Start

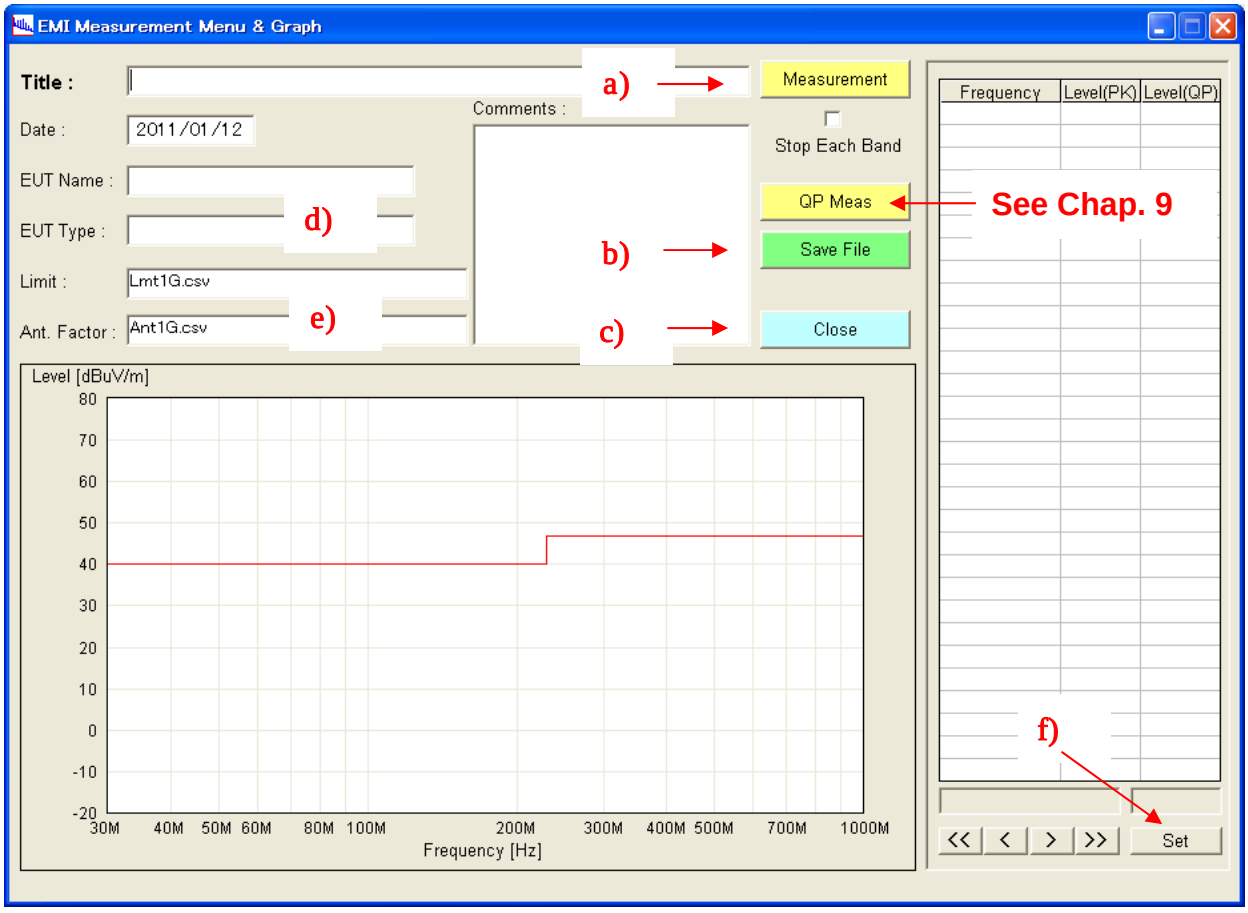
Click “Measurement Menu and Graph” and measurement display will open.

a) Measurement: Measurement start key. The “Confirm” window will open. After checking the connection, click OK. If “Stop Each Band” is checked, the sweep will stop at each frequency band and wait. Click “Measurement” to continue sweep.



b) Save File: Save measurement data as a CSV file.

c) Close: Close display

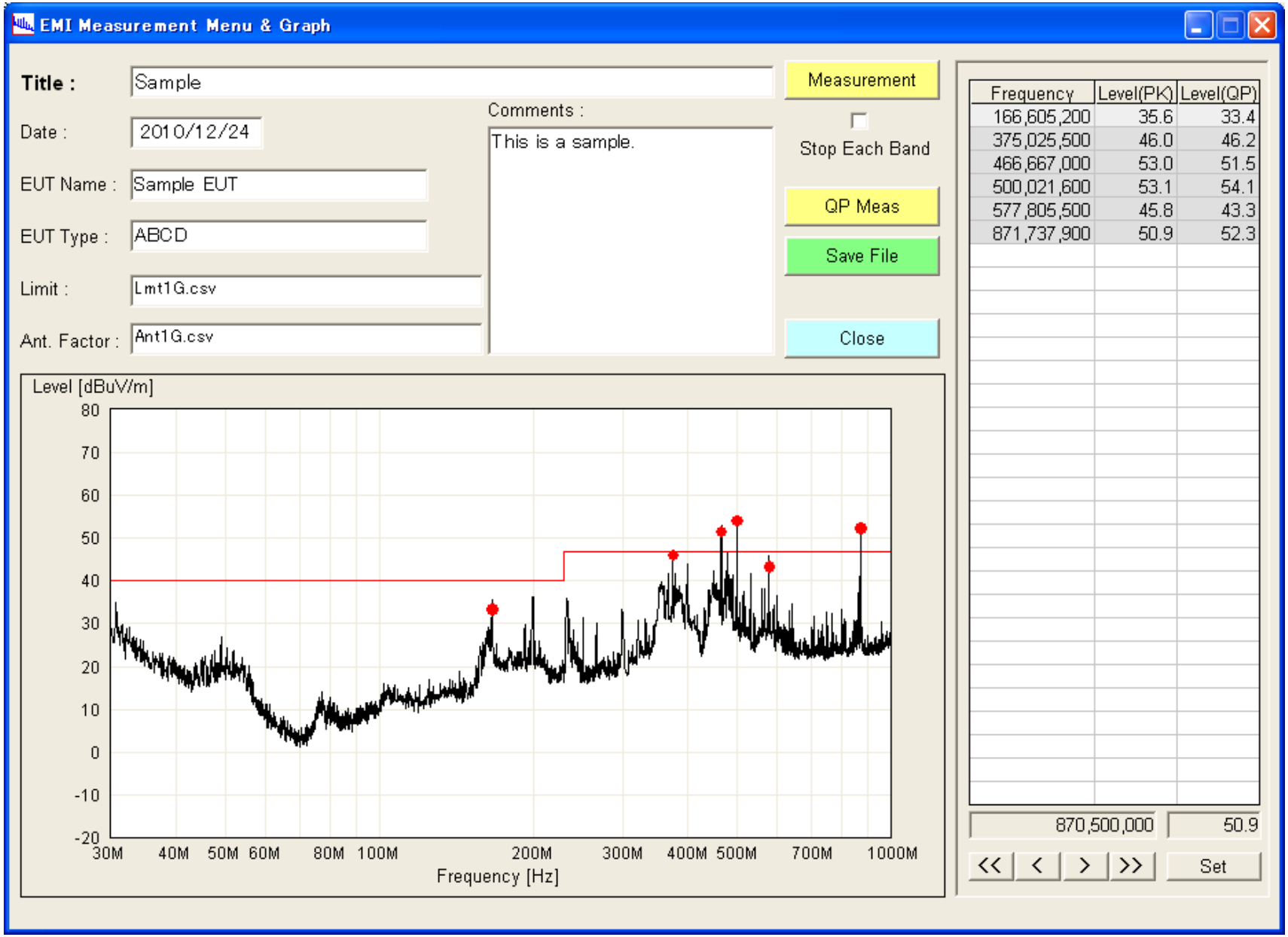


d) Information for the test. Title/EUT Name/EUT Type/Comments.

e) Limit and Ant factor shows file name that are being used.

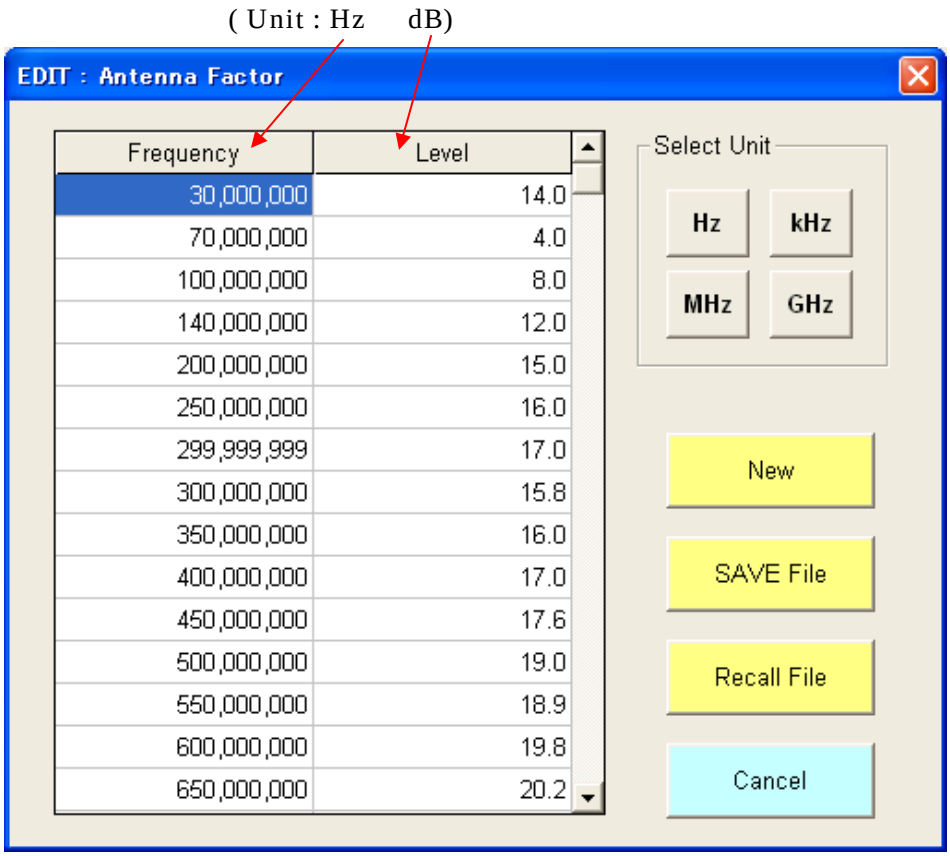
f) After measurement, click trace data on the graph. The " + " marker will display and frequency and level data will be displayed above "Set" key. Click "Set" key and then data will be listed.

The next page shows a measurement sample.


EMI Measurement Menu & Graph
Title :
Sample
Date :
2010/12/24
EUT Name :
Sample EUT
EUT Type :
ABCD
Limit :
Lmt1G.csv
Ant. Factor :
Ant1G.csv
Comments :
This is a sample.
Measurement
Stop Each Band
QP Meas
Save File
Close
Level [dBuV/m]
80
70
60
50
40
30
20
10
0
-10
-20
30M
40M
50M
60M
80M
100M
200M
300M
400M
500M
700M
1000M
Frequency [Hz]
Frequency
Level(PK)
Level(QP)
166,605,200
35.6
33.4
375,025,500
46.0
46.2
466,667,000
53.0
51.5
500,021,600
53.1
54.1
577,805,500
45.8
43.3
871,737,900
50.9
52.3
870,500,000
50.9
<<
<
>
>>
Set

6. Edit Antenna factor and limit line data.

1) Click “Edit” key and open edit display.

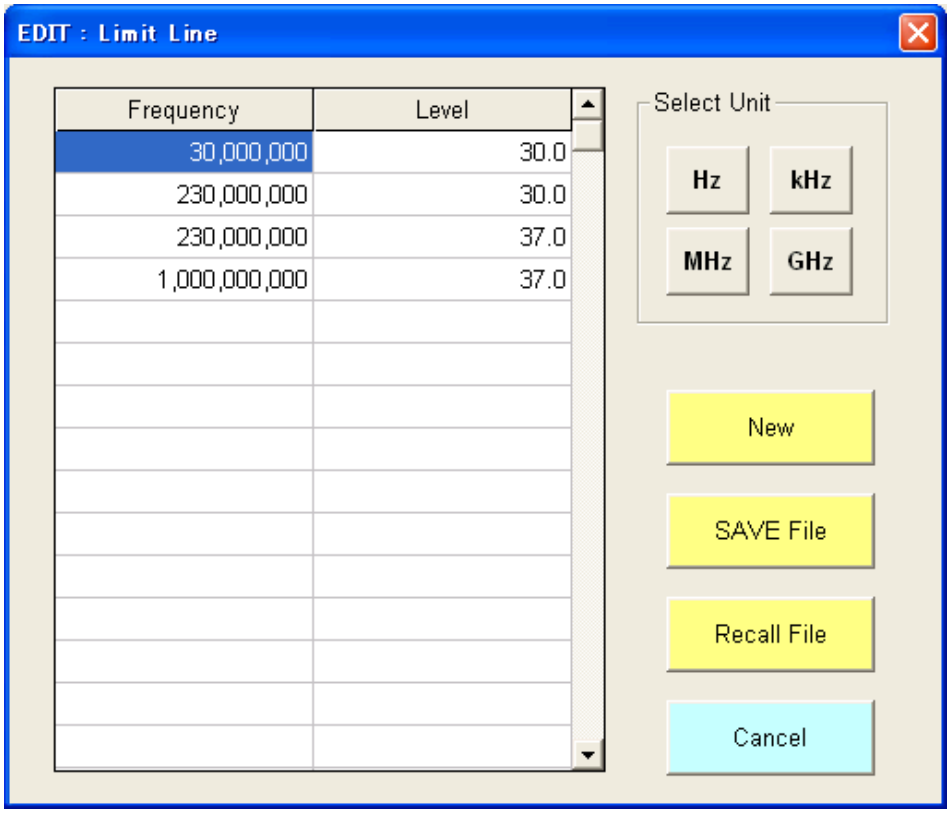


New:
Make new file. Current data will be cleared.

SAVE:
Save edited file.

Recall:
Recall the saved file

Cancel:
Cancel edits and closes the window.



Edit:

Double click the data cell. Input frequency data and click unit or input level data and hit enter key

2) Default file name (The file name that will be set when power on)

It is easy to change default file data table and setting used.

Default file name

Frequency band	Limit Line	Antenna factor	Comment
150k – 30MHz	Lmt30M.csv	Ant30M.csv	
30M – 1GHz	Lmt1G.csv	Ant1G.csv	
1G – 8GHz	Lmt8G.csv	Ant8G.csv	Ant + 20dB AMP
1G – 18GHz	Lmt18G.csv	Ant18G.csv	Ant + 30dB AMP
18G – 40GHz	Lmt40G.csv	Ant40G.csv	Ant + 40dB AMP

7. Save measurement data

Use “Save File” key at Measurement Menu and Graph display. The setting parameter and comment will be saved. After measurement is completed and returned to the previous menu, the popup window will open. Click YES if want to save data or click NO if do not want to save data.

Data format : CSV (Allows data to be used in a spreadsheet)

Total points : 6002 points

Level data : 3001 points (1001 points x 3 traces)

Corrected level data : 3001 points (1001 points x 3 traces)

Line A : Band 1 (Low Band) Level Data(1001), Corrected Level data(1001)

Line B : Band 2 (Middle Band) Level Data(1001), Corrected Level data(1001)

Line C : Band 3 (High Band) Level Data(1001), Corrected Level data(1001)

Frequency data should be calculated as follow.

Frequency at “n” point = St+((SP-ST)/1000)n

where n=0 to 1000, ST: Start Frequency, SP: Stop Frequency

8. Copy of Screen

Start the software such as paints, and put the copied one there because the Active screen is put on the clipboard with Ctrl.+ Alt.+ Print Screen (copy). Afterwards, data can be preserved on paper in the graph image of the personal computer when printing. (Install on the size of the A4 side)

Moreover, it is possible to use it for the report making etc. conveniently by preserving it as a file.

9. Function to measure specific frequency in QP detector

It is an automatic measurement in the QP detector mode of the listed frequency points. (Refer to Chap.5-f) for the frequency points list)

Measurement Routine:

a) Measure all bands using the Measurement key. (Peak Det. mode)

b) Pick up the frequency points which measure using QP Det. mode.

c) Listed frequency points are measured by QP Det. mode.

d) The level and marker of QP Det. mode measurement are displayed.

e) When the measurement data is done in the recall, the QP Det. mode measurement can be done at once according to the listed frequency points.