

# EMI Meas2ch Software for Pre-check (V1.0)

2012/01/11

ADVANTEST

## 1 . Outline

This application software is for the U3800 Spectrum Analyzer (SA). The noise measurement of Pre-check can be done high-speed and easily by installing option 28(EMC filter) in the U3800 series SA, and using this software. The list of the frequency and the level of the noise picked up manually is obtained from the graph and the graph as a measurement result. Afterwards, it is possible to advance to measures and the evaluation measurement that uses SA and the EMI receiver based on this list. We are very happy if the EMI measurement software for this Pre-check that makes easiness to use a concept can contribute to the labor saving of the measurement even a little. (This software is free software)

## 2 . System configuration

Spectrum Analyzer: **U3841 + OPT28**

(U3851/72 Connection OK, however the performance depends on the model.)

Initialization of SA: GPIB Command: AT, Trace points: 1001, Input impedance: 50 ohm  
(Factory setting)

This software does not change these setting.

Personal computer: Windows XP/ 2000

Interface: GPIB (made of NI) or LAN

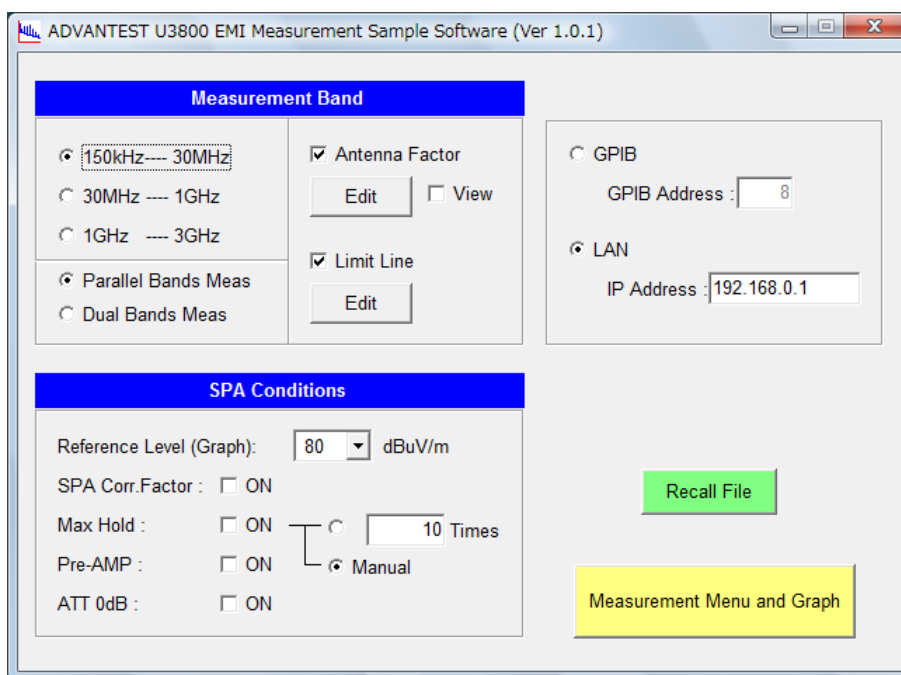
(Please refer to LAN GetTrace sample software for LAN connection)

## 3 . Installation

Execute setup.exe that exists in this software. Operate it according to the instruction of the screen while executing it.

## 4 . Start

Execute "EMI\_Meas2ch" there because the menu named "U3800 EMI\_Meas2ch" is made when it enters from the start of the personal computer menu. The following initial screen is displayed.



## 5 . Measurement selecting items

### 1 ) Select connected Interface of SA and the personal computer. (made of GPIB:NI or LAN)

Specify the GPIB address of accessed SA when existing by the plural though SA (GPIB equipment) is automatic acquisition on the bus in the address of GPIB in case of one.

Set Internet Protocol address for LAN. (Refer to the LAN GetTrace sample for the SA side)

### 2 ) Select the range of the measurement frequency and the measurement mode.

The file of the antenna factor and the limit line changes automatically.

(Become a default file name) or, choose the file newly made.

Parallel: Two inputs are measured simultaneously.

Dual Bands: 2 independent bands are measured simultaneously.

### 3 ) Put the check when you use the antenna factor.

A data change and a new file can be made from the Edit menu.

When View is checked, the approximate value of the correction data is displayed in the graph.

### 4 ) Put the check when you use the limit line.

A data change and a new file can be made from the Edit menu.

## 5 ) Set the Spectrum Analyzer condition.

-Reference Level(Graph): Decide top-level in the graph. (80 or 100)

SA is set to automatic (optimized value) based on this value.

-SPA Corr.Factor: The user's level correction function of SA can be used.

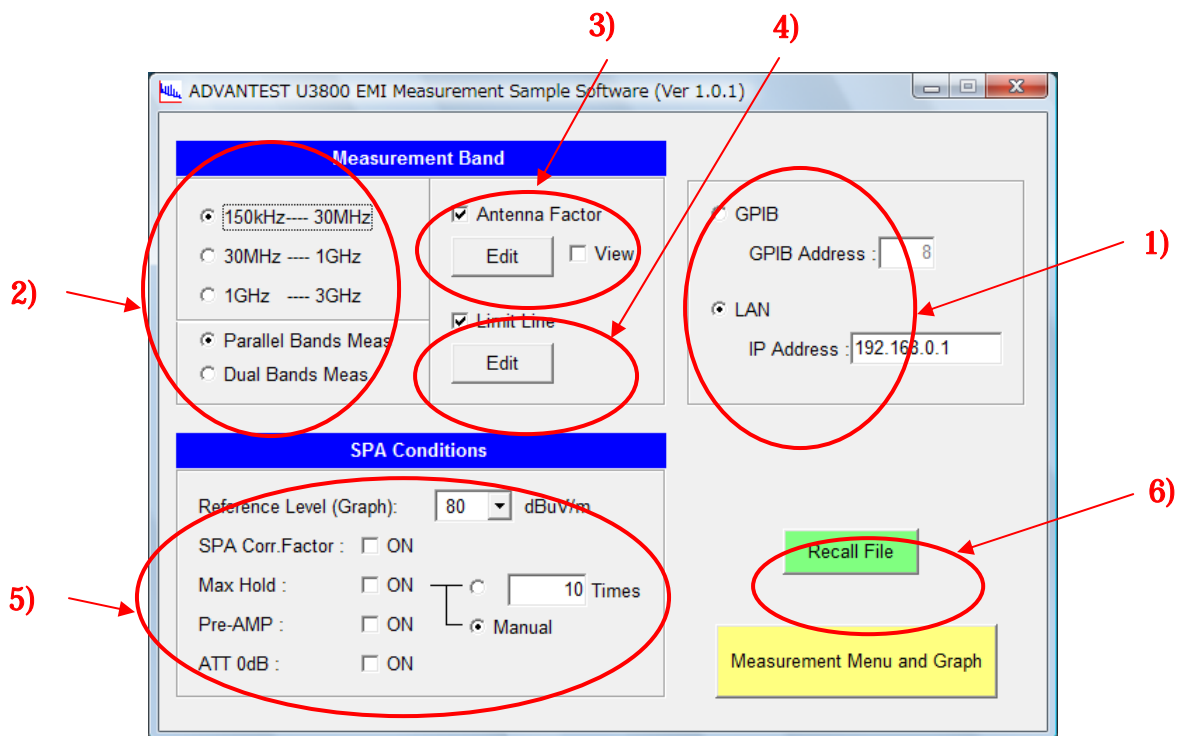
-Max Hold: Do Max Hold with assignment number. (Number is 1~999 times)

-Max Hold Manual: Set Max Hold mode. Decide beginning and the end by SA panel.

-Pre-AMP: Turn on the preamp that exists in the SA.

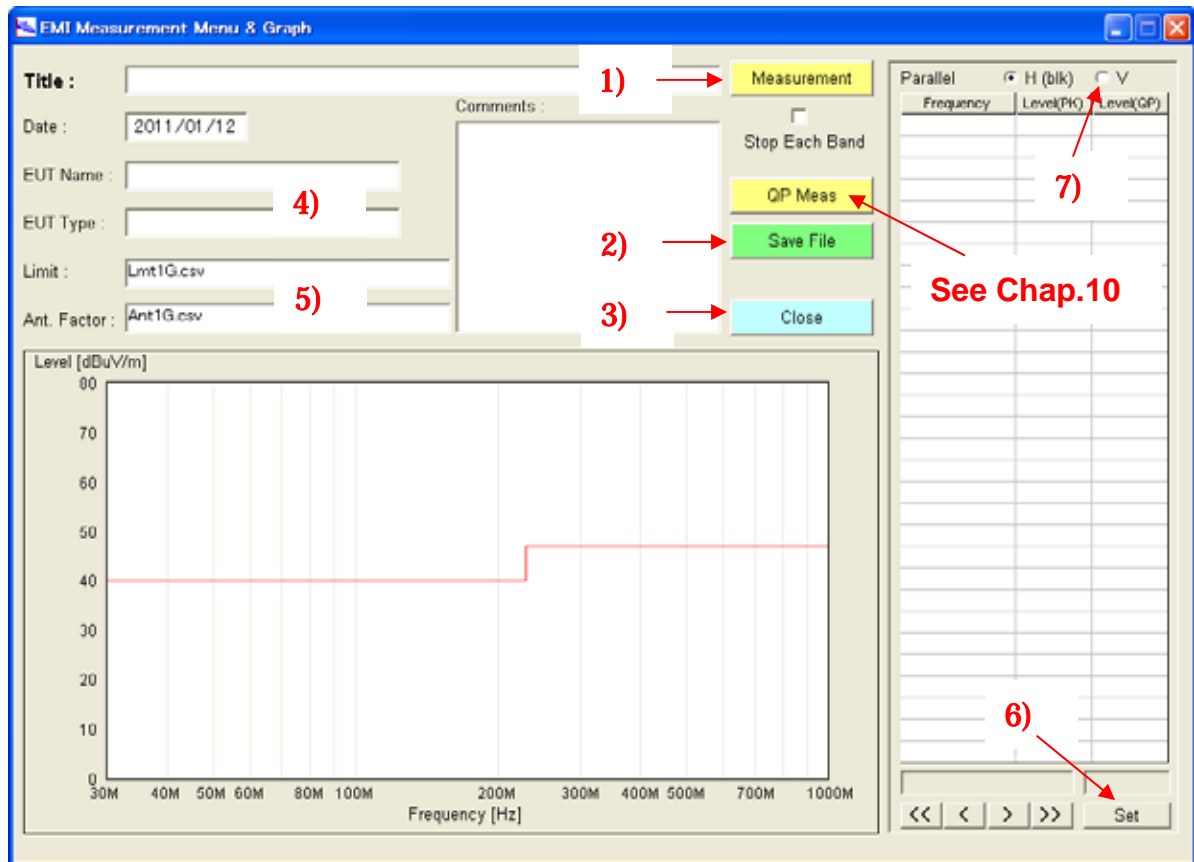
-ATT 0dB: Adjust input ATT of SA to 0, and raise the input sensitivity.

## 6 ) Loading and the setting are done with the measurement data as for the setting condition when the file will be loaded from the Recall File menu when there is measurement data that Save File is done.



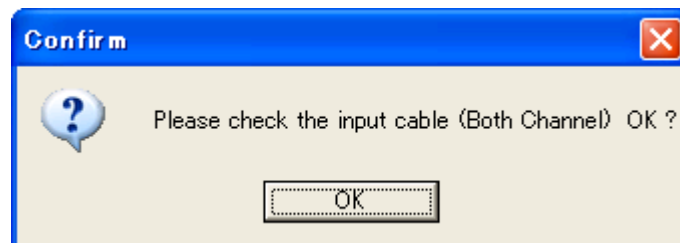
## 6. Measurement beginning

Push Measurement Menu and Graph, and open the measurement screen.



- 1) Measurement: It is a measurement beginning key. It stops at the beginning of each band, and wait for the start though the range of all frequencies is measured 2 or four times when Stop Each Band is checked.

Display the measurement when it begins and you specify each band stop. Push OK after confirming the cable connection.

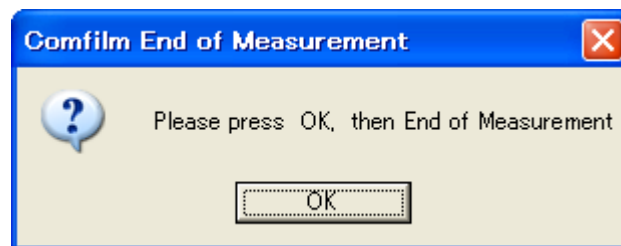


When OK is pushed, the measurement is begun.

When neither Stop Each Band nor Max Hold Manual have been selected, the measurement is completed by the automatic operation.

The following message is displayed at the Max Hold Manual mode, and the measurement of SA is Max Hold Mode.

Please push OK when you want to terminate the measurement.



At this time, we can do the manual operation.

- a. Push the LOCAL key. (Change to a local mode)
- b. Push the EXT CFG key. (Display the menu of SWEEP)
- c. Push SWEEP MODE, and make it to CNT.  
(The measurement of CH1 is begun with MAX HOLD)
- d. Push the GHz key. (Switch of CH1 and CH2)
- e. (The SWEEP menu of another channel comes out)
- f. Push SWEEP MODE, and make it to CNT.

(The measurement of CH2 is begun with MAX HOLD)

The measurement can be started, be stopped, and it set it freely.

Push OK when the measurement is completed. Advance to the following band.

- 2) Save File: Save the measurement data with the CSV file.
- 3) Close: Close this screen. (Return to the first screen)
- 4) The comment is put at the blank. Title, EUT Name/Type, Comments  
(Fill in the Comments column without changing line (CR))  
(Memorize the character until changing line in Save File)
- 5) As for Limit and Ant, the file name used is displayed.  
Therefore, it becomes comprehensible when assuming the file name that the standard name etc.  
enter when making it.
- 6) The “+” is displayed when the mouse is clicked on the graph after the measurement ends, and the frequency and the level of the point are displayed on the Set button. When the Set button is pushed afterwards, it is listed.  
(The classification of the gray with a thin list is classified into the band)
- 7) CH1, CH2 are switched by switching H and V (or, A and B).  
(The marker moves. ) It becomes CH1:H (or, A) and CH2 (or, B).

**The following page is a graph of the measurement example.**



## 7. Edit of antenna factor and limit line

1) Open the edit display pushing the Edit key.

The function and the edit method of the button are as follows.

(unit: Hz dB)

Frequency	Level
30,000,000	14.0
70,000,000	4.0
100,000,000	8.0
140,000,000	12.0
200,000,000	15.0
250,000,000	16.0
299,999,999	17.0
300,000,000	15.8
350,000,000	16.0
400,000,000	17.0
450,000,000	17.6
500,000,000	19.0
550,000,000	18.9
600,000,000	19.8
650,000,000	20.2

Select Unit

Hz kHz

MHz GHz

New

SAVE File

Recall File

Cancel

### New:

It is time when it makes a new file. Present display data is cleared.

### SAVE:

It is preservation of the edited file.

### Recall:

Call it when you use the file made before.

### Cancel:

Discontinue editing, and shut the screen.



Frequency	Level
30,000,000	30.0
230,000,000	30.0
230,000,000	37.0
1,000,000,000	37.0

Select Unit

Hz kHz

MHz GHz

New

SAVE File

Recall File

Cancel

#### Edit:

Frequency that wants to change  
Double-clicking the level or Enter is pushed.

Then, Input the numerical value, push the unit key (Choose from Select Unit) for the frequency, and push 'Enter' for the level.  
(Repeat)

## 2) Default file name (file name of initial value set when software starts)

It is convenient to change and to use the table of the default file name when always using it with the same standard antenna. (Because the default file name is set when software starts) When measuring it on various conditions, two or more files are loaded, and moreover, make and load the file used before it measures it.

"Reference: Default file name"

Frequency	Limit line	Antenna factor	Comment
150k -- 30MHz	Lmt30M.csv	Ant30M.csv	
30M -- 1GHz	Lmt1G.csv	Ant1G.csv	
1G -- 3GHz	Lmt3G.csv	Ant3G.csv	Example of Ant+20dB AMP

## 8 . Save of measurement data

Do with SAVE File of the measurement screen. Because all the measurement conditions and the comments can be preserved, it is convenient to do a report.

Message "Data is not saved" when it is not done that it is save after it measures it, and returns to the re-measurement and the condition setting screen.

"Save: Yes" " Do not save: No"



"Reference"

Data form: CSV (Open it directly with Microsoft Excel)

Measurement data: 1ch: 4001 points + correction data 4002 points

2ch: 8002 points + correction data 8002 points

The data of 16004 points in total queues up in A, B, C, D, E, F, G, and H row.

Data is converted into the real number. (The point data is output from SA)

## 9. 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.

## 10. 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.6-6) for the frequency points list)

Measurement Routine:

- 1) Measure all bands using the Measurement key. (Peak Det. mode)
- 2) Pick up the frequency points which measure using QP Det. mode.(Select H or V)
- 3) Listed frequency points are measured by QP Det. mode.
- 4) Selected H or V ( A or B) is measured.
- 5) The level and marker of QP Det. mode measurement are displayed.
- 6) Next, select H or V, and measure that mode.
- 7) 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.

