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ANT_Para Application Software Operation Manual

Applicable measuring instruments：
R3755A/R3760

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Revision History

Revision	Revision date	Revised content	Total pages
1	12/Jan/2011	First creation	24
2	16/Sep/2011	External trigger	24
3	02/Nov/2012	R3755A Smith chart display LCR measurement	25

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1.　Purpose and Configuration

By installing the network analyzer (R3755A/R3760) into a personal computer (PC), and combining the R3755A/R3760 with A170009 (SP4T) extension SW-BOX (4-port adapter for Antenna VSWR measurement), a maximum of four antenna elements can be measured. In this configuration, antenna characteristics are measured using the ANT_Para application software and the result is saved to a file.
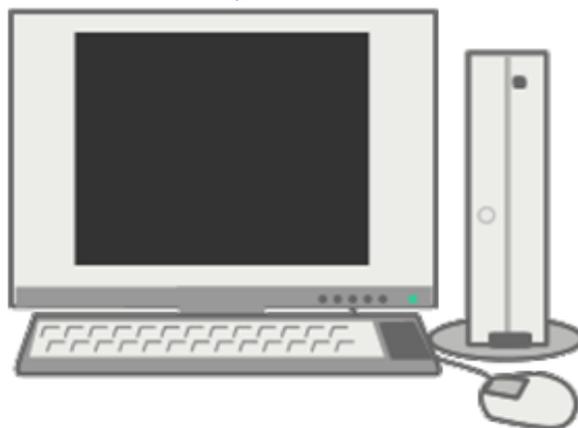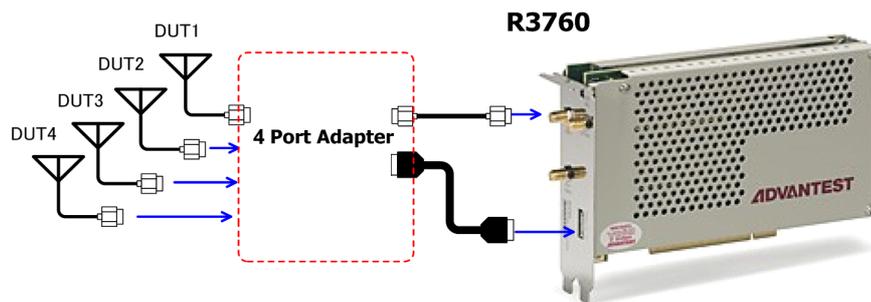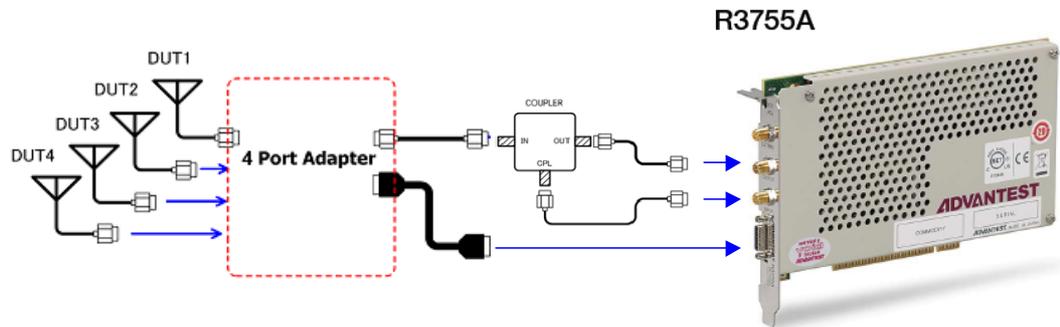
2.   Application Software

Execute installation according to the CD-ROM manual included with the R3755A/R3760.
The ANT_Para application software operates by reading measurement conditions from a measurement
condition file (Excel CSV file). As for measurement condition settings, when the ANT_Para
application software is installed, the measurement condition file is also installed as a sample.
The following describes the measurement condition file.

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3.　Measurement Condition File

The following are example descriptions in an Excel file. (ANT_Para sets measurement conditions by reading a file saved in CSV file format.)

Sample.xls

#	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Application Name	ANT_Para												
2	CSV Sheet Revision	3												
3	Product Name	R3760												
4	CAL Data File Save/Recall	ON												
5	CAL Type (Don't Care / User Define / 3.5mm / 3.5mm(R&S))	Don't Care												
6	User Cal Kit Connect Type (Female)	Female												
7	User Cal Kit OPEN Item Title	OPEN Z0[ohm]	OPEN Delay[ps]	OPEN Loss[G ohm/s]	OPEN C0[e-15] F	OPEN C1[e-27] F/Hz	OPEN C2[e-36]	OPEN C3[e-45] F/Hz3						
8	OPEN Calibration data	50	0	0	0	0	0	0						
9	User Cal Kit SHORT Item Title	SHORT Z0[ohm]	SHORT Delay[ps]	SHORT Loss[G ohm/s]	SHORT L0[e-12] H	SHORT L1[e-24] H/Hz	SHORT L2[e-33]	SHORT L3[e-42] H/Hz3						
10	SHORT Calibration data	50	0	0	0	0	0	0						
11	User Cal Kit LOAD Item Title	LOAD Z0[ohm]	LOAD Delay[ps]	LOAD Loss	LOAD Resistance [ohm]									
12	LOAD Calibration data	50	0	0	50									
13	Number Of Channel	4												
14	Channel Title	CH1												
15	Waveform display	ON												
16	Measurement	S11												
17	CAL Method (Norm / 1 Port)	1 Port												
18	Setting of each port	PORT1												
19	Port Extension (psec)	0												
20	Port Impedance (ohm)	50												
21	Number of Freq Segment	1												
22	Segment Number	START[MHz]	STOP[MHz]	POINT	START POWER[dBm]	STOP POWER[dBm]	RBW[KHZ]	SettlingTime[msec]						
23	1	2400	2500	101	0	0	3	0						
24	Number of Trace	1												
25	Trace Number	FORMAT	/DIV	RefVAL	RefPos	Arrangement Number								
26	1	SWR	1	5	100	1								
27	Number of Measurement	1												
28	Measurement Number	TITLE	Judge Valid(ON/In	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit O	LowerLimit	UpperLimit O	UpperLimit	Lw Freq[MH	Up Freq[MHz]
29	1	S11_VSWR	ON	1	MAX	2400	2470	ON	ON	0	ON	2	2400	2470
30	Channel Title	CH2												
31	Waveform display	ON												
32	Measurement	S11												
33	CAL Method (Norm / 1 Port)	1 Port												
34	Setting of each port	PORT1												
35	Port Extension (psec)	0												
36	Port Impedance (ohm)	50												
37	Number of Freq Segment	1												
38	Segment Number	START[MHz]	STOP[MHz]	POINT	START POWER[dBm]	STOP POWER[dBm]	RBW[KHZ]	SettlingTime[msec]						
39	1	2400	2500	101	0	0	3	0						
40	Number of Trace	1												
41	Trace Number	FORMAT	/DIV	RefVAL	RefPos	Arrangement Number								
42	1	SWR	1	5	100	1								
43	Number of Measurement	1												
44	Measurement Number	TITLE	Judge Valid(ON/In	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit O	LowerLimit	UpperLimit O	UpperLimit	Lw Freq[MH	Up Freq[MHz]
45	1	S11_VSWR	ON	1	MAX	2400	2470	ON	ON	0	ON	2	2400	2470
46	Channel Title	CH3												
47	Waveform display	ON												
48	Measurement	S11												
49	CAL Method (Norm / 1 Port)	1 Port												
50	Setting of each port	PORT1												
51	Port Extension (psec)	0												
52	Port Impedance (ohm)	50												
53	Number of Freq Segment	1												
54	Segment Number	START[MHz]	STOP[MHz]	POINT	START POWER[dBm]	STOP POWER[dBm]	RBW[KHZ]	SettlingTime[msec]						
55	1	2400	2500	101	0	0	3	0						
56	Number of Trace	1												
57	Trace Number	FORMAT	/DIV	RefVAL	RefPos	Arrangement Number								
58	1	SWR	1	5	100	1								
59	Number of Measurement	1												
60	Measurement Number	TITLE	Judge Valid(ON/In	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit O	LowerLimit	UpperLimit O	UpperLimit	Lw Freq[MH	Up Freq[MHz]
61	1	S11_VSWR	ON	1	MAX	2400	2470	ON	ON	0	ON	2	2400	2470
62	Channel Title	CH4												
63	Waveform display	ON												
64	Measurement	S11												
65	CAL Method (Norm / 1 Port)	1 Port												
66	Setting of each port	PORT1												
67	Port Extension (psec)	0												
68	Port Impedance (ohm)	50												
69	Number of Freq Segment	1												
70	Segment Number	START[MHz]	STOP[MHz]	POINT	START POWER[dBm]	STOP POWER[dBm]	RBW[KHZ]	SettlingTime[msec]						
71	1	2400	2500	101	0	0	3	0						
72	Number of Trace	1												
73	Trace Number	FORMAT	/DIV	RefVAL	RefPos	Arrangement Number								
74	1	SWR	1	5	100	1								
75	Number of Measurement	1												
76	Measurement Number	TITLE	Judge Valid(ON/In	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit O	LowerLimit	UpperLimit O	UpperLimit	Lw Freq[MH	Up Freq[MHz]
77	1	S11_VSWR	ON	1	MAX	2400	2470	ON	ON	0	ON	2	2400	2470

Model, CAL correction values (rows 1–13)

Measurement conditions, measurement items, and limits for CH1 (rows 14–29)

Measurement conditions, measurement items, and limits for CH2 (rows 30–45)

Measurement conditions, measurement items, and limits for CH3 (rows 46–61)

Measurement conditions, measurement items, and limits for CH4 (rows 62–77)

3.1. Setting Measurement Condition File

	A	B	C	D	E	F	G	H
	Sample.xls							
1	Application Name	ANT_Para						
2	CSV Sheet Revsion	3						
3	Product Name	R3760						
4	CAL Data File Save/Recall	ON						
5	CAL Type (Don't Care / User Define / 3.5mm / 3.5mm(R&S))	Don't Care						
6	User Cal Kit Connect Type (Female)	Female						

(1) Application Name
  ANT_Para : Application software identification name.

(2) CSV Sheet Revsion
  3 : CSV revision

(3) Product Name
  R3755A/R3760 : Board network analyzer to be connected

(4) CAL Data File Save/Recall
  ON : Uses the calibration data Save/Recall function.
  OFF : Does not use the calibration data Save/Recall function.

(5) CAL Type (Don't Care / User Define / 3.5mm / 3.5mm(R&S))
  Don't Care : Specifies not to select a calibration type.
  User Define : Specifies a user-specific calibration type. (The 6th, 8th, 10th, and 12th lines must also be set.)
  3.5mm : Specifies 3.5mm for the calibration type.
    A calibration value of the MAURY-produced CAL Kit (Model9617F3) is used.
  3.5mm(R&S) : Specifies 3.5mm (R&S) for the calibration type.
    A calibration value of the ROHDE&SCHWARZ-produced CAL Kit (ZV-Z132 MODEL 03) is used.

(6) User Cal Kit Connect Type (Female)
  Female : Only this type can be specified.

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Sample.xls

	A	B	C	D	E	F	G	H
1	Application Name	ANT_Para						
2	CSV Sheet Revsion	3						
3	Product Name	R3760						
4	CAL Data File Save/Recall	ON						
5	CAL Type (Don't Care / User Define / 3.5mm / 3.5mm(R&S))	Don't Care						
6	User Cal Kit Connect Type (Female)	Female						
7	User Cal Kit OPEN Item Title	OPEN Z0[ohm]	OPEN Delay[ps]	OPEN Loss[G ohm/s]	OPEN C0[e−15] F	OPEN C1[e−27] F/Hz	OPEN C2[e−36] F/Hz2	OPEN C3[e−45] F/Hz3
8	OPEN Calibration data	50	0	0	0	0	0	0
9	User Cal Kit SHORT Item Title	SHORT Z0[ohm]	SHORT Delay[ps]	SHORT Loss[G ohm/s]	SHORT L0[e−12] H	SHORT L1[e−24] H/Hz	SHORT L2[e−33] H/Hz2	SHORT L3[e−42] H/Hz3
10	SHORT Calibration data	50	0	0	0	0	0	0
11	User Cal Kit LOAD Item Title	LOAD Z0[ohm]	LOAD Delay[ps]	LOAD Loss	LOAD Resistance [ohm]			
12	LOAD Calibration data	50	0	0	50			

(7) User Cal Kit OPEN Item Title
　　　　Setting title.

(8) OPEN Calibration data
　　　　When CAL Type is User Define, set an OPEN correction value for this setting item.

(9) User Cal Kit SHORT Item Title
　　　　Setting title.

(10) SHORT Calibration data
　　　　When CAL Type is User Define, set a SHORT correction value for this setting item.

(11) User Cal Kit LOAD Item Title
　　　　Setting title.

(12) LOAD Calibration data
　　　　When CAL Type is User Define, set a LOAD correction value for this setting item.

(13)Number Of Channel

Specifies the total number of CHs (N) to be set.

Sample.xls

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
13	Number Of Channel	4												
14	Channel Title	CH1												
15	Waveform display	ON												
16	Measurement	S11												
17	CAL Method (Norm / 1 Port)	1 Port												
18	Setting of each port	PORT1												
19	Port Extension (psec)	0												
20	Port Impedance (ohm)	50												
21	Number of Freq.Segment	1												
22	Segment Number	START[MHz]	STOP[MHz]	POINT	START POWER[dBm]	STOP POWER[dBm]	RBW[KHZ]	SettlingTime[msec]						
23	1	2400	2500	101	0	0	3	0						
24	Number of Trace	1												
25	Trace Number	FORMAT	/DIV	RefVAL	RefPos	Arrangement Number								
26	1	SWR	1	5	100	1								
27	Number of Measurement	1												
28	Measurement Number	TITLE	Judge Valid(ON)/Invalid(OFF)	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit Check	LowerLimit	UpperLimit Check	UpperLimit	Lw Freq[MHz]	Up Freq[MHz]
29	1	S11 VSWR	ON	1	MAX	2400	2470	ON	ON	0	ON	2	2400	2470
30	Channel Title	CH2												
31	Waveform display	ON												
32	Measurement	S11												
33	CAL Method (Norm / 1 Port)	1 Port												
34	Setting of each port	PORT1												
35	Port Extension (psec)	0												
36	Port Impedance (ohm)	50												
37	Number of Freq.Segment	1												
38	Segment Number	START[MHz]	STOP[MHz]	POINT	START POWER[dBm]	STOP POWER[dBm]	RBW[KHZ]	SettlingTime[msec]						
39	1	2400	2500	101	0	0	3	0						
40	Number of Trace	1												
41	Trace Number	FORMAT	/DIV	RefVAL	RefPos	Arrangement Number								
42	1	SWR	1	5	100	1								
43	Number of Measurement	1												
44	Measurement Number	TITLE	Judge Valid(ON)/Invalid(OFF)	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit Check	LowerLimit	UpperLimit Check	UpperLimit	Lw Freq[MHz]	Up Freq[MHz]
45	1	S11 VSWR	ON	1	MAX	2400	2470	ON	ON	0	ON	2	2400	2470
46	Channel Title	CH3												
47	Waveform display	ON												
48	Measurement	S11												
49	CAL Method (Norm / 1 Port)	1 Port												
50	Setting of each port	PORT1												
51	Port Extension (psec)	0												
52	Port Impedance (ohm)	50												
53	Number of Freq.Segment	1												
54	Segment Number	START[MHz]	STOP[MHz]	POINT	START POWER[dBm]	STOP POWER[dBm]	RBW[KHZ]	SettlingTime[msec]						
55	1	2400	2500	101	0	0	3	0						
56	Number of Trace	1												
57	Trace Number	FORMAT	/DIV	RefVAL	RefPos	Arrangement Number								
58	1	SWR	1	5	100	1								
59	Number of Measurement	1												
60	Measurement Number	TITLE	Judge Valid(ON)/Invalid(OFF)	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit Check	LowerLimit	UpperLimit Check	UpperLimit	Lw Freq[MHz]	Up Freq[MHz]
61	1	S11 VSWR	ON	1	MAX	2400	2470	ON	ON	0	ON	2	2400	2470
62	Channel Title	CH4												
63	Waveform display	ON												
64	Measurement	S11												
65	CAL Method (Norm / 1 Port)	1 Port												
66	Setting of each port	PORT1												
67	Port Extension (psec)	0												
68	Port Impedance (ohm)	50												
69	Number of Freq.Segment	1												
70	Segment Number	START[MHz]	STOP[MHz]	POINT	START POWER[dBm]	STOP POWER[dBm]	RBW[KHZ]	SettlingTime[msec]						
71	1	2400	2500	101	0	0	3	0						
72	Number of Trace	1												
73	Trace Number	FORMAT	/DIV	RefVAL	RefPos	Arrangement Number								
74	1	SWR	1	5	100	1								
75	Number of Measurement	1												
76	Measurement Number	TITLE	Judge Valid(ON)/Invalid(OFF)	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit Check	LowerLimit	UpperLimit Check	UpperLimit	Lw Freq[MHz]	Up Freq[MHz]
77	1	S11 VSWR	ON	1	MAX	2400	2470	ON	ON	0	ON	2	2400	2470

B13 : Number of set channels (N)

×N

3.2. Setting Measurement Conditions, Measurement Items, and Limits for Each CH

	A	B	C	D	E	F	G	H
14	Channel Title	CH1						
15	Waveform display	ON						
16	Measurement	S11						
17	CAL Method (Norm / 1 Port)	1 Port						
18	Setting of each port	PORT1						
19	Port Extension (psec)	0						
20	Port Impedance (ohm)	50						

(14) Channel Title
    CH title

(15) Waveform display
    ON : Displays waveforms.
    OFF : Does not display a waveform.

(16) Measurement
    S11 : S11 measuremen (R3760)
    A/R : A/R measuremen (R3755A)

(17) CAL Method (Norm / 1 Port)
    Norm   : Sets Normalize for the calibration method.
    1 Port : Sets 1Port Full Cal for the calibration method.

(18) Setting of each port
    Setting of each port title.

(19) Port Extension (psec)
    Sets the electric length for port 1 by time. (The time unit is "setting value x 10E12".)

(20) Port Impedance (ohm)
    Sets a port impedance value.

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	A	B	C	D	E	F	G	H	I
21	Number of Freq.Segment	1							
22	Segment Number	START[MHz]	STOP[MHz]	POINT	START POWER[dBm]	STOP POWER[dBm]	RBW[KHZ]	SettlingTime[msec]	
23	1	2400	2500	101	0	0	3	0	
24	Number of Trace	1							
25	Trace Number	FORMAT	/DIV	RefVAL	RefPos	Arrangement Number			
26	1	SWR		1	5	100	1		
27	Number of Measurement	1							
28	Measurement Number	TITLE	Judge Valid(ON)/Invalid(OFF)	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit Check
29	1	S11 VSWR	ON	1	MAX		2400	2470 ON	ON

B21 : Number of Freq.Segment : The number of setup of segment sweep(F)

B23 : Start frequency (MHz)
C23 : Stop frequency (MHz)(MHz)
D23 : The number of measurement points
E23 : Output power (start) (dBm)
F23 : Output power (stop) (dBm)
G23 : RBW(kHz)
H23 : Set ring time(msec)

×F

(21)Number of Freq.Segment
　　　Sets the number of frequency settings for which segment sweep is performed.

(22)Segment Number
　　　Segment sweep title.

(23) Number
　　　Setting items specified for segment sweep.
　　　Setting number, start frequency (MHz), stop frequency (MHz), number of measurement points, output power (start), output power (stop), RBW (KHz), and settling time (msec).

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The preceding settings are repeated the number of times specified for "(21) Number of Freq.Segment.

	A	B	C	D	E	F	G	H	I
24	Number of Trace	1							
25	Trace Number	FORMAT	/DIV	RefVAL	RefPos	Arrangement Number			
26	1	SWR	1	5	100	1			
27	Number of Measurement	1							
28	Measurement Number	TITLE	Judge Valid(ON)/Invalid(OFF)	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit Check
29	1	S11 VSWR	ON	1	MAX	2400	2470	ON	ON

B24 : Number of Trace : The number of traces to display(T)

A26 : Trace number
B26 : Trace format(LOGMAG, SWR, SMITH)
C26 : Scale (Division)
D26 : Scale (Reference)
E26 : Scale (Reference Position)
F26 : Trace display position(Arrangement Number)

×T

(24) Number of Trace
        Number of traces to be displayed.

(25) Trace Number
        Trace setting title

(26) Number
        Trace setting items.
        Trace format (LOGMAG,SWR,SMITH*), scale (DIV), scale (Ref), and scale (Ref Position)
        * The scale value of SMITH cannot be set up. (DIV = 1, Ref = 1, Ref Position = 100)
        Arrangement Number : 1,2,3,4
        The preceding settings are repeated the number of times specified for "(24) Number of Trace."

Arrangement Number : The example of specification
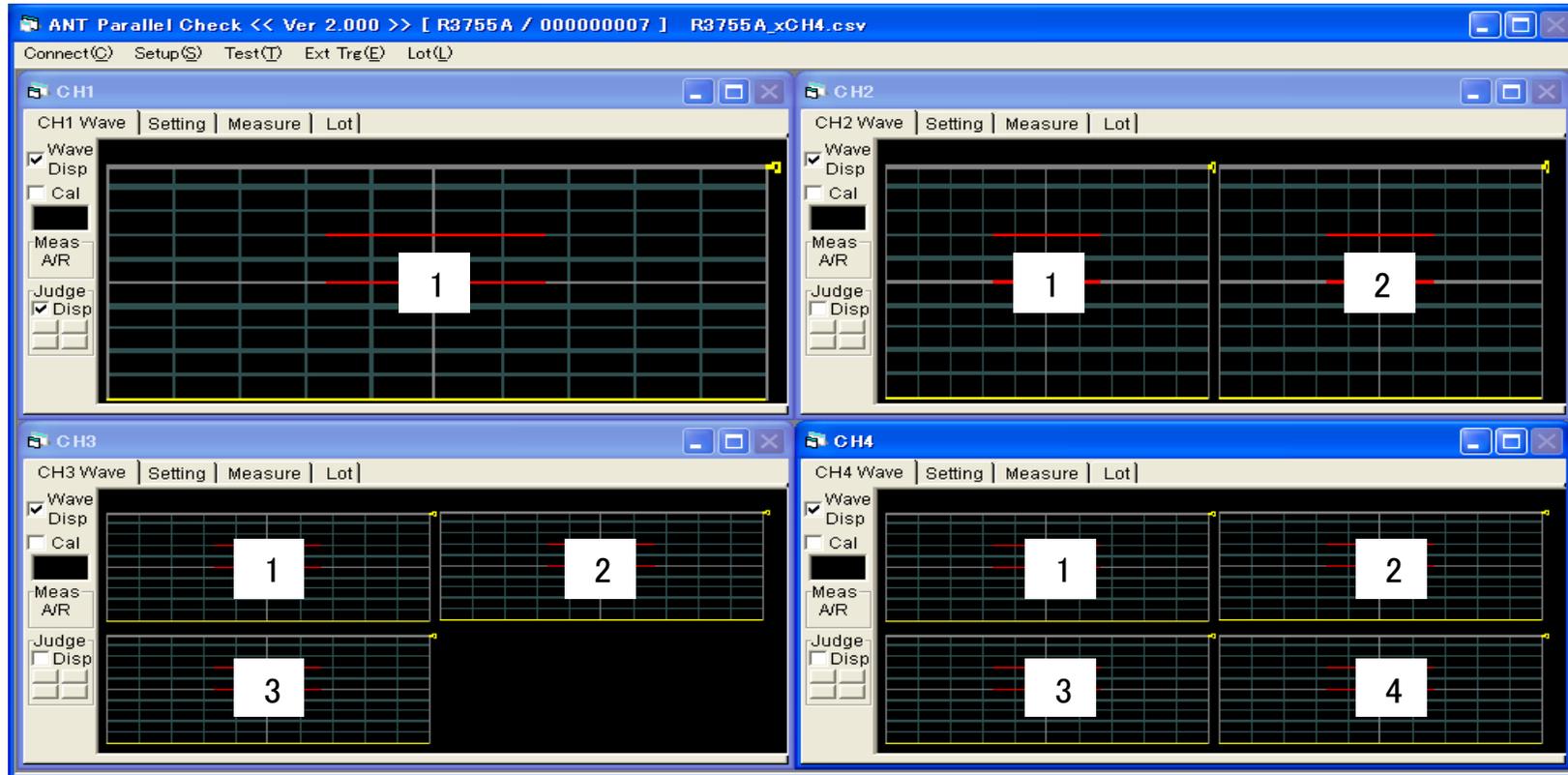
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
27	Number of Measurement	1												
28	Measurement Number	TITLE	Judge Valid(ON)/Invalid(OFF)	Trace Number	Meas. Command	START[MHz]	STOP[MHz]	Limit Disp	LowerLimit Check	LowerLimit	UpperLimit Check	UpperLimit	Lw Freq[MHz]	Up Freq[MHz]
29	1	S11 VSWR	ON	1	MAX	2400	2470	ON	ON	0	ON	2	2400	2470

B27 : Number of Measurment : The number of measurement items(M)

A29 : Measurement item number
B29 : Measurement item title
C29 : Judge(ON/OFF)
D29 : Target trace number
E29 : Method to obtain measurement value (MAX, MIN, VAL, PWRVAL, ...)
F29 : Measurement frequency (start MHz)
G29 : Measurement frequency (stop MHz)
H29 : Limit line display (ON/OFF)
I29 / K29 : Low/Up level limit check enable (ON)/disable (OFF)
J29 / L29 : Low/Up level limit value
M29 / N29 : Measurement frequency limit value
**   (valid for numeric value other than 0)**

×M

(27) Number of Measurement
      Number of measurement points.

(28) Measurement Number
      Measurement item setting title.

(29)　Number

Sets conditions for measurement points.

Item name, total judgment enable/disable (ON/OFF), trace number, data acquisition method (MAX, MIN, VAL, PWRVAL, VAL_L, VAL_C, VAL_R, RES_MIN, RES_L, RES_C, RES_R), data range setting (start), data range setting (stop), limit display setting (ON/OFF), Low limit check enable/disable (ON/OFF), Low limit value, Up limit check enable/disable (ON/OFF), Up limit value, Lw frequency limit value (zero: no limit, other than zero: limit setting), and Up frequency limit value (zero: no limit, other than zero: limit setting)

The preceding settings are repeated the number of times specified for "(27) Number of Measurement".

The following command is effective at the time of the format of SMITH. (3.1Setting Measurement Condition File (26)Number)

VAL_L　:　It asks for L (inductance) of the start frequency.
VAL_C　:　It asks for C (capacity) of the start frequency.
VAL_R　:　It asks for R (resistance) of the start frequency.

RES_MIN　: the frequency of the minimum of a measured level is searched.
RES_L　:　It asks for L (inductance) of the frequency searched by RES_MIN. *
RES_C　:　It asks for C (capacity) of the frequency searched by RES_MIN.*
RES_R　:　It asks for R (resistance) of the frequency searched by RES_MIN.*

* Please specify the same set point as data range setting (start) of RES_MIN, and data range setting (stop).
RES_L : A Low limit value, Up limit value It is possible to attach and set up mH, uH, nH, and pH after a numerical value.
RES_C : A Low limit value, Up limit value It is possible to attach and set up mF, uF, nF, and pF after a numerical value.

4.　Connecting ANT_Para Application Software to R3755A/R3760

From the [Connect(C)] menu, select [ON (N)] to connect to the R3755A/R3760.
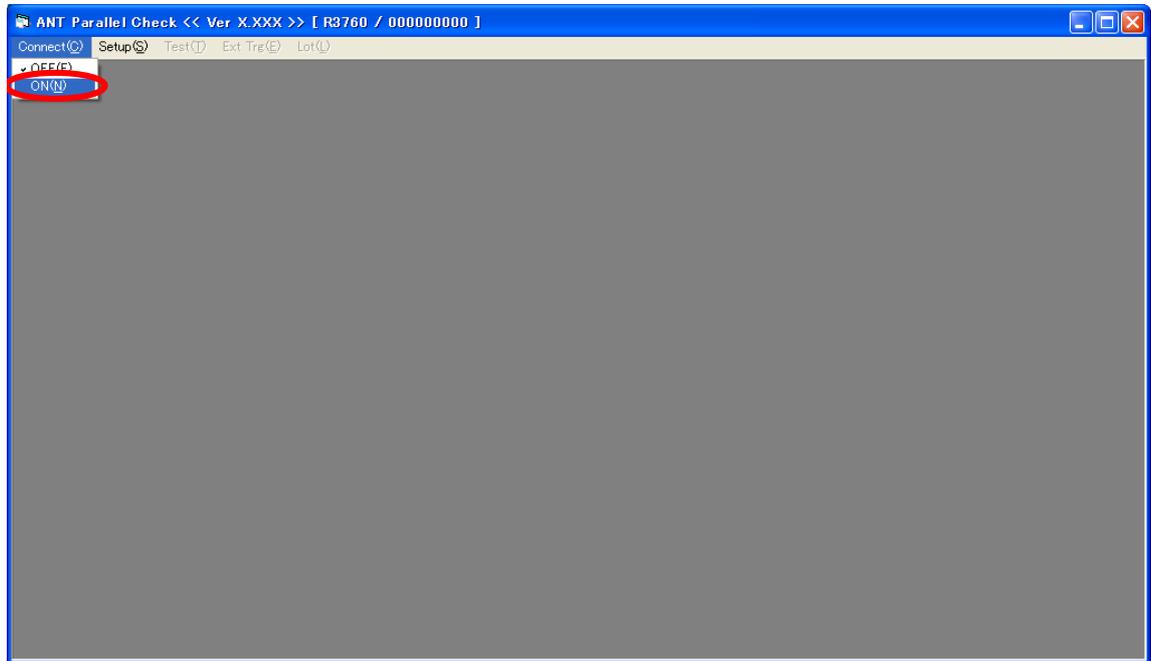
When the connection is complete, the following Excel file selection window, different for each device type, is displayed.

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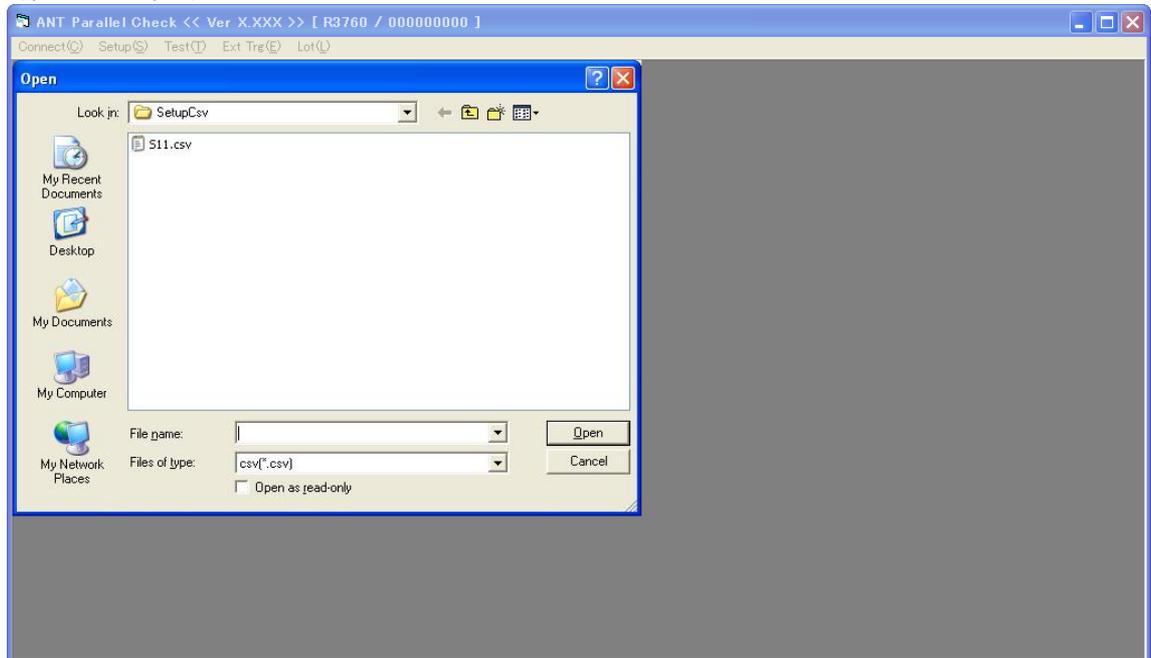
4.1.　ANT_Para Application Software Measurement Window.

The ANT_Para application software measurement window is displayed as follows.
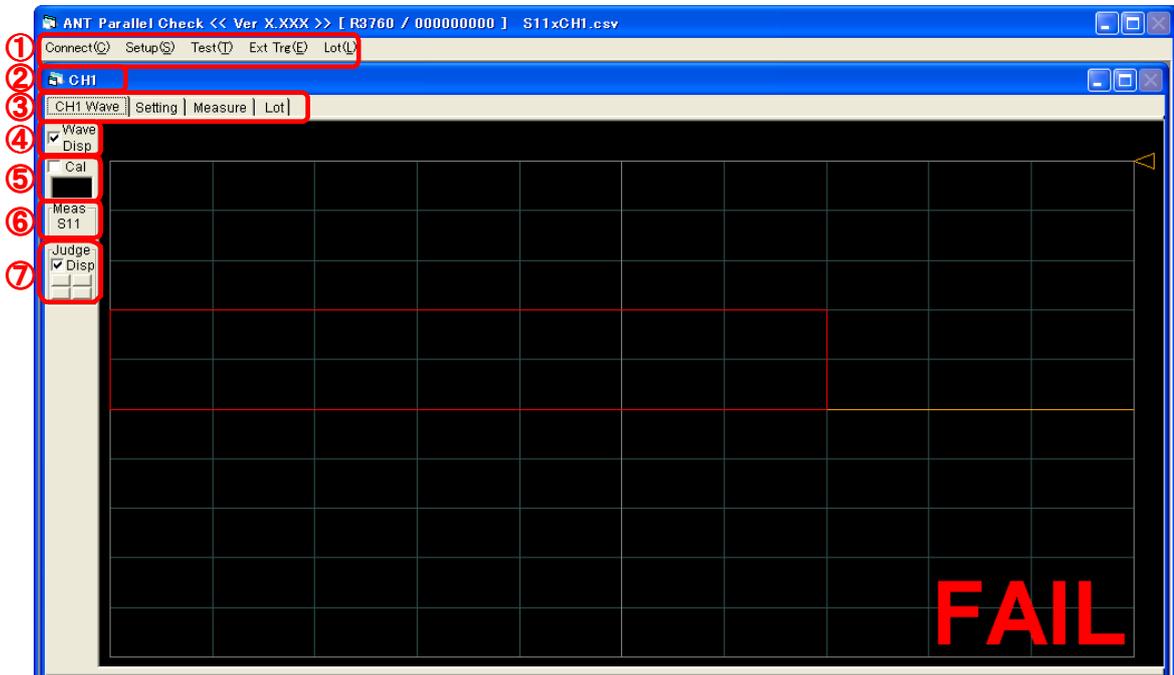
| ① | Connect (C) / Setup(S) / Test(T) / Ext Trg(E) / Lot(L) | Connect(C) : Menu to connect to the board network analyzer |
		Setup(S)　　 : Communication setting menu.
		Test(T)　　 : Sweep (single / continuous) setting menu
		Ext Trg(E) : External trigger setting menu
		Lot(L)　　　: Lot management setting menu
②	Measurement CH	The setting CHs read from an Excel (CSV) file are displayed.
③	Measurement CH information	CHx Wave : Waveform display tab.
		Setting　 : Measurement frequency condition display.
		Masure　　: Measurement waveform type display, and scale setting.
		Lot　　　 : Lot management setting.
④	Display Waveform display	
		Selected: A waveform is displayed.
		Deselected: A waveform is not displayed.
⑤	Cal	Checkbox : Calibration status ON/OFF.
		[　]　 : Calibration OFF
		[Cor]　 : Calibration ON (normal status).
		[C?]　 : Calibration ON (interpolation status)
		[C!]　 : Calibration ON (extrapolation status)
⑥	Meas	Measured-waveform display.
⑦	Judg	Selected: PASS/FAIL is displayed.
		Deselected: PASS/FAIL is not displayed.
		PASS/FAIL display location setting.

4.2. Setting Tab

Measurement frequency settings can be checked, and also calibration data can be obtained or cleared.
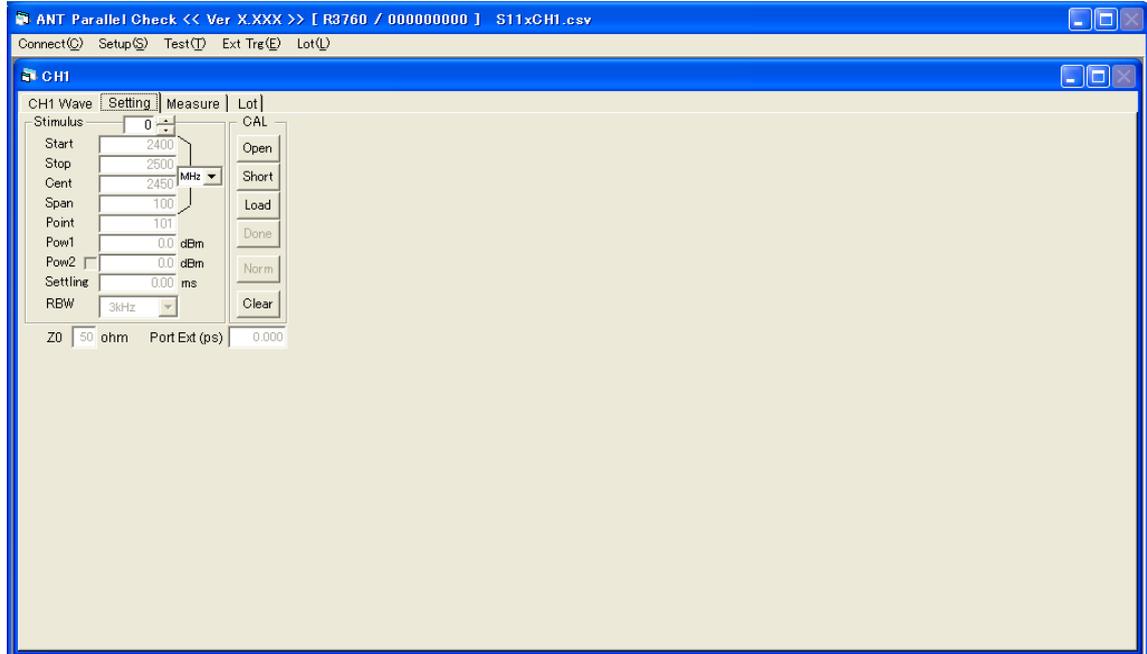
For Cal Method, 1Port Cal or Normalize can be set depending on the specified Excel file (CSV).

4.3. Measure Tab

Measured waveforms can be checked, and also scale can be set.
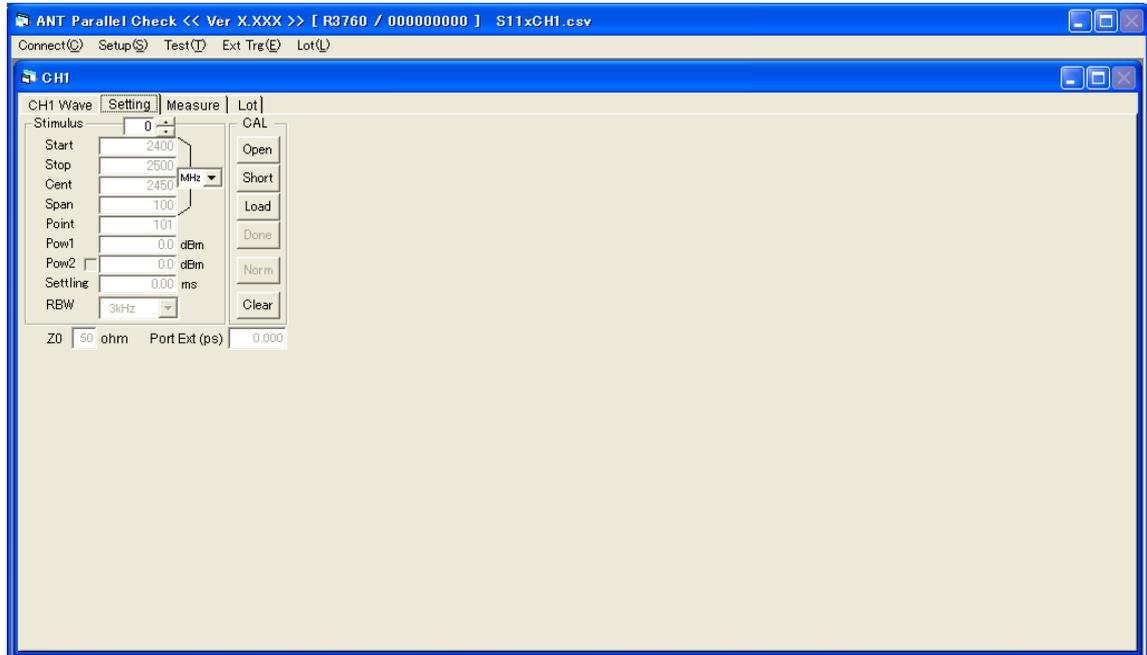
4.4.   Lot Tab

Lot start/end for each CH can be controlled, and also device, PASS, and FAIL count values are displayed. Also, a save file name can be specified, and settings for saving trace data when FAIL occurs can be performed.
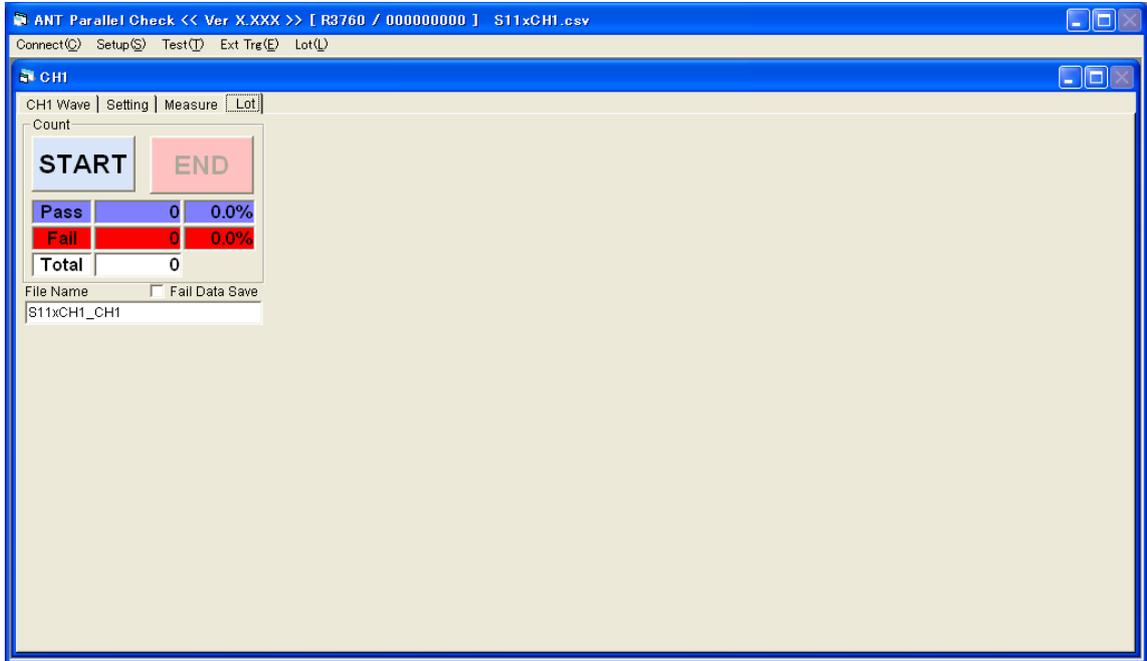

　By operating the [START] and [END] buttons provided here, the measurement results from the [START] button execution and judgment results can be saved to a file for each count.

By clicking the [END] button, a file dialog box is displayed and measurement data can be saved with a name in the specified folder.

Also, an operation to execute lot start for all CHs is provided when multiple CHs are set. By selecting [Start All (S)] from [Lot(L)] in the title menu, lot start can be executed for all CHs. Similarly, by selecting [End All (E)], lot end can be executed for all CHs. In this case, measurement data is saved with the name displayed in File Name.
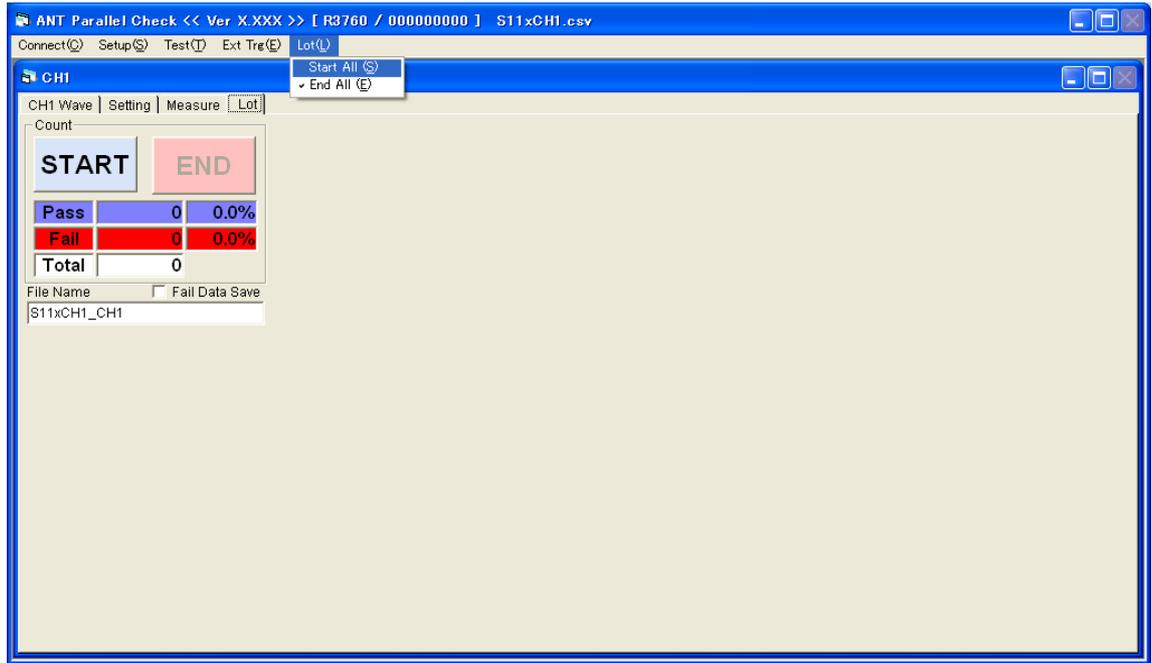
□When the Fail Data Save checkbox is selected, the measured waveform is automatically saved if the measurement value is Fail. The file name consists of a file name selected in the Excel file selection window different for each device type, to which year, month, date, time, and error count are added in this order.
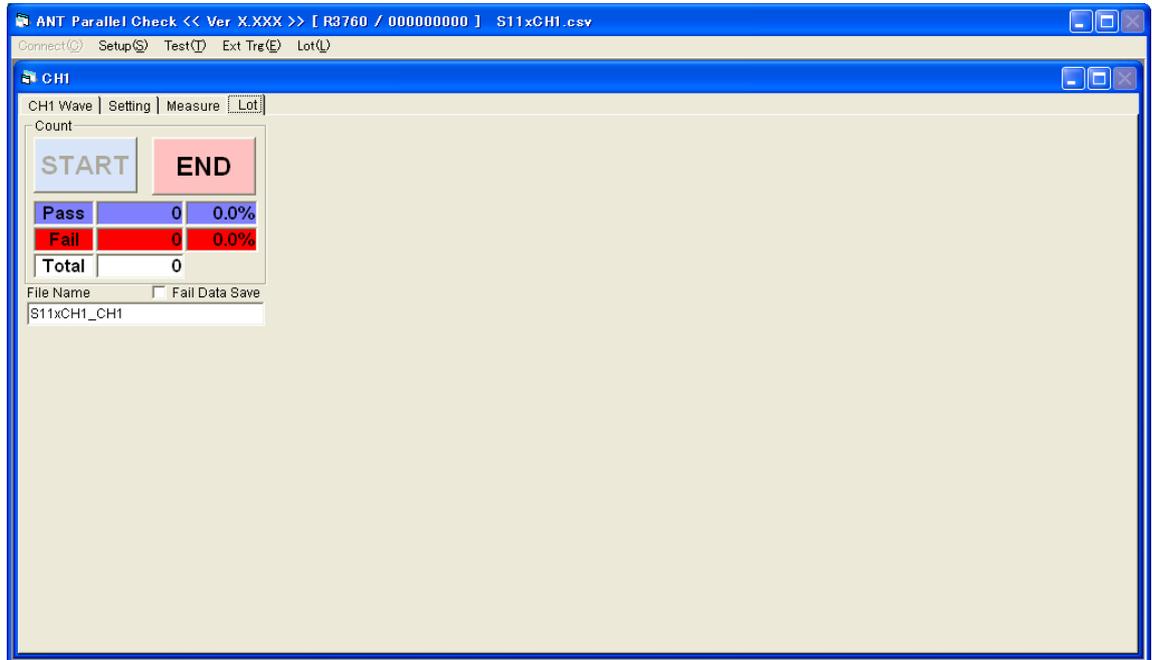
Measured waveform data automatically generated if Fail occurs (Example)

	A	B	C	D	E	F	G
							S11xCH1_CH1_20110208_1204_0001.csv
1	No.	Freq	SWR				
2							
3	1	2.40E+09	5.11E+01				
4	2	2.40E+09	5.79E+01				
5	3	2.40E+09	6.73E+01				
6	4	2.40E+09	8.04E+01				
7	5	2.40E+09	1.02E+02				
8	6	2.41E+09	1.40E+02				
9	7	2.41E+09	2.65E+02				
10	8	2.41E+09	3.37E+02				
11	9	2.41E+09	5.76E+03				
12	10	2.41E+09	2.21E+02				
13	11	2.41E+09	2.78E+02				
14	12	2.41E+09	1.29E+02				
15	13	2.41E+09	9.92E+01				
16	14	2.41E+09	7.92E+01				
17	15	2.41E+09	9.32E+01				
18	16	2.42E+09	7.18E+01				
19	17	2.42E+09	5.78E+01				
20	18	2.42E+09	7.06E+01				
21	19	2.42E+09	4.94E+01				

4.5. Starting Test

By selecting the [Test(T)] menu, measurement is executed one time.
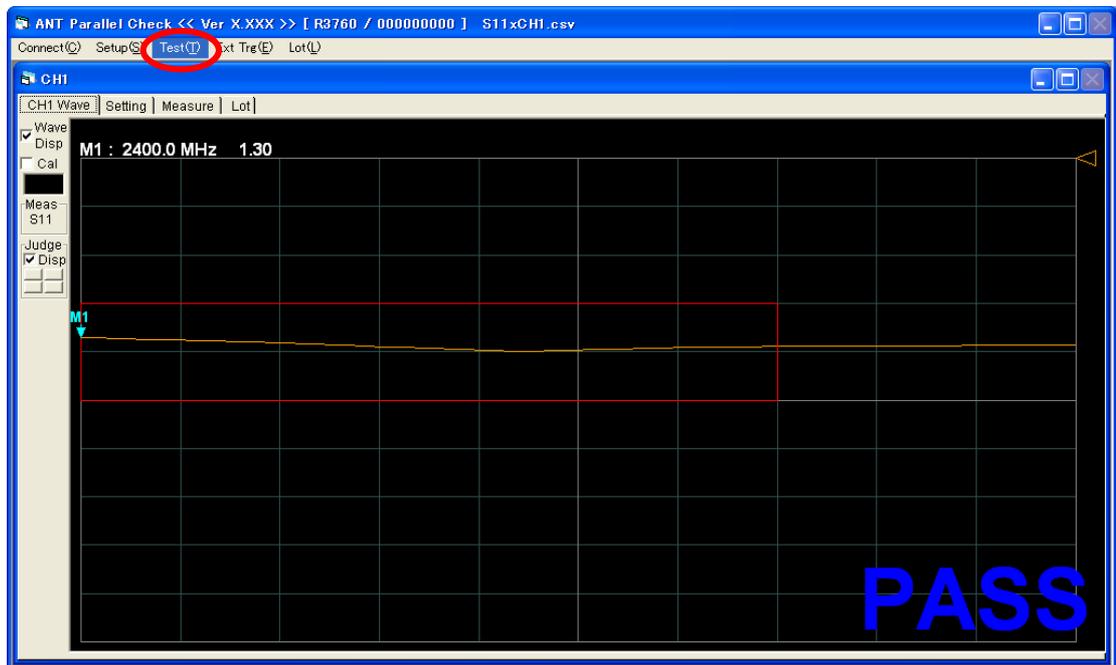
[Ext Trigger ON(N)] : Measurement is executed for all CHs using the external trigger (parallel IF) input signal.

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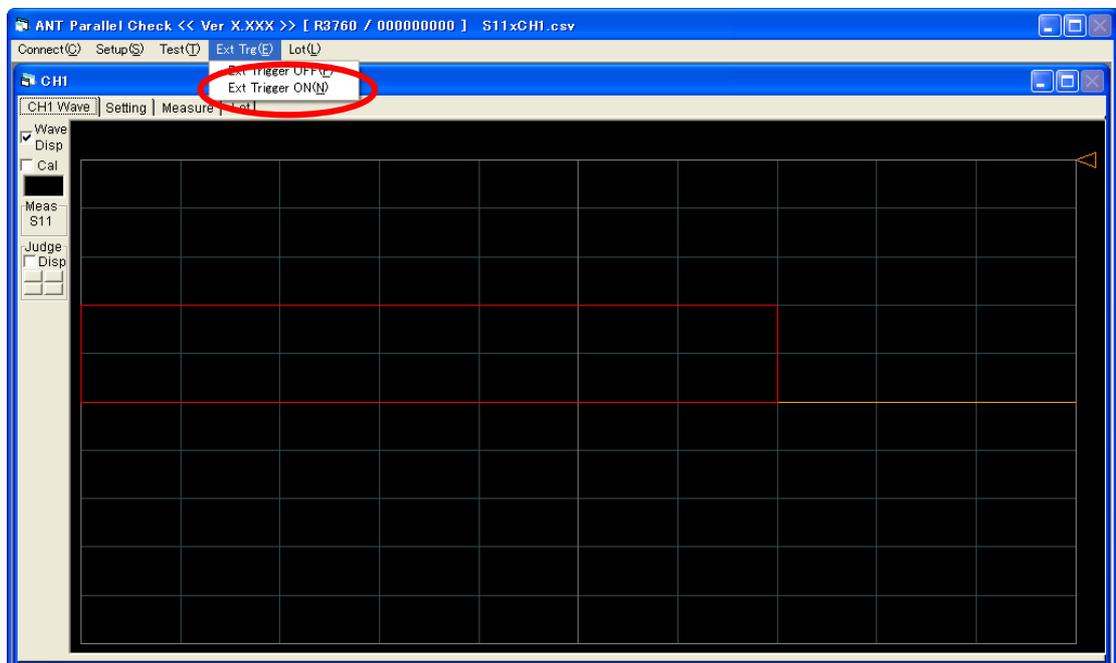
4.6. Setup Menu

When an item within the [Setup(S)] menu is selected, a window to set items for connecting the R3755A/R3760 and Ext Trigger is displayed.
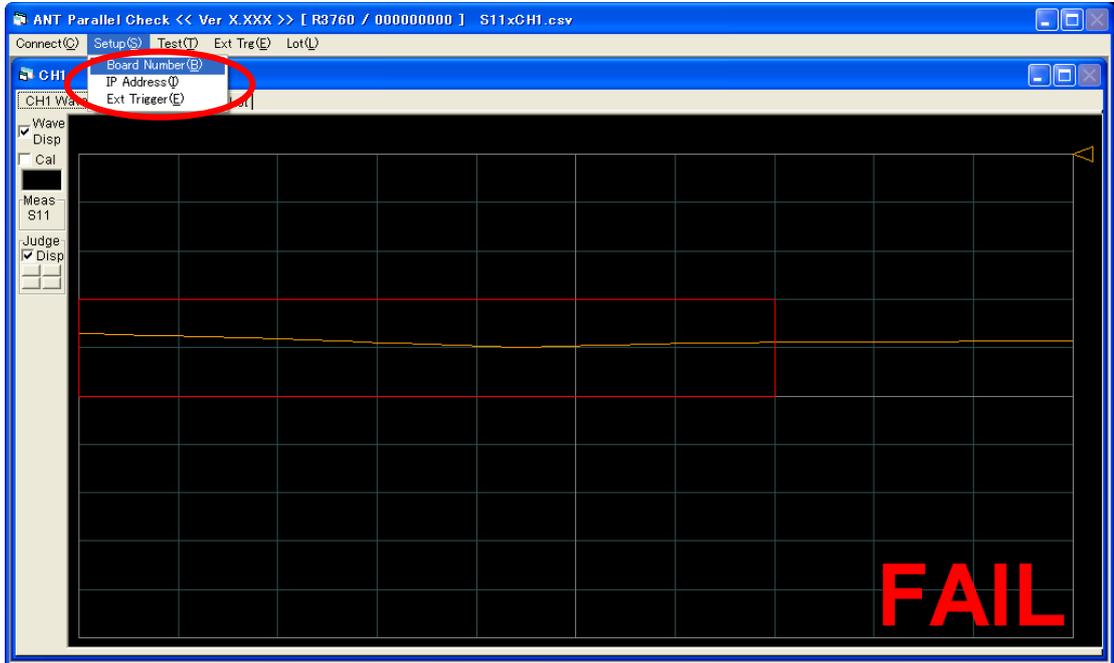

From the pull-down menu for BD, select an R3755A/R3760 board number recognized by NACServer. The IP address does not need to be changed. To use an external trigger, set 1. With this setting, measurement starts using an external trigger signal.
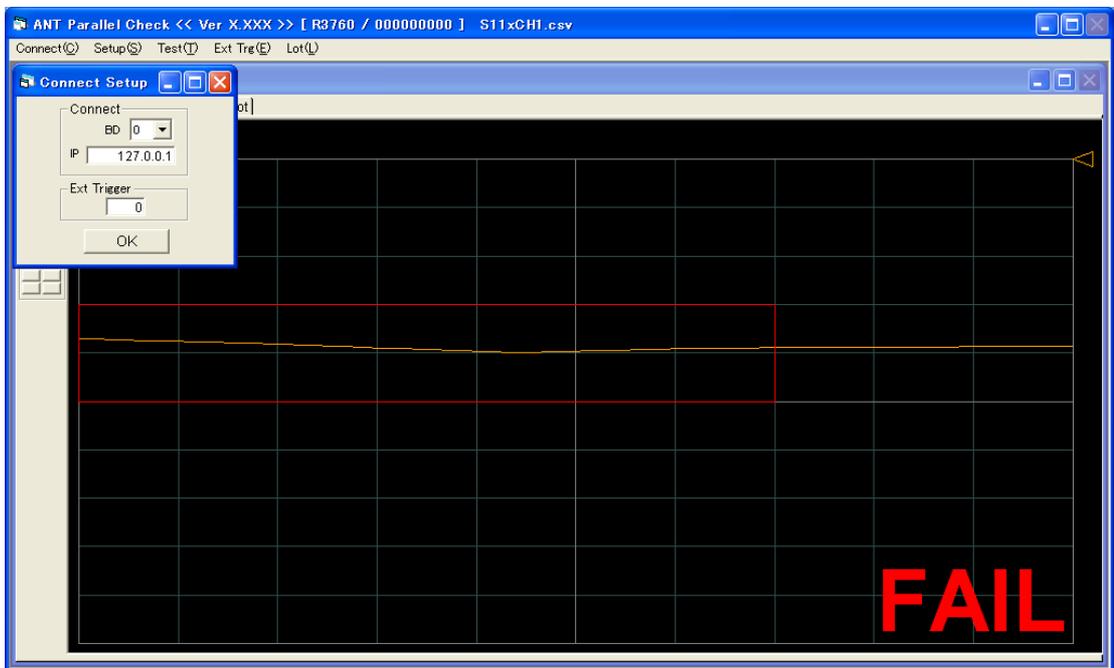
4.7.　Closing ANT_Para

Select [OFF(F)] from the [Connect(C)] menu.
※ For situations where [ON(N)] is selected in the [Connect(C)] menu, ANT_Para cannot terminate.
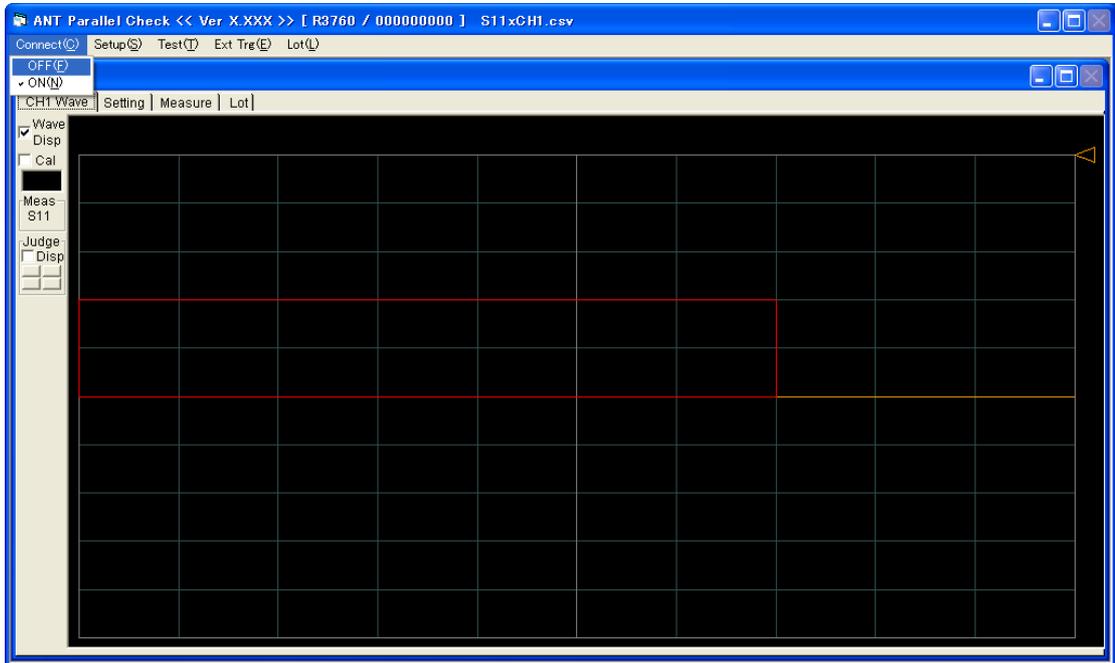
ANT_Para can terminate by selecting [X Close (C) Alt+F4] from the ANT_Para icon menu, or clicking the [X] button on the right side of the window.

4.8. Measurement Result Format

By clicking the lot end button, a measurement result file is generated for each CH.

R3760_2p4GHz_x4CH_CH1.csv

	A	B	C	D	E	F	G	H
1	Application Name	ANT_Para						
2	CSV Sheet Revsion	3						
3	Board Number	0						
4	IP Address	127.0.0.1						
5	Product Name	R3760						
6	Serial Number	191100014						
7	----------	----------	----------					
8	Total Count	6						
9	Pass Count	6	100%					
10	Fail Count	0	0%					
11	----------	----------	----------	–	----------	–	----------	–
12		No.	1				2	
13		CH Title	CH1				CH1	
14		Freq [MHz]	2300.000–2500.00				2300.000–2500.00	
15		Meas Title	S11 MIN				S11 L	
16			Freq		Level		Freq	
17		Upper Limit	----------		–15		----------	
18		Lower Limit	----------		----------		----------	
19		Fail Count	0		0		0	
20	----------	----------	----------	–	----------	–	----------	–
21	Measurement Count	Pass/Fail	Freq		Level		Freq	
22	1	Fail	2368000000		–27.817062		2368000000	
23	2	Fail	2376000000		–27.460571		2376000000	
24	3	Fail	2384000000		–28.326845		2384000000	
25	4	Fail	2392000000		–27.782093		2392000000	
26	5	Fail	2384000000		–27.664534		2384000000	
27	6	Pass	2488000000		–27.457401		2488000000	