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# **ADVANTEST®**

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## **ADVANTEST CORPORATION**

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**R3755A/R3760**  
**RFID measurement sample software manual**

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***Applicable Models***

***R3755A***

***R3760***

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## Revision history

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VERSION	REVISION DAY	CONTENT OF REVISION	NUMBER OF ALL PAGES
1	2010/07/20	New making	8
2	2010/08/16	New Screen RBW Setting bug fix.	8

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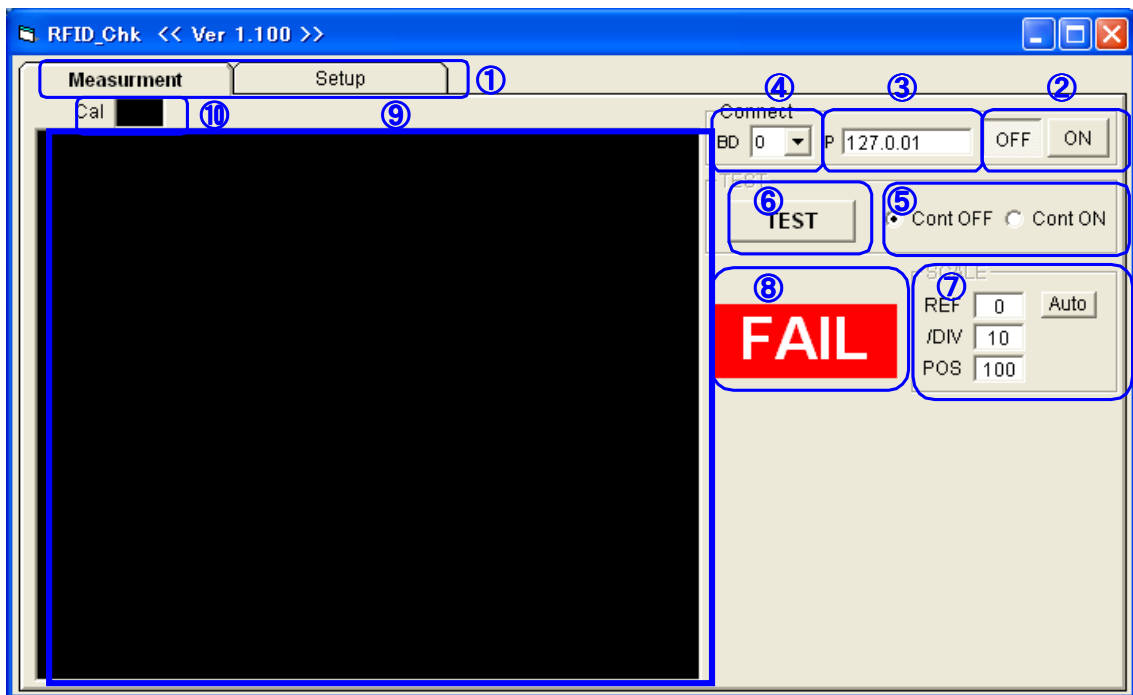
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## 1. R3755A/R3760 RFID About the measurement sample software

The R3755A/R3760 network analyzer is built in the PCI extended slot of the personal computer and used. The feature of the sample software for RFID used with this network analyzer built into the personal computer is shown below.

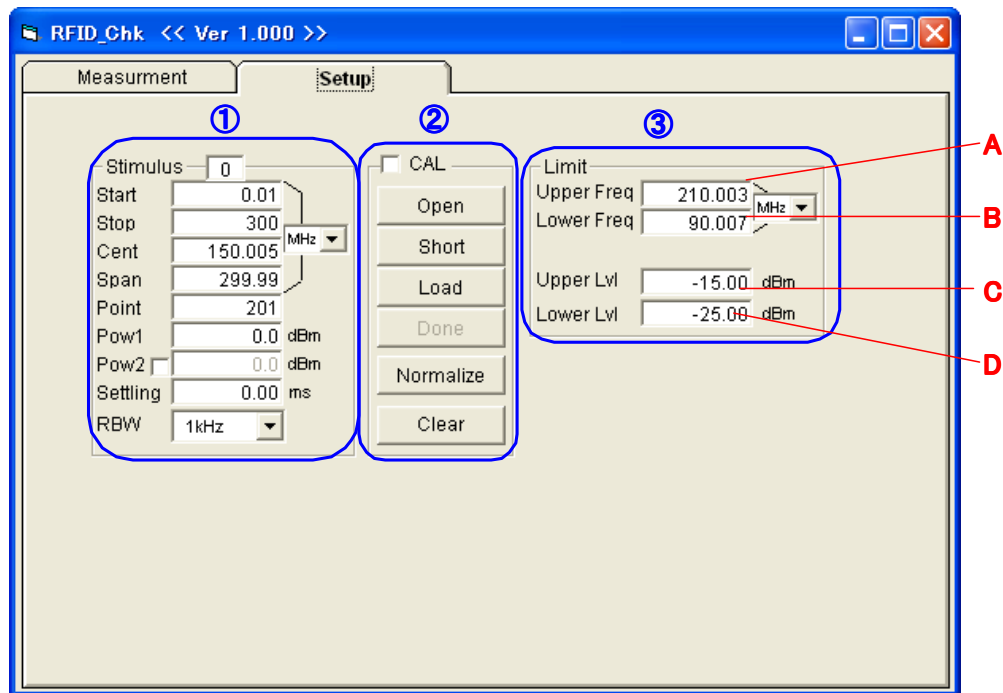
## 2. RFID Measurement sample software screen explanation

### 2.1. Measurment screen



- |                         |   |
|-------------------------|---|
| ① Measurement/Setup Tab | Switch tab on Measurement/Setup tab   |
| ② Connect button        | It connects it with the network analyzer in the Connect button personal computer.   |
| ③ TCP/IP Address        | The address of TCP/IP is input.   |
| ④ Board number          | The board number of R3755A/R3760 is specified..   |
| ⑤ Cont ON/OFF           | ON/OFF continuousness sweep.  |
| ⑥ Sweep button          | It sweep it once.   |
| ⑦ SCALE                 | Setting of Logmag scale.  |
| ⑧ PASS/FAIL             | A minimum level judges and displays the stipulated range a regulated range of the level and the Frequency within the range that has been delimited in the limit line.   |
| ⑨ Wave form             | The shape of waves of Logmag and the marker of the limit line and the Minimum value are displayed.  |
| ⑩ Calibration           | <p>The acquisition of Calibration is displayed.</p> <p>“ ” : Calibration measurement set to OFF.</p> <p>“Cor” : Calibration measurement set to ON (normal condition).</p> <p>“C?” : Calibration measurement set to ON (interpolating condition)</p> <p>“C!” : Calibration measurement set to ON (extrapolating condition)</p> |

## 2.2. Setup screen



### 1. Stimulus

The frequency range for the sweep, number of sweep points, power level, settling time, and other settings for the signal source and the resolution bandwidth (RBW) for the receiver can be set in this area.

### 2. CAL

1Port FULL CALL or Normalize is executed.

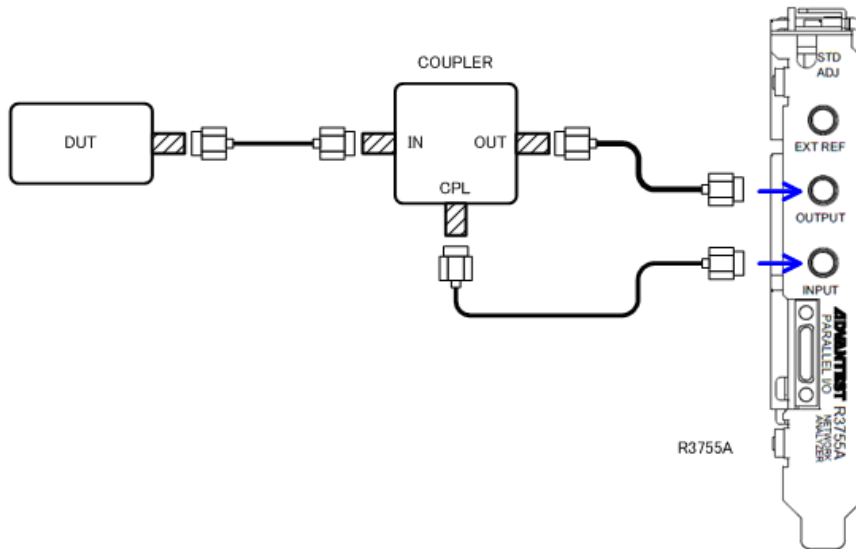
### 3. Limit

The limit of the frequency and the limit at the level are set.

### 3. Before the measurement of RFID

#### 3.1. Connection method

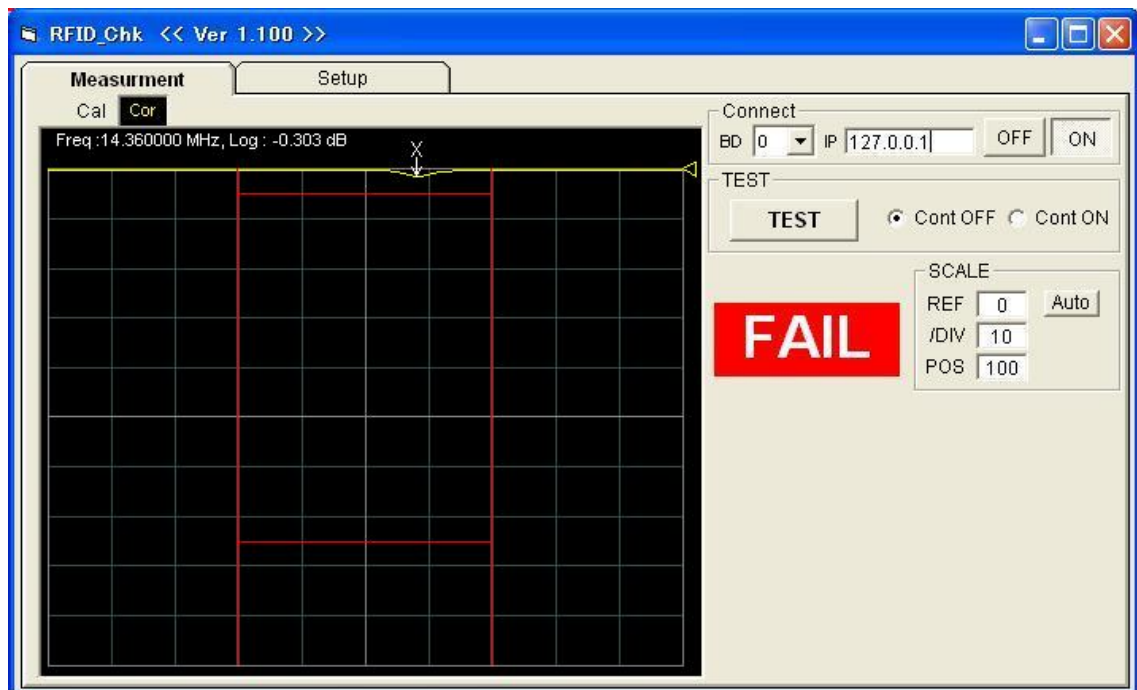
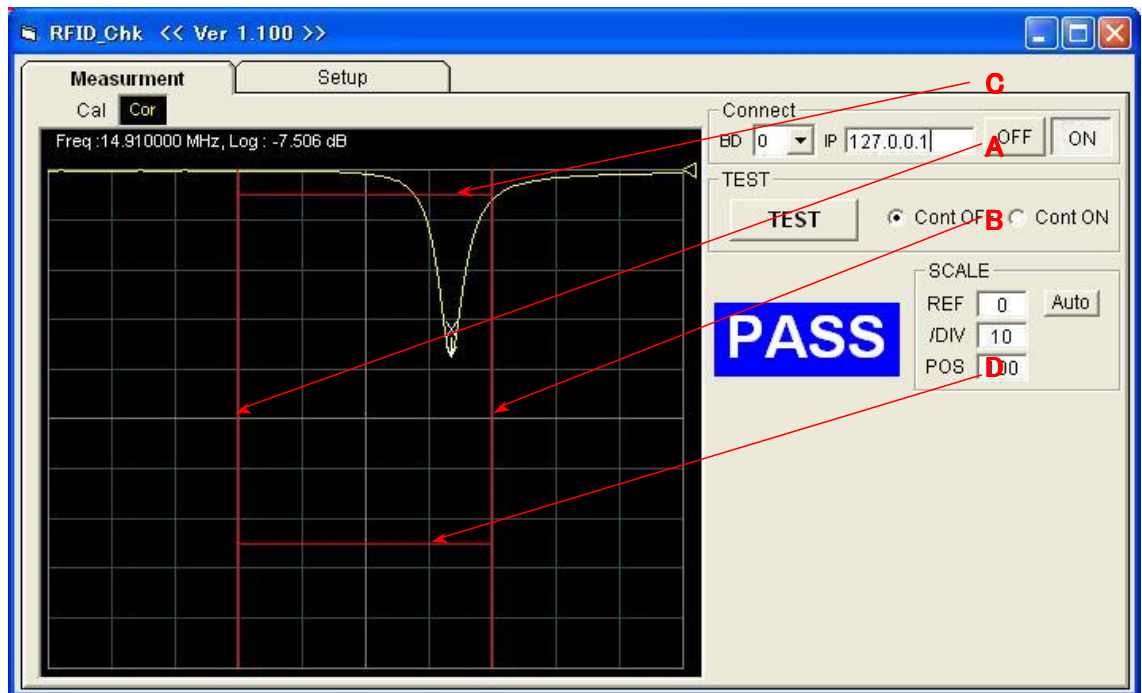
Please connect R3755A and COUPLER as follows.



#### 3.2. Measurement procedure

It connects with network analyzer (NACserver) with Conect button.  
Please calibrate. (Setup Tab)

## 4. RFID Measurement



A minimum level is detected. It confirms within the range of the limit this level and PASS/FAIL is displayed.

## 5. Others (Reference: Coupler Data marketed commodity)

### Coaxial Directional Coupler

50Ω

0.005 to 20 MHz

#### Maximum Ratings

Operating Temperature -55°C to 100°C

Storage Temperature -55°C to 100°C

Permanent damage may occur if any of these limits are exceeded.

#### Coaxial Connections

INPUT	1
OUTPUT	2
COUPLED	3

#### Features

- excellent directivity, 40 dB typ.
- excellent mainline loss, 0.4 dB typ.
- rugged shielded case

#### Applications

- hf communications
- amateur radio
- instrumentation

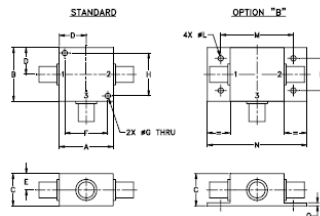
### ZFDC-10-6



BNC version shown  
CASE STYLE: K18

Connectors	Model	Price	Qty.
BNC	ZFDC-10-6	\$52.95	(1-9)
SMA	ZFDC-10-6-S	\$57.95	(1-9)
N-TYPE	ZFDC-10-6-N	\$57.95	(1-9)
BRACKET (OPTION "B")		\$2.50	(1+)

#### Outline Drawing



#### Outline Dimensions (inch/mm)

	A	B	C	D	E	F	G	H
	1.25	1.25	.75	.63	.38	1.00	.125	1.000
	31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40
	J	K	L	M	N	P	Q	wt
	—	—	.125	1.688	2.18	.75	.07	grams
	—	—	3.18	42.88	55.37	19.05	1.78	70.0

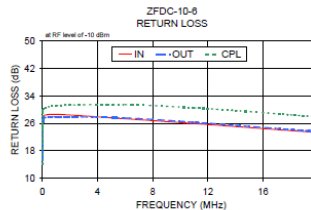
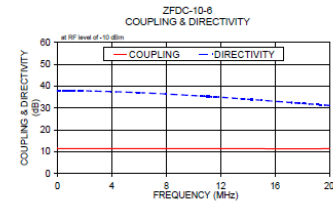
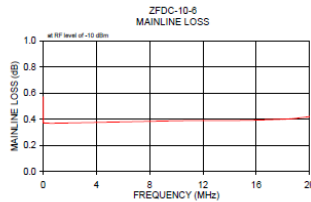
#### Directional Coupler Electrical Specifications

FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT (W)	
																L	MU
			L		M		U		L		M		U				
f <sub>1</sub> -f <sub>2</sub>	Nom.	Flatness	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Max.
0.005-20	11±0.5	±0.5	0.4	1.2	0.4	0.8	0.4	1.0	40	30	40	30	35	25	1.3	1.5	3.0

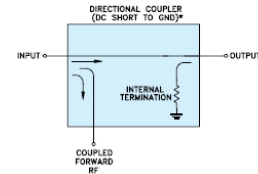
L = low range [f<sub>1</sub> to 10 f<sub>1</sub>] M = mid range [10 f<sub>1</sub> to f<sub>2</sub>/2] U = upper range [f<sub>2</sub>/2 to f<sub>2</sub>]<sup>1</sup> Mainline loss includes theoretical power loss at coupled port.

#### Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)	Coupling (dB)	Directivity (dB)	Return Loss (dB)		Cpl
				In	Out	
0.01	0.57	11.62	37.96	15.36	15.23	13.92
0.02	0.38	11.38	37.78	24.50	24.12	23.93
0.04	0.37	11.35	37.90	27.12	26.69	26.00
0.08	0.37	11.35	38.01	28.29	27.60	30.23
1.00	0.37	11.38	38.03	28.63	27.94	31.20
6.00	0.38	11.35	37.01	27.34	27.57	31.48
11.00	0.39	11.39	35.31	25.93	26.30	30.52
14.00	0.39	11.34	34.01	25.06	25.41	29.71
18.00	0.40	11.32	32.11	23.68	24.18	28.49
20.00	0.42	11.35	31.17	23.31	23.60	27.88



#### Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

For detailed performance specs & shipping online see web site

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P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuits' applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCStore/terms.jsp](http://www.minicircuits.com/MCStore/terms.jsp).

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