# 7. SPECIFICATIONS

## 7.1 R3755A Specifications

This chapter describes about the function of the R3755A and the performance/specification together.

1. Measurement Function

| | |
|---|---|
| Measurement channels | 4 channels |
| Measurement parameter | A/R |
| Measurement format | Log / Linear amplitude, Phase,complex parameter real and imaginary numbers,<br>Z, R, X (When measuring impedance conversion)<br>Y, G, B (When measuring admittance conversion) |

2. Signal Source Section (25°C±5°C, and calibration period: 1 year)

| | |
|---|---|
| Frequency characteristics | |
| Range | 10 kHz to 300 MHz |
| Resolution | 1 Hz |
| Accuracy | ±20 ppm ±1 ppm (Opt20) |
| Output characteristics | |
| Range | +0 dBm to -30 dBm (10 kHz to 1 MHz)<br>+18 dBm to -43 dBm (1 MHz to 300 MHz) |
| Resolution | 0.1 dB |
| Accuracy | ±2.0 dB (0 dBm, 10 MHz) |
| Linearity (10 MHz) | +18 dBm to -35 dBm ±1.5 dB<br>-35 dBm to -43 dBm ±2.5 dB |
| Flatness (At 0 dBm Output) | 1 MHz to 100 MHz 5.0 dBp-p<br>100 MHz to 300 MHz 8.0 dBp-p |
| Sweep characteristics | |
| Sweep parameter | Frequency |
| Range | Frequency sweep same as frequency characteristics |
| Range setting | Start / Stop or Center / Span |
| Sweep type | Any specified segment sweep<br>(Frequency, Output level, RBW, Point, Settling setting) |
| Sweep time | Max. 0.05 ms / Point (RBW 15 KHz) |
| Measurement points (Segments) | Max. 1601 points (segments) |
| Sweep trigger | Continuous or Single |
| Sweep mode | Single channel sweep |
| Output format | |
| Output | Single |
| Connector | SMA (Female), 50 Ω |

3. Characteristic of the Receiver Part (25°C±5°C, and calibration period: 1 year)

| | |
|---|---|
| **Input characteristics** | |
| Input channel | 1 ch |
| Frequency range | 10 kHz to 300 MHz |
| Impedance | Nominal 50Ω |
| Max. input level | 0 dBm |
| Input destruction level | +24 dBm, +/-3 VDC |
| Average noise level | RBW 1 kHz 10 kHz to1 MHz -70 dBm<br>1 MHz to 100 MHz -85 dBm<br>100 MHz to 300 MHz -70 dBm |
| Resolution bandwidth (RBW) | 10 Hz to 15 kHz<br>(1, 1.5, 2, 3, 4, 5, 7 steps) |
| Input connector | SMA (Female), 50 Ω |
| **Amplitude characteristics** | |
| Measurement range<br>RBW 1 kHz | <1 MHz 0 dBm to -70 dBm<br><100 MHz 0 dBm to -85 dBm<br>>100 MHz 0 dBm to -70 dBm |
| Frequency response<br>(At 0 dBm Input) | 10 kHz to 1 MHz 10.0 dBp-p<br>(* 0 dBm input and output connection A ch measurement)<br>1 MHz to 100 MHz 6.0 dBp-p<br>100 MHz to 300 MHz 8.0 dBp-p |
| Dynamic accuracy<br>-20 dBm reference | 0 to -10 dBm ±0.5 dB<br>-10 to -50 dBm ±0.3 dB<br>-50 to -60 dBm ±0.5 dB |
| **Phase characteristic** | |
| Measurement range | ±180° |
| **Error compensation function** | |
| Normalize | Frequency response compensation (Amplitude and phase) for transmission measurement |
| Transmission full calibration | Highly accurate measurement than transmission normalize for transmission measurement<br>Error compensation requires a (0 Ω) short and a (50 Ω) load |

4. Connection to External Devices

| | |
|---|---|
| External reference frequency input | Input frequency 10 MHz +/- 10 ppm > 0 dBm |
| Parallel I/O | 8-bit output (C-MOS)<br>4-bit input (C-MOS) |

5. General Specification

| | |
|---|---|
| Minimum requirements *1 | |
| Expansion slot | PC with PCI (32 bits, 5 V, half size) slot |
| OS | Windows XP |
| CPU | Celeron 500 MHz or Pentium III 500 MHz or faster |
| Main memory | 10 MB or more (Free space) |
| Hard disk | 10 MB or more (Free disk space) |
| Required programming software | Microsoft Visual Basic 6.0 or Visual C++ 6.0<br>Windows XP sp2 MS VB Net Framework 2.0 or greater |
| Miscellaneous | CD-ROM drive |
| Operating environment | |
| Temperature range | Refer to the PC's specification.<br>Maximum temperature range : +5 to +55 °C *2 |
| Humidity range | Refer to the PC's specification.<br>Maximum range : 80% (No moisture) |
| Storing environment | |
| Temperature range | -20°C to +60°C |
| Humidity range | Maximum 85 % (No moisture) |
| Power supply | DC +12 V (1 W), +5 V (5 W), +3.3 V (5 W), and -12 V (1 W)<br>(Major voltages) (Supplied through PCI connector) |
| Power consumption | 15 Watt or lower |
| Dimensions | Approximately 190 (W) × 126 (H) × 20 (D) mm |
| Mass | 1 kg or less |

*1 The R3755A may not operate exactly as described in the PC specifications.

*2 R3755A temperature
Keep the temperature inside the PC not exceeding +55°C, when the R3755A option is installed in the PC.