



### DSA-815 Deviations from CISPR

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The Rigol DSA-815 Spectrum Analyzer represents a significant shift in how companies perform EMI and EMC testing. Now, R&D Engineers can afford to have test equipment that allows them to troubleshoot and test designs on their bench without having to schedule and pay for time at a full compliance lab.

As with any product, there are trade-offs for cost vs. performance. The DSA-815 is a great tool and provides many useful features for the price, but it does not perform exactly like fully compliant EMC test instruments.

The following list highlights some of the key requirements of CISPR 16-1-1 and where the DSA-815 meets or deviates from those.

Full compliance to CISPR 16-1-1 requires the EMI test receiver is of at least the following performance:

- 1. Frequency range: 9 kHz - 1000 MHz
  - ✓ DSA-815 frequency range: 9kHz to 1500MHz
- 2. Amplitude accuracy  $\pm 2$  dB absolute amplitude accuracy
  - ✓ DSA-815 absolute amplitude accuracy < 2dB



3. The frequency response of the filters must also fall within a “mask” defined by CISPR 16.

✓ The EMI filters in DSA800 are designed according to CISPR16.

4. CISPR Specified detectors are Peak, quasi-peak, and average and the charge, discharge time and meter constants of the quasi-peak detector are specified.

✗ DSA800 has been designed to achieve CISPR performance , but has not been tested at this time

5. Specified input impedance must have a nominal value of 50 ohms with deviations specified: With 0dB attenuation: VSWR should less than 2, and with 10dB attenuation, VSWR should less than 1.2

✗ The VSWR of DSA1000 and DSA815 have VSWR's of about 1.5

6. Pass product immunity in a 3 V/m field

✗ The DSA -815 has not been tested at this time.

7. CISPR “Pulse Test”/Preselection: Preselection is achieved by input filters that track the receiver tuning to reduce broadband noise overload at the front end mixer.

✗ There is no preselection in DSA-815.



8. CISPR “Pulse Test”/Sensitivity and dynamic range. The EMI receiver must have a noise floor low enough to measure signals at low Pulse Repetition Frequencies (PRFs)

✘ The DSA-815 has been tested to these values as of late 2013.  
Contact Rigol (see below) for CISPR 16 Calibration Report.

9. Intermediate frequency rejection ratio and Image rejection ratio should be greater than 40dB.

✔ The DSA-815 spec is about 60dBc.



## **Headquarters**

RIGOL TECHNOLOGIES, INC.  
No.156,Cai He Village,  
Sha He Town,  
Chang Ping District, Beijing,  
102206 P.R.China  
Tel:+86-10-80706688  
Fax:+86-10-80705070  
Email: [support@rigol.com](mailto:support@rigol.com)

## **USA**

RIGOL TECHNOLOGIES,USA INC.  
7401 First Place, Suite N  
Oakwood Village  
OH 44164, USA  
Toll free: 877-4-RIGOL-1  
Office: (440) 232-4488  
Fax: (216)-754-8107  
Email: [info@rigol.com](mailto:info@rigol.com)

## **EUROPE**

RIGOL TECHNOLOGIES GmbH  
Lindbergh str. 4  
82178 Puchheim  
Germany  
Tel: 0049- 89/89418950  
Email: [info-europe@rigoltech.com](mailto:info-europe@rigoltech.com)