



SALES AND SERVICE

EUROPE Headquarters:
AFJ International Srl
Via Giacomo Watt, 12 • 20143 Milano • Italy
Tel. +39-02-89159140 • Fax +39-02-89159226
E-mail: afjint@iol.it
www.afj.it

NORTH AMERICA
HV Technologies, Inc.
P.O. Box: 1630
Manassas, VA 20110, USA
Tel. +1-703-365-2330 • Fax +1-703-365-2331
E-mail: emcsales@hvtechnologies.com
www.hvtechnologies.com

ASIA PACIFIC
PIC 儀器企業
7Fl., No.3, Lane 83, Section 1
Kuang Fu Road,
Sanchung City 241
Taipei - ROC
Tel. +886-2-85124888 • Fax +886-2-85124900
E-mail: pic@www.pic.com.tw
www.pic.com.tw

Technical Specifications

	ER55C	ER55R	ER55CR	ER55CR/2.8
Frequency Range	9kHz - 30MHz	30MHz - 1000MHz	9kHz - 1000MHz	9kHz - 2800MHz
Frequency Setting	50Hz (9kHz - 150kHz) 1kHz (150kHz - 30MHz)	25kHz	50Hz (9kHz - 150kHz) 1kHz (150kHz - 30MHz) 25kHz (30MHz - 1000MHz)	50Hz (9kHz - 150kHz) 1kHz (150kHz - 300MHz) 10kHz (300MHz - 2800MHz)
Setting Error	<3x10 ⁻⁶	<3x10 ⁻⁶	<3x10 ⁻⁶	<3x10 ⁻⁶
RF Input	BNC, female, 50Ω	N, female, 50Ω	BNC, 50Ω (9kHz - 30MHz) N, 50Ω (30MHz - 1000MHz)	BNC 50Ω (9kHz - 30MHz) N 50Ω (30MHz - 2800MHz)
VSWR Input	<2:1 <1,5:1 with Pre-Amplifier <1,2:1 with Attenuator	<2:1 <1,5:1 with Pre-Amplifier <1,2:1 with Attenuator	<2:1 <1,5:1 with Pre-Amplifier <1,2:1 with Attenuator	<2:1 <1,5:1 with preamplifier <1,2:1 with attenuator
Preselector	9kHz - 150kHz 150kHz - 500kHz 500kHz - 2MHz 2MHz - 10MHz 10MHz - 30MHz	30MHz - 62.5MHz 62.5MHz - 125MHz 125MHz - 250MHz 250MHz - 500MHz 500MHz - 750MHz 750MHz - 1000MHz	9kHz - 150kHz 150kHz - 50kHz 500kHz - 2MHz 2MHz - 10MHz 10MHz - 30MHz 30MHz - 62.5MHz 62.5MHz - 125MHz 125MHz - 250MHz 250MHz - 500MHz 500MHz - 750MHz 750MHz - 1000MHz	9kHz - 150kHz 150kHz - 500kHz 500kHz - 2MHz 2MHz - 10MHz 10MHz - 30MHz 30MHz - 62.5MHz 62.5MHz - 125MHz 125MHz - 250MHz 250MHz - 500MHz 500MHz - 750MHz 750MHz - 1000MHz 1000MHz - 1500MHz 1500MHz - 2000MHz 2000MHz - 2500MHz 2500MHz - 2800MHz
Max Input	127dBμV	127dBμV	127dBμV	127dBμV
IF Rejection	>70dB	>70dB	>70dB	>70dB
RF Shielding	3 V/m	3 V/m	3 V/m	3 V/m
Intermediate frequency	153,22MHz 10,7MHz 455kHz	1554MHz 153,22MHz 10,7MHz 455kHz	1554MHz 153,22MHz 10,7MHz 455kHz	1554MHz 480MHz 153,22MHz 10,7MHz 455kHz
IF Bandwidth	200Hz 9kHz 120kHz	9kHz 120kHz 1MHz	200Hz 9kHz 120kHz 1MHz	200Hz 9kHz 120kHz 1MHz
Noise Floor	(IF 200Hz) (IF 9kHz)	(IF 120kHz)	(IF 200Hz) (IF 9kHz) (IF 120kHz)	(IF200Hz) (IF9kHz) (IF120kHz)
Peak	<-10dBμV <0dBμV	<-10dBμV	<-10dBμV <0dBμV <-10dBμV	<-10dBμV <0dBμV <-10dBμV
Quasi Peak	<-13dBμV <-3dBμV	<-13dBμV	<-13dBμV <-3dBμV <-7dBμV	<-13dBμV <-3dBμV <-7dBμV
Average	<-20dBμV <-10dBμV	<-3dBμV	<-20dBμV <-10dBμV <-3dBμV	<-20dBμV <-10dBμV <-3dBμV
Measuring Error	±1.5dB max.	±2dB max.	±1.5dB max. (9kHz-30MHz) ±2dB max. (30MHz-1000MHz)	±1.5dB max. (9kHz - 30MHz) ±2db max. (30MHz - 1000MHz)
Demodulation	AM/FM	AM/FM	AM/FM	AM/FM
Display Measure Level	-20 to 120dBμV	0 to 120dBμV	-20 to 120dBμV	0-120dBμV
Pulse Spectral Density	115dBμV/MHz	90dBμV/MHz	115 and 90dBμV/MHz	115 and 90dBμV/MHz
Image Freq. Rejection (at all IF's)	85dB, Typ	85dB, Typ	85dB, Typ	85dB, Typ.
Intercept Point d3	f1 - f2 ≥ 100kHz Level f1, f2: -10dBm fin<2MHz: 8dBm, typ fin>2MHz: 15dBm, typ	f1 - f2 ≥ 5MHz Level f1, f2: -10dBm Pre off: 12dBm, typ Pre on: 0dBm, typ		
Delay Time	2ms. to 2sec.	2ms. to 2sec.	2ms. to 2sec.	2ms to 2sec.
Display Units	dBμV, dBμV/m, dBm, dBpV, dBμA/m	dBμV, dBμV/m, dBm, dBpV, dBμA/m	dBμV, dBμV/m, dBm, dBpV, dBμA/m	dBμV, dBμV/m, dBm, dBpV, dBμA/m
Interface	High speed 8 bit parallel bidirectional port	High speed 8 bit parallel bidirectional port	High speed 8 bit parallel bidirectional port	High speed 8 bit parallel bidirectional port
PC requirement	IBM compatible, 486DX or above 16 MB RAM (min)	IBM compatible, 486DX or above 16 MB RAM (min)	IBM compatible, 486DX or above 16 MB RAM (min)	IBM compatible, 486 or above 16 MB RAM (min)
Power supply	230Vac ±10% 50-60Hz	230Vac ±10% 50-60Hz	230Vac ±10% 50-60Hz	220Vac ±10% 50 ± 10%
Power consumption	50VA	50VA	50VA	50VA
Operating temperature	0° to 45°C	0° to 45°C	0° to 45°C	0° to 45°C
Storage temperature	-20° to 70°C	-20° to 70°C	-20° to 70°C	-20° to 70°C
Size (WxHxD)	450x135x436mm.	450x135x436mm.	450x135x436mm.	450x135x436mm
Weight	14 kg.	15 kg.	17 kg.	18kg



ER55 EMI RECEIVERS



Designed and manufactured in compliance with CISPR 16 - 1, VDE 0876 and ANSI C 63.4

For Measurements vs commonly used European Standards as EN 50081-1, EN 50081-2, EN 55011, EN 55022, EN 55014, EN 55015, or other standards as FCC, ETS, VCCI and VDE 0871 to 0879

Full modular approach

Advanced software showing time and frequency domain



Modular Approach to Receivers

The ER55 series of EMI Receivers, has been conceived under a modular approach, in order to enable users to modulate their investment versus their specific needs. Four fundamental frequency ranges are made available, via four different modular models:

- ER55C: from 9kHz to 30MHz
- ER55R: from 30MHz to 1000MHz
- ER55CR: from 9kHz to 1000MHz
- ER55CR/2.8: from 9kHz to 2800MHz

In particular, Model ER55C can be upgraded to ER55CR or ER55CR/2.8 in any AFJ authorised service centre, via

addition of relevant H/W and S/W modules. The same can be performed with ER55R, so allowing extension of the frequency range whenever required. The modular approach, represents a further advantage whenever a change in applicable Standards demands an extension in frequency range.

CISPR Compliance

The ER55 series of EMI Receivers, fully complies with the following International Standards: CISPR 16-1, VDE 0876, ANSI C63.4. The Quasi-Peak Detector, complies with Clause 2, Section 1 of CISPR 16-1, and the Average Detector, complies with Clause 4, Section 1, of CISPR 16-1.

The response of ER55 Quasi-Peak Detector to pulses (*absolute calibration*), complies with Table 2 of Clause 2.4 of CISPR 16-1. The response of Quasi-Peak Detector to repeated pulses (*relative calibration*) lays between the limits of ± 1.5 dB and of ± 2 dB set in Table 3 of Clause 2.4.2 of CISPR 16-1. The limits are met down to the minimum value of the Pulse Repetition Frequency coming from the DUT, of 1 Hz. Up to 10 fixed and tuned preselector filters guarantee more than 40dB of attenuation for intermediate frequency, image frequency and intermodulation effects.

Software & Automation

All ER55 EMI Receivers are

PC-based and totally controlled by an easy-running WINDOWS™ software. The software will enable the operator to set all parameters and set-up the Receiver as requested by CISPR 16 or to tailor it according to his specific needs.

Some examples are:

- Frequency range and frequency step
- Detectors (Peak, Quasi Peak, Average) and delay time
- Limits set by European and other Standards
- Antenna correction factors (k-factor)

Time saving functions, such as set-up storage or easy procedures for saving of data (measurements, frequency tables, antenna correction factor tables) into files, are available.

The PC-based concept of AFJ

Receivers makes their memory capabilities nearly unlimited. Software for communication with controllers for slidebars, turntables and antenna masts, are available.

At the start-up, the default parameters will be as specified in CISPR 16.

Spectrum Mode

ER55 series of Receivers offer a very fast Peak Detector scan rate. Such "Spectrum Mode Analyser" feature, enables quick and consistent pre-compliance evaluations. The parallel interface communication protocol, grants a fast data interchange between the PC and the Receiver.

Filter Function (OPT)

This option enables the usage of the Receiver as a Scalar Network Analyser. A white noise is provided at the output, by an internal signal generator.

Calibration Generator (OPT)

An internal module, compensates for the thermal drift of the Receiver, to allow proper accuracy just after power-on. A diagnostic routine is also run, to certify proper operation of main functional blocks.

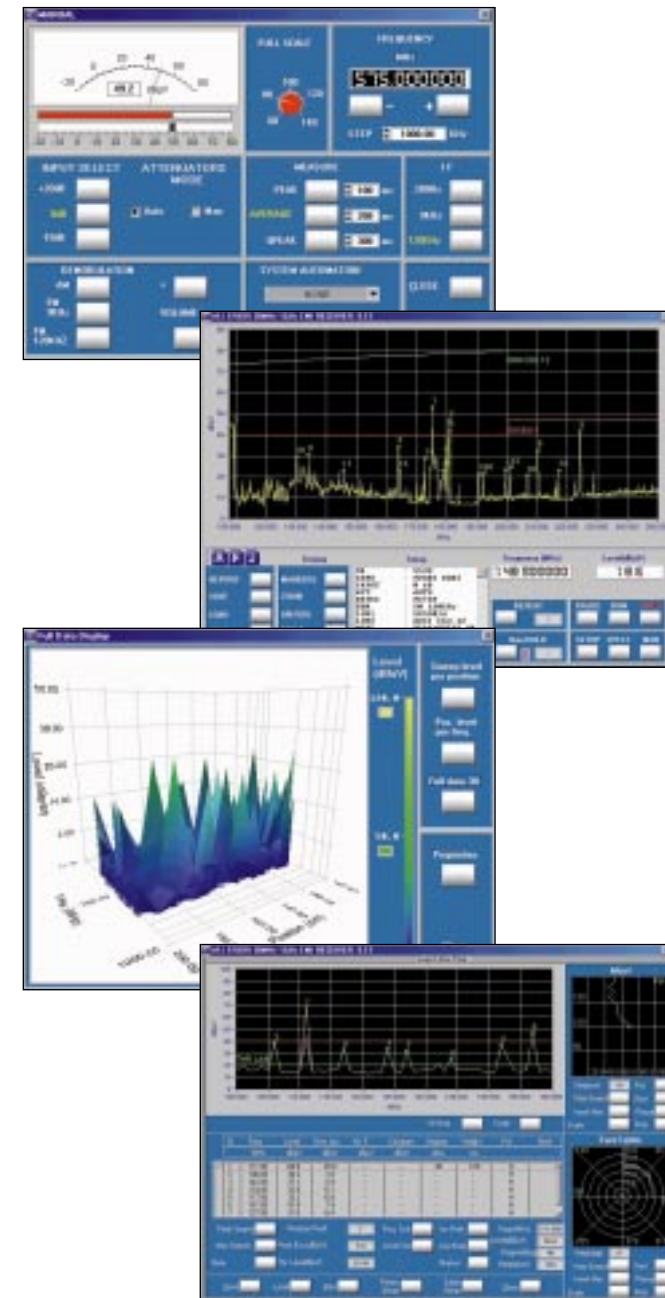
A Wide Range of Accessories

Depending upon specific testing needs, a range of accessories such as LISNs, Antennas, Clamps, Probes is

available. The selection of the correct transducer is very important and well specified in CISPR 16 and in the applied Standards. Depending upon the characteristics and application of the EUT (Equipment Under Test) such as: number of phases or current absorption, an appropriate transducer is specified.

Main areas of application of some transducers are as follows:

- LISN's (*Line Impedance Stabilisation Network*) for RF conducted emission measurements, from 9kHz to 30MHz
- Biconic, Log-Periodic or Broadband antennas for free-field measurements in the 30MHz - 2000MHz frequency range
- Absorbing clamps for cable-radiated power measurements in the 30MHz to 300MHz frequency range (EN55014) or up to 1000MHz
- Passive probes, an alternative to LISN's in case of very high currents
- Loop antennas for magnetic field emission measurements in the 9kHz - 30MHz frequency range (EN55015)
- Near-Field probes, as a useful tool during design-debugging, or pre-compliance radiated emission testing



EMC