rf/microwave instrumentation

Model CI00400A, M1 through M7
RF Conducted Immunity System
100 Watts nominal
10 kHz–400 MHz

Complete testing solutions to the following standards:

- MIL-STD-461D & E CS114
- DO160D & E BCI Testing
- EN/IEC 61000-4-6
- IEC 60601-1-2
- EN 50130-4
- EN 61000-6-1/2
- EN 55024

The Model CI00400A is a fully self-contained state of the art system designed to test RF Conducted Immunity. The system contains a signal generator, 3 channel power meter, 100W nominal AR amplifier 10kHz to 400MHz, directional coupler, and emcware® control software. Everything is contained in a single housing, which eliminates setup issues. This system provides the versatility needed for every test laboratory and equipment manufacturer. The RF amplifier and the signal generator can be used independently of the system. If special needs arise or standards were to change a larger amplifier can be connected to the system. The use of spectrum analyzers and monitoring equipment may also be controlled by the software.

Option 1 adds an additional power head for testing automotive standards such as Ford, GM, Chrysler, BMW, Renault, and ISO11452-4. Option 2 adds data acquisition capability. Option 3 provides a laptop PC preloaded with the test software. Option 4 is a lower cost solution providing all the functions and features of the full CI00400A base model without the cost of the internal amplifier.

The export classification for this equipment is EAR99. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

Internal Test Specifications (See NOTE 1)	
CI00400A	**CI00400A w/Option 1**
MIL-STD-461D (CS114)	All standards of CI00400A plus:
MIL-STD-461E (CS114)	ISO 11452-4
DO160D (Sec 20 BCI Test)	GMW 3097
DO160E (Sec 20 BCI Test)	Ford ES-XW7T-1A278-AC
IEC/EN 60601-1-2	DaimlerChrysler DC-11224
IEC/EN 50130-4	BMW GS95002
IEC/EN 61326	Renault 36-00-8081-G
IEC/EN 61000-6-1	
IEC/EN 61000-6-2	
IEC/EN 61000-4-6	
CISPR 24/EN 55024	

Signal Generator Specifications	
Frequency range resolution	9 kHz to 1.2 GHz 1Hz
Power range resolution	-140 to +13 dBm 0.1dB
Modulation	AM, FSK. FM, Phase, External Pulse

Power Meter Specifications (See NOTE 2)	
Channels	3
Power heads	2
Type	diode
Frequency	10kHz to 8GHz
Range	-60 to +20 dBm

NOTE 1: Specifications can be met using AR-specified external accessories (injection probes, monitor probes, cal fixtures, CDN's, attenuators, etc.) Contact AR for further information.

NOTE 2: The use of a spectrum analyzer may be necessary on some of the low level bulk current injection tests. This is especially true on power and I/O lines with a great amount of ambient noise.

RF Amplifier Specifications	
Frequency range	10 kHz to 400 MHz
Power rating	100 Watts Nominal
1dB compression	75 Watts Nominal
Harmonic Distortion	-20dBc at 50 Watts
Mismatch tolerance	100% of rated power without fold back. Will operate without damage or oscillation with any magnitude of source and load impedance.
Gain	51dB minimum

Connections	
RF Out	Type N (front)
Monitor Port In	Type N (front)
Signal Generator Out	Type N (rear)
Directional Coupler In	Type N (rear)
Amplifier Out/In	Type N (rear)
Pulse In	BNC (rear)
Communication	GPIB (IEEE 488) (rear)
Directional Coupler Fwd Out	Type SMA (rear)
Directional Coupler Fwd In	Type SMA (rear)
Directional Coupler Rev Out (with Option 1)	Type SMA (rear)
Directional Coupler Rev In (with Option 1)	Type SMA (rear)
Monitor Port Out	Type SMA (rear)
Monitor Port In	Type SMA (rear)
Power Meter Calibration Port Out	Type SMA (rear)

General	
Power	115/230 VAC 50/60 Hz, single phase 16A
Breaker	2 pole, 20A
Cooling	active cooling, air ventilation
Environmental conditions	10°C - 40°C
Dimensions,	50.3 x 42.2 x 52.1 cm 19.8 x 16.6 x 21.7 in
Weight	22.7 kg (50.0 lb)
Weight CI00400AM5	17.3 kg (38.2 lb)

Control Software	
emcware® Software Suite	
PC Requirements	
Computer	2GHz Single Core Processor
Operating system	Windows XP, Windows Vista, Windows 7
RAM	1 GB Minimum
Screen Resolution	1024 x 768
Ports	2 available USB 2.0 ports

Options	
1	Additional power head to add the ability to monitor reverse power
2	Data acquisition card.
3	Laptop PC with software preinstalled
4	Amplifier removed; requires use of external amplifier

MODEL CONFIGURATIONS

MODEL	DESCRIPTION
CI00400AM1	Includes Option 3
CI00400AM2	Includes Options 2 and 3
CI00400AM3	Includes Option 2
CI00400AM4	Includes Option 1
CI00400AM5	Includes Option 4
CI00400AM6	Includes Options 1 and 4
CI00400AM7	Includes Options 1 and 3

ACCCESSORY KITS

Application	Model	Description
IEC 61000-4-6 BCI Clamp 50Ω System	TK1000	Conducted immunity test kit containing all the attenuators, injection probes, calibration fixtures, calibration resistors, and termination resistors necessary for IEC testing.
IEC 61000-4-6 BCI Clamp 150Ω System	TK1001	Conducted immunity test kit containing all the attenuators, injection probes, calibration fixtures, calibration resistors, and termination resistors necessary for IEC testing.
IEC 61000-4-6 EM Clamp 50Ω System	TK1002	Conducted immunity test kit containing all the attenuators, injection probes, calibration fixtures, calibration resistors, and termination resistors necessary for IEC testing.
MIL-STD-461 DO160	TK2000	Conducted immunity test kit containing all the attenuators, injection probes, calibration fixtures, calibration resistors, and termination resistors necessary for MIL-STD-461 and DO160 testing.
Automotive	TK3000	Conducted immunity test kit containing all the attenuators, injection probes, calibration fixtures, calibration resistors, and termination resistors necessary for automotive testing.