Test Controls

Status: Idle (2/14/2020 1:49:00 PM)

Select mode
Tuner Efficiency
Validation
Max Loading

Graph Options
☐ X
☑ AutoScale
☐ Z Active Zoom

RF Disabled

Input Level: 20 dBm

Last Modified:

X Scale
Log

Show
Validation

emcware®
EMC Testing Software

Features

The emcware® Suite by AR RF/Microwave Instrumentation provides automated Electromagnetic Compatibility (EMC) testing and report generation for all types of users from corporate to professional test laboratories. It is a standalone software application designed to operate on a PC running a Microsoft Windows™ operating system. The export classification for this software is EAR99. This software is controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

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EMC Software Suite
Version 5.0

Software Design

The emcware® Suite is designed to be user-friendly yet extremely flexible. It is broken up into modules based on different types of EMC testing. Within each module there are pre-defined standards. The ability to create custom test standards is also provided.
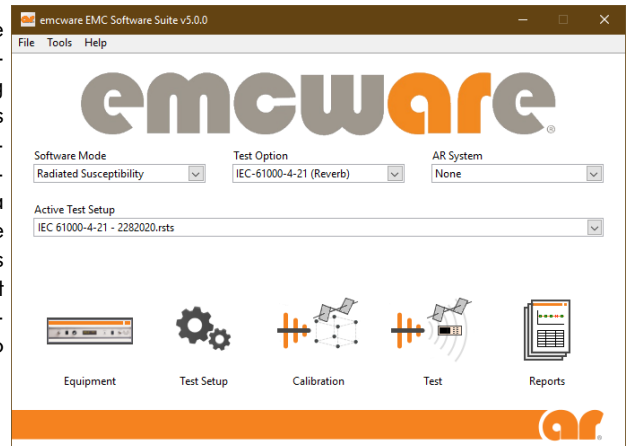
Equipment Management

Contained within the emcware® is a built-in Equipment List Manager. This tool allows for equipment to be entered one time and then accessed from within any of the modules. The Equipment List Manager also keeps track of calibration dates and can warn the user when the calibration date of a specific piece of equipment is approaching.

EUT Monitoring

Use custom equipment or a National Instruments DAQ card to monitor and report the status of the equipment under test (EUT). The National Instruments DAQ device can monitor Analog or Digital levels from the EUT or reset the EUT using the Digital Outputs. Custom equipment, in conjunction with dynamic link library (DLL) files, allows for complete EUT monitoring and control.

Instrument Drivers

Instrument control is provided through AR RF/Microwave Instrumentation's extensive driver library. Creation of new drivers for equipment that is not currently supported is available upon request. Drivers can also be created and imported by the user in the form of dynamic link libraries (dll) files. For a list of supported remote interfaces, see the **Included Equipment Drivers** section.

Signal Routing

The emcware® is designed to allow the user to select between manual and automatic signal routing. Automatic signal routing is implemented using one or more AR RF/Microwave Instrumentation Model SC2000 System Controllers.

Reports

Extensive report generation capability is built into each module. These reports can be customized by the user. All reports are created in Microsoft Word or Microsoft Excel.

Help Instructions

A detailed help utility is included with the emcware®. The contents of the help instructions can be searched by keyword or topic. Open the help file using the context-sensitive help buttons located throughout the user interface.

Licensing

The emcware® is conveniently licensed using a USB hardware dongle that enables full functionality of the software for a single PC. For more details, see the **Licensing Information** section on Page 4.

AR Systems Compatibility

The emcware® can automatically control select AR Systems using built-in equipment setups. See the Compatible Systems for a complete list.

AR RF/Microwave
Instrumentation
160 School House Rd
Souderton, PA 18964
215-723-8181

For an applications engineer call:800.933.8181

www.arworld.us

Specifications

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INCLUDED TEST STANDARDS, emcware®						
Organization	Standard	Version	RS	CI	RE	CE
CISPR	CISPR 11	Ed 5			✓	✓
	CISPR 13	Ed 4			✓	
	CISPR 22	Ed 6			✓	✓
	CISPR 25	Ed 2			✓	✓
	CISPR 32	Ed 1			✓	✓
Department of Defense	MIL-STD-461 RS103	D, E, F, G	✓			
	MIL-STD-461 RS103 (Reverb)	G	✓			
	MIL-STD-461 CS114	D, E, F, G		✓		
	MIL-STD-461 RE(101, 102)	D, E, F, G			✓	
	MIL-STD-461 CE (101, 102)	D, E, F, G				✓
RTCA	DO-160 Section 20	D, E, F, G	✓	✓		
	DO-160 Section 20.6 (Reverb)	F, G	✓			
	DO-160 Section 21	D, E, F			✓	✓
IEC	61000-4-3	Ed 3.1	✓			
	61000-4-6	Ed 4		✓		
	61000-4-21	2011	✓			
	50130-4	1996	✓	✓		
	60601-1-2	Ed 4	✓	✓		
	61000-6-1	Ed 2	✓	✓		
	61326	Ed 2	✓	✓		
	61000-6-2	Ed 2		✓		
Telcordia Technologies	GR-1089-Core	Issue 3, 6	✓			
International Organization for Standards	ISO-11452-(2, 3, 5)	Ed 2	✓			
	ISO-11452-4	Ed 4		✓		
Ford	ES-XW7T-1A278-AC	10/10/2003	✓	✓		
GM	GMW3097	04/2004	✓	✓		
BMW	GS 95002	2004-10		✓		
Chrysler	DC-11224	2006-10		✓		
Renault	36-00-808	2003		✓		
Peugeot	B21 7110	B		✓		

LEGEND: **RS** (Radiated Susceptibility), **CI** (Conducted Immunity), **RE** (Radiated Emissions, **CE** (Conducted Emissions)

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Specifications

RECOMMENDED PC HARDWARE REQUIREMENTS:

- Intel i5 or equivalent
- 4 GB of RAM
- Screen resolution 1,024 x 768 pixels and higher
- 2 available USB (2.0) Ports

OPERATING ENVIRONMENTS:

- Windows 10, Windows 7 Service Pack 1, Windows 8.1

SUPPORTED INTERFACE HARDWARE (Not Included):

- National Instruments GPIB Controller
  - NI GPIB-USB-HS+ [AR P/N 10013688] or equivalent National Instruments device required for GPIB communications
- National Instruments DAQ (Data Acquisition) device
  - NI USB-6212 [AR P/N 10025318] is recommended, but the configuration is customizable

SUPPORTED EQUIPMENT COMMUNICATIONS INTERFACES:

- IEEE 488 (GPIB), National Instruments NI GPIB-USB-HS+ [AR P/N 10013688] or equivalent device required
- RS-232
- USB
- Ethernet (creation of a National Instruments VISA TCP/IP Resource required)

EQUIPMENT DRIVERS:

- A full list of included equipment drivers can be found at the end of this document.
- For equipment that is not currently supported, please contact the factory.
- Equipment drivers can be written by the user in a multitude of programming languages (LabVIEW, Visual Studios, etc.) and imported as dynamic link library (DLL) files.
  - Equipment Driver Templates are included for LabVIEW and Visual C++
- Includes demonstration drivers for all controllable equipment types to allow operation without equipment.

REPORTS:

- Microsoft Word/Excel 2010 or newer required for all output formats
- Output Formats
  - Microsoft Word / Excel
  - PDF
- Included Data
  - All data collected in numerical & graphical formats
  - Test information (test standard, file paths, completion date, etc.)
  - User and Customer information (optional)
  - EUT monitoring data including Pass / Fail status and user comments
  - Test setup information (test level, frequencies, dwell times and EUT monitoring setup)
  - Equipment names and calibration dates
  - Basic equipment interconnect diagram

SPECIAL FEATURES:

- *NEW! Reverberation immunity tests supported
- Test up to 2 Modulations in addition to CW per frequency during one test
- Pause, stop, and resume tests without data loss
- User defined amplitude and frequency thresholding capability (Supports MIL STD 461 thresholding method)
- Pre-defined test standards
- Simple creation of custom test standards
- Graphical display of test levels
- Graphical display of RF path for easy test configurations and changes
- Automated harmonics check (IEC 61000-4-3)
- Automatic control of AR Systems (see **Compatible Systems**)
- Automatic software updates (requires Internet access)

COMPATIBLE SYSTEMS:

- CI00250A
- CI00400A
- CI00401A
- CI00402

LICENSE INFORMATION:

- See page 4

SUPPORT CONTRACT INFORMATION:

- See page 4

Specifications

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Support Contract Information

The annual support provides the following additional services and can be accessed by phone, email, or Remote PC access (if available).

Available emcware® Services	emcware® purchase	Support Contract[1]
Access to emcware® Support Website		
Bug fixes, maintenance updates, and driver updates for current version	✓	✓
Free upgrades to new versions		✓
Automatic notification of available updates	✓	✓
Access to AR Applications and Software Engineers		
Setup support		✓
Problem acknowledgement within 24 hours		✓
Email, phone and remote support		✓
Dedicated support staff focused on providing solutions		✓
Equipment Driver Support		
Driver Creation	Available upon request[2]	
Driver Support	✓	✓
DIY Driver Templates[3]	✓	✓
DIY Driver Templates with example code[3]		✓

[1] *Support contract is valid for 12 months after time of purchase*
[2] *Additional charges may apply - Call for more information*
[3] *User knowledge of a programming language that can generate Windows Dynamic Link Library files (*.dll) is required*

License Information

The emcware® can be installed on any number of PCs at one time. The supplied USB dongle will unlock the full feature list of the PC it is connected to (see below).

emcware® Features	USB Dongle	No USB Dongle
Equipment Setups	✓	✓
Test Setups	✓	✓
Immunity Calibrations	✓	
Immunity Tests	✓	
Emissions Tests	✓	
Report Generation	✓	✓

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INCLUDED EQUIPMENT DRIVERS

Amplifiers
AR RF/MICRO INSTR .... All Models Supported*

Field Probes/Monitors
AR RF/MICRO INSTR .... All Models Supported*
CHAUVIN ARNOUX CA43
HOLADAY INDUSTRIES HI-6105, HI-6100
NARDA .... EMC-20, NBM-520, EMR-200, EP60x Series, 8053B

Receivers
AR RF/MICRO INSTR .... All Models Supported*
AGILENT/HP .... MXE N9038A
KEYSIGHT .... X Series Signal Analyzers
ROHDE & SCHWARZ .... ESIB, ESCI, ESPI, ESU, ESW

System Controllers
AR RF/MICRO INSTR .... All Models Supported*
TDK SI-300

Spectrum Analyzers
ADVANTEST R3265A
AGILENT/HP .... ESA Series, PSA Series, N90x0A (CXA, EXA, MXA, PXA), E740Xα, 856x Series, 859x Series, 8542E, 8546A
KEYSIGHT .... X Series Signal Analyzers, N9320B (BSA)
RIGOL DSA8xx
ROHDE & SCHWARZ .... FSL, FSP

Antenna Controllers
SUNAR .... (formerly Sunol Sciences) SC98VA, SC110VA
ETS .... 1050, 1090A, 2090A, EMCenter (7006-001) (AUX)
FRANKONIA FC06
MATURO .... MCU

Turntable Controllers
SUNAR .... (formerly Sunol Sciences) SC98VT, SC110VT
EMCO .... 1060, 1090T, 2090T, EMCenter(7006-001)
FRANKONIA FC06

Probe Positioners
PROBOTIC SYSTEMS 801
TDK .... SI 300
INNCO CO3000
MATURO .... MCU

Reverberation Tuners
COMTEST LUF1000

Pulse Generators
AGILENT/HP 3325A, 33220A, 8116A, 81101A

Signal Generators
AR RF/MICRO INSTR .... All Models Supported*
AGILENT/HP .... DSO-X 3xxx Series, E8257C, E8257D, ESG, N51xxB, N51xxA, N9310A, 33120A, 33250A, 3336C, 8341, 8350B, 83620B, 83630B, 83731, 8642B, 8648, 8657A, 8657B, 8662A, 8663A, 8664A, 8673B
ANRITSU MG3694A
BERKLEY NUCLEONICS 845/835-6
FLUKE 6060A, 6061A, 6062A
GIGATRONICS 1018, 6080A, 12000A
HAMEG HM8134-3, HM8135
IFR .... 341x Series
MARCONI 2022, 2023, 2024, 2025, 2030, 2031, 2032
ROHDE & SCHWARZ .... SMB, SMBV100A, SMC, SME, SMF, SMG, SMH, SML, SMP, SMR, SMT, SMX, SMY
WILTRON 6668B, 6747A
ANAPICO APSINx000, 12G, 20G, 26G
RIGOL DSA8xx

Power Meters
AR RF/MICRO INSTR .... All Models Supported*
AGILENT/HP .... DSO-X 3xxx Series, EPM E44117, EPM E44118, EPM E44119, EPM 441A, EPM E442, N1913A, N1914A 436A, 437B, 438A
BIRD 4421
BOONTON .... 4230, 9200, BI 55xx
DARE RPR1004A, RPR1006A, RPR1018A
Keysight .... U2000 Series
MARCONI 6960
ROHDE & SCHWARZ .... NRP, NRVS, NRVD, URV5
TESEQ PM6003
TEKTRONIX .... TDS 744A

*NOTE: AR models created after the current release of the software may not be fully supported, but will be supported in subsequent releases within the scope of the emcware® software.

To order AR Products, call 215.723.8181. For an applications engineer call:800.933.8181. Direct to Service call: 215.723.0275 or email: service@arworld.us For Faxing Orders:866.859.0582 (Orders Only Please) info@arworld.us
Approved for public release by AR RF/Microwave Instrumentation

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