

CONDUCTED SUSCEPTIBILITY

# Military & Aerospace Testing



 This document has been  
optimized for electronic media Smart navigation through technical  
specifications. Click the green links.



WHEN GETTING RESULTS MATTERS

## THERE IS ONLY ONE CHOICE

Military and avionic testing is all about quality and precision. MIL-MG3 brilliantly fulfills these requirements.

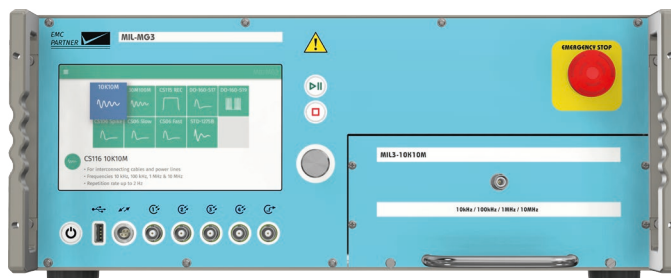
A flexible solution that includes:

- › MIL-STD-461C CS06 spikes, power leads
- › MIL-STD-461 CS106 transients, power leads
- › MIL-STD-461 CS115 bulk cable injection
- › MIL-STD-461 CS116 damped sinusoidal transients
- › MIL-STD-1275 Imported spikes
- › DO-160 section 17 Voltage spikes
- › DO-160 section 19 Inductive switching transients

Ease of use, predefined test routines and large aperture couplers make MIL-MG3 the most efficient and technically advanced instrument in this category.

# FLEXIBLE SOLUTION

MIL-MG3 modular test system is the first of its kind to employ touch screen technology. An enhanced user interface and choice of couplers allow easy expansion to a test suite for MIL-STD and DO-160 impulse requirements



## MIL-MG3 TEST SYSTEM

- MIL-MG3 Mainframe Unit

### Available Plug-Ins

- MIL3-REC (CS115)
- MIL3-10K10M (CS116)
- MIL3-30M100M (CS116)
- MIL3-CS116 CUSTOM FREQUENCY
- MIL3-SPIKE (CS106, CS06)
- MIL3-SPIKE-SLOW (CS06)
- MIL3-SPIKE-FAST (CS06)
- MIL3-1275
- MIL3-DO-160 S17
- MIL3-DO-160 S19

## Accessories for MIL-STD-461

- **CN-BT6**  
Only one coupler for CS115 and CS116 testing. No change of EUT cables position. Aperture diameter (50mm)
- **VERI-MIL3**  
Includes all necessary calibration and measurement loads.

## Included Benefits

|                  |                                                 |
|------------------|-------------------------------------------------|
| <b>Stable</b>    | Pulse reproducibility during test cycle         |
| <b>Precise</b>   | Repeatable test results over long time          |
| <b>Reliable</b>  | Evolution of established technology             |
| <b>Fast</b>      | Minimum setup and calibration time              |
| <b>Polarity</b>  | Maintain test integrity by electronic switching |
| <b>Automated</b> | Save and repeat test routines                   |

# AVAILABLE PLUG-INS

Modules are available for MIL-MG3 system to cover the CS115, CS116, CS106, CS06, DO-160 section 17 and 19 test requirements. Select modules for specific test and later add new modules to enhance the system capability. New modules are automatically recognised and controlled by the system firmware.



## MIL3-REC

MIL-STD-461 / CS115

- › Bulk cable injection impulse
- › Rise & fall time < 2ns pulse duration 30ns



## MIL3-10K10M

MIL-STD-461 / CS116

- › Damped sinusoidal transients
- › Oscillation frequencies 10kHz, 100kHz, 1MHz, 10MHz.



## MIL3-30M100M

MIL-STD-461 / CS116

- › Damped sinusoidal transient
- › Oscillation frequencies 30MHz, 100MHz.



## MIL3-CS116 CUSTOM FREQUENCY

MIL-STD-461 / CS116

- › Choose any CS116 frequency in the range 10kHz to 30MHz



## MIL3-SPIKE

MIL-STD-461 / CS106

- › Transients, power leads
- › Rise time 1.5us and pulse duration 5us



## MIL3-SPIKE -SLOW & FAST

MIL-STD-461C / CS06

- › Spikes, power leads
- › Pulse duration 10us and 0.15us



## MIL3-1275

MIL-STD-1275

- › Imported spike
- › Oscillation frequency 100kHz



## MIL3-DO-160-S17

DO-160 SECTION 17

- › Voltage spikes
- › Rise time 2us and pulse duration 10us



## MIL3-DO-160-S19

DO-160 SECTION 19

- › Inductive switching transients
- › Burst duration > 150us and spike frequency 250kHz

## EMERGENCY STOP



### Enhanced safety is standard

Red/Yellow Emergency Stop button on front panel of generator can be complemented with remote option.

Add warning lamps and a test cabinet for enhanced test place safety.

## UNIQUE FEATURES

Leading technology - New designs take advantage of latest innovations.

Latest generation, solid state, precise technology

### Fast and stable



No generator or coupler adjustments required. System is ready for calibration or testing in less than 30 seconds.

### Test reporting



Generate test reports via USB interface or built in webserver as csv, html and pdf formats.

### Always up to date



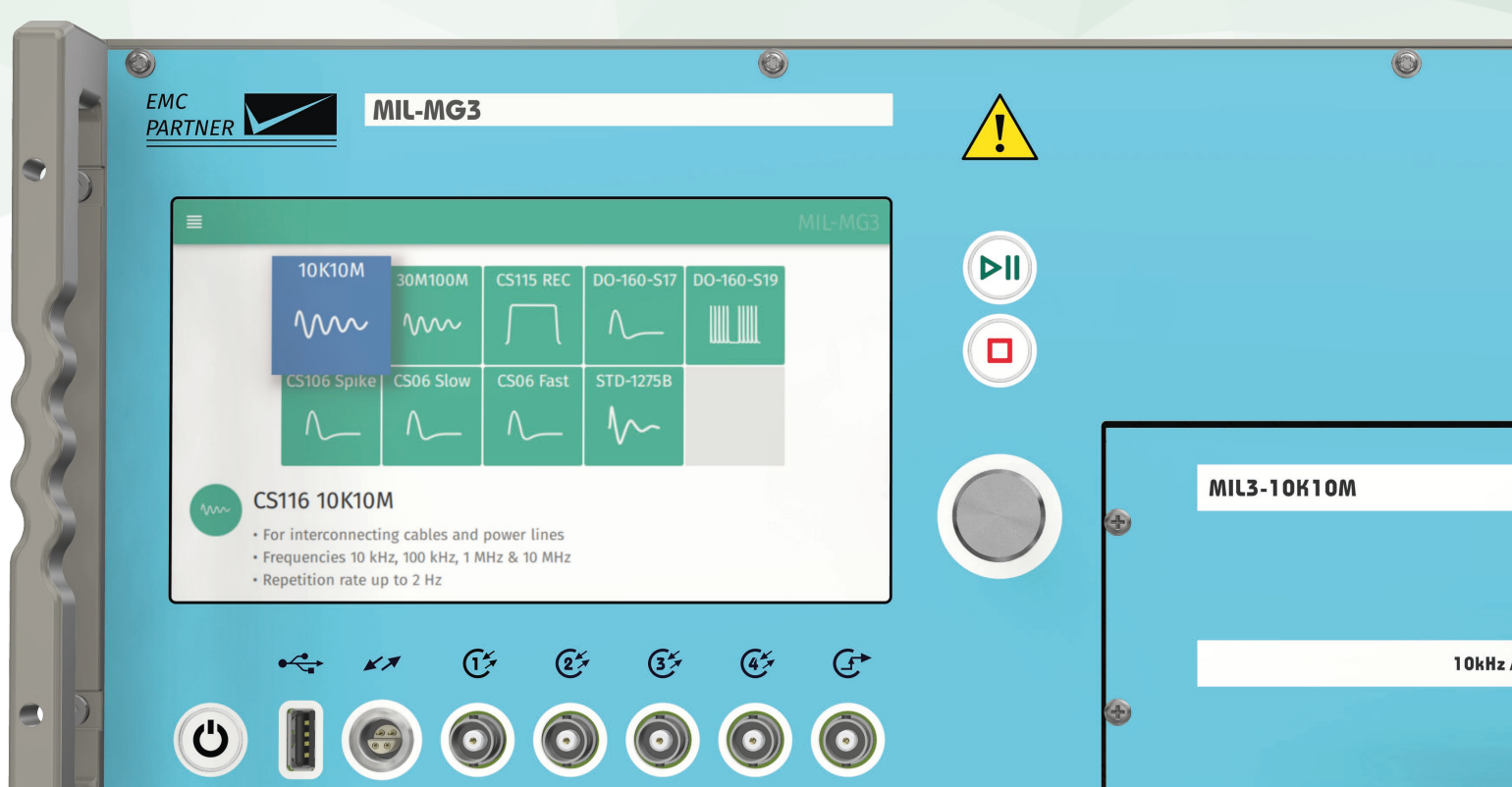
Firmware download from internet directly into the instrument.

### Extend testing capability



Modular, on site upgradeable system based on plugin technology.





## EPOS – TOUCH THE FUTURE

EMC PARTNER Operating System (EPOS) is an independent software with free-of-charge updates for lifetime. EPOS is based on a full colour graphic interface and easy to follow on-screen graphics. Pop-up help gives information when needed, directly during the setting process. EPOS is full of features found only in top of the range instrumentation.

### Integrated Web Server



Use any browser to access test reports from the generator.

### Simple touch screen navigation



Save time with the latest in intuitive menu structures.

### Interactive Interface



User interface adapted to specific modules.

### We speak your language



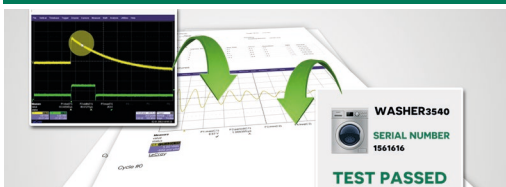
Select between English, German, French, Italian, Spanish, Russian, Chinese (traditional and simplified).



## TEMA3000 SOFTWARE SUITE

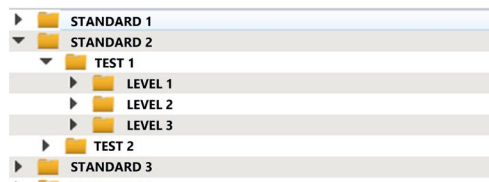
The best solution for professional EMC Test Labs enables comfortable test setups, easy parameter changes and customizable test reports and DSO integration.

### Customizable test reports



- › Customize & edit your protocols
- › Export to multiple file formats
- › Integrate DSO measurements

### Manage tests and sequences



- › Predefined test setups
- › Save and load own tests and sequences

### Productive workflow



- › Minimum learning time
- › Integrated assistant function

### Smart connectivity



- › Transfer tests / reports to PC
- › Remote control from computer



# Technical Specifications

## PLUGINS

| MIL-MG3                | Main frame | MIL3-REC | MIL3-10K10M | MIL3-30M100M | MIL3-CS116 CUSTOM | MIL3-SPIKE | MIL3-SPIKE-SLOW | MIL3-SPIKE-FAST | MIL3-DO-160-S17 | MIL3-DO-160-S19 | MIL3-1275B |
|------------------------|------------|----------|-------------|--------------|-------------------|------------|-----------------|-----------------|-----------------|-----------------|------------|
| MIL-461G CS115         | ✓          | ✓        |             |              |                   |            |                 |                 |                 |                 |            |
| MIL-461G CS116         | ✓          |          | ✓           | ✓            | ✓                 |            |                 |                 |                 |                 |            |
| MIL-461C CS06          | ✓          |          |             |              |                   | ✓          | ✓               | ✓               |                 |                 |            |
| MIL-461F CS106         | ✓          |          |             |              |                   | ✓          |                 |                 |                 |                 |            |
| MIL-1275B              | ✓          |          |             |              |                   |            |                 |                 |                 |                 | ✓          |
| DO-160 S17             | ✓          |          |             |              |                   |            |                 |                 | ✓               |                 |            |
| DO-160 S19             | ✓          |          |             |              |                   |            |                 |                 |                 | ✓               |            |
| ECSS-E-ST-20-07C rev1. |            |          |             |              |                   |            | ✓               | ✓               |                 |                 |            |

## ACCESSORIES

| MIL-MG3     | Main frame | MIL3-REC | MIL3-10K10M | MIL3-30M100M | MIL3-CS116 CUSTOM | MIL3-SPIKE | MIL3-SPIKE-SLOW | MIL3-SPIKE-FAST | MIL3-DO-160-S17 | MIL3-DO-160-S19 | MIL3-1275B |
|-------------|------------|----------|-------------|--------------|-------------------|------------|-----------------|-----------------|-----------------|-----------------|------------|
| CN-BT6      | ✓          | ✓        | ✓           | ✓            | ✓                 |            |                 |                 |                 |                 |            |
| VERI-MIL3   | ✓          | ✓        | ✓           | ✓            | ✓                 |            |                 |                 |                 |                 |            |
| CN-MIG-BT5  | ✓          |          |             |              |                   | ✓          | ✓               |                 | ✓               |                 |            |
| DC-S17CL    | ✓          |          |             |              |                   | ✓          | ✓               | ✓               | ✓               |                 |            |
| VERI5       | ✓          |          |             |              |                   | ✓          | ✓               | ✓               |                 |                 |            |
| SHUNT0E1    | ✓          |          |             |              |                   |            | ✓               |                 |                 |                 |            |
| VERI01 OSI  | ✓          |          |             |              |                   |            |                 | ✓               |                 |                 |            |
| VERI50      | ✓          |          |             |              |                   |            |                 |                 | ✓               |                 |            |
| 20dB ATTEN. | ✓          |          | opt         |              |                   |            |                 |                 |                 |                 |            |
| I-PROBE-CS  | ✓          | ✓        | ✓           | ✓            | ✓                 |            |                 |                 |                 |                 |            |
| TEMA3000    | ✓          | opt      | opt         | opt          | opt               | opt        | opt             | opt             | opt             | opt             | opt        |

# 1. MIL-MG3 MAINFRAME AND PLUGINS

## 1.1. TECHNICAL SPECIFICATIONS

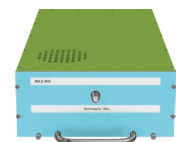
### MIL-MG3 Mainframe

|                                 |                                                                                                                |
|---------------------------------|----------------------------------------------------------------------------------------------------------------|
| Operating system                | EPOS proprietary firmware                                                                                      |
| Languages                       | 8 menu languages, selectable                                                                                   |
| User interface                  | 7" capacitive touch display                                                                                    |
| Connectivity                    | gigabit ethernet, USB, RS485                                                                                   |
| Synchronization on signals      | 40 – 800 Hz                                                                                                    |
| Synchronization source          | external, 50 – 280 V                                                                                           |
| Synchronization angle           | 0 – 359° ± 5°, 1° step                                                                                         |
| Impulse polarity                | positive, negative, electronic switching                                                                       |
| Automatic ramp                  | test level                                                                                                     |
| Trigger out                     | BNC, max. 6 V                                                                                                  |
| Programmable connectors         | 6 BNC connectors (inputs/outputs) as follows                                                                   |
| Programmable input functions    | Trigger input, Start Test, Stop Test, EUT Fail, EUT Mark, Emergency Stop                                       |
| Programmable input max. voltage | low range: 0 – 1.5 V, high range: 2.3 – 24 V                                                                   |
| Programmable output functions   | Running State, Safety Circuit State                                                                            |
| Programmable output max. U, I   | max. 24 V, max. 300 mA                                                                                         |
| Safety features (standard)      | Emergency stop button on front panel red/yellow as per IEC 60947-5-5, IEC 60204-1, ISO 13850<br>Safety circuit |
| Safety accessories (optional)   | WARNING LAMP (24 V, max. 2.4 W),<br>TC-ST test cabinet<br>Remote EMERGENCY STOP button                         |



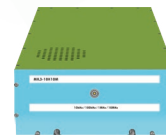
### MIL3-REC

|                          |                             |
|--------------------------|-----------------------------|
| Standard                 | MIL-STD-461, CS115          |
| Test level into 100 Ω    | 1 – 10 A ± 10 %, adjustable |
| Waveform                 | rectangular pulse           |
| Z <sub>out</sub>         | 50 Ω                        |
| Pulse rise and fall time | < 2 ns                      |
| Pulse duration           | ≥ 30 ns                     |
| Repetition rate          | max. 33 Hz                  |
| Requires                 | CN-BT6, VERI-MIL3           |
| Optional                 | I-PROBE-CS                  |



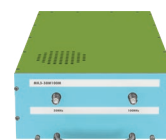
### MIL3-10K10M

|                                                |                                                  |
|------------------------------------------------|--------------------------------------------------|
| <b>Standard</b>                                | MIL-STD-461, CS116 (10 kHz – 10 MHz)             |
| <b>Test level into 100 <math>\Omega</math></b> | @ 10 kHz: 0.02 – 0.22 A $\pm$ 10 %, adjustable   |
| <b>Test level into 100 <math>\Omega</math></b> | @ 100 kHz: 0.2 – 2.0 A $\pm$ 10 %, adjustable    |
| <b>Test level into 100 <math>\Omega</math></b> | @ 1 MHz: 1 – 12 A $\pm$ 10 %, adjustable         |
| <b>Test level into 100 <math>\Omega</math></b> | @ 10 MHz: 2 – 12 A $\pm$ 10 %, adjustable        |
| <b>Waveform</b>                                | damped oscillation@10k,100k,1MHz,10MHz $\pm$ 10% |
| <b>Z<sub>out</sub></b>                         | $\leq$ 100 $\Omega$                              |
| <b>Damping factor (Q)</b>                      | 15 $\pm$ 5 for all frequencies                   |
| <b>Repetition rate</b>                         | max. 2 Hz for all frequencies                    |
| <b>Coupler for all frequencies</b>             | CN-BT6                                           |
| <b>Calibration fixture all freq.</b>           | VERI-MIL3                                        |
| <b>Optional</b>                                | I-PROBE-CS, 20dB ATTENUATOR                      |



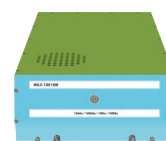
### MIL3-30M100M

|                                                |                                           |
|------------------------------------------------|-------------------------------------------|
| <b>Standard</b>                                | MIL-STD-461, CS116 (30 MHz – 100 MHz)     |
| <b>Test level into 100 <math>\Omega</math></b> | @ 30 MHz: 2 – 12 A $\pm$ 10 %, adjustable |
| <b>Test level into 100 <math>\Omega</math></b> | @ 100 MHz: 1 – 6 A $\pm$ 10 %, adjustable |
| <b>Waveform</b>                                | damped oscillation@30MHz,100MHz $\pm$ 10% |
| <b>Z<sub>out</sub></b>                         | $\leq$ 100 $\Omega$                       |
| <b>Damping factor (Q)</b>                      | 15 $\pm$ 5 for all frequencies            |
| <b>Repetition rate</b>                         | max. 2 Hz for all frequencies             |
| <b>Coupler for all frequencies</b>             | CN-BT6                                    |
| <b>Calibration fixture all freq.</b>           | VERI-MIL3                                 |
| <b>Optional</b>                                | I-PROBE-CS                                |



### MIL3-CS116 CUSTOM FREQUENCY

|                                                |                                            |
|------------------------------------------------|--------------------------------------------|
| <b>Standard</b>                                | MIL-STD-461, CS116                         |
| <b>Test level into 100 <math>\Omega</math></b> | according to Fig. CS116-2                  |
| <b>Frequency</b>                               | choose any frequency from 10 kHz to 30 MHz |
| <b>Waveform</b>                                | damped oscillation                         |
| <b>Z<sub>out</sub></b>                         | $\leq$ 100 $\Omega$                        |
| <b>Damping factor (Q)</b>                      | 15 $\pm$ 5 for all frequencies             |
| <b>Repetition rate</b>                         | max. 2 Hz for all frequencies              |
| <b>Coupler for all frequencies</b>             | CN-BT6                                     |
| <b>Calibration fixture all freq.</b>           | VERI-MIL3                                  |
| <b>Optional</b>                                | I-PROBE-CS                                 |



### MIL3-SPIKE

|                                              |                                       |
|----------------------------------------------|---------------------------------------|
| <b>Standard</b>                              | MIL-STD-461F CS106, MIL-STD-461C CS06 |
| <b>Output impedance</b>                      | < 2 $\Omega$                          |
| <b>Test level into 5 <math>\Omega</math></b> | 100 – 600 V $\pm$ 10 %, adjustable    |
| <b>Waveform</b>                              | voltage spike                         |
| <b>Pulse rise time</b>                       | 1.5 $\mu$ s $\pm$ 0.5 $\mu$ s         |
| <b>Pulse front time</b>                      | 3.5 $\mu$ s $\pm$ 0.5 $\mu$ s         |
| <b>Pulse duration</b>                        | 5 $\mu$ s $\pm$ 22 %                  |
| <b>Voltage sag amplitude</b>                 | $\leq$ 120 V @ 400 V test level       |
| <b>Voltage sag duration</b>                  | $\leq$ 20 $\mu$ s @ 400 V test level  |
| <b>Repetition rate</b>                       | max. 10 Hz                            |
| <b>Synchronization</b>                       | 0 – 359° $\pm$ 5°, 1° step            |
| <b>Requires</b>                              | CN-MIG-BT5, VERI5, DC-S17CL           |



### MIL3-SPIKE-SLOW

|                                  |                                                                           |
|----------------------------------|---------------------------------------------------------------------------|
| <b>Standard</b>                  | MIL-STD-461C CS06, ECSS-E-ST-20-07C Rev. 1<br>CS, power leads, transients |
| <b>Waveform duration</b>         | 10 $\mu$ s $\pm$ 20 %                                                     |
| <b>Polarity</b>                  | positive and negative                                                     |
| <b>Repetition rate</b>           | 0.1 – 60 s                                                                |
| <b>Synchronization</b>           | 0 – 359° $\pm$ 5°                                                         |
| <b>Synchronization input</b>     | 50 – 280 V, 40 – 800 Hz                                                   |
| <b>Serial injection</b>          |                                                                           |
| <b>Test level</b>                | 20 – 300 V $\pm$ 10 %                                                     |
| <b>Z<sub>out</sub></b>           | < 2 $\Omega$                                                              |
| <b>EUT current serial inj.</b>   | max. 1280A @50Hz, 160A @400Hz, 80A @800Hz                                 |
| <b>Requires</b>                  | CN-MIG-BT5, VERI5                                                         |
| <b>Optional</b>                  | DC-S17CL (see EUT supply limits)                                          |
| <b>Parallel injection</b>        |                                                                           |
| <b>Test level</b>                | 20 – 500 V $\pm$ 10 %                                                     |
| <b>Z<sub>out</sub></b>           | < 1 $\Omega$                                                              |
| <b>EUT voltage parallel inj.</b> | max. 250V @DC - 60Hz, 60V @60 - 400Hz,<br>30V @400 - 800Hz                |
| <b>Requires</b>                  | VERI5, SHUNT0E1                                                           |
| <b>Optional</b>                  | DC-S17CL (see EUT supply limits)                                          |





## MIL3-SPIKE-FAST

|                              |                                                                           |
|------------------------------|---------------------------------------------------------------------------|
| <b>Standard</b>              | MIL-STD-461C CS06, ECSS-E-ST-20-07C Rev. 1<br>CS, power leads, transients |
| <b>Waveform duration</b>     | 0.15 $\mu$ s $\pm$ 20%                                                    |
| <b>Polarity</b>              | positive and negative                                                     |
| <b>Repetition rate</b>       | 0.1 – 60 s                                                                |
| <b>Synchronization</b>       | 0 – 359° $\pm$ 5° up to 400 Hz                                            |
| <b>Synchronization input</b> | 50 – 280 V, 40 – 800 Hz                                                   |

### Serial injection

|                                |                                                  |
|--------------------------------|--------------------------------------------------|
| <b>Test level</b>              | 20 – 400 V $\pm$ 10 %                            |
| <b>Z<sub>out</sub></b>         | < 5 $\Omega$ @ standard test level               |
| <b>EUT current serial inj.</b> | max. 32 A @ DC – 800 Hz                          |
| <b>Requires</b>                | <a href="#">VERI5</a>                            |
| <b>Optional</b>                | <a href="#">DC-S17CL</a> (see EUT supply limits) |

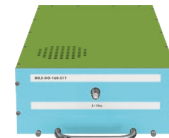
### Parallel injection

|                                  |                                                    |
|----------------------------------|----------------------------------------------------|
| <b>Test level</b>                | 20 – 400 V $\pm$ 10 %                              |
| <b>Z<sub>out</sub></b>           | < 5 $\Omega$ @ standard test level                 |
| <b>EUT voltage parallel inj.</b> | max. 250 V @ DC – 800 Hz                           |
| <b>Requires</b>                  | <a href="#">VERI5</a> , <a href="#">VERI01 OSI</a> |
| <b>Optional</b>                  | <a href="#">DC-S17CL</a> (see EUT supply limits)   |



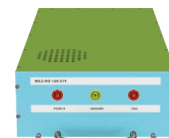
## MIL3-DO-160-S17

|                           |                                                                                |
|---------------------------|--------------------------------------------------------------------------------|
| <b>Standard</b>           | DO-160 Section 17                                                              |
| <b>Output impedance</b>   | 50 $\Omega$ $\pm$ 10 %                                                         |
| <b>Test level OC</b>      | 50 – 1200 V $\pm$ 10 % , adjustable                                            |
| <b>Waveform</b>           | voltage spike                                                                  |
| <b>Pulse rise time</b>    | 1 – 2 $\mu$ s $\pm$ 30 %                                                       |
| <b>Pulse duration</b>     | > 10 $\mu$ s                                                                   |
| <b>Repetition rate</b>    | max. 2 Hz                                                                      |
| <b>Synchronization</b>    | 0 – 359° $\pm$ 5°, 1° step<br>input 50 - 250 V / 40 - 800 Hz                   |
| <b>EUT supply</b>         | 250 V / DC - 60 Hz                                                             |
| <b>parallel injection</b> | 60 V / 60 - 400Hz<br>30 V / 400 - 800Hz<br>current limited only by decoupling  |
| <b>Requires</b>           | <a href="#">CN-MIG-BT5</a> , <a href="#">VERI50</a> , <a href="#">DC-S17CL</a> |



## MIL3-DO-160-S19

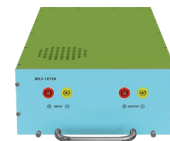
|                   |                                                                   |
|-------------------|-------------------------------------------------------------------|
| <b>Standard</b>   | DO-160 Section 19 – fig. 19-6, inductive switch-<br>ing transient |
| <b>Resistance</b> | 175 $\Omega$ $\pm$ 10 %                                           |
| <b>Inductance</b> | 1.5 H $\pm$ 10 %                                                  |
| <b>Test level</b> | $\geq$ 600 V                                                      |



|                                |                                         |
|--------------------------------|-----------------------------------------|
| <b>Waveform</b>                | voltage spikes/burst                    |
| <b>Spike repetition period</b> | in the range 0.2 – 10 µs                |
| <b>Burst total duration</b>    | in the range 50 - 1000 µs               |
| <b>Event repetition</b>        | 0.1 – 60 s, adjustable                  |
| <b>Test duration</b>           | 1 – 65535 s                             |
| <b>Included</b>                | cables for coupling 0.5 m, 1.0 m, 2.0 m |

### MIL3-1275B

|                              |                                                       |
|------------------------------|-------------------------------------------------------|
| <b>Standard</b>              | MIL-STD-1275 versions A to E, imported voltage spikes |
| <b>Test level</b>            | 100 – 1000 V ±10 %, in open circuit                   |
| <b>Waveform</b>              | ring wave                                             |
| <b>Rise time 10 – 90 %</b>   | < 50 ns                                               |
| <b>Oscillation frequency</b> | 100 – 500 kHz                                         |
| <b>Pulse repetition</b>      | max. 2 Hz                                             |
| <b>Max. EUT power</b>        |                                                       |
| <b>DC</b>                    | 28 V / 30 A                                           |
| <b>AC</b>                    | 230 V / 10 A or 115 V / 25 A @ 50/60 Hz               |



## 1.2. POWER, CLIMATIC CONDITIONS, SHIPPING WEIGHT, DIMENSIONS

### MIL-MG3 mainframe

|                                |                                             |
|--------------------------------|---------------------------------------------|
| <b>Mains adapter</b>           | 100 – 240 V ± 10 % (50/60 Hz)               |
| <b>Power consumption</b>       | ON < 150 VA, standby < 15 VA                |
| <b>Temperature range</b>       | 10 – 35 °C                                  |
| <b>Humidity</b>                | < 80 % non-condensing                       |
| <b>Air pressure</b>            | 86 – 106 kPa                                |
| <b>Mainframe weight</b>        | 17 kg                                       |
| <b>W x d x h</b>               | 45 x 57 x 19 cm                             |
| <b>Version</b>                 | 19" unit, 4 UH                              |
| <b>Included articles</b>       |                                             |
| <b>Power cord</b>              | with country plug                           |
| <b>User manual</b>             | with conformity declaration                 |
| <b>Calibration certificate</b> | factory calibration for each plugin ordered |
| <b>Ethernet cable</b>          | 1 piece                                     |

## 2. ACCESSORIES FOR MIL-MG3

### 2.1. TECHNICAL SPECIFICATIONS

#### CN-BT6

|                              |                                               |
|------------------------------|-----------------------------------------------|
| <b>Standard</b>              | MIL-STD-461 CS115 and CS116                   |
| <b>Application</b>           | injection probe                               |
| <b>Frequency range CS115</b> | usable rise time from 1 ns                    |
| <b>Frequency range CS116</b> | 10 kHz – 100 MHz                              |
| <b>EUT supply</b>            | max. 150A@50/60Hz, 20A@400Hz, 10A@800Hz       |
| <b>Aperture</b>              | 5 cm diameter                                 |
| <b>Dimensions l x h x w</b>  | 25 x 17 x 15 cm                               |
| <b>Weight</b>                | 5 kg                                          |
| <b>Included</b>              | 50 $\Omega$ termination, 1 m cable, 2 m cable |
| <b>Requires</b>              | CS115 and/or CS116 modules, VERI-MIL3         |



#### VERI-MIL3

|                             |                                               |
|-----------------------------|-----------------------------------------------|
| <b>Application</b>          | calibration fixture for CN-BT6 (CS115, CS116) |
| <b>Weight</b>               | 4.5 kg                                        |
| <b>Dimensions l x h x w</b> | 34 x 13 x 15 cm                               |
| <b>Included</b>             | 2 x 20 dB N-type, 2 x 20 dB BNC, 1 m cable    |



#### CN-MIG-BT5

|                             |                                                                                                                                                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Standards</b>            | MIL-STD-461F CS106, MIL-STD-461C CS06, DO-160 Section 17 serial injection                                                                                                                       |
| <b>Application</b>          | injection probe                                                                                                                                                                                 |
| <b>Frequency range</b>      | 10 kHz – 10 MHz                                                                                                                                                                                 |
| <b>EUT supply</b>           | CS106: max.<br>150A@50/60Hz, 20A@400Hz, 10A@800Hz<br>CS06 SLOW: max.<br>max. 1280A @50Hz, 160A @400Hz, 80A @800Hz<br>Section 17, serial injection: max.<br>1000A@50/60Hz, 160A@400Hz, 80A@800Hz |
| <b>Aperture</b>             | 8 x 7 cm                                                                                                                                                                                        |
| <b>Dimensions l x h x w</b> | 22 x 22 x 20 cm                                                                                                                                                                                 |
| <b>Weight</b>               | 13 kg                                                                                                                                                                                           |
| <b>Included</b>             | 1 m cable, 1 turn calibration loop                                                                                                                                                              |
| <b>Requires</b>             | CS106 or CS06 modules or S17 module, DC-S17CL                                                                                                                                                   |



#### DC-S17CL

|                               |                                                         |
|-------------------------------|---------------------------------------------------------|
| <b>Standards</b>              | MIL-STD-461F CS106, MIL-STD-461C CS06 DO-160 Section 17 |
| <b>Application</b>            | decoupling units for power supply side                  |
| <b>For serial injection</b>   | 4 x decoupling capacitors, in 2 boxes                   |
| <b>Decoupling capacitance</b> | 10 $\mu$ F                                              |
| <b>EUT voltage</b>            | max. 250V, DC - 800Hz                                   |
| <b>EUT current</b>            | not limited by decoupling capacitors                    |



|                               |                                               |
|-------------------------------|-----------------------------------------------|
| <b>For parallel injection</b> | 2 x decoupling inductors                      |
| <b>Decoupling inductance</b>  | 1.8 mH                                        |
| <b>EUT voltage</b>            | max. 250V, DC - 800Hz                         |
| <b>EUT current</b>            | max. 16 A                                     |
| <b>Weight</b>                 | 7 kg, all 4 modules and acc. in carrying case |
| <b>Dimensions</b>             | 34 x 28 x 17 cm (carrying case)               |
| <b>Included</b>               | connection cables, carrying case              |

## SHUNTOE1

|                                |                                                               |
|--------------------------------|---------------------------------------------------------------|
| <b>Application</b>             | calibration of MIL3-SPIKE-SLOW SC current, parallel injection |
| <b>Input impedance</b>         | 0.1 $\Omega \pm 2 \%$                                         |
| <b>Transfer ratio</b>          | 1V / 20 A in 50 $\Omega$ , 1V / 10A in 1 M $\Omega \pm 2 \%$  |
| <b>Maximum setting MIL-MG3</b> | MIL3-SPIKE-SLOW: 500 C                                        |
| <b>Weight</b>                  | 0.15 kg                                                       |
| <b>Dimensions</b>              | 12 x 2.5 x 2.5 cm                                             |
| <b>Requires</b>                | MIL-MG3, MIL-SPIKE-SLOW                                       |



## VERI01 OSI

|                                |                                                               |
|--------------------------------|---------------------------------------------------------------|
| <b>Application</b>             | calibration of MIL3-SPIKE-FAST SC current, parallel injection |
| <b>Input impedance</b>         | 0.1 $\Omega \pm 2 \%$                                         |
| <b>Maximum setting MIL-MG3</b> | MIL3-SPIKE-FAST: 400 V                                        |
| <b>3 dB bandwidth</b>          | > 400 MHz                                                     |
| <b>Power dissipation</b>       | max. 3 W, max. 1000 spikes/s @ 4.4 kV                         |
| <b>Transfer ratio</b>          | 1V / 20 A in 50 $\Omega$ , 1V / 10 A in 1 M $\Omega \pm 2 \%$ |
| <b>Dimensions</b>              | 8.5 x 2.5 x 2.5 cm                                            |
| <b>Weight</b>                  | 0.1 kg                                                        |
| <b>Requires</b>                | MIL-MG3, MIL-SPIKE-FAST                                       |



## VERI5

|                                |                                                               |
|--------------------------------|---------------------------------------------------------------|
| <b>Standard</b>                | MIL-STD-461F CS106, MIL-STD-461C CS06                         |
| <b>Application</b>             | non-inductive calibration load                                |
| <b>Input impedance</b>         | 5 $\Omega \pm 2 \%$                                           |
| <b>Power dissipation</b>       | max. 10 W                                                     |
| <b>Maximum setting MIL-MG3</b> | MIL3-SPIKE: 600 V                                             |
| <b>Transfer ratio</b>          | DSO 1M $\Omega$ : 1:50 (34dB); DSO 50 $\Omega$ : 1:100 (40dB) |
| <b>Weight</b>                  | 0.2 kg                                                        |
| <b>Dimensions</b>              | 12 x 2.5 x 2.5 cm                                             |
| <b>Included</b>                | factory calibration report                                    |



## VERI50

|                                |                                                               |
|--------------------------------|---------------------------------------------------------------|
| <b>Standard</b>                | DO-160 Section 17                                             |
| <b>Application</b>             | non-inductive calibration load                                |
| <b>Input impedance</b>         | 50 $\Omega$ $\pm$ 2 %                                         |
| <b>Power dissipation</b>       | max. 10W                                                      |
| <b>Maximum setting MIL-MG3</b> | MIL3-DO-160-S17: 1200 V                                       |
| <b>Transfer ratio</b>          | DSO 1M $\Omega$ : 1:50 (34dB); DSO 50 $\Omega$ : 1:100 (40dB) |
| <b>Weight</b>                  | 0.2 kg                                                        |
| <b>Dimensions</b>              | 12 x 2.5 x 2.5 cm                                             |
| <b>Included</b>                | factory calibration report                                    |



## 20dB ATTENUATOR (optional)

|                                  |                                           |
|----------------------------------|-------------------------------------------|
| <b>Application</b>               | att. reducing test level with MIL3-10K10M |
| <b>Level with 20 dB (10 kHz)</b> | for ex: 22 mA @ gen. setting 220 mA       |
| <b>Weight</b>                    | 0.1 kg                                    |
| <b>Dimensions</b>                | 11 x 2.5 x 2.5 cm                         |
| <b>Included</b>                  | factory calibration report                |



## I-PROBE-CS

|                             |                                                  |
|-----------------------------|--------------------------------------------------|
| <b>Standards</b>            | MIL-STD-461G: CS115, CS116                       |
| <b>Application</b>          | current probe for test level and rise time meas. |
| <b>Output connector</b>     | N (adapter for BNC optional, ask sales)          |
| <b>Frequency range</b>      | 10 kHz – 400 MHz                                 |
| <b>Usable rise time</b>     | 1 ns                                             |
| <b>Aperture</b>             | 50.8 mm (excellent for CN-BT6)                   |
| <b>Input level</b>          | max. 4 A r.m.s., 15 A peak                       |
| <b>Transfer impedance</b>   | - 6 dB $\Omega$                                  |
| <b>Current time product</b> | max. 0.6 mAs                                     |
| <b>Weight</b>               | 1 kg                                             |
| <b>Dimensions</b>           | 14.7 x 12.7 x 3.2 cm                             |
| <b>Included</b>             | carrying case                                    |

## TEMA3000

|                          |                                              |
|--------------------------|----------------------------------------------|
| <b>Application</b>       | modular control software for MIL-MG3 system  |
| <b>License</b>           | 1 license for 1 generator                    |
| <b>TEMA3000 basic</b>    | remote control of generator, single tests    |
| <b>TEMA3000-SEQUENCE</b> | more single tests linked in a sequence       |
| <b>TEMA3000-REPORT</b>   | generation of customized test reports        |
| <b>TEMA3000-DSO</b>      | control of DSOs via Ethernet, data in report |
| <b>TEMA3000-LIBRARY</b>  | collection of norm pre-programmed tests      |
| <b>Compatibility</b>     | Windows XP, 7, 8, 10                         |
| <b>For generators</b>    | MIL-MG3, AVI-LV3, IMU Series, other          |



EMC PARTNER

# PRODUCT APPLICATION RANGE

## CONSUMER & INDUSTRIAL ELECTRONICS

Transient Test Systems for conducted EMC tests on electronic equipment. ESD, EFT, surge, ring wave, DOW, dips, magnetic field, common and differential mode. Compliant to IEC, EN and ANSI standards.



## AEROSPACE ELECTRONICS

Impulse generators and couplers for avionic applications. Single stroke, multiple stroke and multiple burst according to RTCA / DO-160, EUROCAE / ED-14 and aircraft manufacturer standards.



## COMPONENT TESTING

Voltage and current Impulse generators for design and production testing of varistors, gas discharge tubes, surge protective devices, X / Y capacitors and specialist impulse generators for semiconductor tests.



## DEFENCE ELECTRONICS

Complete test solutions for MIL-STD-461 requirements CS06, CS106, CS115, CS116, CS117 and CS118.



## TELECOM & DATA LINE TESTING

Voltage and current impulse generators, CDNs, power contact, power induction equipment for exchange and customer equipment according to ITU, IEC, EN and ETSI requirements.



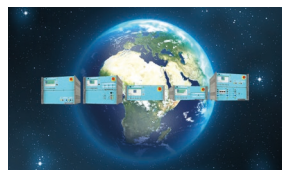
## ENERGY & UTILITY EQUIPMENT

High current CDNs combined with transient test equipment fulfil requirements to test renewable and classical energy distribution network and monitoring equipment.



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