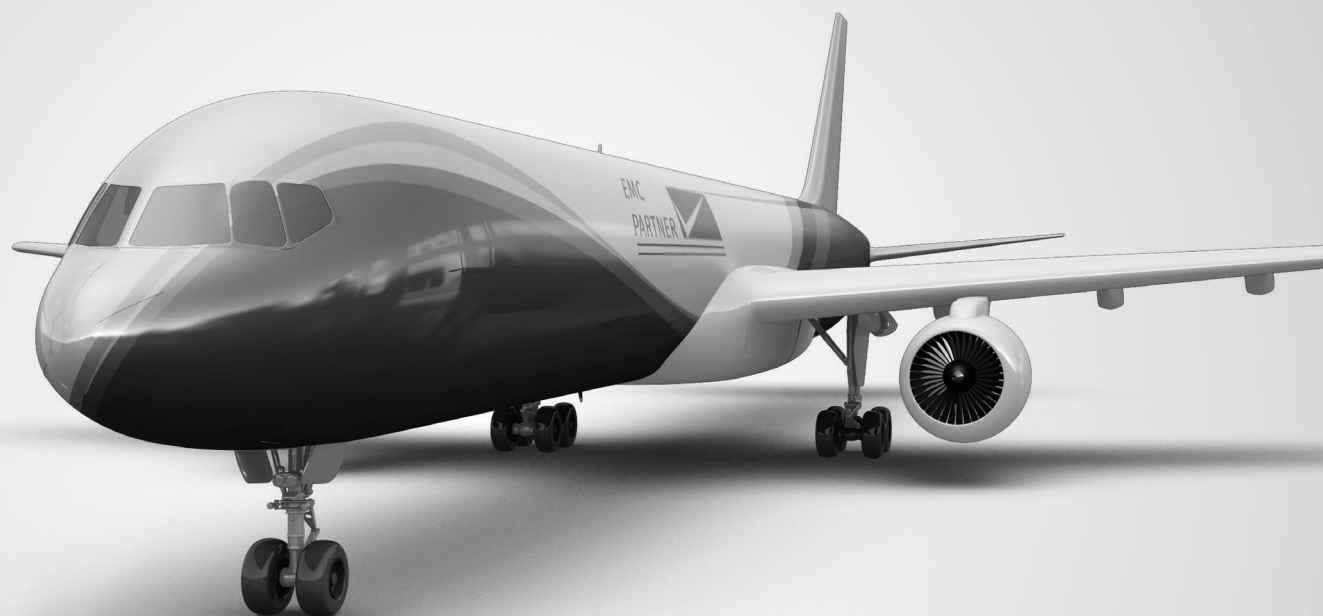




DO-160 & MIL-STD-461G

# Indirect Lightning Effects Test System

AVI-LV5



 This document has been optimized for electronic media

 Smart navigation through technical specifications. Click the green links.



### Accredited Calibration

Quality at EMC PARTNER is based on an ISO 9001 management system. This is the foundation for an ISO 17025 accreditation verified by the Swiss Calibration Service (SCS). SCS No. 146 is the accreditation number of EMC PARTNER AG. Locally accredited but recognized worldwide through affiliation with the ILAC organisation



WHEN GETTING RESULTS MATTERS

## THERE IS ONLY ONE CHOICE

Avionics and military testing is all about quality and precision. AVI-LV5 is the answer for these requirements.

A flexible solution that includes:

- › RTCA DO-160G: SECTION 22, Level 5
- › EUROCAE ED-14G: SECTION 22, Level 5
- › MIL-STD-461: CS117 internal & external equipment test levels

Ease of use, advanced functionality and options make AVI-LV5 the most efficient and technically advanced instrument in this category.

MODERN AND EFFICIENT

# THE LATEST SOLUTION FOR INDIRECT LIGHTNING EFFECTS TESTING

AVI-LV5 is the first EMC PARTNER system to fully integrate all waveforms from MIL-STD-461G and RTCA DO-160 (level 1 to level 5) as standard. Combined with only two couplers, AVI-LV5 is a compact and resourceful solution to indirect lightning testing needs.

Ready for custom WF3 CB plugins for additional frequencies (contact sales)

Only two injection transformers for all levels, all waveforms: faster generator performance verification and testing

Power blocking devices for generator protection during PIN tests included in generator

Adjustable MS subsequent stroke level with EXT-AVI5-MS.  
Optional 30 strokes module available with OPT-MS-30

Optional transient blocking devices for power supply protection during pin injection tests (direct injection method)

Increased energy available for higher impedance cable bundles

WF 5A voltage and WF 5B included as standard features of AVI-LV5-CB generator

Three-phase LISNs with optional DC voltage extensions available with 5  $\mu$ H per line

## POWERFUL AND RELIABLE

AVI-LV5 is a compact system that includes all waveforms for RTCA DO-160: Section 22 and MIL-STD-461G: CS117 testing. All event types are available for PIN Injection and Cable Bundle tests.

- › Quad-core processor, 1.2 GHz
- › 1 Gbps Ethernet port for fast communication with computer
- › 7" capacitive touch-screen with refined GUI, proprietary operating system
- › Solid-state switching technology increases reproducibility and reliability
- › TEMA3000-AVI software suite provides sophisticated automation functions
- › Quick and simple firmware and software updates
- › Seamless test bench integration possibilities: with its programmable bi-directional BNC connectors, AVI-LV5 generators are ready for an optimal PLC integration

# Technical Specifications

# OVERVIEW – SMART SYSTEM CONCEPT

The smart concept of AVI-LV5 allows to extend the system should this be required in the future.

## PIN INJECTION

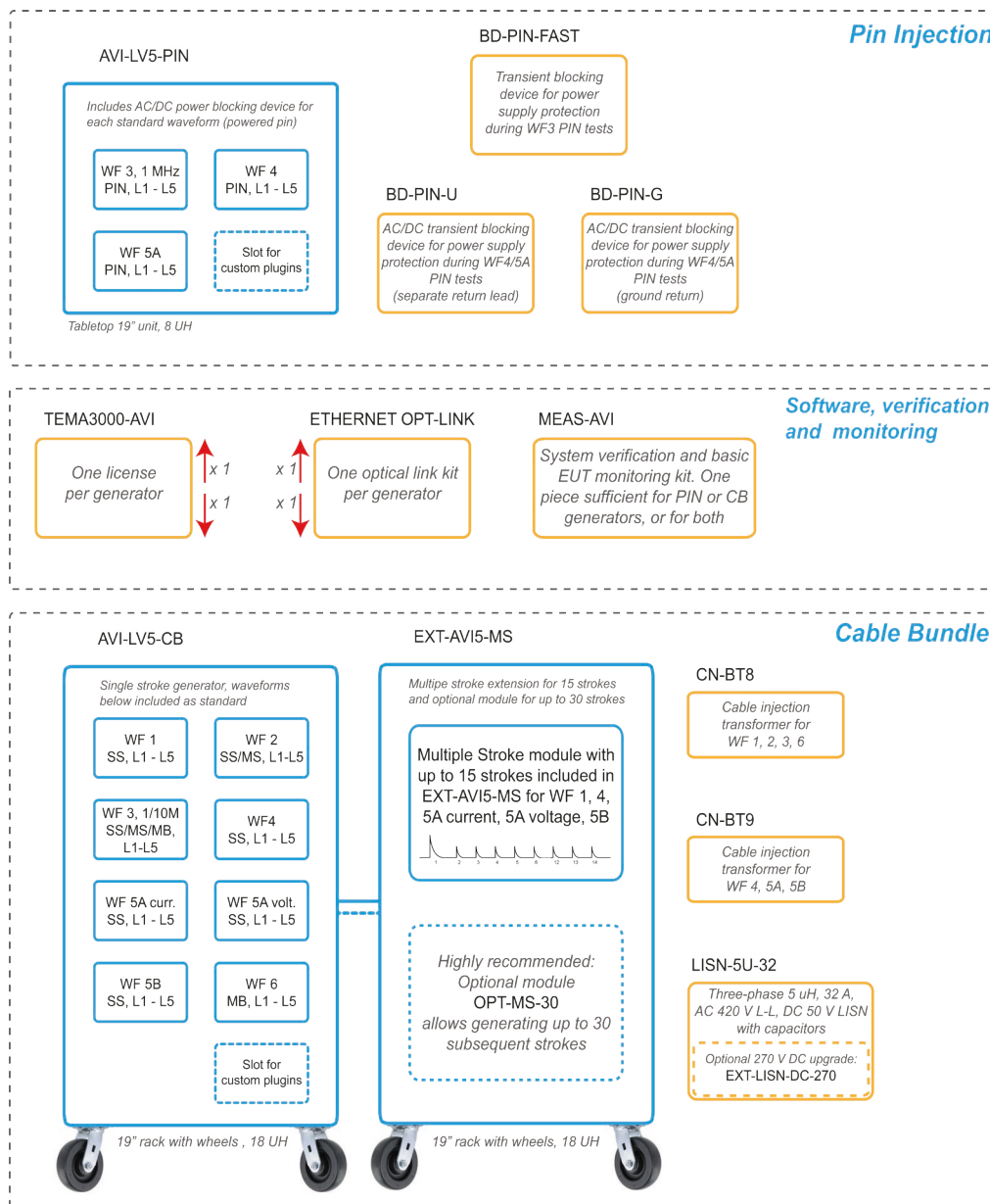
- › AVI-LV5-PIN
- › BD-PIN-FAST
- › BD-PIN-U
- › BD-PIN-G

## CABLE BUNDLE

- › AVI-LV5-CB
- › EXT-AVI5-MS
- › OPT-MS-30
- › CN-BT8
- › CN-BT9
- › LISN-5U-32
- › EXT-LISN-DC-270

## ACCESSORIES

- › MEAS-AVI
- › TEMA3000-AVI
- › ETHERNET OPT-LINK
- › WARNING LAMP
- › EMERGENCY-STOP



# TEST GENERATORS AND EXTENSIONS

## AVI-LV5-PIN GENERATOR

### AVI-LV5-PIN circuit: WF3, 1 MHz, pin injection

<b>Standards</b>	DO-160G S22, ED-14G S22, other
<b>Coupling mode</b>	direct injection
<b>Voltage, current WF3</b>	frequency: 1 MHz $\pm$ 20 % damping: 25 – 75 % (1st to 5th peak)
<b>Test level</b>	specified at application point
<b>Test level single stroke</b>	20 V – 3200 V, – 0 % / + 10 %
<b>Output impedance</b>	25 $\Omega$
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	automatic on power peak or 0 – 359°, step 1°
<b>Programmable ramp</b>	Voltage
<b>Power blocking device</b>	built-in
<b>EUT max. AC-voltage</b>	230 V
<b>EUT max. supply frequency</b>	800 Hz
<b>EUT max. DC-voltage</b>	$\pm$ 540 V

### AVI-LV5-PIN circuit: WF4, pin injection

<b>Standards</b>	DO-160G S22, ED-14G S22, other
<b>Coupling mode</b>	direct injection
<b>Voltage, current WF4</b>	6.4 $\mu$ s $\pm$ 20 % / 69 $\mu$ s $\pm$ 20 %
<b>Test level</b>	specified at application point
<b>Test level single stroke</b>	50 V – 1600 V, – 0 % / + 10 %
<b>Output impedance</b>	5 $\Omega$
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	automatic on power peak (90°, 270°)
<b>Programmable ramp</b>	voltage
<b>Power blocking device</b>	built-in
<b>EUT max. AC-voltage</b>	230 V
<b>EUT max. supply frequency</b>	800 Hz
<b>EUT max. DC-voltage</b>	$\pm$ 540 V

### AVI-LV5-PIN circuit: WF5A, pin injection

<b>Standards</b>	DO-160G S22, ED-14G S22, other
<b>Coupling mode</b>	direct injection
<b>Voltage, current WF5A</b>	40 $\mu$ s $\pm$ 20 % / 120 $\mu$ s $\pm$ 20 %
<b>Test level</b>	specified at application point
<b>Test level single stroke</b>	25 V – 2000 V, – 0 % / + 10 %
<b>Output impedance</b>	1 $\Omega$
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	automatic on power peak (90°, 270°)
<b>Programmable ramp</b>	voltage
<b>Power blocking device</b>	built-in
<b>EUT max. AC-voltage</b>	230 V
<b>EUT max. supply frequency</b>	800 Hz
<b>EUT max. DC-voltage</b>	$\pm$ 540 V

### AVI-LV5-PIN control features

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

### AVI-LV5-PIN supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	100 V – 240 V (50/60 Hz) ± 10%
<b>Power consumption</b>	ON < 400 VA, standby < 15 VA
<b>Weight</b>	43 kg
<b>W x d x h</b>	45 x 60 x 37 cm
<b>Construction type</b>	19" unit, 8 UH
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	25 – 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### AVI-LV5-PIN optional accessories

BD-PIN-FAST	Power supply transient blocking device for WF3 direct PIN tests (2 pieces for separate return lead)
BD-PIN-U	Power supply transient blocking device for WF4 and 5A direct PIN tests. EUT supply with dedicated return
BD-PIN-G	Power supply transient blocking device for WF4 or 5A direct PIN tests. EUT supply with ground return
<b>MEAS-AVI (only 1 kit for PIN and CB)</b>	System verification and basic EUT monitoring kit. Comprises loads, accessories, voltage and current probes. No DSO included. ISO/IEC 17025 calibration of probes and loads included.
TEMA3000-AVI	Control of AVI generators. Includes Library of test routines, Report function, DSO screen dump import and sequence mode. 1 piece per generator required.
ETHERNET-OPT-LINK	10 m optical fibre kit with Ethernet converters. 1 piece per generator required.

## AVI-LV5-CB GENERATOR

### AVI-LV5-CB circuit: WF1 cable induction

<b>Standards</b>	DO-160G S22, MIL-STD-461G CS117, ED-14G S22
<b>Coupling mode</b>	Cable Induction (CI)
<b>Current waveform WF1</b>	6.4 $\mu$ s $\pm$ 20 % / 69 $\mu$ s $\pm$ 20 %
<b>Measured</b>	at coupler output
<b>SC current single stroke</b>	100 A – 3200 A, – 0 % / + 20 %
<b>SC current multiple stroke</b>	50 A – 1600 A (first stroke), – 0 % / + 20 %
<b>(requires EXT-AVI5-MS)</b>	25 A – 800 A (subsequent stroke), –0% / +50%
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	current
<b>Requires</b>	CN-BT8

### AVI-LV5-CB circuit: WF2 cable induction

<b>Standards</b>	DO-160G S22, MIL-STD-461G CS117, ED-14G S22
<b>Coupling mode</b>	Cable Induction (CI)
<b>Voltage waveform WF2</b>	rise time: < 100 ns pulse duration: 6.4 $\mu$ s $\pm$ 20 %
<b>Measured</b>	at coupler output
<b>OC voltage single stroke</b>	50 V – 1600 V, – 0 % / + 20 %
<b>OC voltage multiple stroke</b>	50 V – 1600 V (first stroke), – 0 % / + 20 % 25 V – 800 V (subsequent stroke), –0% / +50%
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	voltage
<b>Requires</b>	CN-BT8

### AVI-LV5-CB circuit: WF3, 1 MHz, cable induction

<b>Standards</b>	DO-160G S22, MIL-STD-461G CS117, ED-14G S22
<b>Coupling mode</b>	Cable Induction (CI)
<b>Voltage, current WF3</b>	frequency: 1 MHz $\pm$ 20 % damping: 25 – 75 % (1st to 5th peak)
<b>Measured</b>	at coupler output
<b>OC voltage single stroke</b>	100 V – 3200 V, – 0 % / + 20 %
<b>OC voltage multiple stroke</b>	100 V – 3200 V (first stroke), – 0 % / + 20 % 50 V – 1600 V (subsequent stroke), –0% / +50%
<b>OC voltage multiple burst</b>	60 V – 1920 V, – 0 % / + 20 % (max. 500 pulses)
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	voltage
<b>Requires</b>	CN-BT8

### AVI-LV5-CB circuit: WF3, 10 MHz, cable induction

<b>Standards</b>	DO-160G S22, MIL-STD-461G CS117, ED-14G S22
<b>Coupling mode</b>	Cable Induction (CI)
<b>Voltage, current WF3</b>	frequency: 10 MHz $\pm$ 20 % damping: 25 – 75 % (1st to 5th peak)
<b>Measured</b>	at coupler output
<b>OC voltage single stroke</b>	100 V – 3200 V, – 0 % / + 20 %
<b>OC voltage multiple stroke</b>	100 V – 3200 V (first stroke), – 0 % / + 20 % 50 V – 1600 V (subsequent stroke), –0% / +50%
<b>OC voltage multiple burst</b>	60 V – 1920 V, – 0 % / + 20 % (max. 500 pulses)
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	voltage
<b>Requires</b>	CN-BT8

### AVI-LV5-CB circuit: WF4 ground injection

<b>Standards</b>	DO-160G S22
<b>Coupling mode</b>	Ground Injection (GI), EUT current max. 30 A
<b>Voltage waveform WF4</b>	6.4 $\mu$ s $\pm$ 20 % / 69 $\mu$ s $\pm$ 20 %
<b>Measured</b>	at application point
<b>OC voltage single stroke</b>	50 V – 1600 V, – 0 % / + 20 %
<b>OC voltage multiple stroke</b>	25 V – 800 V (first stroke), – 0 % / + 20 %
<b>(requires EXT-AVI5-MS)</b>	12.5 V – 400 V (subseq. stroke), –0% / +50%
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	voltage
<b>EUT max. current</b>	30 A DC - 800Hz

### AVI-LV5-CB circuit: WF4 cable induction

<b>Standards</b>	MIL-STD-461G CS117, DO-160G S22, ED-14G S22
<b>Coupling mode</b>	Cable Induction (CI)
<b>Voltage waveform WF4</b>	6.4 $\mu$ s $\pm$ 20 % / 69 $\mu$ s $\pm$ 20 %
<b>Measured</b>	at coupler output
<b>OC voltage single stroke</b>	50 V – 1600 V, – 0 % / + 20 %
<b>OC voltage multiple stroke</b>	25 V – 800 V (first stroke), – 0 % / + 20 %
<b>(requires EXT-AVI5-MS)</b>	12.5 V – 400 V (subseq. stroke), –0% / +50%
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	voltage
<b>Requires</b>	CN-BT9

### AVI-LV5-CB circuit: WF5A ground injection

<b>Standards</b>	DO-160G S22, ED-14G S22, other
<b>Coupling mode</b>	Ground Injection (GI), EUT current max. 30 A
<b>Current waveform WF5A</b>	40 $\mu\text{s} \pm 20\%$ / 120 $\mu\text{s} \pm 20\%$
<b>Measured</b>	at application point
<b>SC current single stroke</b>	150 A – 5000 A, – 0 % / + 20 %
<b>SC current multiple stroke</b>	60 A – 2000 A (first stroke), – 0 % / + 20 %
<b>(requires EXT-AVI5-MS)</b>	30 A – 1000 A (subseq. stroke), –0% / +50%
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	current
<b>EUT max. current</b>	30 A DC - 800Hz

### AVI-LV5-CB circuit: WF5A cable induction

<b>Standards</b>	DO-160G S22, MIL-STD-461G CS117, ED-14G S22
<b>Coupling mode</b>	Cable Induction (CI)
<b>Current waveform WF5A</b>	40 $\mu\text{s} \pm 20\%$ / 120 $\mu\text{s} \pm 20\%$
<b>Measured</b>	at coupler output
<b>SC current single stroke</b>	150 A – 5000 A, – 0 % / + 20 %
<b>SC current multiple stroke</b>	60 A – 2000 A (first stroke), – 0 % / + 20 %
<b>(requires EXT-AVI5-MS)</b>	30 A – 1000 A (subseq. stroke), –0% / +50%
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	current
<b>Requires</b>	<a href="#">CN-BT9</a>

### AVI-LV5-CB circuit: WF5A voltage

<b>Standards</b>	DO-160G S22, Boeing D6, ED-14G S22
<b>Application</b>	core wire pulsing and similar
<b>Coupling mode(s)</b>	Cable Induction (CI), ground injection GI
<b>Voltage waveform WF5A</b>	40 $\mu\text{s} \pm 20\%$ / 120 $\mu\text{s} \pm 20\%$
<b>Measured</b>	at coupler/generator output
<b>OC voltage single stroke</b>	150 V – 2000 V, – 0 % / + 20 %
<b>OC voltage multiple stroke</b>	150 V – 2000 V (first stroke), – 0 % / + 20 %
<b>(requires EXT-AVI5-MS)</b>	30 V – 400 V (subseq. stroke), –0% / +50%
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	voltage
<b>Requires</b>	<a href="#">CN-BT9</a> for CI, direct coupling for GI

### AVI-LV5-CB circuit: WF5B cable induction

<b>Standards</b>	DO-160G S22, ED-14G S22, other
<b>Coupling mode</b>	Cable Induction (CI)
<b>Current waveform WF5B</b>	50 $\mu\text{s} \pm 20\%$ / 500 $\mu\text{s} \pm 20\%$
<b>Measured</b>	at coupler output
<b>SC current single stroke</b>	150 A – 5000 A, – 0 % / + 20 %
<b>SC current multiple stroke</b>	60 A – 2000 A (first stroke), – 0 % / + 20 %
<b>(requires EXT-AVI5-MS)</b>	30 A – 1000 A (subseq. stroke), –0% / +50%
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	current
<b>Requires</b>	CN-BT9

### AVI-LV5-CB circuit: WF6 cable induction

<b>Standards</b>	DO-160G S22, MIL-STD-461G CS117, ED-14G S22
<b>Coupling mode</b>	Cable Induction (CI)
<b>Current waveform WF6</b>	0.25 $\mu\text{s} \pm 20\%$ / 4 $\mu\text{s} \pm 20\%$
<b>Measured</b>	at coupler output
<b>SC current multiple burst</b>	5 A – 160 A
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramp</b>	current
<b>Requires</b>	CN-BT8

### AVI-LV5-CB control features

<b>Operating system</b>	EPOS ORION proprietary firmware
<b>Languages</b>	8 menu languages, selectable
<b>User interface</b>	7" capacitive touch display
<b>Connectivity</b>	ethernet 1Gbps, USB, RS485
<b>Patterns</b>	DO-160 S22, MIL CS117
<b>Optional patterns</b>	Airbus, Boeing patterns require OPT-MS-30
<b>Impulse polarity</b>	positive, negative, electronic switching
<b>Automatic ramp</b>	programmable for test level
<b>Trigger out</b>	BNC, max. 6 V
<b>Programmable connectors</b>	6 BNC connectors (inputs/outputs) as follows
<b>Programmable in- put functions</b>	Trigger input, Start Test, Stop Test, EUT Fail, EUT Mark, Emergency Stop
<b>Programmable in- put max. voltage</b>	low range: 0 – 1.5 V, high range: 2.3 – 24 V
<b>Programmable out- put functions</b>	Running State, Safety Circuit State
<b>Programmable out- put max. U, I</b>	max. 24 V, max. 300 mA
<b>Safety features (standard)</b>	safety circuit, emergency stop button on front panel, red/yellow as per IEC 60947-5-5, IEC 60204-1, ISO 13850
<b>Safety accessories (optional)</b>	WARNING LAMP Remote EMERGENCY STOP button

### AVI-LV5-CB supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	100 V – 240 V (50/60 Hz) ± 10%
<b>Power consumption</b>	ON < 400 VA, standby < 15 VA
<b>Weight</b>	200 kg
<b>W x d x h</b>	60 x 72 x 127 cm
<b>Construction type</b>	19" rack, 18 UH with wheels
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	25 – 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### AVI-LV5-CB optional accessories

<b>LISN-5U-32 + DC option</b>	3P 5 µH LISN max. 420V AC/50 V DC 32 A per phase or DC. Optional DC 270 V capability. For both DO-160 S22 and MIL-STD-461G CS117
<b>MEAS-AVI (only 1 kit for PIN and CI is sufficient)</b>	System verification and basic EUT monitoring kit. Comprises loads, accessories, voltage and current probes. No DSO included. ISO/IEC 17025 calibration of probes and loads included
<b>TEMA3000-AVI</b>	Control of AVI generators. Includes Library of test routines, Report function, DSO screen dump import and sequence mode. 1 piece per generator required.
<b>ETHERNET-OPT-LINK</b>	10 m optical fibre kit with Ethernet converters. 1 piece per generator required.

### EXT-AVI5-MS

<b>Application</b>	extends AVI-LV5-CB for multiple stroke
<b>Subsequent strokes</b>	max. 15 strokes
<b>Weight</b>	200 kg
<b>W x d x h</b>	60 x 72 x 127 cm
<b>Construction type</b>	19" rack, 18 UH with wheels
<b>Supply</b>	100 – 240 V AC 50/60 Hz, max. 450 VA
<b>Requires</b>	<a href="#">AVI-LV5-CB</a>

### OPT-MS-30

<b>Application</b>	option for 30 subsequent strokes
<b>Type</b>	hardware upgrade (subsequent on site installation possible only via service dept.)
<b>Requires</b>	<a href="#">EXT-AVI5-MS</a>

# ACCESSORIES

## BD-PIN-FAST

<b>Standard</b>	DO-160G S22, ED-14G S22
<b>Application</b>	power supply transient blocking device for PIN tests, direct injection method. 2 pieces required for separate return lead 1P
<b>Test level WF3 1 MHz</b>	100 V – 3200 V
<b>EUT supply mode(s)</b>	separate return lead, ground return
<b>EUT supply AC</b>	≤ 230 V L-PE / 32 A @ max. 800 Hz
<b>EUT supply DC</b>	≤ 540 V / 32 A DC
<b>Weight</b>	0.7 kg
<b>Dimensions</b>	10 x 8 x 11 cm
<b>Requires</b>	<a href="#">AVI-LV5-PIN</a>

## BD-PIN-U

<b>Standard</b>	DO-160G S22, ED-14G S22
<b>Application</b>	power supply transient blocking device for PIN tests, direct injection method
<b>Test level WF 4</b>	50 V – 1600 V
<b>Test level WF 5A</b>	25 V - 2000 V
<b>EUT supply mode(s)</b>	separate return lead
<b>Lines</b>	L1, L2, L3, N or DC+ and DC-
<b>EUT supply AC</b>	≤ 230 V L-PE / 32 A @ max. 800 Hz
<b>EUT supply DC</b>	≤ 540 V / 32 A DC
<b>Weight</b>	42 kg
<b>W x d x h</b>	45 x 57 x 19 cm
<b>Construction type</b>	19" unit, 4 UH
<b>Requires</b>	<a href="#">AVI-LV5-PIN</a>

## BD-PIN-G

<b>Standard</b>	DO-160G S22, ED-14G S22
<b>Application</b>	power supply transient blocking device for PIN tests
<b>Test level WF 4</b>	50 V – 1600 V
<b>Test level WF 5A</b>	25 V - 2000 V
<b>EUT supply mode(s)</b>	ground return
<b>EUT supply AC</b>	≤ 230 V L-PE, max.10 A @800 Hz, 32 A@60 Hz
<b>Injection method AC</b>	direct injection
<b>EUT supply DC</b>	≤ 540 V / 32 A DC
<b>Injection method DC</b>	ground injection
<b>Weight</b>	18 kg
<b>W x d x h</b>	45 x 57 x 19 cm
<b>Construction type</b>	19" unit, 4 UH
<b>Requires</b>	<a href="#">AVI-LV5-PIN</a>

### LISN-5U-32

<b>Standard(s)</b>	DO-160G S22, MIL-STD-461G CS117, ED-14G S22
<b>Application</b>	Line Impedance Stabilization Network (5 $\mu$ H)
<b>Inductance</b>	5 $\mu$ H per line (for both AC and DC lines)
<b>Capacitance</b>	10 $\mu$ F/line included, 2 x ( $\geq$ 28 mF) included LISN is calibrated with capacitors connected
<b>Number of lines</b>	4 AC lines (L1 L2, L3, N), 2 DC lines (+ / -)
<b>AC voltage max.</b>	L-L: 420 V @50/60 Hz, L-PE: 240 V @50/60 Hz L-L: 420 V @ 800 Hz, L-PE: 240 V @ 800 Hz
<b>AC current max.</b>	32 A
<b>DC voltage max.</b>	50 V
<b>DC current max.</b>	32 A
<b>Weight</b>	16 kg
<b>W x d x h</b>	45 x 60 x 19 cm
<b>Construction type</b>	19" unit, 4 UH
<b>For generator(s)</b>	AVI-LV5-CB, other (AVI-LV3)

### EXT-LISN-DC-270

<b>Standard(s)</b>	DO-160G S22, MIL-STD-461G CS117, ED-14G S22
<b>Application</b>	extends LISN-5U-32 capability up to 270 V DC
<b>Capacitance</b>	2 lines, $\geq$ 28 mF each
<b>Weight</b>	23 kg
<b>W x d x h</b>	45 x 60 x 19 cm
<b>Construction type</b>	19" unit, 4 UH
<b>Special characteristics</b>	built-in safety features

## MEAS-AVI

<b>Standards</b>	measurements acc. to DO160G S22, ED-14G S22, MIL CS117 and similar
<b>Application</b>	set of voltage, current probes, load(s) and accessories for indirect lightning generator performance verification and basic EUT monitoring
<b>Voltage probe</b>	bandwidth to cover all DO160 S22 waveforms at all standard test levels
<b>Current probe/cal. load</b>	bandwidth to cover all DO160 S22 waveforms at all standard test levels
<b>Other accessories</b>	according to configuration
<b>For generators</b>	either <a href="#">AVI-LV5-PIN</a> or <a href="#">AVI-LV5-CB</a>
<b>Not included</b>	oscilloscope, more current probes for simultaneous monitoring of several bundles

## WARNING-LAMP

<b>Application</b>	red/green signalization lamp
<b>Protection class</b>	IP65, IEC 61140, VDE 0140-1
<b>Mounting support</b>	magnetic support, crewable bracket included
<b>Lamp type</b>	red and green (2 lamps), LED technology
<b>Weight</b>	0.3 kg
<b>Dimensions</b>	30x25x6cm
<b>Included</b>	control cable to TC-ST/generator
<b>For generators</b>	All EMC PARTNER AG generators



## EMERGENCY-STOP

<b>Application</b>	remote emergency stop button
<b>Colours</b>	standard red/yellow as in IEC 60947-5-5
<b>Mounting</b>	on table, magnetic support als included
<b>Weight</b>	0.5 kg
<b>Dimensions</b>	78 x 72 x 64 mm
<b>Included</b>	5m cable
<b>For generators</b>	All EMC PARTNER AG generators



# INJECTION TRANSFORMERS

## CN-BT8

<b>Standards</b>	DO-160G/ ED-14G S22, MIL-STD-461G CS117
<b>Application AVI-LV5-CB</b>	WF 1, 2, 3, 6 all test levels
<b>Application AVI-LV3</b>	WF 1, 2, 3, 5A, 6 up to level 3 (DO-160G S22)
<b>SC current</b>	≥ 3200 A
<b>SC current</b>	≥ 160 A multiple burst
<b>OC voltage</b>	≥ 1600 V
<b>OC voltage WF 3</b>	≥ 3200 V, 1 and 10 MHz
<b>EUT supply CB</b>	
	<i>only one line: high side or return in coupler</i>
<b>All WFs AVI-LV5-CB</b>	≤ 426 A @ 60 Hz, ≤ 32 A @ 800 Hz <i>high side(s) and return(s) together in coupler</i>
<b>All WFs AVI-LV5-CB</b>	≤ 852 A @ 60 Hz, ≤ 64 A @ 800 Hz
<b>Higher EUT current</b>	contact sales@emc-partner.ch for details
<b>EUT max. supply voltage</b>	own isolation for cable / bundle is required: 1500V DC, 1000V AC 50-60 Hz, 230V @800Hz
<b>Aperture</b>	5.5 x 8 cm
<b>Dimensions</b>	18 x 37,5 x 20 cm
<b>Weight</b>	22 kg
<b>For generators</b>	AVI-LV5-CB, AVI-LV3

## CN-BT9

<b>Standards</b>	DO-160G/ ED-14G S22, MIL-STD-461G CS117
<b>Application AVI-LV5-CB</b>	WF 4, 5A current, 5A voltage, 5B all test levels
<b>SC current</b>	≥ 5000 A WF 5A/5B current
<b>OC voltage</b>	≥ 1600 V WF 4 voltage, WF 5A voltage
<b>EUT supply CB</b>	
	<i>only one line: high side or return in coupler</i>
<b>WF 4, 5A current, 5B</b>	≤ 426 A @ DC - 60 Hz, ≤ 32 A @ 800 Hz
<b>WF 5A voltage</b>	≤ 213 A @ DC - 60 Hz, ≤ 16 A @ 800 Hz <i>high side(s) and return(s) together in coupler</i>
<b>WF 4, 5A current, 5B</b>	≤ 852 A @ DC - 60 Hz, ≤ 64 A @ 800 Hz
<b>WF 5A voltage</b>	≤ 426 A @ DC - 60 Hz, ≤ 32 A @ 800 Hz
<b>Higher EUT current</b>	contact sales@emc-partner.ch for details
<b>EUT max. supply voltage</b>	own isolation for cable / bundle is required: 1500V DC, 1000V AC 50-60 Hz, 230V @800Hz
<b>Aperture</b>	6 x 13 cm
<b>Dimensions</b>	61 x 63 x 35 cm (coupler), 65 x 130 x 114 cm (with cart)
<b>Weight</b>	260 kg (coupler), 369 kgs (with cart)
<b>For generators</b>	AVI-LV5-CB

# REMOTE CONTROL

## TEMA3000-AVI

<b>Application</b>	software control for AVI-LV5 generators
<b>Includes</b>	
<b>TEMA3000 BASIC</b>	remote control, single tests
<b>TEMA3000-SEQUENCE</b>	linking multiple single tests
<b>TEMA3000-REPORT</b>	generates reports for single tests/sequences
<b>TEMA3000-LIBRARY</b>	pre-programmed DO-160 S22, CS117 routines
<b>TEMA3000-DSO</b>	DSO control for AVI-LV3, AVI-LV5 generators
<b>License plan</b>	one license required for each generator

## ETHERNET-OPT-LINK

<b>Application</b>	galvanic isolation between computer AVI-LV5 generators
<b>Type</b>	optical fibre kit with Ethernet converters
<b>Length</b>	10 meters
<b>For generators</b>	<a href="#">AVI-LV5-PIN</a> , <a href="#">AVI-LV5-CB</a> (one piece per generator)

# Tradition meets Technology

Over 25 years devoted to combining  
latest technologies into the best products.

 **100% Swiss made products**



# Specific EMC test requirements ?

Search & find your required test equipment by application, standard or test type

[www.emc-partner.com](http://www.emc-partner.com)



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.



## CUSTOMER ServiceS

Customer support throughout an equipment's lifetime is central to the EMC PARTNER AG philosophy. Directly from our ISO accredited facility in Switzerland or through our network of services centres, we provide support wherever you



For further information please do not hesitate to contact your local EMC PARTNER AG representative.  
Visit our website for more information and contact details.

# [www.emc-partner.com](http://www.emc-partner.com)



## Swiss headquarters

EMC PARTNER AG  
Baselstrasse 160  
CH - 4242 Laufen

Phone +41 61 775 20 30  
Fax +41 61 775 20 59  
Email [sales@emc-partner.ch](mailto:sales@emc-partner.ch)  
Web [www.emc-partner.com](http://www.emc-partner.com)

## Your local representative

Information and specifications in this document are an indication of capability only. V.3.6 Subject to change without notice. EMC PARTNER AG publishes only the English version of this document. Translation into other languages is not guaranteed to be a true representation of content or specification.

© by EMC PARTNER AG. No changes or reproduction without permission of EMC PARTNER AG allowed.