

TRANSIENT *Specialists* INC.

Rental Equipment List

Effective February 12th, 2019



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TRANSIENT
Specialists INC.

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WHY TRANSIENT?

FREE technical support

Accredited Calibrations
by an independent lab

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LONGTERM RENTALS



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Harmonics and Flicker Emissions Test Sets



Part #	Description	Waveform
Proflin 2105	5kva single phase power source 0-270v AC / 18.5a 187-264 3 phase input, synthesized impedance to IEC 725 Desktop and windows software for IEC 61000-3-2, 61000-3-3, 61000-4-11, -14, -28, -11 pre-compliance only	IEC EN 61000-3-2, IEC EN 61000-3-3 61000-4-11,-13,-14 61000-4-28
EOS1	Switch for compliance testing per IEC 61000-4-11	IEC 61000-4-11

ESD Test Sets – Rental and New Purchase

Transient Specialists distributes Teseq and EM Test ESD products, so you can purchase any of their ESD simulators directly from us. We also have many brands and models available for rental. Our product offerings include 30kV air and contact mode capabilities and the option of several different discharge networks for commercial, automotive, and military standards. All of the options listed below can be rented individually or with the ESD gun. **All include ISO 17025 calibrations.**



ESD Simulators – EN IEC 61000-4-2

Part #	Description
MZ-15/ec	Thermo Keytek ESD gun to 16kv air, 8kv contact and 150 pf/330 ohm network
dito	EM Test ESD gun to 16.5kv air, 10kv contact, 150 pf/330 ohm network
NSG 435	Teseq ESD gun to 16.5kv air, 9kv contact, 150 pf/330 ohm network
ESD3000	HVT/EMC Partner ESD gun to 16kv air, 10kv contact, 150 pf/330 ohm network

ESD Simulators to 30kV, Automotive and Military Networks

Part #	Description	Network(pf/ohm)
ESD3000	ESD gun to 16kV, programmable, incl. DM-1	150 pf/330 ohm
30KV upg	RM32 relay module required for 30kV testing	
DN-1	IEC 61000-4-2 to 30kv, requires RM32	150 pf/330 ohm
DN-2	ISO TR10605 to 30kv, requires RM32	330 pf/2K ohm
DN-3	ISO TR10605 to 30kv, requires RM32	150 pf/2K ohm
DN-6	VW & Chrysler to 30kv, requires RM32	330 pf/330 ohm
DM-4	Network for Mil-std 464, Mil std-883, GR78	100 pf/1500 ohm
NSG 437	IEC 61000-4-2 network to 30kV	150 pf/330 ohm
NSG 437-auto	IEC 61000-4-2, and 3 ISO 10605 networks to 30kV	150 pf/330 ohm, 330 pf/330 ohm, 150pf/2K and 330pf/2KΩ
INA 4561	NSG 437 MIL-STD 883 ESD Discharge Network, 30kV	100pf/ 1500 ohm

Amplifiers

Transient Specialists has several amplifiers on order due to arrive Mid-February – Mid-March.



Part #	Description	Watts
CBA 400M-110	Teseq 10 kHz – 400 MHz frequency range	110 W
CBA 1G-300	Teseq 80 MHz – 1 GHz frequency range	300 W
AS0860-50	IFI 800 MHz – 6 GHz frequency range	50 W
CBA 1G-600B	Teseq 80 MHz – 1 GHz frequency range	600 W
S251-300	IFI 800 MHz – 2 GHz frequency range	300 W
T188-250	IFI 7.5 GHz – 18 GHz frequency range	250 W

Antennas

Part #	Description	Watts
EFG-3B	IFI 10 kHz – 220 MHz frequency range	2000 W
ANT-ALP1-80	IFI 80 MHz – 1 GHz frequency range	1000 W
ANT-HA251	IFI 1 GHz – 2.5 GHz frequency range	500 W
ANT-HA188	IFI 7.5 GHz – 18 GHz frequency range	500 W

6kV Surge, Ringwave, EFT and Dips Immunity Generators

Complete compliance level testers for EMC immunity standards. They are designed for the CE Mark testing, as well as ANSI/IEEE, CCITT and UL. Weekly rentals are available at half the monthly rental rate. ISO 17025 calibrations included.



Part #	Description	Standards
Pro-Plus	Thermo unit with Bi-wave Surge to 6000v, Electrical Fast Transients to 4400v, Dips and Interrupts, 100khz Ringwave to 6000v, 250v/16a AC coupler, 100v/10a DC, 10x700 Telecom wave to 6000v also available	IEC 61000-4-4, -5 IEC 61000-4-11,12 ANSI C62.41 FCC part68
UCS 500N7	EM Test unit with Bi-wave Surge to 7000v, EFT to 5500v, 100khz Ringwave to 6000v, 300v/16a AC coupler, 300v/10a DC	IEC 61000-4-4,5,12 ANSI C62.41
NSG 3060	Teseq unit with Bi-wave Surge to 6600v, EFT to 4800v, 100khz Ringwave to 6600v, 270v/16a AC coupler, 125v/16a, 225v/7a DC	IEC 61000-4-4,5,12 ANSI C62.41
Axos 8	Haefely unit with Bi-wave Surge to 7000v, EFT to 5000v, 100khz Ringwave to 7kv, 264v/16a AC coupler 220v/10a DC	IEC 61000-4-4,5,12 ANSI C62.41

4kV Surge and EFT Test Sets

Part #	Manufacturer/ Description	Standards
TRA3000/ IMU4000	EMC Partner unit with EFT to 4.4kv, Bi-wave surge to 4.1kv, Dips to 6 amps and 280v/16a AC coupler, 300v/16a DC, Optional common mode test capability	IEC 61000-4-4 61000-4-5 61000-4-11,16
NSG3040	Teseq unit with EFT to 4.4kv, Surge to 4.4kv and 260v/16a AC coupler, 260v/16a DC	IEC 61000-4-4 61000-4-5
NX5	EM Test unit with EFT to 5.5kv, Bi-wave surge to 5kv, and a 300v/32a AC and DC coupler	IEC 61000-4-4 61000-4-5
UCS500n5	EM Test unit with EFT to 5.5kv, Bi-wave surge to 5kv, and 300v/16a AC coupler, 300v/10a DC	IEC 61000-4-4 61000-4-5
UCS500n5E	EM Test unit with EFT to 5.5kv, 300v/16a AC, 300v/10a DC	IEC 61000-4-4
Axos 5	Haefely unit with EFT to 5kv, Surge to 5kv 264v/16a AC coupler, 220v/10a DC coupler	IEC 61000-4-4 IEC 61000-4-5

Couplers, Variacs and Capacitive Clamps for 4kV and 6kV Generators:

Part #	Optional Accessories for the generators listed above	Standards
CDN 3063	Teseq 3 phase EFT and Surge coupler, 480v/32a	61000-4-4,5
CDN 3083S	Teseq external 3 phase 620v/100a AC or DC Surge coupler for the NSG3040, NSG3060	61000-4-5
CDN 3083B	Teseq external 3 phase 690v/100a AC or DC EFT coupler For the NSG3040, NSG3060, 440v with NSG 3040	61000-4-4
CDN HSS2	Teseq 8 line Ethernet coupler/decoupler	61000-4-5
CNV504N1.3	4kV coupler/decoupler for Surge and Ringwave onto 4 data lines	61000-4-5 & 12
V4780 S2	Auto tapped transformer for Dips to 16 amps for the UCS500n7	IEC 61000-4-11
INA 6502	Step transformer for Dips to 16 amps for the NSG 3040, 3060	IEC 61000-4-11
CM.CCL	Capacitive coupling clamp for EFT testing of datalines	61000-4-4

Teseq 15kV Combination Wave Surge Generator



Part #	Description
NSG 3150- CDN -3153	15kV, 7.5kA combination wave surge system with external 690V/ 63A single or 3 phase power coupler

Conducted RF Immunity to IEC 61000-4-6 and Mil Std 461, CS114



Part #	Description
CWS 500N1.4	Conducted Immunity test set, 9khz to 1Ghz signal generator, 80 watt amplifier from 100khz to 300Mhz, power meter, dual directional coupler which monitors forward and reverse power, 6 db adapter, attenuators, software
NSG 4070	Teseq conducted immunity test set, 9khz to 1ghz signal Generator 80 watt amplifier from 150khz to 230 mhz Power Meter, 6db adapter, software
CWS 500N2	Conducted RF susceptibility test set for DO160 s20, CS114, Including 10khz-1Ghz signal generator, 100W class A amp. 10khz to 400Mhz, Power meter, 3db, 20 db attenuators, monitor probe, software
F120-6A	Clamp-on injection probe, 10kHz to 400MHz, 100 CW, calibration fixture
F120-9A	Clamp-on injection probe, 10kHz to 230MHz, 125 CW, calibration fixture
CDN-AF4	100v, 1.5amp. coupler for 4 unshielded lines
CDN-S15	100V, 1.5 amp. CDN for 15 shielded lines
CDN-M2/3/16A	240VAC, 16A coupler for 2 or 3 power lines
CDN-M5/32A	400VAC, 32A coupler for 5 power lines
EM101	EM Clamp .15 to 1,000 MHz, 100 W max, incl: FTC 101 decoupling clamp

Common Mode tests to IEC 61000-4-16

This functionality is based on the TRA 3000/ IMU 4000 EMC Partner platform. Options are available for both the long and short test.



Part #	Description	Technical Standard
TRA3000/ CN-16-long	EMC Partner unit with EFT to 4.4kv, Bi-wave surge to 4.1kv Dips to 6 amps and 280v/16a AC coupler, 300v/16a DC, Includes the internal card for the 61000-4-16 long test only, and the single phase CDN, 300v, 50/60hz	IEC 61000-4-4,5,11 61000-4-16 (long test)
TRA3000/ CN-16	All the equipment listed above, plus the external box for the short test, the PS3 power supply, and the mains Coupler/decoupler	IEC 61000-4-4,5,11 61000-4-16 (long and short test)

ANSI C37.90, IEC 61000-4-18 Damped Oscillatory Test System

Part #	Description	Technical Standard
MIG-OS-OS1	100 khz and 1 Mhz damped oscillatory test set to 3kv includes the CDN2000-06-25 three phase coupler 480v, 25a maximum	C37.90.1 IEC 60255-5 IEC 61000-4-18

EMC Partner/ HVT Military EMC Products

These products test pulse susceptibility of equipment in accordance with Military and Aviation standards. These units include the injection probes, calibration adapters and attenuators required for RTCA DO 160 sec. 22 and Mil Std 461 CS115, CS116, and CS117. **See page 3 for conducted RF to CS114**



Part #	Description	Technical Standard
AVI3000	Exponential transient and damped oscillatory indirect lightning susceptibility generator. Includes waveforms 1,2,3,4,5A,6, pin injection, single stroke, multiple stroke, and multiple burst, and CN-BT7 injection probe	DO 160, sec. 22 Mil Std 461 CS117
MIG2000-6	CS115 – 2x30 nanosec. waveform CS116 – 10kHz/100kHz/1MHz/10MHz/ 30MHz/100MHz Includes the CN-MIG-BT and CN-MIG-BT2 injection probes, the Veri-Mil2 calibration fixture and attenuators	Mil Std 461 CS115, CS116

Solar Military EMC Products

These products test pulse susceptibility of equipment in accordance with Military and Aviation standards. They are available individually or with the accessories required to comply with these standards. **See page 3 for conducted RF to CS114**



Part #	Description	Technical Standard
2854-1	Spike generator to 600 volts, 1.5 μ sec. rise time, 3.5 μ sec. duration	Mil Std 461 CS106
7054-1	Spike generator to 600 volts, 10 μ sec.	Do160 sec.17 Mil Std 462 CS06
8282-1	Conducted transient susceptibility, .15 μ sec, 5 and 10 μ sec. to 600V	Mil Std 461 B/C CS06/ NEMA TS2
8850-2 pkg.	Power sweep generator with 7021-1 phase shift network	Mil Std 461 CS01/CS101
9354-2	Universal Transient Generator with 6 damped Sinusoidal waves to 3200 volts incl: 10kHz, 100kHz, 1MHz, 10 MHz, 30MHz,100 MHz, 3 double exponential: 6.4 μ s, 70 μ s, 120 μ s	Mil Std 461, CS116 DO 160, sec 22
CS-116 acc	Accessory pack for Mil-std-461D, CS116 Testing incl: 9335-2 coupling clamp, 9841-1 50 ohm load, 9142-1N, 9123-1N, 9410-1,9454-1 – High voltage attenuators 9125-1, 9357-1 calibration fixtures	Mil Std 461, CS116, CS115
9355	Pulse Generator 2x35 nanosec. To 2kv	Mil Std 461, CS115
6220-4	H-V Audio Isolation Transformer	Do 160, sec. 18, 22

EM Test Automotive EMC Products

These products test pulse susceptibility in accordance with many of the car manufacturers' requirements. They can handle power inputs of 12 or 24 VDC. They both have freestyle modes in addition to preprogrammed test routines. The coupler in the UCS 200N can be used and controlled by any unit of the LD200N series, VDS series, and PFS 200N series.



Part #	Description	Waveform
NSG 5500	Fast Transient, Load Dump and Dip Generator for testing to ISO, SAE, DIN, and JASO and others.	1,2a,3a,3b,5a,5b,6&7
PA 5840-75	Battery Supply 60v/-15v, 75A Peak, 25A constant	1,2a,3a,3b,5a,5b,6&7
PA 5840-300	Battery Supply 60v/-15v, 300A Peak, 100A constant	1,2a,3a,3b,5a,5b,6&7
LD 200N	Load Dump Generator for SAE J1455, J1113, ISO 7637, etc. with software license, DUT max 60v/30a, with CLD opt.	5a and 7
UCS 200N50	EFT and microburst generator with coupler for DUT max. Of 60v, 50a for SAE J1113, JASO, ISO 7637, etc. with software license	1,2a,3a,3b
UCS 200N100	Same as above with DUT max. of 100a	1,2a,3a,3b
VDS 200N30	DC power supply, dips and interrupts unit DUT to 30 amps, with software license	2b,4
VDS 200N15	DC power supply, dips and interrupts unit DUT to 15 amps, with software license	2b,4
Autowave	4 channel arbitrary generator and 2 channel transient recorder for use with the VDS200 with a library of standard test routines	BMW, Toyota SAE J1113-2 GMW 3172
PFM 200N100	100 A power fail simulator and micro-interruptions	E10, E13, and E14 LV 124
ACC	Capacitive coupling clamp – automotive, for testing Shielded lines over a proscribed length	3b
CA ISO	Load Resistor Device for pulse verification	5a,5b,7
CA EFT kit	Verification for EFT pulses	1,2a,3a,3b

MegaPulse Defib – IEC 60601-1

Designed for product safety testing for the medical devices industry, this unit is specifically designed to meet the criteria of IEC 60601-1

Part #	Description
Megapulse Defib – 5P	5000 V voltage source with output shaping network and evaluation network to perform in accordance with IEC 60601-1:2005, and several related standards Incl: Defib-5 Pass-Fail reference
Megapulse Defib – PF	5100 V voltage source with digital voltage read-out, faster time between pulses Meets the latest requirements of IEC 60601-2-25:2011, IEC 60601-2-27:2011

Thermo Keytek ECAT Systems for Testing at Higher Voltages and for Specialty Standards

These modular systems allow customization of generators for different waveforms and coupling capabilities. All ECAT systems with two or more modules are discounted 20% from individual module prices.



ECAT Systems

These are a few of our most popular ECAT configurations. They can be modified by exchanging or adding the other modules listed below.

Part #	Description	Modules Included	Standards
ECAT- 3phs	Bi-wave surge to 6kv, EFT to 4.4kv, with 3 Phase coupler up to 600v/32a	E103, E501, E411, E4554	IEC 61000-4-5 IEC 61000-4-4 ANSI C62.41
ECAT-UL864	UL864 voltage ramps to 3kv	E103, E513	UL863, UL294

Series 500 Surge Modules

Part #	Description	Waveform	Standards
E501b	Combination wave 2&12 ohm	V=1.2x50 to 6600v I=8x20 to 3300a	IEC 61000-4-5 ANSI C62.41
E502b	Telecom wave	V= 10x700 or .5x700 To 6000v	FCC part 68 CCITT K.17
E503	100kHz Ring wave	I =200 or 500 V to 6600v	IEC 61000-4-12 ANSI C62.41
E506-4w	Telcordia lightning surge	2x10 to 5000v, 500a	GR-1089-core
E508	Telcordia lightning surge	10x360 to 1000v, 100a	GR-1089-core
E509	Telcordia lightning surge	10x1000 to 1500v, 100a	GR-1089-core
E513	Voltage ramp surge	100v/μs, 500v/μs, 1kv/μs 5kv/μs, 10kv/μs to 3000v	UL 864

Series 400 EFT Modules

These plug-ins for the E103 Controller generate EFT pulse bursts to meet national and international standards, including IEC 1000-4-4. Some include coupler/filters for power-on testing.

Part #	Description	Coupler/Filter	Max Volts
E411	EFT generator, 50 ohm output imped.	not included	4.4kV
E421	EFT generator, 50 ohm output imped.	not included	8kV

Coupler/ Decouplers and Other Networks

Part #	Description	Max. EUT voltage/current
E551	Surge Coupler/Filter - single phase	250V / 16A
E4554	Surge and EFT coupler - three phase	480V / 32A
E4554-kV-hV	10kV Surge and EFT Coupler-three phase	600V / 32A
E103	Controller for ECAT system	
EP62	Dips and interrupts (PQF) per IEC61000-4-11	240V / 32A
EP3	Manual 3 phase coupler for the EP62	480V / 32A

Calibration Accessories

This equipment can be used to verify calibration of test equipment.

Part #	Description
110	Pearson Current Transformer with 100:1 attn
EFT-Attn	Probe for EFT measurements – 50 ohm and 1k ohm inputs
2237	Barth Attenuator
PK1001D	6kV Differential Voltage probes
PK1002D	10kV Differential Voltage probes
CAS 3025	Teseq CAS 3025 Pulse Verification kit, 50 ohm and 1k ohm EFT Verification, includes cal adapters for Teseq generators

We frequently update this equipment list for new equipment or changing market conditions. Please call for the latest prices and equipment. Weekly rates on all equipment are available for 1/2 the monthly rental. We include free technical support and two days each way in transit time, in our rental prices. Transient Specialists specializes in transients and electrostatic discharge. For pricing information contact:

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