

Specifications



UCS 200M

Ultra-Compact Simulator for
Automotive Transients

Designed to meet the many test needs of today and the rigours of converging world standards, the EM Test UCS 200M generator offer a full range of conducted immunity transient tests to ISO, JASO, SAE and manufacturer standards.

The distinct operation features, convenient DUT connection facilities, a clearly arranged menu structure and display philosophy as well as the preprogrammed standard test routines make testing easy, reliable and safe. Extendable by a large variety of test accessories the UCS 200M is the universal equipment for a wide range of recommendations even for high power battery supply application up to 200A.

- ISO 7637-2-2004
- SAE J1113 parts 11, 12
- SAE J1455
- JASO D001
- GM 3097
- Ford ES-XW7T
- Chrysler PF9326
- DC 10614
- BMW
- VW
- PSA
- Renault
- Fiat
- Nissan
- Honda



Burst module, Pulse 3a/3b

Electrical Fast Transient Simulator based on ISO 7637-2:2004

Coupling Matrix type CNA

Test Level Output

acc. to ISO 7637-2:2004

Test voltage	25V – 1'000V ± 10%
Rise time tr	5ns ± 1.5ns
Pulse duration td	100ns (+100/-0)ns
Verification	As per Annex D of ISO 7637-2:2004 into a 50Ω and a 1,000Ω load
Source impedance	Zq = 50Ω
Polarity	Pulse 3b positive and pulse 3a negative

Trigger Circuit

Trigger of bursts	Automatic, manual, external
Burst duration	T4 = 0.1ms - 999.9ms
Burst repetition rate	T5 = 10ms - 9.999ms
Spike frequency	f = 0.1kHz - 200kHz
Test duration	T = 0:01min - 999:59min or endless

Outputs

Direct	Via 50Ω-coaxial connector
Coupling mode	To the + battery line
CRO trigger	5V trigger signal for oscilloscope

Test Routines

Quick Start	On-line adjustable parameters, easy to use
Standard Test Routines	acc. to ISO 7637-2:2004, level 1 - 4
User Test Routines	User Test Routines
	Random burst release
	Change voltage after T by ΔT
	Change frequency after T by Δf
CRO trigger	5V trigger signal for oscilloscope

Options

ACC	Capacitive coupling clamp acc. to ISO 7637 part 3
KW50	100:1 divider, 50Ω
KW1000	400:1 divider, 1000Ω
CA EFT kit	EFT/Burst verification kit
A6dB	6dB attenuator, 50Ω
ITP	Immunity test probes (electrical field generation)
ITP/H	Immunity test probes (magnetic field generation)

Technical data for standard CNA 50

DUT supply voltage	Max. 60V
DUT supply current	50 A
Inrush current capability	100A for 500ms
Dimension UCS & CN	19" / 3HU

Technical data for optional CNA 100

DUT supply voltage	Max. 60V
DUT supply current	100 A
Inrush current capability	150A for 500ms
Dimension UCS & CN	19" / 6HU

Technical data for optional CNA 150

DUT supply voltage	Max. 60V
DUT supply current	150 A
Inrush current capability	150 A
Dimension UCS & CN	19" / 9HU

Technical data for optional CNA 200

DUT supply voltage	Max. 60V
DUT supply current	200 A
Inrush current capability	200 A
Dimension UCS & CN	19" / 9HU

Input

DUT supply +/-	Simulator type VDS 200B & PFS 200B
Pulse 5, 7	Standard for one type LD 200x

Output

+/- DUT supply	Central DUT output
Coaxial output port	To connect the capacitive coupling clamp as per ISO 7637 part 3

Interface

CN interface	To control the internal CN by external pulse generators such as LD 200B
--------------	---

Option

CNA Ext	Extention to connect 3 additional generators
---------	--

Micropulse module,

Pulse 1, 2 based on ISO 7637-2:2004

Micropulse module,

Pulses based on Jaso and Nissan

Test Level Output

Open circuit voltage	$U = 20V - 600V \pm 10\%$ (Peak voltage and polarity acc. to the selected standard)
Repetition rate	0.2s – 99.0s

ISO Pulse 1 (12V)

Rise time t_r (10 - 90%)	$1\mu s + 0\%$ // - 50%
Pulse duration t_d (10 - 10%)	$2ms \pm 10\%$
Internal resistor	$10\Omega \pm 10\%$

ISO Pulse 1 (24V)

Rise time t_r (10 - 90%)	$3\mu s + 0\%$ // - 50%
Pulse duration t_d (10 - 10%)	$1ms \pm 10\%$
Internal resistor	$50\Omega \pm 10\%$

ISO Pulse 2 (12V/24V)

Rise time t_r (10 - 90%)	$1\mu s + 0\%$ // - 50%
Pulse duration t_d (10 - 10%)	$50\mu s \pm 10\%$
Internal resistor	$2\Omega \pm 10\%$

As per ISO 7637-2 the following standards can be covered

SAE J1113	GM 3097
BMW	VW
Chrysler PF 9326	PSA
DC10614	Renault
FIAT	Mitsubishi
Ford ES-XW7T	Honda

Option Pulse Programming Mode

Rise time	$1\mu s$ to $10\mu s$ with steps of $1\mu s$
Pulse duration	$50\mu s$ to $10,000\mu s$
Internal resistor	2Ω - 100Ω in steps of 5Ω , 200, 400 & 450Ω

Trigger

Automatic	Automatic release of the pulses
Manual	Manual release of a single pulse
External	External release of a single pulse
Battery supply switch	Selectable Off time, $t_o = 0 - 10,000ms$

Output

+/- output	Central DUT output
Coupling	To the battery +line
Decoupling	Via diode and battery supply switch

Test Routines

Quick Start	Immediate start; easy to use and fast
User Test Routines	1. Custom made test routines 2. Change voltage after n pulses by ΔV
Pulse selector	
Service	Service, setup, self test

Interface

Serial interface	RS 232, baud rate 1200 - 19200
Parallel interface	IEEE 488, address 1 - 30
CN interface	To control the internal CN and battery switch

JASO D 001

Pulse A2 as per JASO D 001

Test voltage	+110V
Capacitor	$C = 4.7\mu F$
Pulse duration at τ	$\tau(36,8\%) = 2.5\mu s \pm 30\%$
R1	$0.6\Omega \pm 10\%$
R2	$0.4\Omega \pm 10\%$
Polarity	Positive

Pulse B2 as per JASO D 001

Test voltage	-260V
Capacitor	$C = 33\mu F$
Pulse duration at τ	$\tau(36,8\%) = 2.0ms \pm 20\%$
R1	$60\Omega \pm 10\%$
R2	$80\Omega \pm 10\%$
Polarity	Negative

Pulse D2 as per JASO D 001

Test voltage	+170V
Capacitor	$C = 2.2\mu F$
Pulse duration at τ	$\tau(36,8\%) = 2.5\mu s \pm 30\%$
R1	$1.2\Omega \pm 10\%$
R2	$0.9\Omega \pm 10\%$
Polarity	Positive

Nissan NDS

Pulse B2 as per Nissan

Open circuit voltage	$-300V \pm 10\%$
Capacitor	$C = 33\mu F$
R1	$100\Omega \pm 10\%$
R2	$75\Omega \pm 10\%$
Polarity	Negative

Pulse C8 as per Nissan

Open circuit voltage	$\pm 300V \pm 10\%$
Capacitor	$C = 1\mu F$
R1	$500\Omega \pm 10\%$
R2	$450\Omega \pm 10\%$
Polarity	Positive and negative

Pulse C50 as per Nissan

Open circuit voltage	$\pm 300V \pm 10\%$
Capacitor	$C = 33\mu F$
R1	$30\Omega \pm 10\%$
R2	$200\Omega \pm 10\%$
Polarity	Positive and negative

Pulse C300 as per Nissan

Open circuit voltage	$-300V \pm 10\%$
Capacitor	$C = 33\mu F$
R1	$100\Omega \pm 10\%$
R2	$75\Omega \pm 10\%$
Polarity	Negative



EM TEST

EM TEST AG
Sternenhofstr. 15
CH-4153 Reinach
Switzerland

Tel: +41 (0)61 717 91 91
Fax: +41 (0)61 717 91 99
email: sales@emtest.ch
URL: <http://www.emtest.com>

ucs200m_eV115.doc
09.08.07
Page 3/4

Micropulse module, Pulses based on SAE J1455

SAE J1455

Mutual Pulse as per SAE J1455

Rise time t_r (10% - 90%)	$1\mu s \pm 20\%$
Pulse duration t_d at τ	$15\mu s \pm 20\%$
Internal resistor	$50\Omega \pm 10\%$

Inductive Pulse as per SAE J 1455

Rise time t_r (10 - 90%)	$1\mu s \pm 20\%$
Pulse duration t_d at τ	$1,000\mu s \pm 20\%$
Internal resistor	$20\Omega \pm 10\%$

Options

CA ISO Micropulse/Load Dump pulse verification kit

General data

General data

Dimensions, weight	
For models 50A	19" / 3HU, approx. 20kg
For models 100A	19" / 6HU, approx. 30kg
For models 150A and 200A	19" / 9HU, approx. 35kg
Supply voltage	115/230V +10/-15%
Fuses	2 x T 2AT (230V) or 2 x T 4AT (115V)

Options

Rack	For system integration; includes GPIB bus, pulse bus, ground reference plane, security switch and power contact.
ISMISO	Software to control the test, including standard library, test report facility and data conversion generator.

The SmartRack

Sophisticated Housing for Sophisticated Instruments



UCS 200M 200A model

The best place to put your generators is in the SmartRack. A wired, "intelligent" rack, the SmartRack not only holds, but also interconnects and controls equipment. Slide your generators into the SmartRack and you can run entire test routines from your PC with no plugging or unplugging, no stops or starts.

Select from a comprehensive directory of the most recent pre-programmed international and manufacturer standards – including custom pulse waveforms – and the SmartRack does the rest. You can modify test parameters and even create your own tests.

Just how easy is testing with the SmartRack? Consider this:

- The Device Under Test (DUT) voltage has one easy connection at the UCS 200M coupling unit
- No need to keep plugging and unplugging DUTs
- The test rack has a ground reference plane that matches with the test table specified in ISO 7637-2:2004
- ISM ISO (SmartRack) software controls the entire test process. It generates test reports as well
- Tests can be initiated from front panels as well as from a PC

Technical data subject to change without notice.