

## 3110A Standards Waveform Generator

The list below shows the tests added or revised in the 3110A Standards Library (V2.0.5) as of November 6, 2019.

### Automotive Tests

<b>BMW - GS 95003-2 (2010-01)</b>		
	5.2.1.1	Testing for Immunity to 18V Transient
	5.2.1.3.1	Slow Decreasing and Increasing of Operating Voltage, Alternate
	5.2.1.3.2	Slow Decreasing and Fast Rise of Operating Voltage
	5.2.1.3.3	IGR Development of Voltage
	5.2.1.5	Cranking Profile, Level I
	5.2.1.5	Cranking Profile, Level Ip
	5.2.1.5	Cranking Profile, Level II
	5.2.1.5	Cranking Profile, Level Iip
	5.2.1.5	Cranking Profile, Level II
	5.2.1.6	Very Brief Voltage Dip
	5.2.1.7	Brief Voltage Dip
<b>NEW</b>	5.3.2	Load Dump Impulses 5A Severity Level 3
<b>NEW</b>	5.3.2	Load Dump Impulses 5A Severity Level 4
<b>NEW</b>	5.3.2	Load Dump Impulses 5B Severity Level 3
<b>NEW</b>	5.3.2	Load Dump Impulses 5B Severity Level 4
	5.3.3.1	Protection against Polarity Reversal
	5.3.3.2	Protection against Polarity Reversal for Semiconductor Power Circuit
<b>BMW - GS 95024-2-1 (2010-01)</b>		
	4.10	E-10 Short Interruptions
<b>BMW - GS 95024-2-2 (2011-02)</b>		
	8.10	E-10 Short Interruptions
<b>Chrysler - CS-11809 (2009-05-29)</b>		
	4.2.2	Supply Voltage Drop Out 12VD
	4.2.3	Supply Voltage Dips, 12VDC
<b>Ford EMC CS-2009.1 (2-11-2010)</b>		
<b>NEW</b>	CI 220	Pulse f1 (13.5V)
<b>NEW</b>	CI 220	Pulse f2 (13.5V)
<b>NEW</b>	CI 220	Pulse g1 (13.5V loaded condition)
<b>NEW</b>	CI 220	Pulse g1 (13.5V open circuit condition)
<b>NEW</b>	CI 220	Pulse g2-a (13.5) (unsuppressed)

<b>NEW</b>	CI 220	Pulse g2-b (13.5V) (suppressed)
<b>Ford FMC1278 (2-11-2010)</b>		
<b>NEW</b>	CI 220	Pulse 2b (24V)
<b>NEW</b>	CI 220	Pulse 5a (12V)
<b>NEW</b>	CI 220	Pulse 5a (24V)
<b>NEW</b>	CI 220	Pulse 5b (12V)
<b>NEW</b>	CI 220	Pulse A1 (12V)
	CI 230	Immunity from Power Cycling, Waveform A (7-1-2015)
	CI 231	Immunity from Power Cycling, 24VDC (7-1-2015)
	CI 250	Immunity to Ground Voltage Offset Continuous Disturbances
	CI 260	Waveform A 13.5V 2 ms
	CI 260	Waveform A 13.5V 5 ms
	CI 260	Waveform A 13.5V 10 ms
	CI 260	Waveform A 13.5V 30 ms
	CI 260	Waveform A 13.5V 50 ms
	CI 260	Waveform A 13.5V 100 µsec
	CI 260	Waveform A 13.5V 300 µsec
	CI 260	Waveform A 13.5V 500 µsec
	CI 260	Waveform A 27V 2 ms
	CI 260	Waveform A 27V 5 ms
	CI 260	Waveform A 27V 10 ms
	CI 260	Waveform A 27V 30 ms
	CI 260	Waveform A 27V 50 ms
	CI 260	Waveform A 27V 100 µsec
	CI 260	Waveform A 27V 300 µsec
	CI 260	Waveform A 27V 500 µsec
<b>ISO 7637-2 (2004) (E)</b>		
<b>NEW</b>	5.6.5	Transient Immunity, Test Pulse 5A, 12V
<b>NEW</b>	5.6.5	Transient Immunity, Test Pulse 5B, 24V
<b>ISO 7637-2 (2011) (E)</b>		
	5.6.2	Transient Immunity, Test Pulse 2B, 12V
	5.6.2	Transient Immunity, Test Pulse 2B, 24V
<b>ISO 16750-2 (2012-11) (E)</b>		
<b>NEW</b>	A.3.1	Load Dump Pulse Verification 12V 2ohm Load
<b>NEW</b>	A.3.1	Load Dump Pulse Verification 12V No Load

<b>NEW</b>	A.3.1	Load Dump Pulse Verification 24V 2ohm Load
<b>NEW</b>	A.3.1	Load Dump Pulse Verification 24V No Load
<b>NEW</b>	4.6.4.2.2	Load Dump Test A (without suppression) 12V
<b>NEW</b>	4.6.4.2.2	Load Dump Test A (without suppression) 24V
<b>NEW</b>	4.6.4.2.3	Load Dump Test B (with suppression) 12
<b>NEW</b>	4.6.4.2.3	Load Dump Test B (with suppression) 24
<b><u>Nissan 28400NDS02 Rev 3 (1999-07)</u></b>		
	3	Resistance to Power Source Voltage Fluctuation (step fluctuation)
<b><u>Toyota TSC70212G (2007-06)</u></b>		
	5.2	Waveform 14 (+B) IG Operation When Battery Voltage Dropped, 12VDC
	5.2	Waveform 14 (+B) IG Operation When Battery Voltage Dropped, 24VDC
	5.2	Waveform 16 (+B) Battery Connect and Disconnect, Instantaneous Disconnect, Test Pattern 1, 24VDC
	5.2	Waveform 21 (SW) Cranking 3, 24VDC
<b><u>Volkswagen VW TL 820 66 (2006-11)</u></b>		
<b>NEW</b>	5.2.5	Pulse 5B 42V

## Aviation Tests

<b><u>MIL-HDBK-704-8 (9-APRIL-2004)</u></b>		
<b>NEW</b>	LDC104	28VDC, Total Ripple Condition A, 704A
<b>NEW</b>	LDC104	28VDC, Total Ripple Condition A, 704B, C, D, E & F
<b>NEW</b>	LDC104	28VDC, Total Ripple Condition B, 704A
<b>NEW</b>	LDC104	28VDC, Total Ripple Condition B, 704B, C, D, E & F

## Industry Tests

<b><u>IEC 6100-4-16 (2015)</u></b>		
	5.2	Continuous Disturbance at 16.66 Hz, Level 1
	5.2	Continuous Disturbance at 16.66 Hz, Level 2
	5.2	Continuous Disturbance at 16.66 Hz, Level 3
	5.2	Continuous Disturbance at 16.66 Hz, Level 4
	5.2	Continuous Disturbance at 50 Hz, Level 1
	5.2	Continuous Disturbance at 50 Hz, Level 2
	5.2	Continuous Disturbance at 50 Hz, Level 3
	5.2	Continuous Disturbance at 50 Hz, Level 4
	5.2	Continuous Disturbance at 60 Hz, Level 1
	5.2	Continuous Disturbance at 60 Hz, Level 2
	5.2	Continuous Disturbance at 60 Hz, Level 3

5.2	Continuous Disturbance at 60 Hz, Level 4
5.2	Continuous Disturbance at DC, Level 1
5.2	Continuous Disturbance at DC, Level 2
5.2	Continuous Disturbance at DC, Level 3
5.2	Continuous Disturbance at DC, Level 4
5.2	Short Duration Disturbance at 16.66 Hz, Level 1
5.2	Short Duration Disturbance at 16.66 Hz, Level 2
5.2	Short Duration Disturbance at 16.66 Hz, Level 3
5.2	Short Duration Disturbance at 16.66 Hz, Level 4
5.2	Short Duration Disturbance at 50 Hz, Level 1
5.2	Short Duration Disturbance at 50 Hz, Level 2
5.2	Short Duration Disturbance at 50 Hz, Level 3
5.2	Short Duration Disturbance at 50 Hz, Level 4
5.2	Short Duration Disturbance at 60 Hz, Level 1
5.2	Short Duration Disturbance at 60 Hz, Level 2
5.2	Short Duration Disturbance at 60 Hz, Level 3
5.2	Short Duration Disturbance at 60 Hz, Level 4
5.2	Short Duration Disturbance at DC, Level 1
5.2	Short Duration Disturbance at DC, Level 2
5.2	Short Duration Disturbance at DC, Level 3
5.2	Short Duration Disturbance at DC, Level 4
<b>IEC 61000-4-19 (2014)</b>	
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 1 2kHz-9kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 1 9kHz-95kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 1 95kHz-150kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 2 2kHz-9kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 2 9kHz-95kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 2 95kHz-150kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 3 2kHz-9kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 3 9kHz-95kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 3 95kHz-150kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 4 2kHz-9kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 4 9kHz-95kHz
<b>NEW</b>	5.1.2 CW Pulse with Pause Level 4 95kHz-150kHz



**Disclaimer:**

Although AE Techron has made substantial effort to ensure the accuracy of the Standards' test files (SWG files), which are included with the 3110 unit, no warranty, expressed or implied, is made regarding accuracy, adequacy, completeness, legality, reliability or usefulness of the information provided. It is the responsibility of the user to ensure the accuracy and applicability of these test files for their intended purposes.