



New medical EMC standard IEC 60601-1-2 4th edition



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The 60601-1 collateral standard for medical EMC is 60601-1-2, presently the 3rd edition of the standard is in force. However in December 2018 newly certified (or recertified) medical devices will be required to meet the more rigorous requirements from the 4th edition. Therefore, most medical equipment manufacturers are opting for doing EMC evaluations to the 4th edition at the current time.

While this EMC standard covers both emissions and immunity aspects of medical product design, the emissions requirements for the 4th edition are fundamentally unchanged from the 3rd edition. Note, these emissions requirements are Class B CISPR11 (Conducted and Radiated) and 61000-3-2 (Line Harmonics).

The following table details the changes in immunity test requirements from the 3rd to the 4th edition, as well as the enhanced immunity capabilities of the new Globtek GTM96 series of power supply product line.

The United States FDA has set a transition date of December 31 2018 and it's standard for this requirement can be found at their website: http://www.accessdata.fda.gov/scrpts/cdrh/cfdocs/cfStandards/detail.cfm?standard__identification_no=32630

60601-1-2 Immunity Test Level

Immunity Test	3th ed criteria	4th ed criteria	Enhanced GT EL6 GTM96XXX Family Product Capability
ESD 61000-4-2	6KV Contact 8KV Air	8KV Contact 15KV Air	10KV Contact 18KV Air
Radiated RF 61000-4-3	3V/m, 80-2500MHz, General Medical Equip 10V/m, 80-2500MHz, Life Support Equip	3V/m, 80-2500MHz, Professional Healthcare Facility 10V/m, 80-2500MHz, Home Healthcare Environment	Same as 4th ed Criteria
EFT 61000-4-4	2kV on AC input, 5KHz Repetition 3x -- to Line, Neutral and Earth	2kV on AC input, 100KHz Repetition 3x -- to Line, Neutral and Earth	4kV on AC input, 100KHz Repetition 3x -- to Line, Neutral and Earth
Surge (Lightning) 61000-4-5	2kV common mode, 1kV differential on AC lines (minimum 5 surges at each phase angle)	500V,1kV,2kV common mode, 500V,1kV differential on AC	500V,1kV,2kV,4kV common mode, 500V,1kV,2KV differential mode on AC input lines #
Conducted RF 61000-4-6	3Vrms, 0.15-80MHz on AC input	3Vrms, 0.15-80MHz on AC input	Same as 4th ed Criteria

GTM96060 Enhanced Surge capability limited to 1.5kV for differential mode

Dips and Dropouts	Dip to 40% for 5 cycles (100 ms) Dip to 70% for 25 cycles (500ms)	Dip to 0% for 1 cycles @ 0° phase angle Dip to 70% for 25/30 cycles @ 0° phase angle	Same as 4th ed Criteria
61000-4-11	Dropout to 5% for 10 ms Interrupt >95% for 5 sec	Dropout to 0% for 0.5 cycles @ 0°, 45°, 90°, 135°, 180°, 225°, 270° & 315° phase angles Interrupt 100% for 250/300 cycles-	
# GTM96060 Enhanced Surge capability limited to 1.5kV for differential mode			

GlobTek products compliant with IEC 60601-1-2 4th edition:

Name	Type	Input Voltage	Watts	Vout	Efficiency	Ingress Protection	MOOP	MOPP	60601-1-4th Ed.	IEC 62368-1	Dimensions (mm)
GT-41134-W2-TAB	Wall Plug-in	120V~/60Hz	6	3-24 V	V	IP40			✓		
GTM41076-06VV-QA2MOPP	Wall Plug-in	100-240V~, 50-60 Hz	6	5-30 V	Meets/Exceeds for Medical	IP52 Option		✓	✓		43.5* 74.0* 35.3
GTM41134-WWVV-F	Open Frame/Internal	100-240V~, 50-60 Hz	6	3.3-48 V	N/A			✓	✓	✓	84.5*41.5*17.0
GTM41134-WWVV-FWT2	Open Frame/Internal	100-240V~, 50-60 Hz	6	3.3-48 V	N/A			✓	✓	✓	84.5*41.5*17.0
GTM96060-06VV-Q	Wall Plug-in	100-240V~, 50-60 Hz	6	5-36 V	VI	IP52		✓	✓	✓	43.5*74.0*36.8
GTM46101-10VV-XX-USB	Wall Plug-in	100-240V~, 50-60 Hz	10	5-5.5 V	VI	Indoor Use		✓	✓	✓	41.0 x 71.0 x 31.5
GTM46161-	Wall	100-	10	5-5.5	VI			✓	✓	✓	41.0 x 71.0 x

16V.V-USB	Plug-in	240V~, 50-60 Hz	16	V	VI	Indoor Use		✓	✓	✓	31.5
GTM41 080-18VV-F	Open Frame/Internal	100-240V~, 50-60 Hz	18	5-48 V	V	IPX0	✓	✓	✓		84.5*41.5*21.6
GTM41 080-18VV-F	Open Frame/Internal	100-240V~, 50-60 Hz	18	5-48 V	V	IPX0	✓	✓	✓		74*44*34
GTM96 180-18VV H/M	Wall Plug-in	100-240V~, 50-60 Hz	18	4-48 V	VI	IP42		✓	✓		74*43.5*36.8
GTM96 180-18VV-T2	Desktop/External	100-240V~, 50-60 Hz	18	5-48 V	VI	IP42		✓	✓		(L)87x(W)47x(H)32mm
GTM96 180-18VV-T2A	Desktop/External	100-240V~, 50-60 Hz	18	5-48 V	VI	IP42		✓	✓		(L)87x(W)47x(H)32mm
GTM96 180-18VV-T3	Desktop/External	100-240V~, 50-60 Hz	18	5-48 V	VI	IP42		✓	✓		(L)87x(W)47x(H)32mm
GTM96 180-18VV-T3A	Desktop/External	100-240V~, 50-60 Hz	18	5-48 V	VI	IP42		✓	✓		(L)87x(W)47x(H)32mm
GTM41 060-25VV-FW-IM	Open Frame/Internal	100-240V~, 50-60 Hz	25	3.3-30 V	Meets/Exceeds for Medical			✓	✓		98*50*28
GTM96 250-25VV-R2	Wall Plug-in+Desktop Combination	100-240V~, 50-60 Hz	25	5-48 V	VI	IP41, IP52 Option available		✓	✓		(L)101.73x(W)46.47x(H)38.2 mm
GTM91 120-30VV-F	Open Frame/Internal	100-240V~, 50-60 Hz	30	5-48 V	V		✓	✓	✓		101.6x50.8x22.30
GTM91 120-30VV-F (PCB Mounted)	Open Frame/Internal	100-240V~, 50-60 Hz	30	5-48 V	V		✓	✓	✓		101.6x50.8x22.30
GTM91	Open										

120-30VV-FW	Fram e/Internal	100-240V~, 50-60 Hz	30	5-48 V	V		✓	✓	✓		101.6x50.8x22.30
GTM91 120-30VV-FW (PCB Mounted)	Open Fram e/Internal	100-240V~, 50-60 Hz	30	5-48 V	V		✓	✓	✓		101.6x50.8x22.30
GTM91 120-30VV-P2	Potte d/Encapsul ated in plasti c housi ng	100-240V~, 50-60 Hz	30	5-48 V	V		✓		✓		102*46*37
GTM91 120-30VV-P2(SR with NA Plug 2 pin)	Potte d/Encapsul ated in plasti c housi ng	100-240V~, 50-60 Hz	30	5-48 V	V	IP68	✓	✓	✓		
GTM91 120-30VV-P3	Potte d/Encapsul ated in plasti c housi ng	100-240V~, 50-60 Hz	30	5-48 V	V	IP68	✓		✓		102*46*37
GTM91 120-30VV-P3 (SR with EU Plug 3 pin)	Potte d/Encapsul ated in plasti c housi ng	100-240V~, 50-60 Hz	30	5-48 V	V	IP68	✓		✓		
GTM91 120-30VV-P3 (SR with NA Plug 3 pin)	Potte d/Encapsul ated in plasti c housi ng	100-240V~, 50-60 Hz	30	5-48 V	V	IP68	✓	✓	✓		

Model	Configuration	Voltage/Hz	Ports	Power	Protection	IP Rating	Option	EMC	Safety	Dimensions
GTM91 120-30VV-T2	Wall Plug-in+Desktop Combination	100-240V~, 50-60 Hz	30	5-48 V	V	IP52, IP54	Option available	✓	✓	(L)101.77x(W)47.47x(H)36.7
GTM91 120-30VV-T3A	Wall Plug-in+Desktop Combination	100-240V~, 50-60 Hz	30	5-48 V	V	IP52, IP54	Option available	✓	✓	(L)101.77x(W)47.47x(H)36.7 mm
GTM96 300-36VV-R2	Wall Plug-in+Desktop Combination	100-240V~, 50-60 Hz	36	5-48 V	VI	IP52, IP54	Option available	✓	✓	(L)101.73x(W)46.47x(H)38.2 mm
GTM96 300-36VV-R3A	Wall Plug-in+Desktop Combination	100-240V~, 50-60 Hz	36	5-48 V	VI	IP52, IP54	Option available	✓	✓	(L)101.7x(W)46.47x(H)38.2mm
GTM96 300-36VV-T2	Desktop/External	100-240V~, 50-60 Hz	36	5-48 V	VI	IP42, IP54	Option available	✓	✓	(L)105.0x(W)50.0x(H)35.50mm
GTM96 300-36VV-T2A	Desktop/External	100-240V~, 50-60 Hz	36	5-48 V	VI	IP42, IP54	Option available	✓	✓	(L)105.0x(W)50.0x(H)35.50mm
GTM96 300-36VV-T3	Desktop/External	100-240V~, 50-60 Hz	36	5-48 V	VI	IP42, IP54	Option available	✓	✓	105x(W)50.0x(H)35.0mm
GTM43 007-AWWV V-F	Open Frame/Internal	100-240V~, 50-60 Hz	60	5-48 V	N/A	N/A		✓	✓	76.2x50.8x23.6 for 5V-14V models, 76.2x50.8x22.5 for 15V-48V models Top Diagram i
GTM43 007-AWWV V-F (D3)	Open Frame/Internal	100-240V~, 50-60 Hz	60	5-48 V	N/A	N/A		✓	✓	76.2x50.8x23.6 for 5V-14V models, 76.2x50.8x22.5 for 15V-48V models

	without standoffs)	Internal	50-60 Hz									5 for 15V-48V models Top Diagram i
GTM43007-AWWV V-FW	Open Frame	Internal	100-240V~, 50-60 Hz	60	5-48 V	N/A	N/A		✓	✓		76.2x50.8x23.6 for 5V-14V models, 76.2x50.8x22.5 for 15V-48V models
GTM43007-AWWV V-FW (D2 without standoffs)	Open Frame/ Internal	Internal	100-240V~, 50-60 Hz	60	5-48 V	N/A	N/A		✓	✓		76.2x50.8x23.6 for 5V-14V models, 76.2x50.8x22.5 for 15V-48V models
GTM43007-BWWV V-F	Open Frame/ Internal	Internal	100-240V~, 50-60 Hz	60	5-48 V	N/A	N/A		✓	✓		101.6x50.8x23.6 for 5V-14V models, 101.6x50.8x22.5 for 15V-48V models
GTM43007-BWWV V-FW	Open Frame/ Internal	Internal	100-240V~, 50-60Hz	60	5-48 V	N/A	N/A		✓	✓		101.6x50.8x23.6 for 5V-14V models, 101.6x50.8x22.5 for 15V-48V models
GTM43007-CWWV V-F	Open Frame/ Internal	Internal	100-240V~, 50-60 Hz	60	5-48 V	N/A	N/A		✓	✓		127x76.2x23.6
GTM43007-CWWV V-FW	Open Frame/ Internal	Internal	100-240V~, 50-60 Hz	60	5-48 V	N/A	N/A		✓	✓		127x76.2x23.6
GTM91099-60VV-P2	Potted/ Encapsulated in plastic housing	Internal	100-240V~, 50-60 Hz	60	5-48 V	V	IP68		✓	✓		144.81*57.11*39.0
GTM91099-60VV-P3	Potted/ Encapsulated in plastic	Internal	100-240V~, 50-60 Hz	60	5-48 V	V			✓	✓		

	housing											
GTM91099-60VV-P3(SR with NA Plug 3 pin)	Potted/Encapsulated in plastic housing	100-240V~, 50-60 Hz	60	5-48 V	V			✓	✓			
GTM91099-60VV-T2	Wall Plug-in+Desktop Combination	100-240V~, 50-60 Hz	60	5-48 V	V	IP42		✓	✓			117.53*53.47*36.6
GTM91099-60VV-T3A	Wall Plug-in+Desktop Combination	100-240V~, 50-60 Hz	60	5-48 V	V	IP52, IP54 Option available		✓	✓			117.53*53.47*36.6
GTM96600-60VV-P2(SR with NA Plug 2 pin)	Potted/Encapsulated in plastic housing	100-240V~, 50-60 Hz	60	5-48 V	VI			✓	✓			144.81*57.11*39.0
GTM96600-60VV.V-R2	Wall Plug-in+Desktop Combination	100-240V~, 50-60 Hz	60	5-54 V	VI	IP40, IP54 Option available		✓	✓			117.53*53.47*36.6
GTM96600-60VV.V-R3A	Wall Plug-in+Desktop Combination	100-240V~, 50-60 Hz	60	5-54 V	VI	IP40, IP54 Option available		✓	✓			117.53*53.47*36.6
GTM96600-60VV.V-T2	Desktop/External	100-240V~, 50-60Hz	60	5-54 V	VI	IP41		✓	✓			117.5*53.5*34.2
GTM96	Desktop	100-										

600-60VV.V-T2A	Deskt op/External	100-240V~, 50-60Hz	60	5-54 V	VI	IP41		✓	✓		117.5*53.5*34.2
GTM96 600-60VV.V-T3	Deskt op/External	100-240V~, 50-60Hz	60	5-54 V	VI	IP41		✓	✓		117.5*53.5*34.2
GTM96 600-60VV.V-T3A	Deskt op/External	100-240V~, 50-60Hz	60	5-54 V	VI	IP41		✓	✓		117.5*53.5*34.2
GTM96 605-GEN2-R2	Deskt op/External	100-240V~, 50-60Hz	60	0 V	VI			✓	✓		
GTM96 605-GEN2-R3A	Deskt op/External	100-240V~, 50-60Hz	60	0 V	VI			✓	✓		
GTM96 605-GEN2-T2	Deskt op/External	100-240V~, 50-60Hz	60	0 V	VI			✓	✓		
GTM96 605-GEN2-T3	Deskt op/External	100-240V~, 50-60Hz	60	0 V	VI			✓	✓		
GTM96 600-65VV.V-P2	Deskt op/External	100-240V~, 50-60Hz	65	5-54 V	VI	IP41		✓	✓		117.5*53.5*34.2
GTM96 600-65VV.V-P3	Deskt op/External	100-240V~, 50-60Hz	65	5-54 V	VI	IP41		✓	✓		117.5*53.5*34.2
GTM41 133-90VV-x.x-F	Open Frame/Internal	100-240V~, 50-400Hz	90	12-48 V	V			✓	✓		184*62*25
GTM41 133-90VV-x.x-T2	Deskt op/External	100-240V~, 50-60 Hz	90	12-48 V	V	IP21		✓	✓		149.38 x 62.6 x 33.5 +/-1.0 mm
GTM41 133-90VV-x.x-T3A	Deskt op/External	100-240V~, 50-60Hz	90	12-48 V	V	IP21		✓	✓		149.38 x 62.6 x 33.5 +/-1.0 mm
GTM96 900P9	Deskt op/External	100-240V~, 50-60Hz	90	12-54 V	VI	IP41			✓		149.38 x 62.6 x 33.5 +/-1.0

UVV.V-T2	Deskt op/External	100-240V~, 50-60 Hz		V							mm
GTM96 900P9 0VV.V-T3	Deskt op/External	100-240V~, 50-60Hz	90	12-54 V	VI	IP41		✓	✓		149.3 x 62.8 x 34.0 +/-1.0
GTM96 900P9 0VV.V-T3A	Deskt op/External	100-240V~, 50-60Hz	90	12-54 V	VI	IP41		✓	✓		149.38 x 62.6 x 33.5 +/-1.0 mm
GTM96 1200P 120VV.V-T2	Deskt op/External	100-240V~, 50-60 Hz	120	12-54 V	VI	IP41		✓	✓		149.30*62.80*34.00
GTM96 1200P 120VV.V-T3	Deskt op/External	100-240V~, 50-60 Hz	120	12-54 V	VI	IP41		✓	✓		149.30*62.80*34.00
GTM96 1600P WWW VV.V-T2	Deskt op/External	100-240V~, 50-60 Hz	180	12-54 V	VI	IP41		✓	✓		176.5*74*40
GTM96 1600P WWW VV.V-T3	Deskt op/External	100-240V~, 50-60 Hz	180	12-54 V	VI	IP41		✓	✓		176.5*74*40
GTM96 1600P WWW VV.V-T3A	Deskt op/External	100-240V~, 50-60 Hz	180	12-54 V	VI	IP41		✓	✓		176.5*74*40
GTM96 2400P WWW VV.V-CX	Open Frame/Internal	100-240V~, 50-60 Hz	240	12-54 V	VI	na		✓	✓		187.75*74.30*41
GTM96 2400P WWW VV.V-F	Open Frame/Internal	100-240V~, 50-60 Hz	240	12-54 V	VI	na		✓	✓		182.80*63*29.7
GTM96 2400P WWW VV.V-FL	Open Frame/Internal	100-240V~, 50-60 Hz	240	12-54 V	VI	na		✓	✓		187.75*74.30*41

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