

IMPACT SOLAR™ MONITOR KIT

Daylight/Sunlight Readable, Industrial-/Military-Grade, Open Frame LCD Monitor Kits

In its native form, the **IMPACT SOLAR™ DMK/SMK SERIES** is intentionally designed as the most basic turnkey monitor General Digital™ can produce. Unlike most of our complete LCD monitor offerings, the Impact Solar™ DMK/SMK Series is comprised of the bare necessities and does not include features such as a protective enclosure, thermal management, etc. The kit is intended to offer our OEM (Original Equipment Manufacturer) customers with an economical, turnkey product that can be easily integrated into your existing products, consoles, protective enclosures or kiosks.

Integrated into every unit are the latest advances in LCD display technology, while providing the equivalent viewing area of much larger CRTs. All of our active matrix TFT LCD screens offer up to 16.7 million colors, wide viewing angles, and fast response times (suitable for live video). We qualify multiple sources of supply to ensure product availability and long life.

The LCD display, control electronics and cabling are all secured to a sturdy, metal mounting frame, which facilitates installation.

Modular adaptability is the **IMPACT SOLAR™ DCM/SCM SERIES'** domain. Their lightweight enclosures have been optimized to reduce cost, protect the monitors' electronics and facilitate a variety of mounting schemes. This inherent flexibility permits Integrators and VARs (Value Added Resellers) to quickly and easily design and manufacture their end-products around our fully functional display modules.

For OEMs/End Users, General Digital™ offers a series of optional bezels and enclosures that allow the Impact Solar™ DCM/SCM Series to be transformed into standalone, panel mount or rack mount monitor units.

The low power Impact Solar™ DCM/SCM Series is designed to operate from a single +12V regulated source. Customers can provide their own power supply, request a custom supply, or choose our standard power supply configuration, featuring a power-factor-corrected AC switching supply. Additionally, this series is designed with the intent to meet UL 60950 and FCC Class A Certification.

Sunlight readability is achieved using our **GENFLECTIVE™** technology, which is a passive approach to brightness and contrast enhancement. Using a proprietary combination of reflective, brightness and contrast enhancing films, sunlight readable performance is achieved. General Digital™ developed GenFlective™ technology to improve daylight and sunlight readable brightness and contrast performance without increased power consumption, heat emission, and backlight augmentation. Another benefit is increased backlight bulb life expectancy.

Please feel welcome to consult with a General Digital™ Sales Engineer for additional information, or visit our web site at www.GeneralDigital.com.



QUICK LOOK

ENCLOSURE

- » Light Weight, Modular Enclosure of DCM/SCM Series Facilitates Customer Integration
- » Pre-designed Bezels & Enclosures Available with the DCM/SCM Series to Transform Into a Panel Mount, Rack Mount or Standalone Device
- » Low Cost, Open Frame Design of DMK/SMK Series is Ideal for OEMs
- » Sturdy Metal Mounting Frame/Panel of DMK/SMK Series Simplifies OEM Integration
- » Versatile Enclosures may be Mounted from the Front or the Rear
- » Rugged, All-Metal Construction
- » Seamless Replacement for CRTs

DISPLAY

- » 6.4" to 19.0" Diagonal Active Matrix TFT LCD Display
- » VGA (640 x 480 pixels) to SXGA (1280 x 1024 pixels) Resolution
- » Wide Viewing Angle (Horizontal & Vertical)
- » Several Models Improve Sunlight Readability by Employing GenFlective™ Technology to Enhance Brightness and Contrast

VIDEO CONTROLLER

- » Support for Interlaced and Non-Interlaced Video Sources
- » Support for Separate, Composite, Sync-On-Green, DVI-D, SDI Standards
- » Support for NTSC, SECAM, PAL, RS-170 Video Input
- » Resolutions to 1920 x 1200 @ 60 Hz (Scaled); Sub-resolutions to 85 Hz
- » Intuitive On-screen Menus for Display Calibration and User's Control
- » Advanced Imaging Features
 - Auto Adjust, Brightness/Contrast/Color Adjustments, Image Expansion, Image Zoom, Foreign Languages, PIP, PBP, More

POWER

- » Separate AC Input Supply Provides +12 VDC to Monitor
- » Low Power Consumption (<50 Watts)

OPTIONS

- » Automatic Brightness Adjustment Sensor
- » Protective Glass Display Overlays
- » Capacitive and Resistive Touch Screens
- » Support for DVI-D Video, HDMI Video, NTSC Video (Composite)
- » External Power Supplies (AC, DC, Power Factor Correction, More)
- » Audio Add-on Board for Stereo Speaker Control

CERTIFICATIONS

- » The Impact DCM/SCM Solar Series is Designed with the Intent to Meet UL 60950 and FCC Class A Certification when Configured with the General Digital-Supplied Power-Factor-Corrected AC Power Supply

Designed and Manufactured in the U.S.A.

GD GENERAL DIGITAL
The Innovators of Flat Panel Technology

DISPLAY

	Size (Diagonal)	Viewing Area (W x H)	Resolution (Pixels)	Number of Colors	Luminance (0° Max.) ¹	Contrast (Max.) ¹	Response Time (Rise/Decay)	Horizontal Viewing Angle	Vertical Viewing Angle	Shock ²	Vibration ²
DMK-06V-901	6.4"	5.1" x 3.8"	640 x 480	262,144	500+ Nits ³	250:1	20/40 ms	± 70°	+ 40°, -70°	50 G, 11 ms ½ Sine Wave	1.0 G (58–500 Hz)
SMK-06V-902	6.4"	5.1" x 3.8"	640 x 480	262,144	1000 Nits	400:1	15/25 ms	± 70°	+ 40°, -55°	50 G, 11 ms ½ Sine Wave	1.0 G (58–500 Hz)
SMK-08V-910	8.4"	6.7" x 5.1"	640 x 480	262,144	900 Nits	250:1	20/40 ms	± 70°	+ 40°, -70°	50 G, 11 ms ½ Sine Wave	1.0 G (58–500 Hz)
DMK-10V-921	10.4"	8.3" x 6.2"	640 x 480	262,144	500+ Nits ³	450:1	20/40 ms	± 70°	+ 40°, -70°	50 G, 11 ms ½ Sine Wave	1.5 G (10–300 Hz)
SMK-10V-920	10.4"	8.3" x 6.2"	640 x 480	262,144	1000+ Nits	450:1	20/40 ms	± 60°	+ 40°, -60°	50 G, 11 ms ½ Sine Wave	1.0 G (58–500 Hz)
SMK-12S-930	12.1"	9.7" x 7.3"	800 x 600	262,144	1350 Nits	300:1	20/40 ms	± 70°	± 55°	90 G, 11 ms ½ Sine Wave	1.0 G (58–500 Hz)
DCM-15X-405	15.0"	11.97" x 8.98"	1024 x 768	16.2 Million	550 Nits	700:1	6/2 ms	± 70°	+ 65°, -60°	50 G, 20 ms ½ Sine Wave	1.5 G (10–200 Hz)
SMK-15X-947	15.0"	11.97" x 8.98"	1024 x 768	16.7 Million	600 Nits	600:1	4/14 ms	± 80°	+ 80°, -60°	50 G, 11 ms ½ Sine Wave	2.0 G (5–100 Hz)
DCM-19W-963	19.0"	14.81" x 11.85"	1280 x 1024	16.7 Million	400 Nits	600:1	13/7 ms	± 85°	± 85°	50 G, 11 ms ½ Sine Wave	1.5 G (10–300 Hz)

1 Brightness and Contrast values reflect measurements obtained with a Minolta® CS100 photometer; these values are nominal and may vary.

2 Shock and Vibration data reflect parameters for baseline industrial monitors. Military-grade monitors could sustain even greater shock and vibration levels. Please inquire with a Sales Engineer for more information.

3 Employs GenFlective™ passive optical enhancement. The brightness increases as ambient light increases.

VIDEO CONTROLLER⁶

dd	Display Supported	Resolution/Frequency ⁴							Scaling	NTSC / SECAM / PAL / RS-170	Video Supported
		640 x 480 VGA	800 x 600 SVGA	1024 x 768 XGA	1366 x 768 WXGA	1280 x 1024 SXGA	1600 x 1200 UXGA	1920 x 1200 WUXGA			
50	6.4"/8.4"	60, 75 Hz	60, 75 Hz	60, 75 Hz	—	60, 75 Hz	—	—	—	Analog Processor, No RS-170	Separate, Composite, S-Video
53	6.4"/8.4"	60 Hz	56, 60 Hz	60 Hz	60 Hz	60 Hz	—	—	—	—	Separate, Composite, Sync-on-Green, DVI-D
57	6.4"/8.4"	60 Hz	56, 60 Hz	60 Hz	60 Hz	60 Hz	—	—	—	—	Separate, Composite, Sync-on-Green
60 ⁵	All	60, 72, 75 Hz	56, 60, 72, 75 Hz	60, 70, 75 Hz	60 Hz	60, 75 Hz	60 Hz	60 Hz	On/Off	Digital Processor, Picture-in-Picture	Separate, Composite, Sync-on-Green, DVI-D
61 ⁵	All	60, 72, 75 Hz	56, 60, 72, 75 Hz	60, 70, 75 Hz	60 Hz	60, 75 Hz	60 Hz	60 Hz	On/Off	—	Separate, Composite, Sync-on-Green
62 ⁵	All	60, 72, 75 Hz	56, 60, 72, 75 Hz	60, 70, 75 Hz	60 Hz	60, 75 Hz	60 Hz	60 Hz	On/Off	Digital Processor, Picture-in-Picture	Separate, Composite, Sync-on-Green
63 ⁵	All	60, 72, 75 Hz	56, 60, 72, 75 Hz	60, 70, 75 Hz	60 Hz	60, 75 Hz	60 Hz	60 Hz	On/Off	Digital Processor, Picture-in-Picture	DVI-D
64 ⁵	All	60, 72, 75 Hz	56, 60, 72, 75 Hz	60, 70, 75 Hz	60 Hz	60, 75 Hz	60 Hz	60 Hz	On/Off	—	Separate, Composite, Sync-on-Green, DVI-D

4 Most common video modes listed. Other video modes supported. Speak with a Sales Engineer for more information.

5 Supports advanced features such as Live Video, Picture-in-Picture (multiple user-selectable sizes), and Picture-by-Picture.

6 Most common video inputs listed. See below for a comprehensive list of supported video standards. Speak with a Sales Engineer for more information.

VIDEO STANDARDS SUPPORTED All Models

Analog Computer Video	Digital Computer Video	Composite (Live) Video	HD Video	Others
VGA, SVGA, ARGB, RGB, Separate Sync, Composite Sync, Sync-on-Green, DVI-A, STANAG 3350 A / B / C	DVI-D, DVI-I, SD-SDI, HD-SDI	NTSC, PAL, SECAM, RS-170, S-Video, CCTV	HD-SDI, HDMI	CGI, CCIR, EGA, RS-343A, EIA-343A, Custom Sync

MTBF

	Display	Backlight ⁷	Inverter	Power Supply (Optional)
DMK-06V-901	> 50,000 Hours (Minimum)	> 50,000 Hours (Typical)	182,000 Hours	Depends on Supply Selected
SMK-06V-902	> 50,000 Hours (Minimum)	> 20,000 Hours (Typical) ⁸	182,000 Hours	Depends on Supply Selected
SMK-08V-910	> 50,000 Hours (Minimum)	> 20,000 Hours (Typical) ⁸	182,000 Hours	Depends on Supply Selected
DMK-10V-921	> 50,000 Hours (Minimum)	> 50,000 Hours (Typical)	182,000 Hours	Depends on Supply Selected
SMK-10V-920	> 50,000 Hours (Minimum)	> 20,000 Hours (Typical) ⁸	182,000 Hours	Depends on Supply Selected
SMK-12S-930	> 50,000 Hours (Minimum)	> 30,000 Hours (Typical) ⁸	182,000 Hours	Depends on Supply Selected
DCM-15X-405	> 50,000 Hours (Minimum)	> 50,000 Hours (Typical)	182,000 Hours	Depends on Supply Selected
SMK-15X-947	> 50,000 Hours (Minimum)	> 30,000 Hours (Minimum)	182,000 Hours	Depends on Supply Selected
DCM-19W-963	> 50,000 Hours (Minimum)	> 50,000 Hours (Typical)	182,000 Hours	Depends on Supply Selected

7 The hours for Backlight MTBF refer to the half-life of the bulbs; that is, the point at which the bulbs reach half of their original brightness. *It does not indicate the life expectancy of the bulbs.*

8 Represents typical half-brightness life expectancy when operated at maximum brightness; life expectancy will increase if operated below maximum brightness.



ENVIRONMENTAL

	Temperature, Operating	Temperature, Storage	Humidity, Operating	Humidity, Storage	Altitude, Operating	Altitude, Storage
DMK-06V-901	0° C to 55° C	-25° C to 70° C	20% to 95% RH Non-condensing	5% to 95% RH Non-condensing	10,000 Feet	24,000 Feet
SMK-06V-902	-20° C to 70° C	-30° C to 70° C	20% to 95% RH Non-condensing	5% to 95% RH Non-condensing	10,000 Feet	24,000 Feet
SMK-08V-910	0° C to 45° C	-20° C to 60° C	20% to 95% RH Non-condensing	5% to 95% RH Non-condensing	10,000 Feet	24,000 Feet
DMK-10V-921	-10° C to 60° C	-30° C to 70° C	20% to 95% RH Non-condensing	5% to 95% RH Non-condensing	10,000 Feet	24,000 Feet
SMK-10V-920	-10° C to 60° C	-30° C to 70° C	20% to 95% RH Non-condensing	5% to 95% RH Non-condensing	10,000 Feet	24,000 Feet
SMK-12S-930	0° C to 50° C	-25° C to 60° C	20% to 95% RH Non-condensing	5% to 95% RH Non-condensing	10,000 Feet	24,000 Feet
DCM-15X-405	-30° C to 85° C	-30° C to 85° C	8% to 90% RH Non-condensing	8% to 90% RH Non-condensing	10,000 Feet	30,000 Feet
SMK-15X-947	-10° C to 70° C	-20° C to 80° C	8% to 90% RH Non-condensing	8% to 90% RH Non-condensing	10,000 Feet	30,000 Feet
DCM-19W-963	0° C to 50° C	-20° C to 60° C	20% to 95% RH Non-condensing	5% to 95% RH Non-condensing	10,000 Feet	24,000 Feet

MECHANICAL

	Dimensions (H x W x D)	Construction	Finish	Weight, Operating ⁹	Weight, Shipping ⁹
DMK-06V-901	7.50" x 9.25" x 1.43"	5052-H32 Aluminum	Clear Iridite	3 Pounds	8 Pounds
SMK-06V-902	7.50" x 9.25" x 2.43"	5052-H32 Aluminum	Clear Iridite	3 Pounds	8 Pounds
SMK-08V-910	7.50" x 10.50" x 2.48"	5052-H32 Aluminum	Clear Iridite	4 Pounds	8 Pounds
DMK-10V-921	8.81" x 11.81" x 1.38"	5052-H32 Aluminum	Clear Iridite	4 Pounds	8 Pounds
SMK-10V-920	8.81" x 11.81" x 2.38"	5052-H32 Aluminum	Clear Iridite	4 Pounds	8 Pounds
SMK-12S-930	9.00" x 14.00" x 3.04"	5052-H32 Aluminum	Clear Iridite	6 Pounds	12 Pounds
DCM-15X-405	11.22" x 14.22" x 1.99"	5052-H32 Aluminum	Clear Iridite	8 Pounds	14 Pounds
SMK-15X-947	11.22" x 14.22" x 1.99"	5052-H32 Aluminum	Clear Iridite	8 Pounds	14 Pounds
DCM-19W-963	13.12" x 16.04" x 2.94"	5052-H32 Aluminum	Clear Iridite	13 Pounds	19 Pounds

⁹ Add 2 pounds to the weight when a Separate Power Supply is included.

I/O CONNECTIONS

	Power (DC)	Analog Video	On/Standby (DC)	S-Video	Composite Video	Touch Screen
DMK-06V-901	2-pin, 0.156" sp., Molex	High Density 15-pin Socket	LED on Membrane Pad	4-pin Mini DIN	RCA Jack	DE-9, Socket
SMK-06V-902	2-pin, 0.156" sp., Molex	High Density 15-pin Socket	LED on Membrane Pad	4-pin Mini DIN	RCA Jack	DE-9, Socket
SMK-08V-910	2-pin, 0.156" sp., Molex	High Density 15-pin Socket	LED on Membrane Pad	4-pin Mini DIN	RCA Jack	DE-9, Socket
DMK-10V-921	2-pin, 0.156" sp., Molex	High Density 15-pin Socket	LED on Membrane Pad	4-pin Mini DIN	RCA Jack	DE-9, Socket
SMK-10V-920	2-pin, 0.156" sp., Molex	High Density 15-pin Socket	LED on Membrane Pad	4-pin Mini DIN	RCA Jack	DE-9, Socket
SMK-12S-930	2-pin, 0.156" sp., Molex	High Density 15-pin Socket	LED on Membrane Pad	4-pin Mini DIN	RCA Jack	DE-9, Socket
DCM-15X-405	3-pin Circular	High Density 15-pin Socket	LED on Membrane Pad	4-pin Mini DIN	RCA Jack	DE-9, Socket
SMK-15X-947	3-pin Circular	High Density 15-pin Socket	LED on Membrane Pad	4-pin Mini DIN	RCA Jack	DE-9, Socket
DCM-19W-963	3-pin Circular	High Density 15-pin Socket	LED on Membrane Pad	4-pin Mini DIN	RCA Jack	DE-9, Socket

CALIBRATION All Models

dd	Interface	Functions	Advanced
50	On-screen Displays Navigated by 8-button Membrane Pad	Brightness, Contrast, Hue, Saturation, Sharpness, Color, Phase, Clock, Scheme, Highlight Window, Language, Auto Color, Color Temperature, R/G/B Color Gain	Auto Configuration (On/Off), Video Source, Reset, OSD Position (Horizontal & Vertical), OSD Timeout, Backlight Dimming
53, 57	On-screen Displays Navigated by 8-button Membrane Pad	Brightness, Contrast, Sharpness, Color Temperature, Gamma, Frequency, Phase, Image Position (Horizontal & Vertical), Input Source Select	Auto Source Seek, Auto RGB Calibration, Auto Setup Position/Frequency/Phase, OSD (Position, Timeout), Reset
60/61/62/63/64	On-screen Displays Navigated by 8-button Membrane Pad	Volume, Brightness, Contrast, Saturation, Hue, Sharpness, Backlight Brightness, Input Signal, Aspect Size (Scaling), Image Position (Horizontal & Vertical)	Picture-In-Picture (PIP), PIP Size, PIP Position, PIP Transparency, Picture-by-Picture (PBP), Auto Picture Setup, Auto Color Gain, Wide Screen Mode Detection, Manual Clock/Phase, Auto Source Seek, Auto Power Off, Video Standard, Gamma, OSD (Position, Timeout, Language [English, Spanish, French, German, Chinese], Transparency, Display Input), Image Freeze, Image Zoom & Pan, Color Temperature, Hot Keys, Monochrome Mode, Backlight Setup

POWER SUPPLY¹⁰

<i>hij</i>	Input Voltage Range	Output			Frequency Range	Line Entry Module/Filter	Power Factor
		6.4"/10.4" DMK Series	6.4"/8.4"/10.4"/12.1" SMK Series	15.0"/19.0" DMK & SMK Series			
SA30 (Separate)	90–264 VAC	–	66 W /+ 12 VDC	66 W /+ 12 VDC	47–63 Hz	–	–
SA49 (Separate)	100–264 VAC	30 W /+ 12 VDC	–	–	50–60 Hz	–	–
0092 (None)	+ 12 VDC	Filtering and regulation provided by customer					

10 Includes 6'7" AC Power Cable.

OPTIONS

All Models (Ordered Separately – Please Inquire with a Sales Engineer for Additional Options and Accessories)

DISPLAY OVERLAY (Other Overlays Available – Please Inquire with a Sales Engineer)

<i>gg</i>	Description	<i>gg</i>	Description
00	None	23	Vandal Shield, Clear Float Glass, Antiglare Etch Two Sides, 2 Panes Bonded (Laminated) Together (Not Bonded to LCD)
02	Clear Float Glass, Antiglare Etch Two Sides	24	Vandal Shield, Soda Lime Glass, Chemically Strengthened (Tempered), Antireflective Coating Two Sides
04	Clear Float Glass, Antireflective Coating Two Sides	35	Capacitive Touch Screen, Ideal Etch
21	Vandal Shield, Polycarbonate or Acrylic	51	Resistive Touch Screen

OTHER

Optical Enhancements	Bonding of Filter and Display Using Indice-Matched Optical Materials; Brightness and Contrast Enhancing Films and Laminations
Power Supplies	AC and DC Supplies; Various Input Ranges, Input Frequencies; Separate or Attached; Power Factor Correction; AC and DC Power Cables
Video Accessories	Video Cables, Signal Extenders, NTSC/PAL/SECAM/RS-170/S-Video/DVI-D/HD-SDI/ SD-SDI/HDMI/HD Component Support, Picture-in-Picture, Picture-by-Picture
Remote Control	IR or Serial Calibration/Control Interface
Customization	Custom Mechanical and Electrical Modifications; Custom Finishing; Custom Software and Performance Modifications; Private Labeling

MODEL NUMBER CONFIGURATOR¹¹

Model Style	Size & Resolution (<i>aab</i>)	Display (<i>ccc</i>)	Video Controller (<i>dd</i>)	Keyboard/Pointer (<i>ee</i>)	Industrial Enclosure (<i>ff</i>)	Display Overlay (<i>gg</i>)	Power Supply (<i>hij</i>)
DMK-	06V-	901-	##-	00-	00-	##-	###
SMK-	06V-	902-	##-	00-	00-	##-	###
SMK-	08V-	910-	##-	00-	00-	##-	###
DMK-	10V-	921-	##-	00-	00-	##-	###
SMK-	10V-	920-	##-	00-	00-	##-	###
SMK-	12S-	930-	##-	00-	00-	##-	###
DCM-	15X-	405-	##-	00-	00-	##-	###
SCM-	15X-	947-	##-	00-	00-	##-	###
DCM-	19W-	963-	##-	00-	00-	##-	###

11 The pound symbol (#) indicates customer-defined values.

ORDERING

Model Number ¹²	Description
DMK-06V-901- dd -00-00- gg-hij	Impact Monitor Kit Solar™, 6.4" Diagonal, VGA, Open Frame, Daylight Readable, Ruggedized LCD Monitor
SMK-06V-902- dd -00-00- gg-hij	Impact Monitor Kit Solar™, 6.4" Diagonal, VGA, Open Frame, Sunlight Readable, Ruggedized LCD Monitor
SMK-08V-910- dd -00-00- gg-hij	Impact Monitor Kit Solar™, 8.4" Diagonal, VGA, Open Frame, Sunlight Readable, Ruggedized LCD Monitor
DMK-10V-921- dd -00-00- gg-hij	Impact Monitor Kit Solar™, 10.4" Diagonal, VGA, Open Frame, Daylight Readable, Ruggedized LCD Monitor
SMK-10V-920- dd -00-00- gg-hij	Impact Monitor Kit Solar™, 10.4" Diagonal, VGA, Open Frame, Sunlight Readable, Ruggedized LCD Monitor
SMK-12S-930- dd -00-00- gg-hij	Impact Monitor Kit Solar™, 12.1" Diagonal, SVGA, Open Frame, Sunlight Readable, Ruggedized LCD Monitor
DCM-15X-405- dd -00-00- gg-hij	Impact Monitor Kit Solar™, 15.0" Diagonal, XGA, Open Frame, Daylight Readable, Ruggedized LCD Monitor
SCM-15X-947- dd -00-00- gg-hij	Impact Monitor Kit Solar™, 15.0" Diagonal, XGA, Open Frame, Sunlight Readable, Ruggedized LCD Monitor
DCM-19W-963- dd -00-00- gg-hij	Impact Monitor Kit Solar™, 19.0" Diagonal, SXGA, Open Frame, Daylight Readable, Ruggedized LCD Monitor

12 Bold Italicized letters refer to standard customer-defined configurations (see Model Number Configurator above).

