The 5600MSC and 5601MSC Master Sync and Clock Generators are both a broadcast quality master sync pulse generator (SPG) and a master clock. Each provides all of the synchronizing signals needed in a 21st century TV station or post production facility at the same time as solving the problem of locking the in-house master clock system to the master video sync pulse generator.

A high stability, temperature controlled oscillator, provides both the 5600MSC and 5601MSC with better than 1.0x10-8 (or 0.01ppm) frequency reference. The free running drift of this 10MHz reference will be less then 0.1Hz (which amounts to less than1 millisecond time drift per day). This guarantees that any frequency drift, with time and temperature, will be within the tolerances expected from the best SPGs or master clocks available in the industry. Both the 5600MSC and 5601MSC may also be referenced to an external 5 MHz or 10 MHz master oscillator if higher stability is required. Both the SPG and the Master Clock section of the 5600MSC or 5601MSC may be referenced to high stability time and frequency standards present in the Global Position System (GPS) by adding the GPS (+GP) option.

The SPG section of both 5600MSC and 5601MSC provides six timeable reference outputs. These six BNC outputs may be configured to provide independently timed color black (black burst) outputs or independently timed HDTV tri-level sync outputs. Each color black output can optionally carry vertical interval time code (VITC) on a user specified set of lines. Additionally, each output can provide 10MHz, 5MHz, PAL Subcarrier, NTSC Subcarrier, 1 PPS, 1/1.001 PPS, 6/1.001 PPS, PAL color frame pulse and 48kHz wordclock

When referenced to the optional GPS receiver, the start of the NTSC four field sequence, or the PAL eight field sequence, will coincide with a specific point in the GPS code. In this way, by referencing all the 5600MSCs (or 5601MSCs) in a system to GPS, they will all be automatically locked to each other. This is ideal for applications requiring remote facility frequency, phase and time locked! GPS heads may be remoted from the unit with standard 50 ft. cables included or optional 100 ft. & 400 ft. weatherproof cables. For remote GPS head requirements of greater than 400 ft. or fiber optic isolation, GPS Data Fiber Transmitters & Receivers are also available (7707GPS-DT, 7707GPS-DR).

On the 5600MSC, the master clock section provides a primary longitudinal time code (LTC) output on an XLR connector and a 9-pin D connector, as well as a secondary LTC output available only on the 9-pin D connector. The time code may be set from the front panel or referenced to a number of different sources.

On the 5601MSC, the master clock section provides two longitudinal time code (LTC) or optional IRIG outputs on XLR connectors and a 15-pin D connector. The time code may be set from the front panel or referenced to a number of different sources.

Having two LTC outputs provides the ability to drive 24 and 30 Fps, or drop-frame and non-drop frame timecode simultaneously. Time may be externally referenced to GPS or via modem to a high-level time source or extracted from VITC on the reference input. Time derived from such sources can be offset from UTC to a specific time zone as required. When referenced to GPS or by modem (or LTC or IRIG or VITC on 5601MSC), either MSC can provide RFC-1305 compliant NTP via Ethernet, and operates in broadcast and server mode. GPS, NTP and Modem access are all options for both MSCs. Both the 5600MSC and 5601MSC includes a battery backed-up real time clock to maintain its time while power is not applied to the unit.

On the 5600MSC, an optional word clock output is available (+WC) and also audio word clock may be generated from DARS with 520DARS-W module (Refer to 520DARS-W brochure). For the 5601MSC, a wordclock output is a standard feature. It provides 48kHz wordclock or may be configured as an additional sync output. Also for the 5601MSC, the 10MHz output provides 10MHz or 5MHz, or may be configured as an additional sync output.

For the 5600MSC, there are two test signal generator options available. The STG option provides a composite analog video test signal output, AES and balanced analog audio tone generators and a digital audio reference output (DARS). The STG option also provides two standard definition SDI test signal outputs and two SDI black outputs. The HTG option provides two high definition SDI test signal outputs and two HD SDI black outputs.

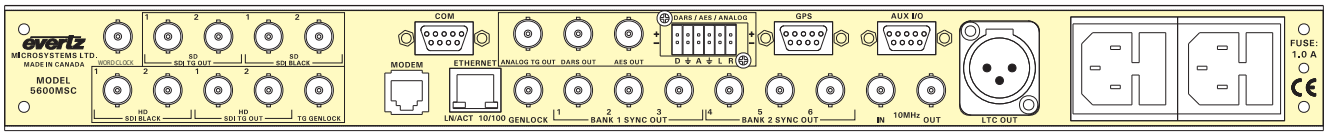
For the 5601MSC, there are three test signal generator options available. The SDTG option provides two composite analog video test generators, two AES and one DARS outputs (both balanced and unbalanced), and two balanced analog audio channels. The SDTG option also provides four standard definition SDI test signal generators. The HDTG option includes all features of the SDTG option and adds support for HD formats. The 3GTG option includes all features of the HDTG option and adds support for dual-link and 3G formats. Each test generator has two outputs and a large suite of test signals available. When the 3GTG option is ordered, 3D test signals are also available.

All versions of the 5600MSC / 5601MSC offer a COM port for software upgrades. An optional redundant power supply is also available. For the 5601MSC only, the redundant power supplies are hot-swappable.

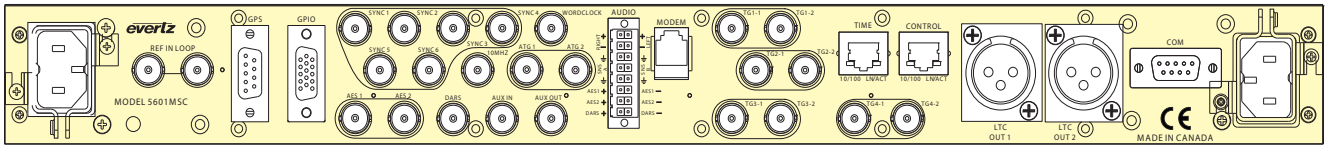
Automatic Changeovers

Two 5600MSC units in combination with an Automatic Change Over (model 5600ACO) provide an extra degree of reliability where dual redundant installations are required. The ACO provides relay changeover for the two LTC outputs, the six Sync pulse outputs, the 10MHz reference output, and the GPI/O interface. A serial cable interconnecting the COM ports of the two 5600MSC units guarantees that the configuration and timing of the units are identical so that changeovers are done with minimal disruption of the plant timing reference. The model 5600ACO2 also provides changeover for the optional test generator signals.

In the case of the 5601MSC, two 5601MSC units in combination with an Automatic Change Over (model 5601ACO2) provide an extra degree of reliability. Again, the ACO provides relay changeover for the two LTC outputs, the six sync pulse outputs, the 10MHz reference output, wordclock and the GPI/O interface. The model 5601ACO2 also provides changeover for all the optional test generator signals.



5600MSC Rear Panel



5601MSC Rear Panel

Features & Benefits

- 6 independently timeable programmable reference outputs
- Bi-level or Tri-level outputs selectable
- 2 Independent LTC Time Code outputs
- LTC Input (optional on 5600MSC, standard on 5601MSC)
- Reference loop input for video and 10MHz/5MHz references
- GPS option for frequency and time reference
- 3.58/4.43/5 MHz frequency reference output (only on 5601MSC)
- 10MHz frequency reference output
- Wordclock output (optional on 5600MSC, standard on 5601MSC)
- Output frequency stability guaranteed better then 1.0 x 10-8 (or 0.01ppm)
- Optional modem for time reference dial up
- 2 GPS based units will be in time and phase even when remotely separated by miles
- Optional test generators available are (refer to ordering options):
  - Composite Video
  - AES/DARS
  - Analog Audio Tones
  - SD SDI
  - HD SDI
  - 3Gb/s (only on 5601MSC)
- Optional Network Time Protocol (NTP) server support (GPS option should be ordered with NTP option)
- For 5600MSC, 16 character Alpha-numeric display, with 20 pushbuttons
- For 5601MSC, dual 6 line x 16 character Alpha-numeric display, with 10 pushbuttons
- Rack mountable
- Optional redundant power supply (redundant power hot-swappable only on 5601MSC)
- Automatic changeover units available for dual redundant systems applications
- Compatible with Dual GPS Data Fiber Receivers & Transmitters
- 2 factory presets and 3 user presets available
- VITC reader on reference input for time reference
- Ten Field Pulse is available on NTSC sync outputs
- VistaLINK® control for device configuration and status monitoring
- On 5601MSC, all active components are front panel extractable & serviceable

Summary

5600MSC Signal Inputs / Outputs

5601MSC Signal Inputs / Outputs

5600MSC Specifications

Analog Sync Outputs:

Standards:	SMPTE ST 170-1 (NTSC-M), ITU-R BT 1700-1 (PAL-B), 625i/ 48Hz/47.95Hz (Slow-PAL), SMPTE ST 274-1 (1080i/60, 1080i/50,1080p/30, 1080p/30sF, 1080p/25, 1080p/25sF, 1080p/24, 1080p/24sF and the 1/1.001 divisor versions where applicable) SMPTE ST 296-1 (720/60, 720p/59.94, 720p/50) 1Hz and 6Hz pulse (and the 1/1.001 divisor versions)
Connector:	6 BNC per IEC 61169-8 Annex A
Number of Outputs:	6 (2 banks of 3) configured as: 6 color black (black & burst) - selectable with VITC On/Off or 6 HD tri-level sync or 3 color black (black & burst) and 3 HD tri-level sync All outputs independently timeable
DC Offset:	0V ±0.1V
Return Loss:	> 40dB up to 5MHz
SNR:	> 75dB

10MHz Input and Output:

Input:	0.5V p-p min level, 75Ω (Relay Bypass Protected)
Output:	1V p-p (75Ω terminated)
Connector:	BNC per IEC 61169-8 Annex A
Signal Type:	Sine wave. Harmonics < 40dB typical
Long Term Oscillator Stability:	
Free Running:	0.01ppm
External Ref:	5 or 10 MHz external reference autodetect (max locking range ± 0.1ppm) GPS with +GP option

LTC Outputs:

Standard:	SMPTE ST 12-1
Frame Rate:	Nominal 24, 25, and 30 (drop frame and non-drop frame)
Number of outputs:	2
Connectors:	3-pin male XLR type, Female DB9
Level:	
Unpowered:	Adjustable, 0.5V to 4.5V p-p
Powered:	2V p-p with 11V DC offset to drive downstream 1200 series slave clocks
Output Impedance:	66Ω balanced (unpowered)
Rise Time:	40 ±10µs
Jitter:	< 2µs

Communications and Control:

Serial Port:	
Connector:	Female DB-9
Level:	RS232
Baud Rate:	57.6 Kbaud
Format:	8 data bits, no parity, 2 stop bits

GPS Receiver (with "+GP" option installed):

Temperature:	-40°C to +70°C
Humidity:	95% R.H. Condensing at 60°C
Dimensions:	5.8" D x 3.9" H (147mm x 100mm)

Modem: (with "+M" option installed):

Connector:	RJ-11 telephone jack
Baud Rate:	300 baud Bell 103 compatible
Ethernet:	
Network Type:	Fast Ethernet 100 Base-TX IEEE 802.3u standard for 100Mb/s baseband CSMA/CD local area network Ethernet 10 Base-T IEEE 802.3 standard for 10Mb/s baseband CSMA/CD local area network
Connector:	RJ-45
Function:	VistaLINK® control NTP port with +T option installed

NTP Port (+T option installed):

Standard:	RFC-1305 compliant, broadcast and server mode support Time must be referenced to GPS or VITC or have been synchronized via modem within the last 10 days (as per RFC1305)

DARS & AES Test Generator Outputs (with +STG option installed):

Standard:	
Unbalanced:	SMPTE ST 276-1 single ended AES (24-bits) (1V p-p into 75Ω)
Balanced:	AES3-1992 (24-bits) (4Vp-p un-terminated)
Number of Outputs:	
DARS:	1 unbalanced, 1 balanced
AES Test Gen:	1 unbalanced, 1 balanced
Connector:	
Unbalanced:	BNC per IEC 61169-8 Annex A
Balanced:	Removable Terminal Strip
Sampling Rate:	48kHz
Impedance:	
Unbalanced:	75Ω unbalanced
Balanced:	110Ω balanced
Return Loss:	> 25dB to 10MHz (with external 75Ω termination)
AES Tones:	Menu selectable

Genlock Input:

Type:	Autodetects standard SMPTE ST 170-1 (NTSC-M), ITU-R BT.1700-1 (PAL-B), Color Black 1V p-p with optional VITC Composite Bi-level sync (525i/59.94 or 625i/50) 300mV HD Tri-level Sync (same HD standards as sync outputs)
Number of Inputs:	1
Connector:	BNC per IEC 61169-8 Annex A
Video:	Max: 2V p-p video Min: Sync level 150mV
Frequency Lock	
Range:	±50ppm from nominal
Input Impedance:	High impedance, isolated, differential - external termination required
Return Loss:	> 25dB to 10MHz (with external 75Ω termination)

Analog Composite Video Test Signal Generator (with "+STG" option installed):

Standard:	SMPTE ST 170-1 (NTSC-M) ITU-R BT.1700-1 470-6 (PAL-B)
Number of Outputs:	1
Connector:	BNC per IEC 61169-8 Annex A
Signal Level:	1V p-p nominal
DC Offset:	0V ±0.1V
Output Impedance:	75Ω
Return Loss:	>35dB to 10MHz (with external 75Ω termination)
SNR:	> 75dB

SDI Test Generator Outputs (with "+STG"option installed):

Standard:	SMPTE ST 259M-1 (270Mb/s)
Number of Outputs:	2 outputs of selected test signal 2 outputs of black video
Embedded Audio:	Up to 4 groups as specified in SMPTE ST 259-1
Connectors:	BNC per IEC 61169-8 Annex A
Signal Level:	800mV nominal
DC Offset:	0V ±0.5V
Rise and Fall Time:	900ps nominal
Overshoot:	< 10% of amplitude
Return Loss:	> 15dB up to 270Mb/s
Jitter:	< 0.2 UI
Genlock:	Provided internally by 5600MSC

Analog Audio Tone Generator (with "+STG" option installed):

Number of Outputs:	2
Type:	Balanced analog audio
Connector:	6 pins on 12-pin removable terminal strips
Output Impedance:	66Ω
Signal Level:	-20 to +8dBu into 10kW load

HDTV Test Generator Outputs (with "+HTG" option installed):

Standards:	SMPTE ST 292-1 4:2:2, YCbCr SMPTE ST 372-1 dual link 4:4:4 GBRA or YCbCr Same standards as HD sync outputs
Number of Outputs:	
4:2:2:	2 outputs of selected test signal 2 outputs of black video
4:4:4:	2 dual link outputs of selected test signal
Embedded Audio:	Up to 4 audio groups as specified in SMPTE ST 299-1. Selectable tone frequencies (from 60Hz to 10kHz) and audio group. Audio can be embedded on test signal or black or both outputs.
Connector:	BNC per IEC 61169-8 Annex A
Signal Level:	800mV nominal
DC Offset:	0V ±0.5V
Rise and Fall Time:	200ps nominal
Overshoot:	< 10% of amplitude
Jitter:	< 0.2 UI
Genlock Input:	HD Tri-level Sync or NTSC or PAL Color Black 1V p-p, (provided from one of the Sync outputs)

Word Clock Output (with +WC option installed):

Signal:	0,0V-0.5V, 48kHz Word Clock
Connector:	BNC per IEC 61169-8 Annex A
Number of Outputs:	1

General Purpose Inputs and Output:

Number of Inputs:	2
Number of Outputs:	2 (function menu selectable)
Type:	Opto-isolated, active low with internal pull-ups to +5 volts
Connector:	4 pins plus 2 ground pins on 9-pin female D connector
Signal Level:	+5V nominal

Physical:

Dimensions:	19" W x 1.75" H x 18.75" D. (483mm W x 45mm H x 477mm D)
Weight:	8lbs (3.5kg)

Electrical:

Voltage:	Auto ranging 100 to 240 Volts AC, 50/60Hz
Configuration:	Optional redundant supply available with +2PS option
Power:	90 W max (all options installed)
Safety:	ETL Listed Complies with EU safety directives
EMI/RFI:	Complies with FCC Part 15 Class A Complies with EU EMC Directive

5601MSC Specifications

Analog Sync Outputs:

Output Standards:	
Black Burst:	SMPTE 170M (NTSC-M), ITU-R BT.1700-1 (PAL-B)
Bi-Level:	Slo-Pal 625i/48, 625i/47.95
HD Tri-Level:	SMPTE 274M (1080p/23.98, 1080p/24, 1080i/50, 1080i/59.94, 1080i/60, 1080p/23.98sF, 1080p/24sF, 1080p/25, 1080p/29.97, 1080p/30) SMPTE 296M (720p/59.94, 720p/60, 720p/50, 720p/24)
Pulse Signals:	PAL color frame, 1Hz pulse, 1/1.001Hz pulse, 6/1.001Hz pulse
CW Signals:	5MHz, 10MHz, NTSC-M Subcarrier, PAL-B Subcarrier
Wordclock:	48kHz Wordclock
Connector:	6 BNC per IEC 61169-8 Annex A
Number of Outputs:	6
DC Offset:	0V ±0.05V
Return Loss:	> 40dB up to 10MHz
SNR:	> 75dB rms

10MHz Output:

Output Levels:	1.0V p-p, 2.0V p-p, in 75Ω, selectable
Connector:	BNC per IEC 61169-8 Annex A
Output Type:	10MHz sine wave (default), all other analog sync standards (see above) selectable
SNR:	>70dB rms
SFDR:	>50 dBc

Wordclock Output:

Output Type:	48kHz Wordclock (default), all other analog sync standards (see above) selectable
Connector:	BNC per IEC 61169-8 Annex A
Risetime:	< 25ns
Levels:	5V CMOS (1kΩ) or ±1V (75Ω)

LTC Outputs:

Standard:	SMPTE 12M-1 or IRIG-B
Frame Rate:	24, 25, 30 and 29.97 (drop frame and non-drop frame)
Number of outputs:	2 balanced
Connectors:	3-pin male XLR type, Female DB-15
Level:	
Unpowered:	Adjustable, 1.0V to 8.0V p-p, balanced
Powered:	2V p-p with 11V DC offset to drive downstream 1200 series slave clocks
Output Impedance:	44Ω balanced (un-powered)
Rise Time:	40 ±10µs
Jitter:	< 2µs

IRIG Input/Outputs (with +IRIG option installed):

Standard:	IRIG B122, B123, B126, B127
Number of outputs:	2, shared with LTC, may be both LTC, 1LTC-1IRIG, both IRIG
Connectors:	3 pin male XLR type, Female DB-15
Level:	1.0-8.0 p-p, blanaced
Output Impedance:	44Ω balanced

LTC Input:

Standard:	SMPTE 12M-1 or IRIG-B
Number of Inputs:	1 balanced
Connector:	Female DB-15
Input impedance:	>30kΩ balanced
Sensitivity:	0.25V p-p min

Frequency Lock Range:

Wide mode:	±15 ppm min
Narrow mode:	±0.1 ppm min

Communications and Control:

Serial Port:	
Connector:	Female DB-9
Level:	RS-232
Baud Rate:	115200 baud
Format:	8 data bits, no parity, 2 stop bits

GPS Receiver (with "+GP" option installed):

Temperature:	-40°C to +70°C
Humidity:	95% R.H. Condensing at 60°C
Dimensions:	3.74" D x 2.85" H (100mm x 72mm)

Modem: (with "+M" option installed):

Connector:	RJ-11 telephone jack
Baud Rate:	300/1200 baud Bell 103 compatible

Ethernet:

Network Type:	Fast Ethernet 100 Base-TX IEEE 802.3u standard for 100Mb/s baseband CSMA/CD local area network Ethernet 10 Base-T IEEE 802.3 standard for 10Mb/s baseband CSMA/CD local area network
Connector:	RJ-45
Function:	VistaLINK® control NTP port with +T option installed

NTP Port (+T option installed):

Standard:	RFC-1305 compliant, broadcast and server mode support Time must be referenced to GPS, LTC, VITC or have been synchronized via modem within the last 10 days (as per RFC1305)

DARS & AES Test Generator Outputs (with +SDTG, HDTG or 3GTG installed):

Standard:	
Unbalanced:	SMPTE ST 276-1single ended AES (24-bits) (1V p-p into 75Ω)
Balanced:	AES3-1992 (24-bits) (4Vp-p 110Ω terminated)
Number of Outputs:	
DARS:	1 unbalanced, 1 balanced
AES Test Gen:	2 unbalanced, 2 balanced
Connector:	
Unbalanced:	BNC per IEC 61169-8 Annex A
Balanced:	Removable Terminal Strip
Sampling Rate:	48kHz
Impedance:	
Unbalanced:	75Ω unbalanced
Balanced:	110Ω balanced
AES Tones:	Menu selectable

Genlock Input (Video/10MHz selectable):

Type:	Autodetects standard SMPTE 170M (NTSC-M), ITU-R BT.1700-1 (PAL-B), Color Black 1V p-p with optional VITC and 10- field pulse HD Tri-level Sync (same HD standards as sync outputs)
Number of Inputs:	2 Loop thru High impedance, isolated, differential external termination required
Connector:	BNC per IEC 61169-8 Annex A
Return Loss:	>40dB to 10MHz (with external 75Ω termination)
Video Input Range:	From -3.5dB (double-terminated) to +6dB (unterminated) 10MHz Input Range: 0.3V p-p to 4.0V p-p

Analog Composite Video Test Signal Generator (with +SDTG, HDTG or 3GTG installed):

Standard:	SMPTE 170M (NTSC-M) ITU-R BT.1700-1 (PAL-B)
Number of Outputs:	2
Connector:	BNC per IEC 61169-8 Annex A
Signal Level:	1V p-p nominal
DC Offset:	0V ±0.05V
Output Impedance:	75Ω
Return Loss:	>40dB to 6MHz
Frequency response:	± -0.1dB to 5.5MHz
SNR:	> 75dB rms

Analog Audio Tone Generator (with +SDTG, HDTG or 3GTG installed):

Number of Outputs:	2
Type:	Balanced analog audio
Connector:	6 pins on 16-pin removable terminal strips
Output Impedance:	66Ω
Signal Level:	-30 to +10dBu into 10kW load
DC Offset:	< 10mV
Noise floor:	< -90dBu, unweighted
THD+N:	< -100dB with 1kHz @ +10dBu into 10kΩ load

SDI Test Generators:

Standards:	With SDTG option, SMPTE ST 259-1-C (270Mb/s), With HDTG option, SMPTE ST 259-1-C (270Mb/s) and SMPTE ST 292-1 4:2:2 With 3GTG option, SMPTE ST 259-1-C (270Mb/s), SMPTE ST 292-1 4:2:2, SMPTE ST 372-1 dual link, and SMPTE ST 424-1
Number of Generators:	4 (2 outputs per)
Embedded Audio:	Up to 4 audio groups as specified in SMPTE ST 299-1 or SMPTE ST 272M Selectable tone frequencies (from 20Hz to 12kHz) and audio group
Connector:	BNC per IEC 61169-8 Annex A
Signal Level:	800mV nominal drive (1600mV drive for 5601AC02)
DC Offset:	0V ±0.5V
Rise and Fall Time:	100ps HD/3G, 600ps SD
Overshoot:	< 10% of amplitude
Jitter:	< 0.2 UI
Return Loss:	> 15dB to 1.5GHz > 10dB to 3GHz

General Purpose Inputs and Output:

Number of Inputs:	2
Number of Outputs:	2 (function menu selectable)
Output Type:	Opto-isolated, active closure to GND, 20k Ω pull-ups to +5V
Input Type:	Opto-isolated, senses closure to GND, pull-ups to +5V
Connector:	4 pins plus 2 ground pins on DB-15 female

Physical:

Dimensions:	19" W x 1.75" H x 11.5" D (483mm W x 45mm H x 292mm D)
Weight:	8lbs (3.5kg)

Electrical:

Voltage:	Auto ranging 100 to 240V AC, 50/60Hz
Configuration:	Optional redundant supply available
Power:	90W max (all options installed)
Safety:	ETL Listed Complies with EU safety directives
EMI/RFI:	Complies with FCC Part 15 Class A Complies with EU EMC Directive

Comparison of 5600MSC and 5601MSC Inputs and Outputs

INPUTS	5MHz/10MHz Reference	GPS option for frequency and time reference	Modem option for time reference dial	LTC	Dual Power							
5600MSC	x	+GP	+M	+L	+2PS							
5601MSC	x	+GP	+M	X	+2PS							

OUTPUTS	6 Independent timeable reference	Bi-Level or Tri-Level Selectable	Two Independent LTC	5MHz Frequency	10MHz Frequency	NTP Server Support	Analog Test Generator	SD SDI Test Generator	HD SDI Test Generator	3Gb/s & 3D Test Generator	Word Clock	IRIG Compatible
5600MSC	x	x	x		x	+T	+STG	+STG	+HTG		+WC	
5601MSC	x	x	x	x	x	+T	+SDTG	+SDTG	+HDTG	+3GTG	x	+WC

5600MSC Ordering Information

5600MSC	Master SPG/Master Clock System

Ordering Options

+2PS	Redundant power supply
+M	Modem Option
+GP	GPS Option (includes GPS receiver and 50' weatherproof cable)
+T	Network Time Protocol (Must be ordered with +GP or +M option)
+STG	NTSC/PAL test signal generator Audio tone generator (analog) DARS generator (balanced & unbalanced) AES generator (balanced & unbalanced) PLUS an SD SDI Test Generator with 2 SD SDI test signals and 2 SD SDI black
+HTG	HD SDI Test Generator with 2 HD SDI test signals & 2 HD SDI black
+WC	Optional Word Clock Output
+L	LTC input option (Note: If this option is installed, the second LTC output is deleted.)

Accessories

WA-T76	100' weatherproof cable for 5600MSC, GPSII & 7707GPS-DT
WA-T77	100' weatherproof cable for 7707GPS-DR to 5600MSC
WA-T11	400' weatherproof cable for GPS receiver

For other weatherproof cable lengths, contact factory

For remote GPS head requirements greater than 400' cables or fiber optic isolation order:

7707GPS-DT	Dual GPS Data Fiber Transmitter
7707GPS-DR	Dual GPS Data Fiber Receiver

5601MSC Ordering Information

5601MSC	Master SPG/Master Clock System including: 6 bi-level/tri-level sync outputs 5/10 MHz output, 48kHz word clock output, 2 LTC outputs Loop thru genlock/5/10MHz input, LTC input, 1 power supply
5601ACO2	2RU Automatic Change Over System (see individual brochure)

Ordering Options

+2PS	Redundant power supply
+M	Modem Option
+GP	GPS Option (includes GPS receiver and 50' weatherproof cable)
+T	Network Time Protocol (Must be ordered with +GP or +M option)
+SDTG	4 Dual output SD SDI Test generators 2 NTSC/PAL test signal generator outputs 1 Stereo Analog Audio tone generator 1 DARS generator (balanced & unbalanced) 2 AES generator (balanced & unbalanced)
+HDTG	4 Dual output configurable SD/HD SDI Test/Black generators 2 NTSC/PAL test signal generator outputs 1 Stereo Analog Audio tone generator 1 DARS generator (balanced & unbalanced) 2 AES generators (balanced & unbalanced)
+3GTG	4 Dual output configurable SD/HD/3G SDI Test generators 2 NTSC/PAL test signal generator outputs 1 Stereo Analog Audio tone generator 1 DARS generator (balanced & unbalanced) 2 AES generator (balanced & unbalanced) Includes 3D test sets
+IRIG	LTC inputs and outputs are IRIG compatible

Accessories

WA-T76	Optional 100' weatherproof cable for GPS receiver
WA-T11	Optional 400' weatherproof cable for GPS receiver

For other weatherproof cable lengths, contact factory

For remote GPS head requirements greater than 400' cables or fiber optic isolation order:

7707GPS-DT	Dual GPS Data Fiber Transmitter
7707GPS-DR	Dual GPS Data Fiber Receiver
WA-T77	Optional 100' weatherproof cable for 7707GPS-DR to 5601MSC