

MASTER SPG, MASTER CLOCK, & TEST SET SYSTEM



Also Featured:
Evertz Digital & Analog Digital Time Displays



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COMBINATION MASTER SYNC PULSE

5600MSC MASTER SYNC AND TIME REFERENCE GENERATOR

The 5600MSC is a Master SPG, Master Clock and Master Time Code Generator all in one box. It provides analog black and HDTV tri-level sync signals and solves the problem of locking the in-house master clock system to the master video sync pulse generator. The separate 5600ACO automatic changeover unit completes the package.

A high stability, temperature controlled oscillator, provides the 5600MSC with better than 0.5×10^{-8} (0.005ppm) frequency reference. The free running drift of this 10MHz reference will be less than 0.1Hz (which amounts to less than 1 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. The 5600MSC 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 sections, may be referenced to high stability time and frequency standards present in the Global Position System (GPS) by adding the GPS option. The 5600MSC provides a high stability 10MHz output reference for use by other devices.



Master SPG functions

- 6 independently timetable black burst outputs
- PAL and NTSC blacks (simultaneously if required)
- 1Hz, 1/M Hz, 6/M Hz, PAL color frame
- HDTV tri-level sync (simultaneously with blacks if required)
- All HDTV standards
- 5/10 MHz input
- 10MHz output
- Optional NTSC/PAL, SDI and HDTV test generators
- DARS reference (optional with +STG test generator)
- Analog and AES audio tones (optional with +STG test generator)
- Sub carrier stability of better than 0.1Hz per month
- Optional GPS receiver with ATR video phasing
- Audio word clock may be generated from DARS with 520DARS-W module

Slave SPG functions

- Gen-lock mode for locking to other external black burst source

Test Generator options

- PAL/NTSC/SDI/AES/DARS Test Generator and Analog Audio Tone outputs
- HD-SDI Test Generator with Source Ident and Audio Tones (embedded)
- Multiple test signals; 28 SDI/PAL, 33 SDI/NTSC over 30 HDTV
- Programmable Audio Tones (continuous or interrupted)

Master Clock Time Code Generator functions

- Two master LTC time code generators - may be different frame rates and different times
- 23.98, 24, 25, 29.97 (drop frame and non-drop frame) and 30Fps Time Code
- Date in the user bits (4 standards supported + manual entry)
- Daylight saving time compensation
- 6 VITC timecode outputs (in video blacks). Can support 6 additional time zones
- Optional GPS receiver for time of day reference
- Optional modem for time of day reference
- Optional network time protocol server

GPS Reference Option

- The GPS receiver provides a reference for frequency, time and video, based on absolute time reference. Remote SPGs also locked to GPS reference, may be used to time remote sources and, as both SPGs are locked to GPS, no frames will be dropped or repeated. When two SPGs are employed with an auto-changeover, it is recommended that each SPG has it's own GPS receiver to ensure complete redundancy.

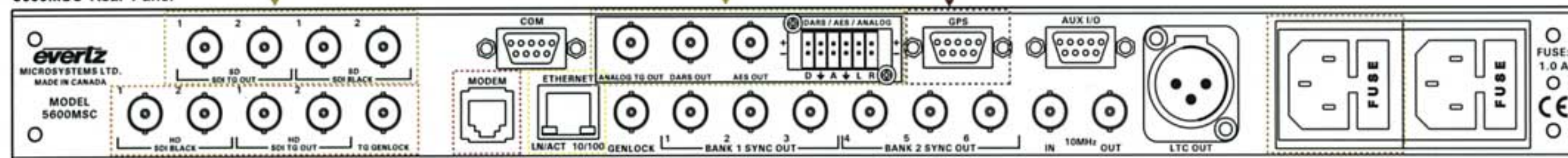
Standard Definition Test Generator (option +STG)

- 2 SDI test signal outputs for 625 or 525 line video, with 16 ch embedded audio; 2 digital blacks
- 1 analog test signal output for 625 line (PAL) or 525 line (NTSC)
- Analog audio tones pre-programmable as events (continuous or interrupted as required)
- Balanced and unbalanced DARS and AES/EBU audio tones
- Audio word clock may be generated from DARS with 520DARS-W module

GPS reference (option +G)

GPS heads may be removed 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).

5600MSC Rear Panel



HDTV Test Generator (option +HTG)

- 2 HD-SDI test gen and 2 HD-SDI black outputs
- 480p/59.94, 720p/59.94, 1080p/23.98sF, 1080i/59.94, 1080i/50 and 1080p/25sF
- Embedded audio and on-screen SID
- 4:4:4 Dual link mode

Internal Modem (option +M)

- Modem for time accessed by dialing a remote device at preprogrammed times

Network Time Protocol (option +T)

- RJ45 connector for Network Time Protocol option - precise time to computers

Redundant Power Supply (option +2PS)

- Second redundant power supply and separate power cord

Ordering information: 5600MSC + options (as indicated above) - Master SPG / Master Clock System

GENERATOR, MASTER CLOCK & TEST SET

5600ACO2 & 5600ACO AUTOMATIC CHANGEOVER

The 5600ACO/ACO2 Automatic Changeovers are intended for use with two 5600MSC Master Clock / Sync Generators. The 5600ACO/ACO2 system uses latching relays to ensure maximum reliability and minimal disruption in the event of any failure. The complete system provides the highest level of security for television station video and time synchronization systems. The 5600ACO is a 1RU device which is an ACO for a subset of the 5600MSC outputs. The 5600ACO2 is a 2RU ACO for all outputs of the 5600MSC. Two power supplies are included as a standard feature, to alleviate any single point of failure concerns.

The front panel has three switches, recessed into the panel for added security. There is an AUTO / MANUAL switch, a GPI / FRONT PANEL switch and an A / B select switch for manual changeover. In automatic mode, all signals from both 5600MSCs are monitored to detect any abnormal signals. For example if a level, pulse width, phase, time code error or other abnormality is detected, the 5600ACO2 circuitry will trigger and the entire bank of signals will be switched to the backup 5600MSC. In manual mode the changeover can be operated from a GPI or from the front panel switch. LEDs provide status information as to the health of the two 5600MSCs, together with indication as to which one is active. In addition two GPO outputs indicate which master is active and when the inputs from both masters are not the same.



5600ACO2



5600ACO

Features:

- Three front panel switches select automatic, front panel or GPI activation of changeover
- Front panel switches are recessed to prevent accidental operation
- Front panel status LEDs show the health of each of the inputs
- Front panel status LEDs show the operational modes of the changeover
- Redundant power supply standard
- GPIO input/outputs
- Automatic changeover is a voting system based on which source has the most valid signals and that the good signals on the present master are also on the backup

Protected Outputs:

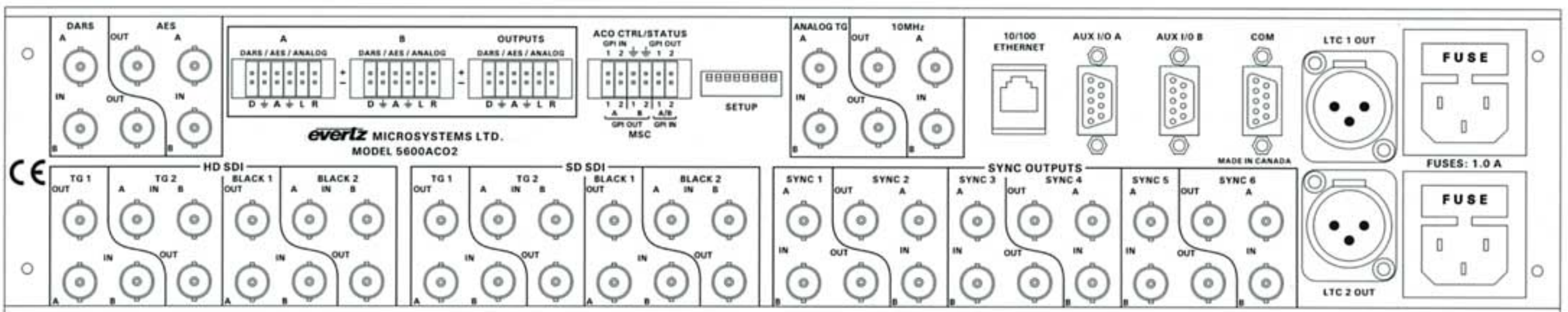
5600ACO2

- 6 video/sync outputs
- 10MHz frequency reference output
- Balanced and unbalanced DARS and AES outputs
- 2 Linear time code outputs
- 4 HD-SDI test signal outputs
- 4 SDI test signal outputs
- 1 Analog video test signal output
- Balanced analog audio output (Not monitored)

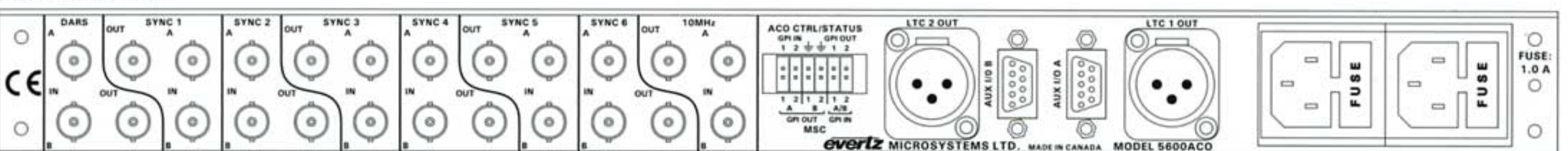
5600ACO

- 6 video/sync or other coaxial signals
- 10MHz frequency reference output
- DARS output
- 2 Linear Time Code outputs

5600ACO2 Rear Panel



5600ACO Rear Panel



Ordering information:

- 5600ACO2 - 2RU Automatic Changeover System complete with 2 power supplies, 2 power cords and 3 DB9 cables (BNC cables not included)
5600ACO - 1RU Automatic Changeover System complete with 2 power supplies, 2 power cords and 3 DB9 cables (BNC cables not included)

DIGITAL & ANALOG DIGITAL TIME DISPLAYS

1200DD & 1201DD DATA DIGITAL DISPLAY



- Completely self-setting with SMPTE/EBU timecode input or battery back-up
- Built-in quartz time base oscillator with battery back-up
- May be operated as a timecode reader for use with countdowns
- Digital display is user-selectable between HH:MM:SS, 12/24 hour, HH:MM:SS FF and date
- May be configured as a timecode generator to drive other clocks
- LED brightness is adjustable
- Runs on 50/60Hz, 115/230V AC power line
- User-programmable time offsets
- Rack mountable

Ordering Information:

1201DD - 1RU Rackmount Digital Display
1200DD - 2RU Rackmount Digital Display

1216 & 1212 REMOTE TIME DISPLAY



- SMPTE/EBU timecode input
- Three motors for quiet operation and rapid hand setting
- Addressable slave clocks with programmable time offsets
- Automatic daylight saving time adjustment
- Single cable distribution for both power and timecode
- Low voltage (12V) operation
- Master or slave operation with battery backed up clock
- Sweep or step second hand movement
- Optional illumination
- Two sizes 12" or 16"

Ordering Information:

1212 - 12" diameter analog clock display
1216 - 16" diameter analog clock display
1212L - 12" diameter analog clock display with back lighting
1216L - 16" diameter analog clock display with back lighting

1275A REMOTE TIME DISPLAY



The model 1275A is a multifunction time of day display, that can act as a slave to a master clock system or as a self contained, presettable clock.

- As a slave display the unit will read SMPTE/EBU time code. The user can program time zone offsets from the incoming code. The DQS-B6 code format can be ordered as a special order.
- As a standalone clock, it can be programmed to operate in either 12 or 24 hour mode. Two unobtrusive front panel push buttons allow presetting and accurate synchronization to a standard time source.
- An eight-position DIP switch permits user selection of four different operating and display modes and the time zone offset.

Ordering Information:

1275A-110 - Digital Clock Display 115V/60Hz
1275A-220 - Digital Clock Display 220V/50Hz
For DQS-B6 Order 1275A-xxx-DQS

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