

Ready for a range of audio and video testing with

4K systems



ESG-4000

4K/HD Test Signal Generator

Full range of test patterns, extensive outputs

Test signal generator that generates 4K signal (UHD 3840 x 2160p, Full 4K 4096 x 2160p). Distributes each of two lines (4K video) from quad-link 3G-SDI to two outputs, or two HD-SDI lines (HD video) to three outputs. Embeds 32-channel audio in 3G-SDI or 16-channel audio in HD-SDI output. Equipped with two outputs for MADI signals. Two lines independently configurable.

Features

Versatile 4K output support

Can produce any combination of 3G-SDI (Level-A/B) and Square Division (SQD)/2-Sample Interleave Division (2SI) signals, and 3840 x 2160p/4196 x 2160p resolution.

Video test patterns

Standard test patterns include color bars, ramp, steps, white, black, pathological, crosshatch, multiburst, and noise. Register up to 10 custom test patterns created via computer.

Colorimetry switching

Choose from ITU-R BT.2020 or ITU-R BT.709 for 4K testing (except for custom test patterns).

Test pattern scrolling

Scroll test patterns horizontally, vertically, or diagonally.

Character display

Display time codes or channel numbers on test patterns as needed.

Output frame frequency switching

Supports multiple formats.

Audio test signals

Outputs standard test signals (1 kHz, etc.) Test signals can also be customized by registering 10 computer-generated WAV (linear PCM) files.

Two-line output

One line (SG-1) for 4K and HD output is provided as standard. Able to support two-line output (SG-1, SG-2) with option. SG-1 and SG-2 independently configurable. 4K output can be distributed to two systems, and HD output to three.

Genlock

Output can be synced to an external reference signal, with BB or tri-level sync available for each of the three output lines.

External control, SNMP monitoring

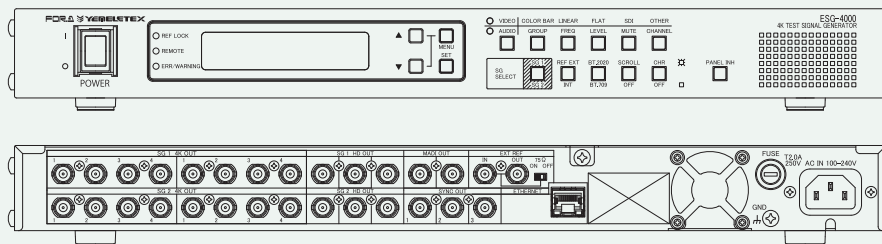
Control the unit via telnet, or monitor operation via SNMP.

Specifications

| | | |
|-------------------------------|---|---|
| Video output | 4K (3840 x 2160/4096 x 2160) | 3G-SDI BNCx4: 60p ¹ /59.94p/50p (Level A/B-DS) 3G-SDI BNCx2 ¹ : 30p/30PsF/29.97p/29.97PsF/25p/25PsF/24p/24PsF/23.98p/23.98PsF (Level B-DS) 2-line ² /2-way distributed, SMPTE ST 424-compliant Square Division (SQD) and 2-Sample Interleave Division (2SI) supported |
| | HD (1920 x 1080) | 3G-SDI BNCx1: 60p ¹ /59.94p/50p (Level A/B-DS) HD-SDI BNCx1: 60i ¹ /59.94i/50i/30p ¹ /30PsF ¹ /29.97p ¹ /29.97PsF ¹ /25p ¹ /25PsF ¹ /24p ¹ /24PsF ¹ /23.98p ¹ /23.98PsF ¹ 2-line ² /3-way distributed, SMPTE ST 292-1-compliant |
| Audio formats | 48 kHz, 24-bit, 32 channels (AES3-compliant) | |
| Audio output | 4K (SDI EMBEDDED) | BNC x2 (16 ch x2 ³ , 2 lines/2-way distributed) SMPTE ST 299-1-compliant |
| | HD (SDI EMBEDDED) | BNC x1 (16 ch x1, 2 lines/3-way distributed) SMPTE ST 299-1-compliant |
| | MADI | BNC x1 (32 ch x1, 2 lines) AES10-compliant |
| Reference input | BB: NTSC: 0.429 Vp-p/PAL: 0.45 Vp-p, SMPTE ST 170-compliant Tri-level sync: 0.6 Vp-p, SMPTE ST 240-compliant 75Ω, BNC x1 with loop-through | |
| Reference output | BNC x3 (tri-level sync or BB available for each) Formats: HD reference: Tri-level sync, SMPTE ST 240-compliant SD reference: BB, SMPTE ST 170/ST 318-compliant | |
| Time code output ⁴ | 4K (3G-SDI) | BNC x4 (shared with video output; 2 lines/2-way distributed) SMPTE ST 12-1/ST 12-2-compliant |
| | HD (HD-SDI) | BNC x1 (shared with video output; 2 lines/3-way distributed) SMPTE ST 12-1/ST 12-2-compliant |
| Interface | Ethernet: 10BASE-T/100BASE-TX (IEEE802.3), RJ-45 x1 | |
| Video output patterns | COLOR BAR group | Full color bar (100%/75%), SQD full color bar (100%/75%), Multi-format color bar (100%/75%), SQD multi-format color bar (100%/75%) |
| | LINEAR group | Y Ramp (UP/DOWN), Y Step (5/10), G Step (5/10), B Step (5/10), R Step (5/10) |
| | FLAT group | White (100%/50%), Black (100%/50%), Red (100%/50%), Blue (100%/50%), Green (100%/50%) |
| | SDI group | EQ, PLL, Pathological |
| | OTHER group | Crosshatch (NOR/REV), Multiburst, Noise, User (1-10) (Up to 10 frame test patterns created on a computer can be registered.) |
| Audio test signals | Multiplexing groups | Off, 1, 1+2, 1+2+3, 1+2+3+4 (Can specify audio packets to multiplex into the four lines of SDI output.) |
| | Audio frequency | 400 Hz, 800 Hz, 1 kHz, 2 kHz, 3 kHz, 4 kHz, 6 kHz, 8 kHz, 10 kHz, 12 kHz, User (1-10) User (1-10): Register a custom WAV (linear PCM) file up to 30 sec. |
| | Audio level | 0 dBFS, -6 dBFS, -12 dBFS, -18 dBFS, -20 dBFS, -22 dBFS, -24 dBFS, MUTE (Signal levels in registered audio files cannot be adjusted, except for MUTE.) |
| | Audio mute | MUTE OFF, MUTE CH1 to 4, MUTE CH2 to 4, MUTE CH3 to 4, MUTE CH4 |
| | Audio channel | ALL OFF, 1 ON, 1 to 2 ON, 1 to 3 ON, 1 to 4 ON (Audio channels can be enabled or disabled using active channel data in audio control packets.) |
| Temperature/humidity | 0°C to 40°C / 10% to 80% (no condensation) | |
| Power/consumption | 100 V AC to 240 V AC±10%, 50/60 Hz / Max. 80 W (at 100 V AC) | |
| Dimensions/weight | 430 (W) x 44 (H) x 450 (D) mm / 6 kg | |
| Consumables | Cooling fans (to be replaced every 5 years) Power unit (to be replaced every 3 years) | |
| Accessories | AC cord, Rack mount brackets, CD-ROM (Operation manuals) | |
| Options | ESG-40SG2: SG-2 option | |

*1: Planned for spring 2016 release *2: Optional *3: 8 ch x2 when set to a horizontal resolution of 4096 *4: Multiplexed time codes represent time information in free-run mode

External View



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