



# Easy to See Time Lag



## EDD-5200 Time Lag Checker

**This equipment can measure the video delay time, audio delay time, difference between audio channels and difference between video and audio using test time code (hereafter called TTC) signals.**

- Generates TTC signals whose phases are the same as those of video, audio or VANC signals and outputs them as video, audio or VANC.
- Measures video and audio delay time by routing video and audio signals back to Time Lag Checkers through the desired devices and lines, and by comparing the time from output to input (return). Also measures video and audio delay time of devices or lines by comparing phases of TTC signals that are routed back to Checkers.
- Estimates delay time in long distance with GPS using two Time Lag Checkers.

### Features

#### 3G-SDI, HD-SDI and SD-SDI Supported

The Time Lag Checker supports the following video and audio standards:

##### Video standards

- SMPTE 259M 270Mbps SD-SDI (D1 NTSC,PAL)
- SMPTE 292M 1.485Gbps, 1.485/1.001Gbps HD-SDI (1080i 50/59/60,720p 50/59/60)
- SMPTE 424M 2.97Gbps, 2.97/1.001Gbps 3G-SDI (1080p 50/59/60)

\*3G SDI: "Level A YC4:2:2 10bit" and "Level B Dual-link YC4:2:2 10bit" only

##### Audio standards

- AES/EBU
- Embedded Audio(8ch)

#### Long Distance Delay Measurements

Long distance delay measurements are possible using two Time Lag Checkers whose clocks are synchronized with a GPS clock. Audio and video delay time in long distance can be measured without GPS synchronization. \* Measurements using GPS cannot be performed if four or more GPS satellites cannot be acquired due to the lack of antenna coverage or weather conditions.

#### Various Measurement Modes

- Delay time of video and audio
- Video transmission delay time
- Delay time of video and VANC
- Audio transmission delay time
- Delay between audio channels in various combinations
- Delay measurement of signals with different formats (with some restrictions)

#### Measurement Log Output

All information required for delay calculations, such as time codes, reference signal information and delay measurement values against reference signals, can be output from the Checker to a computer via Ethernet for later analysis on the computer.

#### High Accuracy Measurements

- The accuracy of measurements is within 0.001 msec.
- \* Within 1 msec for Embedded SD Audio.
- \* Excluding cases when GPS satellites cannot be acquired

#### Multiplexing TTC onto Input Video Signals

Compression, decompression or other performances of video or audio devices can be evaluated according to video sources by multiplexing TTC onto input video signals.

#### Difference Measurements between Video and VANC

Differences between video and VANC can be measured by multiplexing TTC signals into VANC areas.

#### Built-in High Precision Clock(synchronized by GPS)

In open air, synchronize the Checker's clock with a GPS clock. Once the clock synchronization is performed, the clock keeps time within 1 ms accuracy while GPS LED is lit green (about 3 hours).

## Specifications

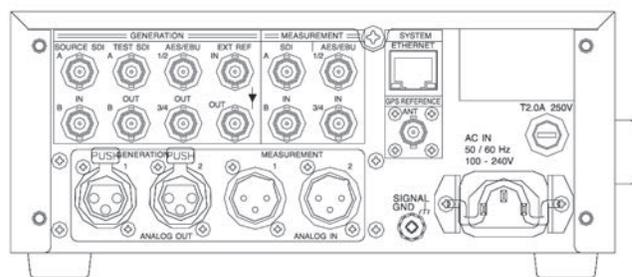
Video Format	3G-SDI	SMPTE425M 1080p 50/59/60 (Level A YC4:2:2 and Level B YC4:2:2 10bit Dual-Link structure only)
	HD-SDI	SMPTE274M 1080i 50/59/60 SMPTE296M 720p 50/59/60
	SD-SDI	SMPTE125M 480i ITU-R BT656 576i
Signal Generation	SDI Output	3G-SDI SMPTE424M / 2.97 (1.485/1.001) Gbps
		HD-SDI SMPTE292M / 1.485 (1.485/1.001) Gbps
		SD-SDI SMPTE259M / 270 Mbps
		800 mVp-p (75-ohm) ±10% BNC
	AES/EBU output	AES/EBU, 4ch 1.0 Vp-p (75-ohm) ±10% BNC x 2
	Embedded audio output	SMPTE272M/299M PCM 48kHz 8ch
	Test signals	Luster signal, Color bars (scroll)
Measurement	SDI Input	(Same as SIGNAL GENERATION) 800 mVp-p (75-ohm) BNC
	AES/EBU input	AES/EBU, 4ch 1.0 Vp-p (75-ohm) BNC x 2
	Embedded audio input	SMPTE272M/299M PCM 48kHz 8ch
	Range	18.999999 sec (maximum range between TTC and signal) on a 0.001 msec basis (9.999999 sec: range between signals)
	Accuracy	Within ±0.001 msec (when in the same frame rate)
	Display units	sec/ms or sec/frame/ms
Panel	LED indicators	Video detection, Audio detection, GPS input
	Panel operation	Measurement target and mode selection using panel keys
	Display	Delay time value / Measurement value
Other I/O	Reference input	HD Tri-level sync: 0.6Vp-p/75-ohm or Composite sync: 0.286Vp-p (0.3Vp-p)/75-ohm BNC (75Ω termination required.)
	GPS input	BNC, 50-ohm, 3V GPS reception: SPS 50ch, L 1 C/A code Cold start: 28 seconds (5 to 10 minutes required for clock synchronization)
	ETHERNET	10BASE-T/100BASE-TX, For measurement data output and maintenance
Other	Power	100 VAC - 240 VAC ±10% 50/60Hz
	Power consumption	Less than 25 W
	Temperature / Humidity	+5°C to 40°C / Less than 90% (no condensation)
	Dimensions	200 (W) x 88 (H) x 350 (D) mm (excluding ledges)
	Weight	Approx. 4 kg

## Outside Pictures

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### FOR-A COMPANY LIMITED

Head Office : 3-8-1 Ebisu, Shibuya-ku, Tokyo 150-0013, Japan

FOR-A Corporation of America Corporate Office : 11155 Knott Ave., Suite G&H, Cypress, CA 90630, USA

FOR-A Corporation of America East Coast Office : 2 Executive Drive, Suite 670, Fort Lee Executive Park, Fort Lee NJ 07024, USA

FOR-A Corporation of America Distribution & Service Center : 2400 N.E. Waldo Road, Gainesville, FL 32609, USA

FOR-A Corporation of America Miami Office : 5200 Blue lagoon Drive, Suite 760, Miami, FL 33126, USA

FOR-A Corporation of Canada : 346A Queen Street West, Toronto, Ontario M5V 2A2, CANADA

FOR-A UK Limited : UNIT C71, Barwell Business Park, Leatherhead Road, Chessington Surrey, KT9 2NY, UK

FOR-A Italia S.r.l. : Via Voltorno, 37, 20047, Brugherio MB, ITALY

FOR-A Corporation of Korea : 1007, 57-5, Yangsan-ro, Yeongdeungpo-gu, Seoul 150-103, KOREA

FOR-A China Limited : 708B Huateng Building, No. 302, 3 District, Jinsong, Chaoyang, Beijing 100021, CHINA

FOR-A Middle East-Africa Office : Jebel Ali Free Zone, LOB-16, Office 619, P.O. Box: 261914 Dubai, UAE

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Homepage: <http://www.for-a.com/>

Tel : +81 (0)3-3446-3936

Tel : +1 714-894-3311

Tel : +1 201-944-1120

Tel : +1 352-371-1505

Tel : +1-305-931-1700

Tel : +1 416-977-0343

Tel : +44 (0)20-8391-7979

Tel : +39 039-881-086/103

Tel : +82 (0)2-2637-0761

Tel : +86-(0)10-8721-6023

Tel : +971 4 887 6712

Fax : +81 (0)3-3446-1470

Fax : +1 714-894-5399

Fax : +1 201-944-1132

Fax : +1 352-378-5320

Fax : +1-305-264-7890

Fax : +1 416-977-0657

Fax : +44 (0)20-8391-7978

Fax : +39 039-878-140

Fax : +82 (0)2-2637-0760

Fax : +86-(0)10-8721-6033

Fax : +971 4 887 6713