

# 3G/HD/SD FRAME RATE CONVERTER **FRC-9000**

Enhanced operation and expandability at affordable pricing  
 Capable of 4K support using optional software



- | 3G/HD/SD multi-format support
- | SD to 3G/HD up conversion
- | Conversion with Motion Compensation Processing
- | Interlace-to-Progressive conversion
- | 4K (UHD, SQD/2SI) support (Optional)
- | Up/down/cross frame rate conversions between 4K and HD (Optional)
- | Simultaneous conversion of 2-channel video inputs (Optional: when using 3G/HD-SDI)

## 4K/HD multi-format supported.

Simultaneous conversion of 2-channel video inputs also available with option.

- | 1-ch HD IN distributed to 4 HD OUT



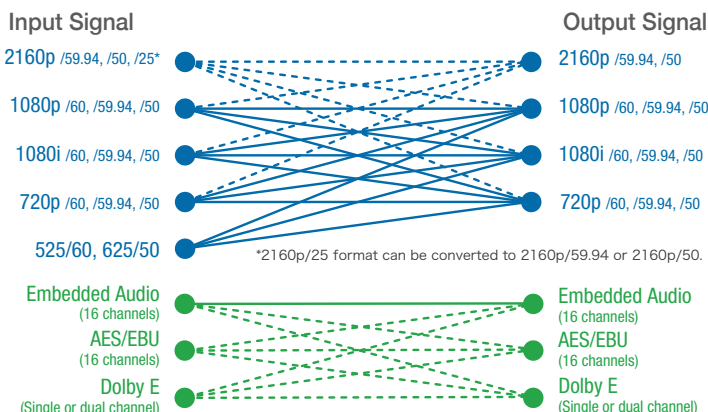
- | Simultaneous conversion of 2 HD channels (Optional)



- | 4K SQD support (Optional)



## Various frame rate conversion



## Other features

- | Scene Cut Detection
- | Genlock
- | Front touch panel and web browser control
- | 16-channel AES/EBU I/O (48kHz,24-bit : Optional)
- | FRC-90DA (Optional): AES/EBU digital audio
- | FRC-90DM\* (Optional): Dolby E 2-channel encoder/decoder

\*required FRC-90DA mounted

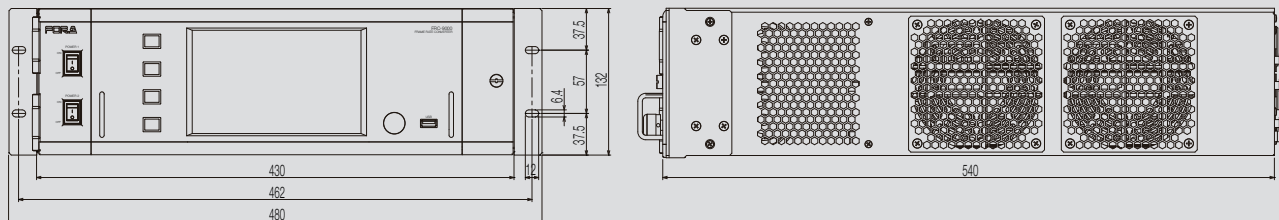
## Specifications

Video format	4K: 2160/59.94p, 2160/50p (quad link 3G-SDI, Level-A/B, SQD/2SI), 2160/25p (quad-link 3G-SDI, SQD)(optional) HD: 1080/60p, 1080/59.94p, 1080/50p (Level-A/B) 1080/60i, 1080/59.94i, 1080/50i, 720/60p, 720/59.94p, 720/50p SD: 525/60, 625/50
Frame rate conversion	[2160p/59.94, 50], [1080p, 1080i, 720p/60, 59.94, 50] ↔ [2160p/59.94, 50], [1080p, 1080i, 720p/60, 59.94, 50] (optional) 2160p/25 → 2160p/59.94, 50 (optional) 1080p, 1080i, 720p/60, 59.94, 50 ↔ 1080p, 1080i, 720p/60, 59.94, 50 525/60, 625/50 → 1080p, 1080i, 720p/60, 59.94, 50
Video Inputs	3G/HD/SD-SDI: 3 Gbps/1.5 Gbps/270Mbps 75Ω BNC x 4
Video Output	3G/HD-SDI: 3 Gbps/1.5 Gbps 75Ω BNC x 4 Pass-through input to output is possible (relay circuit)
Quantization	3G/HD/SD-SDI: 10-bit
Genlock input	BB: NTSC: 0.429 Vp-p/PAL: 0.45 Vp-p or Tri-level sync: 0.6 Vp-p, 75Ω or loop-through, BNC x 2 (Terminate with 75Ω terminator, if unused.)
I/O delay	+5 to +1000 ms (depending on input/output formats) (Ex: I/O delay when converting from 1080/59.94i to 1080/50i: Approx. 105 ms)
Audio Input	Embedded audio: 4 groups (16 channels) 48 kHz 16-bit to 24-bit, synchronous/asynchronous
Audio Input (FRC-90DA)	AES/EBU: 1.0 Vp-p unbalanced 16 stereo pairs, 32/44.1/48 kHz, 16-bit to 24-bit, 75Ω, BNC x 16 Metadata input: 9-pin D-sub (female) x 2 Reference input: BB: NTSC: 0.429 Vp-p/PAL: 0.45 Vp-p or Tri-level sync: 0.6 Vp-p, 75Ω, BNC x 2
Audio Output	Embedded audio: 4 groups (16 channels) 48 kHz, 16-/20-/24-bit, synchronous/asynchronous
Audio Output (FRC-90DA)	AES/EBU: 1.0 Vp-p unbalanced 16 stereo pairs, 48 kHz, 16-/20-/24-bit, 75Ω, BNC x 16 Metadata output: 9-pin D-sub (female) x 2 Audio delay adjustment: +5 to +1000 ms (in 1 ms step) for each channel Gain adjustment: -20 dB to +20 dB (in 0.1 dB step) for each channel Audio processing: SRC (Sample Rate Converter), Down mix, Channel re-mapping, Channel mute
Ancillary data	Audio data, Audio metadata embedding/de-embedding
Interface	LAN 100BASE-TX/1000BASE-T RJ-45 1 port For web browser and Dolby Metadata Configure GUI connections
Temperature/Humidity	0°C to 40°C/30% to 85% (no condensation)
Power	100 V AC to 240 V AC, 50/60 Hz
Power consumption	504 VA at 100 V, 516 VA at 240 V
Dimensions/Weight	430 (W) x 132 (H) x 540 (D) mm FRC-9000: 20.5 kg, FRC-90DA: 2.4 kg
Accessories	Rack mount brackets, AC cord, CD-ROM (operation manual)
Consumables	Power unit: replace every 5 years (at room temperature), Cooling fan: replace every 4 years (at room temperature)
Options	FRC-90DA: AES/EBU digital audio, FRC-90DM: Dolby E 2-channel encoder/decoder, FRC-902C: 3G/HD-SDI 2ch option, FRC-904K: 4K option

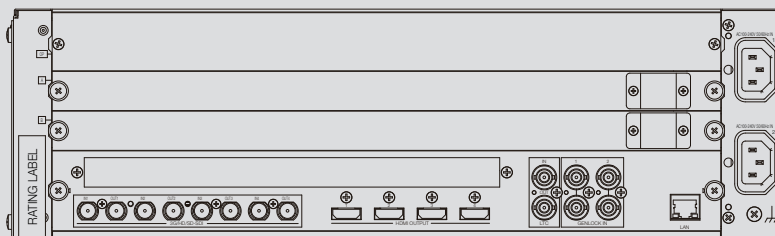
\* Dolby is a registered trademark of Dolby Laboratories.

### External Dimensions

Unit: mm



### Rear Panel



**FOR.A**<sup>®</sup>  
INNOVATIONS IN VIDEO  
and AUDIO TECHNOLOGY

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 Northeast Office:**

2 Executive Drive, Suite 670, Fort Lee, NJ 07024, USA

**FOR-A Corporation of America Southeast Office:**

8333 North West 53rd Street, Suite 450, Doral, FL 33166, USA

**FOR-A Corporation of America Service Center:**

2400 N.E. Waldo Road, Gainesville, FL 32609, USA

**FOR-A Europe S.r.l.:**

Via Volturmo, 37, 20861 Brugherio MB, Italy

Tel: +1-714-894-3311

Tel: +1-201-944-1120

Tel: +1-305-931-1700

Tel: +1-352-371-1505

Tel: +39-039-916-4811

**FOR-A UK Limited:**

Trident Court, 1 Oakcroft Road, Chessington, KT9 1BD, UK

**FOR-A Italia S.r.l.:**

Via Volturmo, 37, 20861, Brugherio MB, Italy

**FOR-A Middle East-Africa Office:**

Dubai Media City, Aurora Tower, Office 1407, P.O. Box 502688, Dubai, UAE

**AGIV (India) Private Limited:**

2nd Floor, Valecha Chambers, Link Road, Andheri (W), Mumbai 400053, India

**FOR-A South East Asia Office:**

Studio 09, Rm. A1, 3/F., Phase 1, Hang Fung Ind. Bldg., 2G Hok Yuen St., Hung Hom, Hong Kong

ISO 9001 and 14001 certified  
(Sakura R&D)

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

Tel: +44-(0)20-3044-2935

Tel: +39-039-881-086/103

Tel: +971-(0)4-551-5830

Tel: +91-22-2673-3623

Tel: +852-2110-9227