Specifications

Audio resolution

- Recording media
  SD/SDHC cards
  CompactFlash (CF) cards

- File system
  FAT32 (4 GB or more)
  FAT16 (2 GB or less)

- File formats
  BWF (Broadcast Wave Format)
  WAV (Waveform Audio File Format)

- Number of channels
  2 channels

- Quantization bit depths
  16-bit, 24-bit

- Sampling frequencies
  44.1/48/88.2/96/176.4/192 kHz

- Clock reference types
  INTERNAL, WORD IN, VIDEO IN, DIGITAL IN
• Timecode frame rates
  23.976, 24, 25, 29.97DF, 29.97NDF, 30DF, 30NDF

Inputs and outputs

Analog audio inputs and outputs
The error for nominal and maximum levels is ±1 dB or less for all input and output jacks except the PHONES jack.

• ANALOG IN L/R (BALANCED)
  Input impedance: 4.3 kΩ
  Nominal input level: +4 dBu (1.23 Vrms) ±1 dB
      (+6 dBu when maximum input level is set to +15 dBu)
      (+6 dBu when Digital Ref. Level is set to −9 dB)
  Maximum input level (selectable): +15 dBu (4.36 Vrms) (D.Ref: −9 dBFS, A.Input: +6 dBu)
      +18 dBu (6.16 Vrms) (D.Ref: −14 dBFS, A.Input: +4 dBu)
      +20 dBu (7.75 Vrms) (D.Ref: −16 dBFS, A.Input: +4 dBu)
      +22 dBu (9.76 Vrms) (D.Ref: −18 dBFS, A.Input: +4 dBu)
      +24 dBu (12.3 Vrms) (D.Ref: −20 dBFS, A.Input: +4 dBu)
  D. Ref: Digital Ref. Level setting
  A. Input: Analog Input Ref. Level setting.

• ANALOG IN L/R (UNBALANCED)
  Connectors: RCA pin jacks
  Input impedance: 3.9 kΩ
  Nominal input level: −10 dBV (0.316 Vrms) ±1 dB
  Maximum input level: +6 dBV (2.0 Vrms) ±1 dB

• ANALOG OUT L/R (BALANCED)
  Output impedance: 100 Ω or less
  Nominal output level: +4 dBu (1.23 Vrms) ±1 dB
      (+6 dBu when Digital Ref. Level is set to −9 dB)
  Maximum output level (selectable): +15 dBu (4.36 Vrms) (D.Ref: −9 dBFS, A.Output: +6 dBu)
      +18 dBu (6.16 Vrms) (D.Ref: −14 dBFS, A.Output: +4 dBu)
      +20 dBu (7.75 Vrms) (D.Ref: −16 dBFS, A.Output: +4 dBu)
      +22 dBu (9.76 Vrms) (D.Ref: −18 dBFS, A.Output: +4 dBu)
      +24 dBu (12.3 Vrms) (D.Ref: −20 dBFS, A.Output: +4 dBu)
  D. Ref: Digital Ref. Level setting
  A. Output: Analog Out Ref. Level setting

• ANALOG OUT L/R (UNBALANCED)
  Connectors: RCA pin jacks
  Output impedance: 100 Ω or less
  Nominal input level: −10 dBV (0.32 Vrms) ±1 dB
  Maximum input level: +6 dBV (2.0 Vrms) ±1 dB

• PHONES jack
  Connector: standard 6.3 mm (1/4”) stereo jack
  Maximum output level: 45 mW + 45 mW or more (THD+N 0.1% or less, into 32 Ω)
Digital audio inputs and outputs

**DIGITAL IN (S/PDIF)**
- Connector: RCA pin jack
- Input signal voltage amplitude: 200 mVP-p to 600 mVP-p/75 Ω
- Input impedance: 75 Ω
  IEC60958–3 (S/PDIF)
- Supported sampling frequencies: 44.1/48/88.2/96/176.4/192 kHz (Single/Double/Quad)
  When SRC is ON, the receivable range is 32–192 kHz.

**DIGITAL IN (AES/EBU)**
- Connector: XLR–3–31
- Input signal voltage range: 200 mVP–p to 10 Vp–p/110 Ω
- Input impedance: 110 Ω ±20%
  IEC60958–3 (S/PDIF)
- Supported sampling frequencies: 44.1/48/88.2/96/176.4/192 kHz (Single/Double/Quad)
  When SRC is ON, the receivable range is 32–192 kHz.

**DIGITAL OUT (S/PDIF)**
- Connector: RCA pin jack
- Output voltage: 0.5 Vpp ±20%/75 Ω
- Input impedance: 75 Ω
- Format: IEC60958–3 (S/PDIF)
- Supported sampling frequencies: 44.1/48/88.2/96/176.4/192 kHz (Single/Double/Quad)

**DIGITAL OUT (AES/EBU)**
- Connector: XLR–3–32
- Output voltage: 2–5 Vp–p/110 Ω
- Output impedance: 110 Ω ±20%
- Supported sampling frequencies: 44.1/48/88.2/96/176.4/192 kHz (Single/Double/Quad)

Control input/output ratings

**RS–422 (attached with optional SY–2 board)**
- Connector: D-sub 9-pin (female, inch specification)

**RS–232C**
- Connector: D-sub 9-pin (female, inch specification)

**PARALLEL**
- Connector: D-sub 25-pin (female, inch specification)

**TIMECODE IN (attached with optional SY–2 board)**
- Connector: BNC
- Signal voltage amplitude: 0.5–5 Vp–p
- Input impedance: 10 kΩ
- Format: SMPTE 12M–1999 compliant
**TIMECODE OUT (attached with optional SY-2 board)**
- Connector: BNC
- Signal voltage amplitude: 2 Vp–p
- Output impedance: 600 Ω
- Format: SMPTE 12M–1999 compliant

**WORD/VIDEO IN**
- Connector: BNC
- Input voltage: 5V TTL equivalent (WORD IN)
- Signal voltage amplitude: 1 Vp–p (VIDEO IN)
- Input impedance: 75 Ω ±10%
- Allowable frequency deviation of external synchronization: ±100 ppm
- Includes switch for enabling termination
- Input frequencies (WORD): 44.1/48/88.2/96/176.4/192 kHz
- Input signal (VIDEO): 24/25/29.97/30 Frame (NTSC/PAL Black burst, HDTV Tri-Level)

**WORD/VIDEO THRU/OUT**
- Connector: BNC
- Signal voltage amplitude: 5V TTL equivalent
- Output impedance: 75 Ω ±10%
- Output frequency (WORD): 44.1/48/88.2/96/176.4/192 kHz
- Frequency stability ±10 ppm or less (Ta = 20° C)
- OUT/THRU switch included (OUT is only for WORD OUT)

**ETHERNET**
- Connector: RJ45
- Compatibility: 100BASE-TX, 1000BASE-T

**KEYBOARD**
- Connector: Mini-DIN (PS/2)

**USB**
- Connector: USB A–type 4–pin
- Protocol: USB 2.0 HIGH SPEED (480 Mbps) compliant

**REMOTE**
- Connector: RJ45
- Supply voltage: 13 V
- Signal: LVDS serial

**Audio performance**

**Frequency response**
ANALOG IN to ANALOG OUT:
- 20 Hz – 20 kHz: ±0.5 dB
  - (Fs = 44.1/48 kHz, JEITA) (recording and playback)
- 20 Hz – 40 kHz: +0.5 dB/−2 dB
  - (Fs = 88.2/96 kHz, JEITA) (recording and playback)
- 20 Hz – 80 kHz: +0.5 dB/−5 dB
  - (Fs = 176.4/192 kHz, JEITA) (recording and playback)
• Distortion
  ANALOG IN to ANALOG OUT: 0.005% or less (JEITA)
  (recording and playback)

• S/N ratio
  ANALOG IN to ANALOG OUT: 100 dB or more (JEITA)
  (recording and playback)

General

• Power
  AC 100–240 V, 50–60 Hz

• Power consumption
  22 W

• Dimensions (W × H × D)
  482.6 x 94 x 314.1 mm (including protrusions)

• Weight
  4.7 kg

• Operating temperature range
  5–35ºC

PARALLEL connector

The PARALLEL connector on the rear panel allows external control of this unit. (A TASCAM RC-SS20 can also be connected.)

The pin assignments are as follows.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
<td>GND</td>
<td></td>
<td>14</td>
<td>REMOTE_SELECT_H or Open</td>
<td>REMOTE_SELECT_L</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>PLAY</td>
<td>FLASH 1</td>
<td>I</td>
<td>15</td>
<td>PAUSE</td>
<td>FLASH 6</td>
<td>I</td>
</tr>
<tr>
<td>3</td>
<td>STOP</td>
<td>FLASH 2</td>
<td>I</td>
<td>16</td>
<td>(Reserved)</td>
<td>FLASH 7</td>
<td>I</td>
</tr>
<tr>
<td>4</td>
<td>RECORD</td>
<td>FLASH 3</td>
<td>I</td>
<td>17</td>
<td>AUX1, FF</td>
<td>FLASH 8</td>
<td>I</td>
</tr>
<tr>
<td>5</td>
<td>SKIP FWD</td>
<td>FLASH 4</td>
<td>I</td>
<td>18</td>
<td>AUX2, REW</td>
<td>FLASH 9</td>
<td>I</td>
</tr>
<tr>
<td>6</td>
<td>SKIP BWD</td>
<td>FLASH 5</td>
<td>I</td>
<td>19</td>
<td>AUX3, MARK</td>
<td>FLASH 10</td>
<td>I</td>
</tr>
<tr>
<td>7</td>
<td>(Reserved)</td>
<td>STOP</td>
<td>I</td>
<td>20</td>
<td>(Reserved)</td>
<td>FLASH_PAGE</td>
<td>I</td>
</tr>
<tr>
<td>8</td>
<td>FADER_START</td>
<td>FADER_START</td>
<td>I</td>
<td>21</td>
<td>(Reserved)</td>
<td>(Reserved)</td>
<td>O</td>
</tr>
<tr>
<td>9</td>
<td>(Reserved)</td>
<td>(Reserved)</td>
<td>O</td>
<td>22</td>
<td>TALLY,SD</td>
<td>TALLY,SD²</td>
<td>O</td>
</tr>
<tr>
<td>10</td>
<td>TALLY_PAUSE</td>
<td>TALLY_PAUSE</td>
<td>O</td>
<td>23</td>
<td>(Reserved)</td>
<td>(Reserved)</td>
<td>O</td>
</tr>
<tr>
<td>11</td>
<td>TALLY, RECORD</td>
<td>RESERVED</td>
<td>O</td>
<td>24</td>
<td>TALLY_CF</td>
<td>TALLY_CF²</td>
<td>O</td>
</tr>
<tr>
<td>12</td>
<td>TALLY_STOP</td>
<td>TALLY_STOP</td>
<td>O</td>
<td>25</td>
<td>+5V²</td>
<td>+5V²</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>TALLY_PLAY</td>
<td>TALLY_PLAY</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I: Command input for transport control
  Internal circuit, +5V pull-up
  Triggers from a low input level of 50 msec or more

O: Command output, for tally output
  The internal circuit is open collector
  (10Ω output impedance)
  Low command output when operating
  20V dielectric strength, 35mA maximum current
1For RC-SS20, assigned to CF indicator
2For RC-SS20, assigned to CD indicator
3+5V: maximum supplied current is 50 mA

When REMOTE Select (pin 14) is set to high, it can be used as an ordinary parallel controller. When set to low, flash start mode is enabled. In addition, depending on the high/low setting of the Flash Page (pin 20), the key assignments are as follows.

<table>
<thead>
<tr>
<th>Pin 14</th>
<th>Pin 20</th>
<th>Flash start take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
<td>1–10</td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
<td>11–20</td>
</tr>
</tbody>
</table>

■ Dimensional drawings
■ Block diagram

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