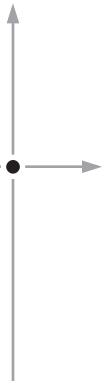# T2
INTELLIGENT DIGITAL DISK RECORDER

User Manual — Front Panel mode —

17 September, 2009

grass valley

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- The screens used as examples in this manual are those of the development stage, so they may vary from those in the final product.

- If there are any variations between the explanation in this manual and the actual application method, priority is given to the actual application method.

- This manual is written for people who have a basic knowledge of how to use a computer. If there are no special instructions, perform the same operation as a normal computer operation.

- In this manual, the system of the T2 is called "Workstation".

Warning

- Health precautions

    In rare cases, flashing lights or stimulation from the bright light of a computer display or TV monitor may trigger temporary epileptic seizures or loss of consciousness. It is believed that even individuals whom have never experienced such symptoms may be susceptible. If you or close relatives have experienced any of these symptoms, consult a doctor before using this product.

Contents

Section 1

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Setup

Overview

The T2 is a multi-channel digital video recorder that allows simultaneous recording and playback of media stored on internal disk drives. The T2 features a single recording channel (R1) and two playback channels (P1/P2). The quantity of hours recorded depends on the video compression settings that are selected. The front panel touch screen and TFT display, along with front panel transport controls, allow easy operation and monitoring with minimal external connections.

With the Jog/Shuttle or the external controllers, variable speed playback is available.

Features

- Supporting a high quality "Canopus HQ Codec", the T2 can handle videos in full resolution (1920x1080), 4:2:2 color space, and up to 200Mbps.

- The T2 can load and play HQ videos edited on Grass Valley EDIUS, without any additional encoding.

- Equipped with 1 input line and 2 HD/SD-SDI output lines, recording and playback are available simultaneously, as well as playbacks with the 2 output channels perfectly synchronized.

- Supports RS-422A deck controls.

- Supports remote controls via GPI.

- Equipped with a 7-inched touch screen LCD and a jog/shuttle knob, the T2 can be operated as a stand-alone unit.

- Supports file import in various formats including QuickTime* and Windows Media.
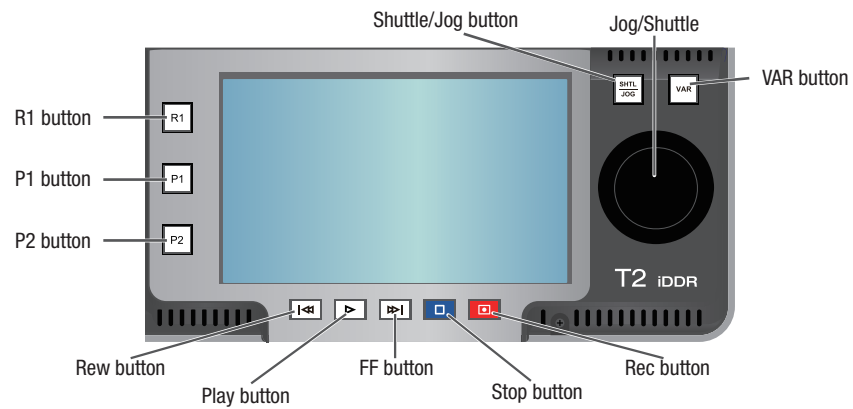
  * QuickTime is not supported in some codecs.

Part names and functions

Front panel
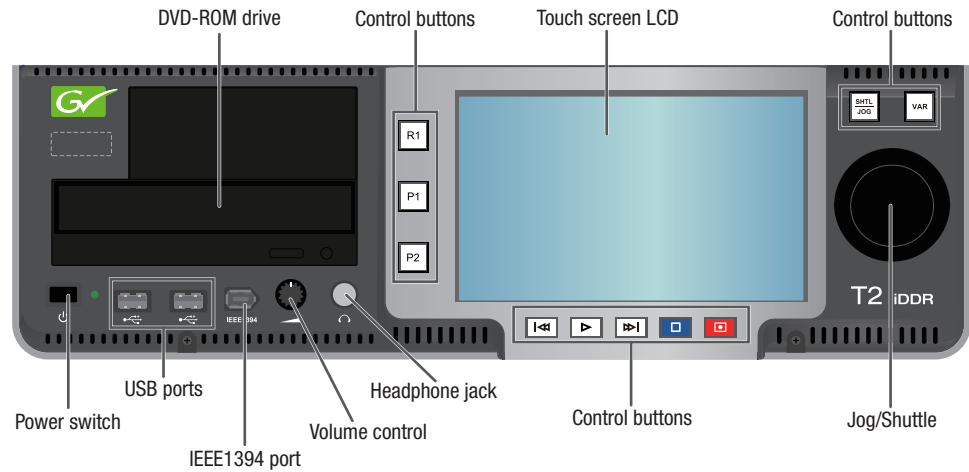
Touch screen LCD	Displays the T2 screens. By touching on the items displayed on screen, T2 can be operated.
DVD-ROM drive	Used to import video/audio media files stored on DVD-ROM. * Does not support DVD-Video playback.
Power switch	Turns on/off the T2.
USB ports	Used to connect USB removable devices.
IEEE1394 port	Used to connect IEEE1394 removable devices. * Does not support the connection of DV/HDV devices.
Volume control	Used to adjust the headphone volume.
Headphone jack	Used to connect a headphone.
Jog/Shuttle	(See *next page*)
Control buttons	(See *next page*)

Control buttons

Shuttle/Jog button   Jog/Shuttle

VAR button

R1 button

P1 button

P2 button

T2 iDDR

Rew button   FF button   Rec button

Play button   Stop button

|	
R1 button	Switches the Recorder channel to active.
P1 button	Switches the Player1 channel to active.
P2 button	Switches the Player2 channel to active.
Rew button	Moves back frame by frame. Keep pressing the button will fast-rewind.
Play button	Starts playback.
FF button	Moves forward frame by frame. Keep pressing the button will fast-forward.
Stop button	Stops playback/recording.
Rec button	Starts recording.
Shuttle/Jog button	Makes Jog/Shuttle active. (Switches modes from **VAR** button.)
VAR button	Executes variable speed playback. (Opens the control screen. Switches modes from **Shuttle/Jog** button.)
Jog/Shuttle	Executes jog playback, shuttle playback.
Rew + Stop buttons	While playing a clip 　Moves to the previous IN/OUT point, or the top of the clip. While playing a playlist 　Moves to the previous event.
FF + Stop buttons	While playing a clip 　Moves to the next IN/OUT point, or the end of the clip. While playing a playlist 　Moves to the next event.

Rear panel
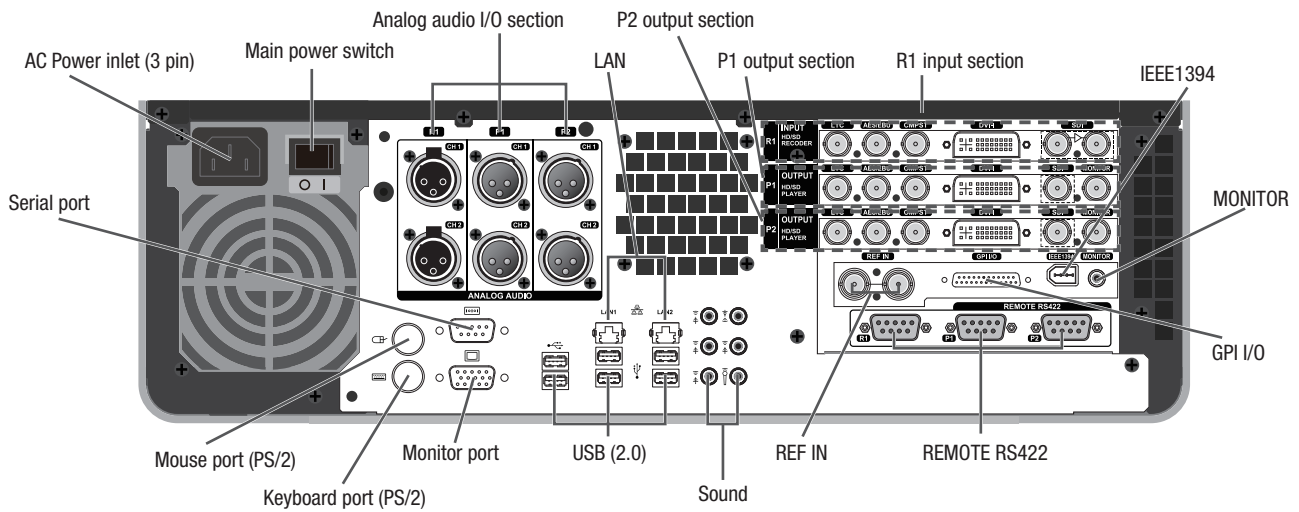
AC Power inlet (3 pin)	Use the supplied power cable and connect to the AC power.
Main power switch	Turns the main power ON/OFF.
Analog audio I/O section	Used for analog audio I/O.
Mouse port (PS/2)	Used to connect a mouse.
Keyboard port (PS/2)	Used to connect a keyboard.
Serial port	Not used.
Monitor port	Used to connect a PC monitor.
USB (2.0)	Used to connect a keyboard or mouse.
LAN	Used to connect a LAN cable.
Sound	Not used.
R1 input section	Used for inputting to the R1 channel.
P1 output section	Used for outputting from the P1 channel.
P2 output section	Used for outputting from the P2 channel.
REF IN	Used to input REF signal.
GPI I/O	Used for GPI I/O.
IEEE1394	Used to connect a device via IEEE1394.
MONITOR	Used for audio monitor.
REMOTE RS422	Used for remote control of R1, P1, P2 channels.

## Analog audio I/O section
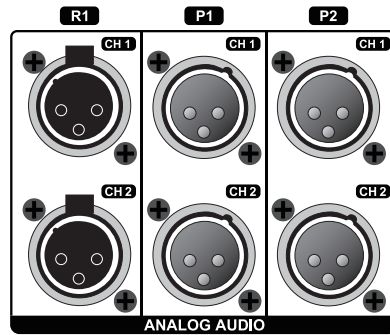
R1 – CH1 R1 – CH2	Used for audio input to the R1 channel. Balanced audio input. XLR-3-31x2 (CH1-2)
P1 – CH1 P1 – CH2	Used for audio output from the P1 channel. Balanced audio output. XLR-3-32x2 (CH1-2)
P2 – CH1 P2 – CH2	Used for audio output from the P2 channel. Balanced audio output. XLR-3-32x2 (CH1-2)

R1 input section

LTC	Used for LTC (timecode) input.
AES/EBU	Used for digital audio (AES/EBU) input.
CMPST	Used for Composite input.
DVI-I	Used for DVI-I input (for DVI, YPbPr).
SDI	Used for SDI input (left), and for active through (right).

P1/P2 output section
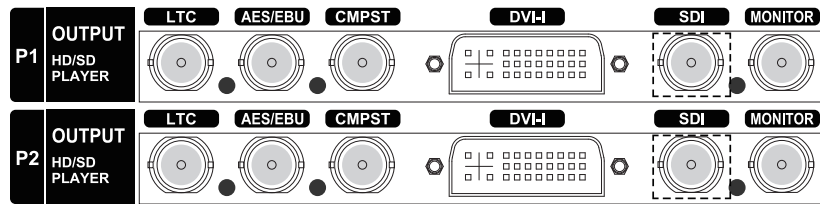
LTC	Used for LTC (timecode) output.
AES/EBU	Used for digital audio (AES/EBU) output.
CMPST	Used for Composite output.
DVI-I	Used for DVI-I output (for DVI, RGB, YPbPr).
SDI	Used for SDI output.
MONITOR	Used for monitor output (Composite).

Note   The YPbPr signal is input/output via analog RGB pins on the DVI-I port. To output YPbPr, use a RGB conversion connector cable.

Start-up and shutdown

Start-up

The following procedure is to start-up the T2.
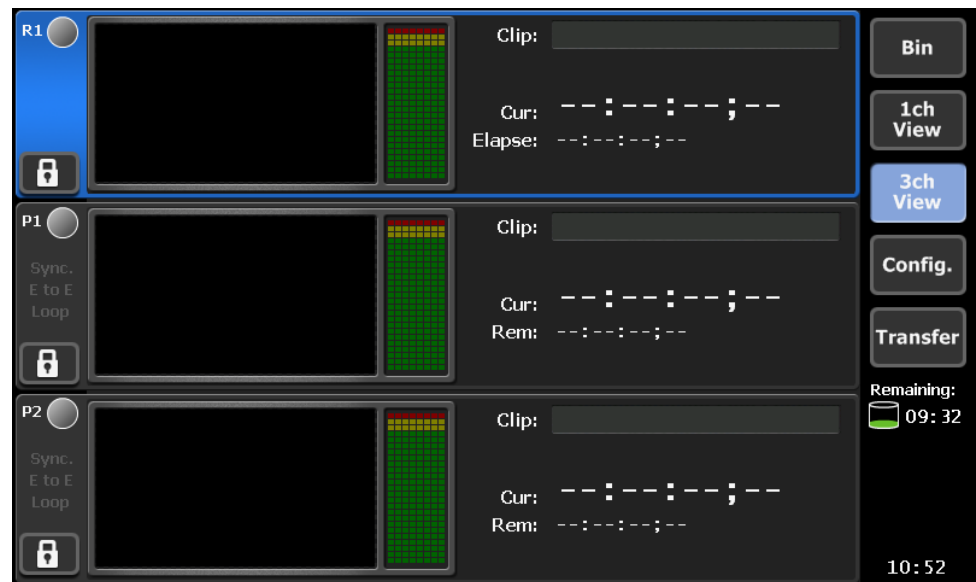
1. Switch the Main power switch on the rear panel to the on position, and turn the Power switch on the front panel ON.

Power switch

2. T2 starts up and the 3ch View screen appears on the touch screeen LCD.

3ch View

Shutdown

The following procedure is to shutdown the T2.

1. Switch the screen to the 1ch View, and touch the **Menu** button.

Menu button (R1 channel)

2. From the text menu, choose **Tools – Exit**.

3. On the dialog displayed, choose **Shutdown** and touch the **OK** button.

   To turn the T2's main power off, wait until the screen goes blank, confirm that the shutdown is complete, and then turn off the main power switch on the rear panel.

Hardware settings

Touching the **Config** button shown on the screen, the General settings screen will open.
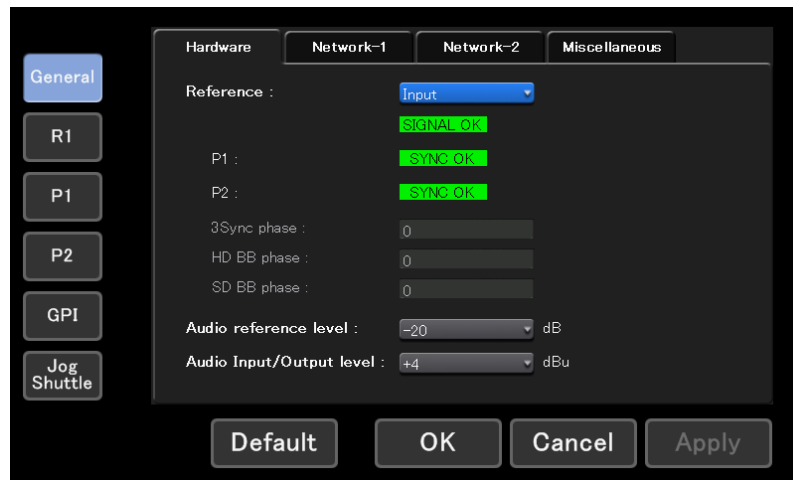
Modify the settings according to your environment.
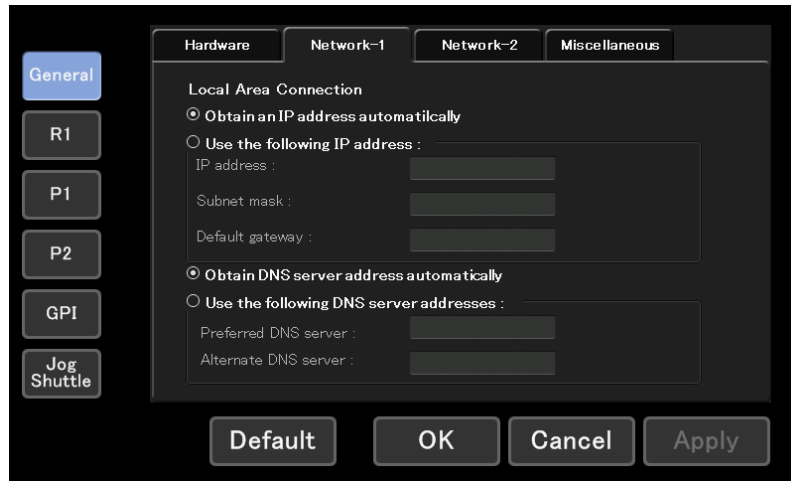
Config button

General settings

Hardware tab

Reference	The options you can choose from for the reference input method are **External**, **Input** and **Internal**. The sync status is displayed in the boxes below this button. • P1 ....Displays if the P1 channel is synchronized. • P2 ....Displays if the P2 channel is synchronized. • 3Sync phase ...To use the HD tri-level REF signal as the HD REF signal, check this box. Enter a value to adjust the REF phase. (Available only for **External**) • HD BB phase...To use the HD Black Burst REF signal as the HD REF signal, check this box. Enter a value to adjust the REF phase. (Available only for **External**) • SD BB phase...To use the SD Black Burst REF signal as the SD REF signal, check this box. Enter a value to adjust the REF phase. (Available only for **External**)
Audio reference level	Adjusts the audio reference level (Headroom).
Audio Input/Output level	Adjusts the audio input/output level.

Network-1/Network-2 tab

Obtain an IP address automatically	Check this option to obtain an IP address automatically via DHCP.

Use the following IP address	Establishes a local area connection by specifying an IP address, subnet mask and default gateway.
	
	IP address
	  Specify an IP address.
	
	Subnet mask
	  Specify a subnet mask.
	
	Default gateway
	  Specify a default gateway.

Obtain DNS server address automatically	Check this option to obtain a DNS server address automatically via DHCP.

Use the following DNS server addresses	Establishes a local area connection by specifying addresses for the default DNS server and an alternate DNS server.
	
	Preferred DNS server
	  Specify a default DNS server address.
	
	Alternate DNS server
	  Specify a default DNS server address.

Miscellaneous tab

Language	Choose between **English** and **Japanese** for the on-screen language. * Restarting the system is required to apply the setting.

DF mode	Specify either drop-frame or non-drop frame to be used.
	 DF
	   Check this option to use Drop frame.
	 NDF
	   Check this option to use Non-drop frame.

Playlist AutoScroll	Specify if you want the Event List of the playlist to automatically scroll.

R1 channel settings

Input Settings tab
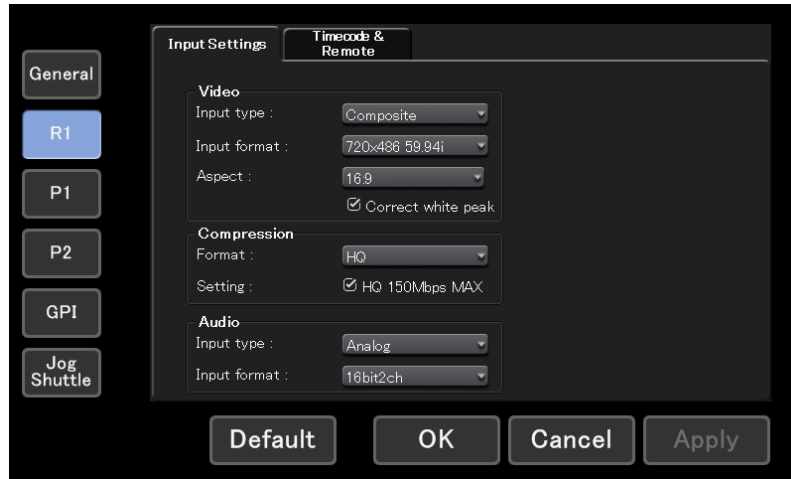
|	
Video	**Input type** Choose a type of video input. **Input format** Choose a format for the video input. **Aspect** Choose the aspect ratio for the SD input. **Correct white peak** Check this option to enable white peak correction.
Compression	**Format** Specify the compression format. **Setting** Check this option to limit the compression rate for the Canopus HQ codec, up to 150Mbps.
Audio	**Input type** Specify the audio input format from **Analog**, **AES/EBU** (digital) and **SDI embedded**. **Input format** Check this option to record in 16bit 2ch.

Timecode & Remote tab

Select Timecode	Specify the format for the timecode from **TC (LTC)** and **SDI (VITC)**.
Record Timecode	Choose the timecode to use for recording. **External** Uses the timecode from the external device. **Internal-System time** Uses the system clock. **Internal-Specified start TC** Specify a value as the beginning timecode.
Record ancillary data	Setting this option to ON will record VANC.
Remote protocol	Choose a REMOTE protocol from **BVW** and **AMP**.
AMP Connection	Specify an IP address and a channel for AMP connection.

P1/P2 channel settings

Video tab
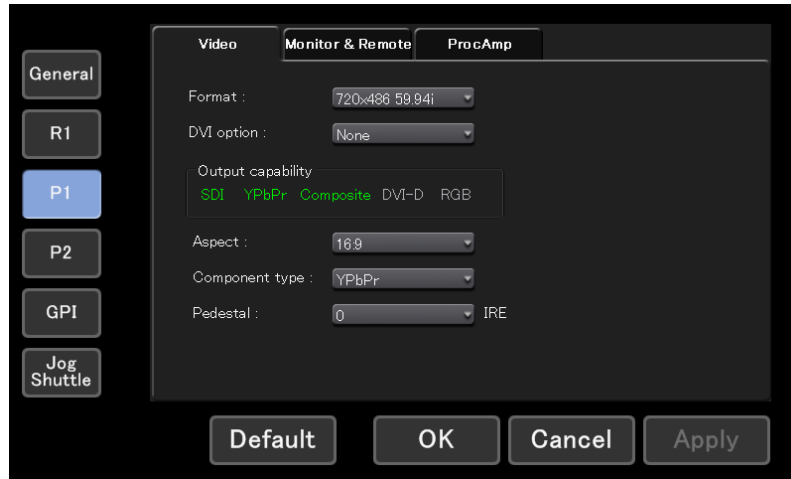
Format	Specify the resolution and the frame rate for the output video.
DVI option	Choose a video resolution to use with DVI/RGB format for output.
Output capability	Displays available format with highlight.
Aspect	Specify the aspect ratio. Choose **4:3** or **16:9** for SD video.
Component type	Choose the type of the analog signal output via DVI-I port.
Pedestal	Choose the setup (black) level in NTSC. Choose **7.5IRE** for North America.

Monitor & Remote tab

	Specify the channel to use for monitor out, and specify if OSD (on-screen display) is enabled.
Monitor out	**Channel** Specify the channel to use for monitor out. Only **P1** is available for **P1** channel, while **P1** and **P2** for **P2** channel. **OSD** Enables/Disables the on-screen display.
Remote protocol	Choose a REMOTE protocol from **BVW** and **AMP**.

ProcAmp tab

| Video gain	Adjusts the Video gain. (Available only for Composite and SD Component)
Chroma gain	Adjusts the Chroma gain. (Available only for Composite and SD Component)
Chroma phase	Adjusts the Chroma phase. (Available only for Composite)
Black level	Adjusts the Black level. (Available only for Composite and SD Component)
Video output level	Adjusts the Video output level. (Available only for Composite and Component)

GPI settings

Input tab

GPI-Input	Use the **Previous** and **Next** buttons to choose the GPI input trigger.
Trigger Settings	Permits specification of the GPI input trigger settings.

Trigger Settings — Permits specification of the GPI input trigger settings.

Channel
Choose a channel to respond to the GPI input trigger.

Action
Specify the action caused by the trigger.
- Stop .... Stops playback/recording.
- Play........................... Plays the clip or playlist loaded to a channel.
- Record .... Starts recording.
- Rewind...................... Rewinds. Rewinding stops at the start of the content, or when other action is performed.
- FastFwd .... Executes Fast Forward. Fast Forward stops at the end of the content, or when other action is performed.
- CueStart.................... Cues up to the IN point of the content loaded.
- CueEnd .... Cues up to the OUT point of the content loaded.
- Eject.......................... Unloads the content loaded.
- Preview .... Loads the clip uploaded from the R1 channel onto the P1 channel.
- CueNextEvent .... Cues up to the next event on the playlist loaded.
- CuePrevEvent .... Cues up to the previous event on the playlist loaded.
- VARPlayback.............. Plays the content in the speed specified in Variable speed playback mode (see "*Jog/Shuttle settings*").

Active
Choose the GPI signal to activate from **High** and **Low**.

Output tab
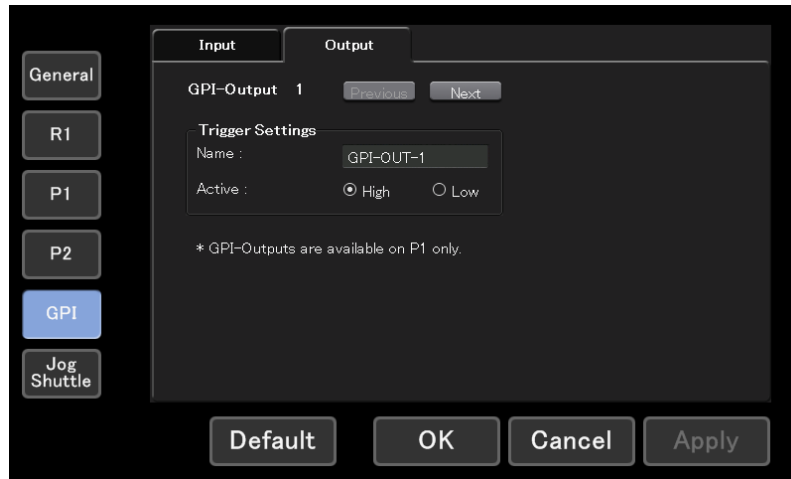
GPI-output	Use the **Previous** and **Next** buttons to choose the GPI output trigger.
Trigger Settings	Permits specification of the GPI output trigger settings. **Name** Specify the name of the trigger. **Active** Choose the GPI signal to activate from **High** and **Low**.

Jog/Shuttle settings

Shuttle speed	Choose the maximum shuttle speed, either **16x** or **32x**.
VAR setting	Choose the playback speed in the Variable speed playback mode, between **1/8**, **1/4** and **1/2**.

Front Panel mode

Overview

In the Front Panel mode, you can operate the T2 through the image displayed on the touch screen LCD on the front of the T2. When the T2 is turned on, the 3ch View is displayed as the main screen. The 3ch View consists of one Recorder and two Playback channels. The Playback channel has two modes: **Clip Player** mode and **Playlist Player** mode. Touching the area where the input value is available opens the **S/W Keyboard** (for the alphabet) or the **S/W Keypad** (for inputting numbers) screen. You can input values by touching the key on the touch screen LCD.

3ch View

3ch View

R1 channel	To choose this channel, touch the header area shown on the touch screen LCD. The active channel is highlighted.
P1 channel	To choose this channel, touch the header area shown on the touch screen LCD. The active channel is highlighted.
P2 channel	To choose this channel, touch the header area shown on the touch screen LCD. The active channel is highlighted.
Bin button	Opens the Bin window.
1ch View button	Switches the screen to the 1ch View for the active channel.
3ch View button	Switches the screen to the 3ch View.
Config button	Opens the Config screen.
Transfer button	Opens the Transfer screen.
HDD capacity	Displays the estimated amount of time for recording.
Clock	Displays the current time.

Recorder (R1) channel

Status

Lock button

Clip	Displays the clip name.
Cur	Displays the current timecode.
Elapse	Displays the elapsed time by timecode.
Status	Displays the status of the recording operation with a circular chart.
Lock button	Locks/Unlocks the channel.

Player (P1/P2) channel (Clip Player mode)

Status   Playback mode

Lock button

| Clip	Displays the clip name.
Cur	Displays the current timecode.
Rem	Displays the remaining time by timecode.
Status	Displays the status of the playback operation with a circular chart.
Playback mode	Displays the status whether Sync mode, E to E mode, or Loop mode is enabled.
Lock button	Locks/Unlocks the channel.

Player (P1/P2) channel (Playlist Player mode)

P.List	Displays the playlist name.
Now	Displays the current event.
Next	Displays the next event.
Cur	Displays the current timecode.
Rem	Displays the remaining time by timecode.
Status	Displays the status of the playback operation with a circular chart.
Playback mode	Displays the status whether Sync mode, E to E mode, or Loop mode is enabled.
Lock button	Locks/Unlocks the channel.

1ch View — Recorder screen

On this screen, you can modify the settings for recording and/or execute the recording. When recording is in progress, other operations, with the exception of stop, are not available on the channel. When the capacity of the HDD becomes low, the HDD icon is displayed in red. In that case, a warning message appears at the beginning of the recording.
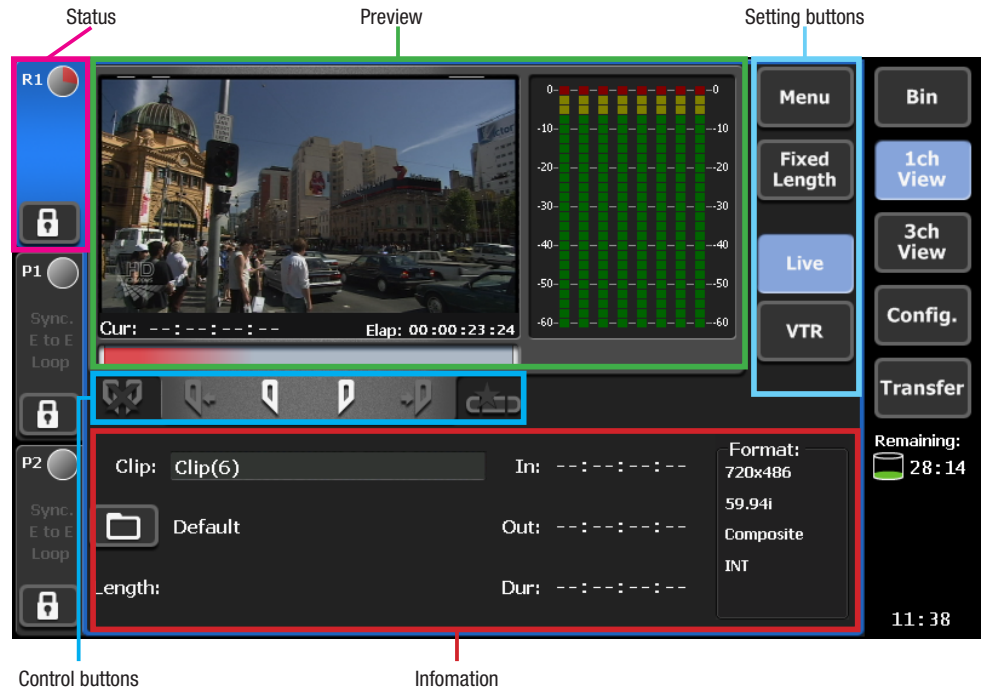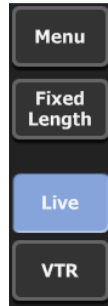

Status
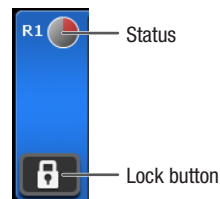
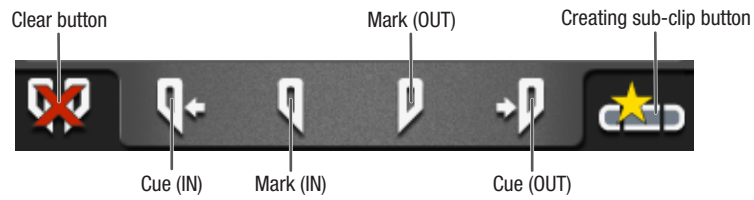| Status	Displays the status of the recording operation with a circular chart.
Lock button	Locks/Unlocks the channel.

Preview

Preview   Audio level

Status bar

Preview	Displays the preview for the input video.
Audio level	Displays the input audio level.
Cur	Displays the current timecode.
Elap	Displays the elapsed recording time by timecode.
Status bar	Displays the recording status with a bar.

Setting buttons

|	
Menu button	Displays the menu. **Properties** Opens the clip properties dialog. **Rename** Opens the dialog to change the current clip name. **Tools** • Maintenance..Choose this option to switch the T2 to Maintenance mode. Entering a password is required. • Exit...............Choose this option to restart or shutdown the T2.
Fixed Length button	Enables/Disables the Fixed Length recording mode. Setting this button to **ON** opens the dialog to specify the duration of the recording.
Control Mode button	Switches the recording mode between Live and VTR. **Live** Records the video input from an external device as live (stream). Perform operations manually for recording. When the Fixed Length Recording is activated, the recording automatically stops when the specified period of time has passed. **VTR** You can specify the IN/OUT points before starting recording, controlling the external VTR device from T2. To use this mode, connection to an external device via RS-422A is required.

Control buttons

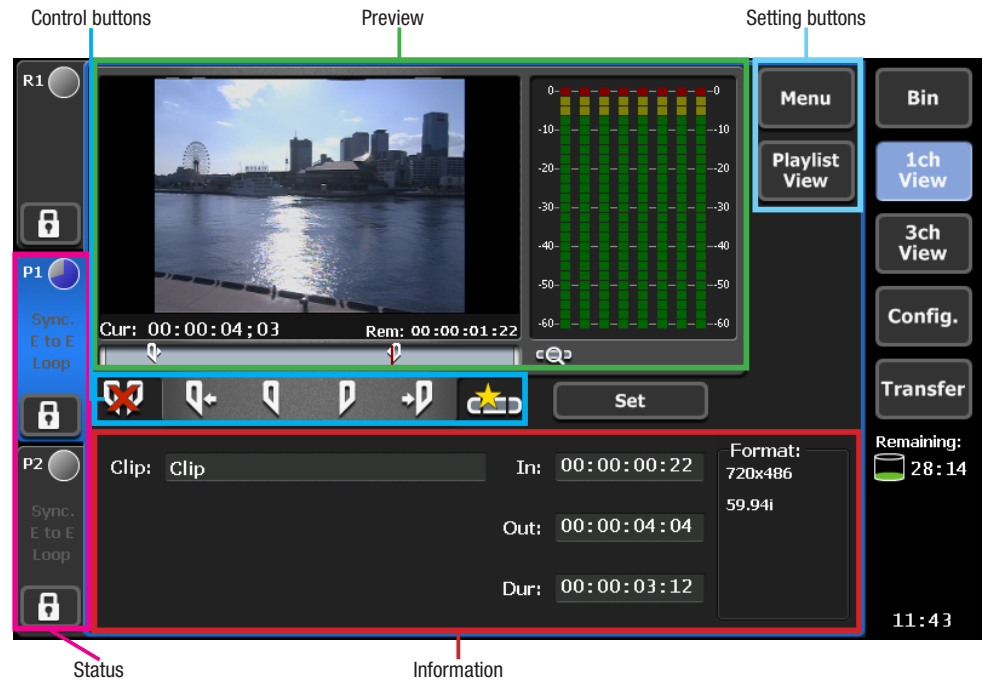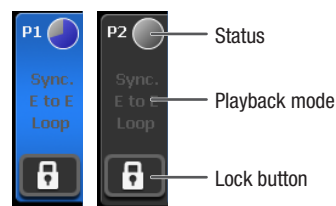|	
Clear button	Clears the existing IN/OUT points.
Cue (IN)	Cues the VTR to the existing IN point. (Available only in VTR mode)
Mark (IN)	Marks the current position as the IN point of the content. Marking an IN point will set the timecode of the IN point in the timecode box.
Mark (OUT)	Marks the current position as the OUT point of the content. Marking an OUT point will set the timecode of the OUT point in the timecode box, as well as the duration of the clip in the Length box.
Cue (OUT)	Cues the VTR to the existing OUT point. (Available only in VTR mode)
Creating sub-clip button	Generates a sub-clip according to the existing IN/OUT points.

Information
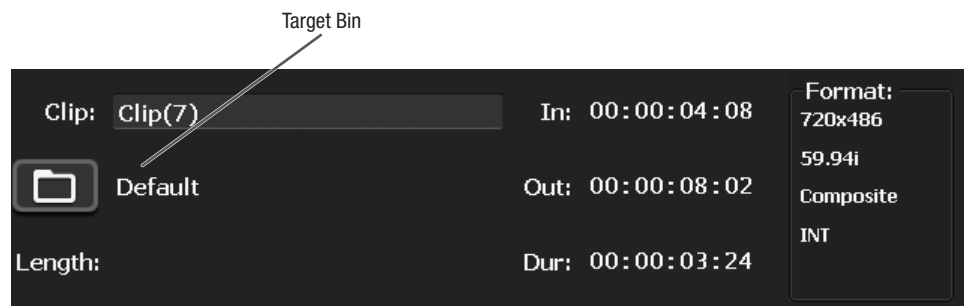
Clip	Input a clip name.
Target Bin	Displays the Bin folder where the recorded media file is stored. Touching the icon will open the dialog to change target Bins.
Length	Displays the duration of the clip in the Fixed Length mode.
In	Displays the timecode at the IN point.
Out	Displays the timecode at the OUT point.
Dur	Displays the duration of the content between the IN-OUT points by timecode.
Format	Displays the information including video size, frame rate, input type, source timecode (TC (LTC) / SDI (VITC) / INT), etc.

1ch View — Clip Player screen

On this screen, you can modify the settings for clip playback and/or execute the playback
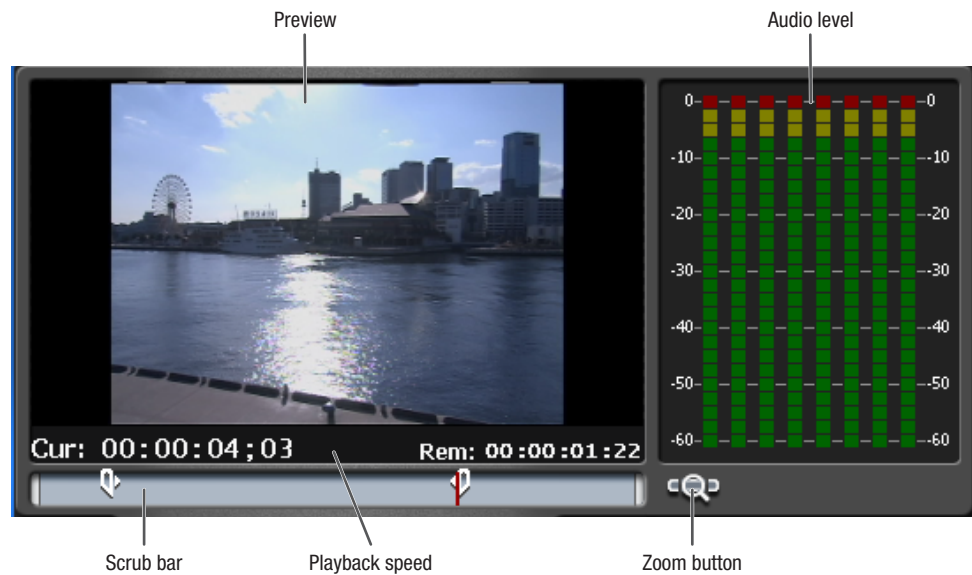

Status

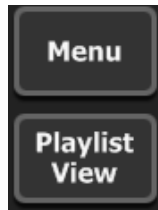| Status	Displays the status of the playback operation with a circular chart.
Playback mode	**Sync.** Displays whether the Sync mode is enabled. **E to E** Displays whether the E to E mode is enabled. When the E to E mode is enabled, the recorder channel audio and video inputs are switched to the player channel audio and video outputs when the player channel is in stop mode or when there is no clip loaded. * The video format for the channel specified to **E to E mode** must be same as that of the R1 channel. **Loop** Displays whether the Loop mode is enabled.
Lock button	Locks/Unlocks the channel.

Preview

Preview   Audio level

Scrub bar   Playback speed   Zoom button

Preview	Displays the video preview.
Audio level	Displays the input audio level.
Cur	Displays the current timecode.
Playback speed	Displays the current playback speed (ratio).
Rem	Displays the remaining time by timecode.
Scrub bar	Displays the current position and the IN/OUT points.
Zoom button	Changes the display scale on the scrub bar (Zoom On / Off). **Zoom On** Displays the section between the IN-OUT points of the clip as a whole scale of the scrub bar. Moving the current point out of the IN-OUT range is not available. **Zoom Off** Displays the entire media clip in a complete scale of the scrub bar. In the normal playback operations, the current position can be moved between the IN-OUT points. To move out of the existing IN-OUT range, perform FF, Rew, Jog/Shuttle operations after CueUp.

Setting buttons

Menu button	Displays the menu. **Unload** Unloads the loaded clip. **Properties** Opens the clip properties dialog. **Rename** Opens the dialog to change the current clip name. **Now Recording** Loads the clip which is being recorded on the R1 channel onto one of the playback channels. (Follow-up playback) **Set Thumbnail Frame** Changes the thumbnail of the clip with the current frame displayed. **Remote** Enables/Disables the Remote controls. With the Remote controls set to ON, local operations will be ignored. **Playout Mode** Enables/Disables the Sync mode, E to E mode, and Loop mode. • E to E ....Enables/Disables the E to E mode. When the E to E mode is enabled, the recorder channel audio and video inputs are switched to the player channel audio and video outputs when the player channel is in stop mode or when there is no clip loaded. * The video format for the channel specified to **E to E mode** must be same as that of the R1 channel. • Loop..............Enables/Disables the Loop mode. • Sync..............Enables/Disables the Sync mode.(Available only on P2 channel) **Tools** • Maintenance...............Choose this option to switch the T2 to the Maintenance mode. Entering a password is required. • Exit.............................Choose this option to restart or shutdown the T2.
Playlist View	Switches the screen to the Playlist Player mode.

Sync mode

Touch the **Menu** button on the P2 channel, and choose **Sync** to activate the Sync mode. In the Sync mode, the content (clip or playlist) loaded to the P2 channel will be played in sync with the P1 channel.

When the Sync mode is activated, if the output settings of the P1 and P2 channels differ, the settings on the P2 channel are automatically changed so as to match those of the P1.

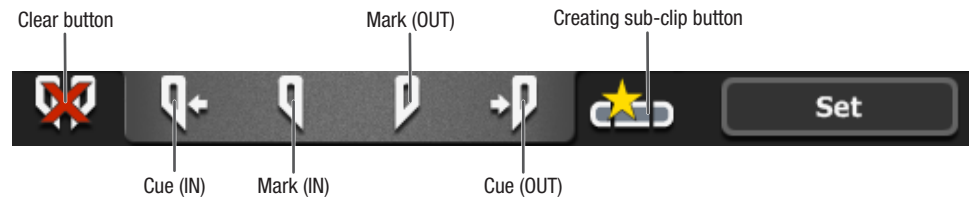The E to E mode cannot be simultaneously activated.

In the Sync mode, only playback operations are available. Marking IN/OUT points or creating sub-clips is not available.

* If the duration of the contents differs between P1 and P2 channels, the playback operations will be performed according to the P1 channel. (P1 channel is the master channel.) When the content loaded on the P2 channel is shorter, the final frame remains displayed.

Requirements for sync mode

- Contents must be of the same type. (clip and clip or playlist and playlist). Combinations between clip and playlist are not available for pairing contents in the sync mode.

- Video format must be available and loaded on the same profile.

- Audio types do not matter.

- Contents must be specified as a pair in the Bin before loading to the channels.

Control buttons

Clear button   Mark (OUT)   Creating sub-clip button

Cue (IN)   Mark (IN)   Cue (OUT)

Clear button	Clears the existing IN/OUT points.
Cue (IN)	Cues to the existing IN point.
Mark (IN)	Marks the current position as the IN point of the content. Marking an IN point will set the timecode of the IN point in the timecode box.
Mark (OUT)	Marks the current position as the OUT point of the content. Marking an OUT point will set the timecode of the OUT point in the timecode box, as well as the duration of the clip in the Length box.
Cue (OUT)	Cues to the existing OUT point.
Creating sub-clip button	Generates a sub-clip according to the existing IN/OUT points.
Set button	Use this button to set the IN/OUT points for the clip. After marking the IN/OUT points, touch the **Set** button to update the IN/OUT points of the clip.

Information
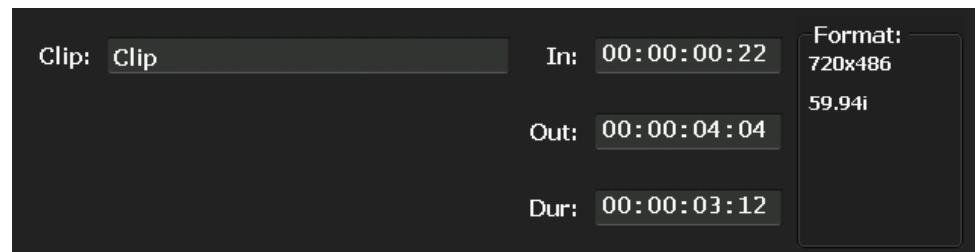
Clip	Displays the name of the loaded clip.
In	Displays the timecode at the IN point.
Out	Displays the timecode at the OUT point.
Dur	Displays the duration of the content between the IN-OUT points by timecode.
Format	Displays video size and frame rate of the clip.

1ch View — Playlist Player screen

In this screen, you can modify the playback settings for the playlist and/or execute the playback. The Event List will be automatically scrolled so that the clip being played is shown on screen. To enable/disable the auto-scroll for the Event List, touch the **Config** button, open the **Miscellaneous** tab and change the **Playlist AutoScroll** setting (Default: ON).
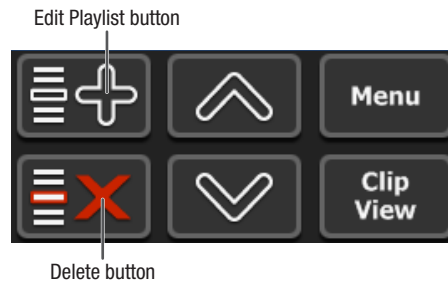

Control buttons   Preview   Setting buttons

Status   Information   Event List

Status

Status	Displays the status of the playback operation with a circular chart.

Playback mode	**Sync**
	  Displays whether the Sync mode is enabled.
	
	E to E
	  Displays whether the E to E mode is enabled. When the E to E mode is enabled, the recorder channel audio and video inputs are switched to the player channel audio and video outputs when the player channel is in stop mode or when there is no playlist loaded.
	  * The video format for the channel specified to **E to E mode** must be same as that of the R1 channel.
	
	Loop
	  Displays whether the Loop mode is enabled.

Lock button	Locks/Unlocks the channel.

Preview

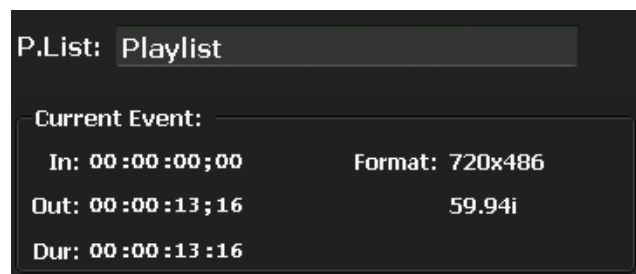|	
Preview	Displays the video preview.
Cur	Displays the current timecode.
Playback speed	Displays the current playback speed (ratio).
Rem	Displays the remaining time by timecode.
Scrub bar	Displays the current position and the IN/OUT points.

Setting buttons

Edit Playlist button

Delete button

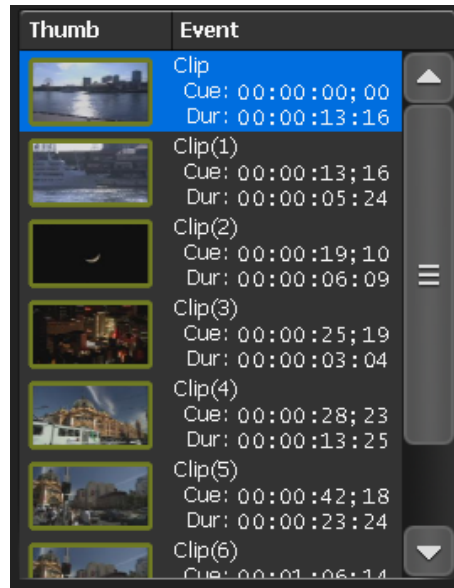| Edit Playlist button	Opens the Edit Playlist screen.
Delete button	Deletes the events selected in the Event List.
UP button	Moves the selected event to a position above the previous event in the list.
DOWN button	Moves the selected event to a position below the next event in the list.
Menu button	Displays the menu. **Unload** Unloads the loaded playlist. **Properties** Opens the playlist properties dialog. **Rename** Opens the dialog to change the current playlist name. **Event Effect** Opens the Event Effect settings dialog for the event selected in the Event List. **Event Properties** Opens the properties dialog for the event selected in the Event List. **Remote** Enables/Disables Remote control. When Remote control is enabled, local operations are ignored. **Playout Mode** Enables/Disables Sync mode, E to E mode, and Loop mode. • Sync..............Enables/Disables the Sync mode.(Available only on P2 channel) • E to E ....Enables/Disables the E to E mode. When the E to E mode is enabled, the recorder channel audio and video inputs are switched to the player channel audio and video outputs when the player channel is in stop mode or when there is no playlist loaded. * The video format for the channel specified to **E to E mode** must be same as that of the R1 channel. • Loop..............Enables/Disables the Loop mode. **Tools** • Maintenance...............Choose this option to switch the T2 to the Maintenance mode. Entering a password is required. • Exit.............................Choose this option to restart or shutdown the T2.
Clip View	Switches the screen to the Clip Player mode.

Operation buttons

Clear button   Mark (OUT)

Cue (IN)   Mark (IN)   Cue (OUT)

Clear button	Clears the existing IN/OUT points.
Cue (IN)	**Normally** Cues to the existing IN point of the current event. **While editing** Cues to the existing IN point.
Mark (IN)	Marks the current position as the IN point of the content. Marking an IN point will set the timecode of the IN point in the timecode box. (Available only while editing)
Mark (OUT)	Marks the current position as the OUT point of the content. Marking an OUT point will set the timecode of the OUT point in the timecode box. (Available only while editing)
Cue (OUT)	**Normally** Cues to the existing OUT point of the current event. **While editing** Cues to the existing OUT point.
TRIM button	Use this button to start editing IN-OUT points on the current event.

Information

|	
P. List	Displays the name of the loaded playlist.
Current Event	Displays the current event. **In** Displays the timecode at the IN point. **Out** Displays the timecode at the OUT point. **Dur** Displays the duration of the event by timecode. **Format** Displays the video size, frame rate, etc.

Event List

Event List	Lists the events on the playlist. On the thumbnail of each event, icons for identifying its effect are displayed, if any. Double-touching on an event will cue to the event. **Blue background** Current event being played **Colored frame** Selected event

Playlist Player — Edit Playlist screen

Touching the **Edit Playlist** button on the Playlist Player screen opens the Edit Playlist screen.
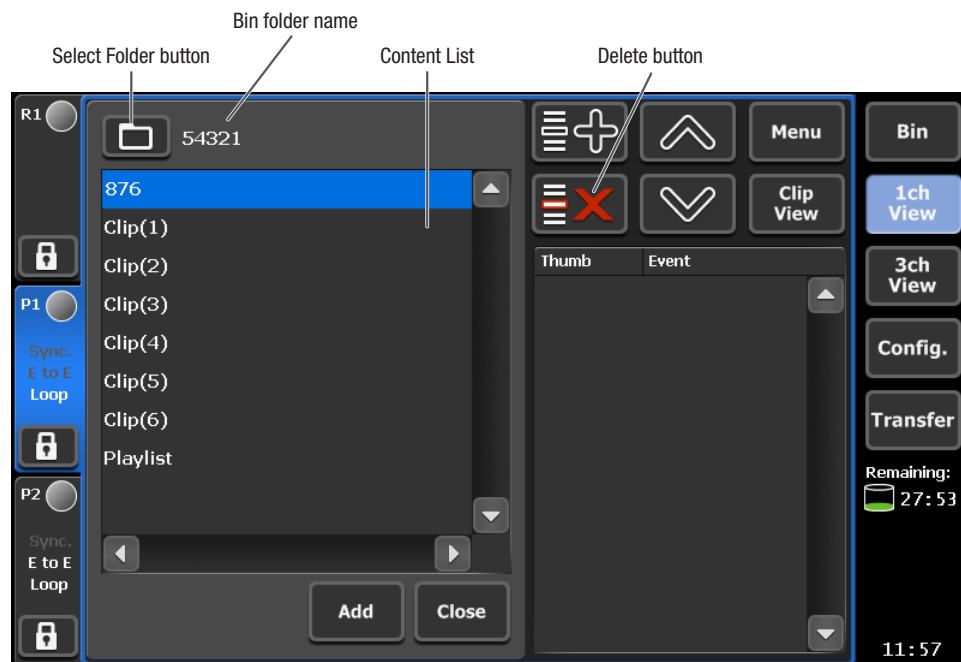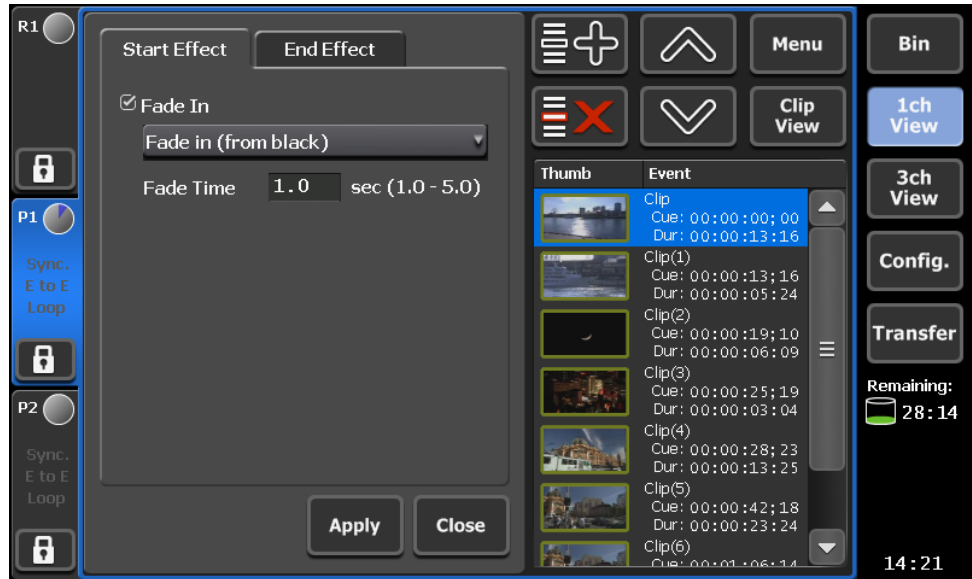

Select Folder button	Touching the **Select Folder** button allows you to change the Bin, listing the contents of the Bin folder in the Content List area. After choosing a folder, touching the **OK** button will change the Bin, displaying the contents of the selected folder.
Bin folder name	Displays the name of the Bin folder that is currently chosen.
Content List	Displays the contents (clip and playlist) of the Bin folder. While choosing a folder, a list of the Bin folders is displayed.
Edit Playlist button	Registers contents to the selected playlist. Touch the **Edit Playlist** button to display the contents stored in the Bin, and touch the **Add** button to register.
Delete button	Deletes the events selected on the Event List.
UP button	Moves the selected event above the previous event on the list.
DOWN button	Move the selected event below the next event on the list.
Menu button	Displays the menu.
Clip View button	Switches the screen to the Clip Player mode.
Add button	Adds the clips (and playlists) that were chosen from the Content List as events after the selected event on the Event List at the right.
Close button	Closes the Edit Playlist screen and goes back to the Playlist Player screen.

Playlist Player — Event Effect screen

Touching the **Menu** button on the Playlist Player screen and choosing **Event Effect** will open the Event Effect screen.

Start Effect tab

Fade In	Check this option to add the fade in effect to the chosen event, and choose the effect. • Fade in (from black) ....Adds the fade in starting from a black screen. • Fade in (from white) ....Adds the fade in starting from a white screen.
Fade Time	Specify the duration between the beginning and the end of the fade in.

End Effect tab

Fade Out	Check this option to add the fade out effect to the chosen event, and choose the effect. • Fade out (to black).................. Adds the fade out ending with a black screen. • Fade out (to white).................. Adds the fade out ending with a white screen.
Fade Time	Specify the duration between the beginning and the end of the fade out.
Action	Choose the action after the fade out ends. • Pause (show black)................. Pauses the playback and displays a black screen. • Pause (show white)................. Pauses the playback and displays a white screen. • Pause (last frame) .... Pauses the playback and displays the last frame. • Pause (next event) .... Pauses the playback and displays the first frame of the next event. • Pause (show EtoE).................. Displays the video input to the R1 channel with active through. • Loop...................................... Playbacks the selected event in a loop.

Bin

Touching the **Bin** button on the Clip Player screen or the Playlist Player screen for the P1/P2 channel will open the Bin. The Bin has two view modes that can be chosen from the Menu: **Text View** and **Icon View**.

Text View

Film strip   Bin folder   Content List

Preview button	Shows/Hides the preview (film strip).
Empty Recycle Bin button	Deletes all the contents in the Recycle Bin. Note that the deleted contents cannot be restored.
New Folder button	Creates a new Bin folder.
Watch Folder button	Enables/Disables the Watch folder.
Delete button	Deletes the selected contents from the Bin and moves them to the Recycle Bin.
> P1 button	Loads the selected contents to the P1 channel.
> P2 button	Loads the selected contents to the P2 channel.

Menu	Displays the menu. **View** Switches the Bin view between **Text View** and **Icon View**. **Delete Folder** Deletes the selected Bin folder and its contents and moves them to the Recycle Bin. **Rename Folder** Renames the selected Bin folder. **Properties** Opens the properties dialog for the item selected on the Content List. **Tools** • Maintenance...............Choose this option to switch the T2 to the Maintenance mode. Entering a password is required. • Exit.............................Choose this option to restart or shutdown the T2.
Film strip	Displays the preview of the contents with a six-parted film strip.
Bin folder	Displays the Bin folder.
Switching Bin tab	Switches the Bin view between **Bin** and **Recycle Bin**.
Content List	Lists the contents in the folder chosen in the Bin folder.

Icon View
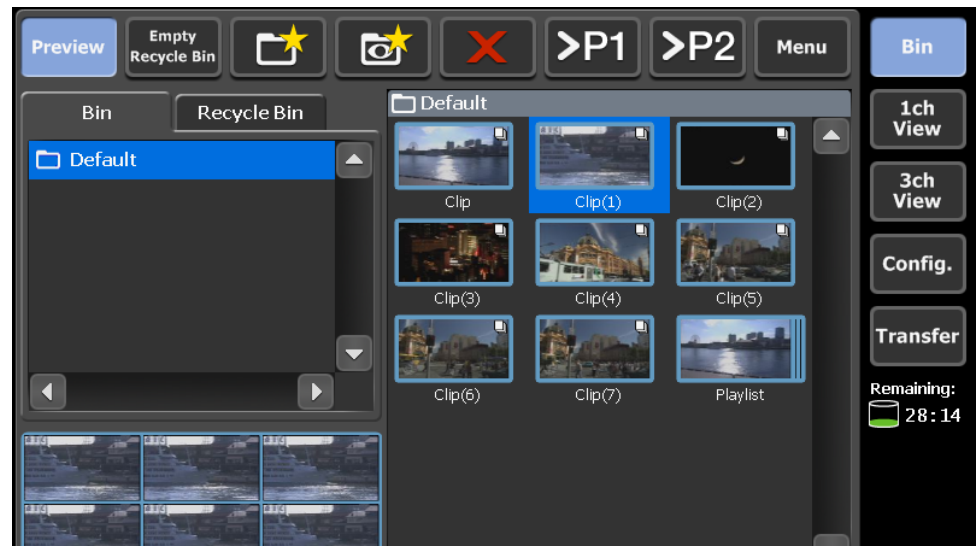
Thumbnail icons
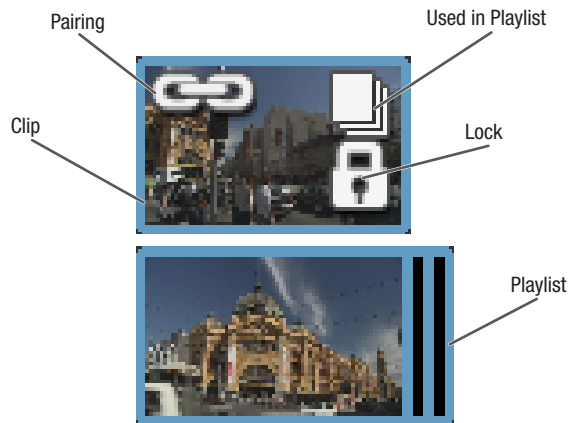
Pairing icon	Displayed on the clips/playlists that have been paired for the Sync mode.
Lock icon	Displayed on the clip/playlist that have been locked.
Used in Playlist icon	Displayed on the clip/playlist that have been used in a playlist.

Creating Watch Folder screen
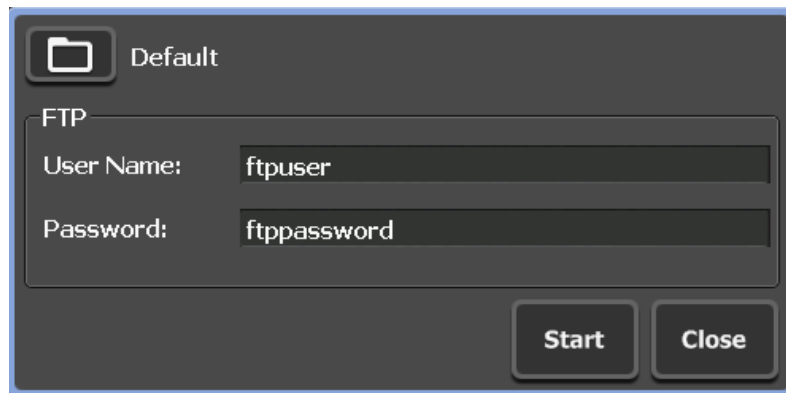
Folder name	Displays the Bin folder name to be used as a Watch folder.
FTP	Specify the FTP user name and its password. **User Name** Input a user name. **Password** Input the password.

Transfer screen
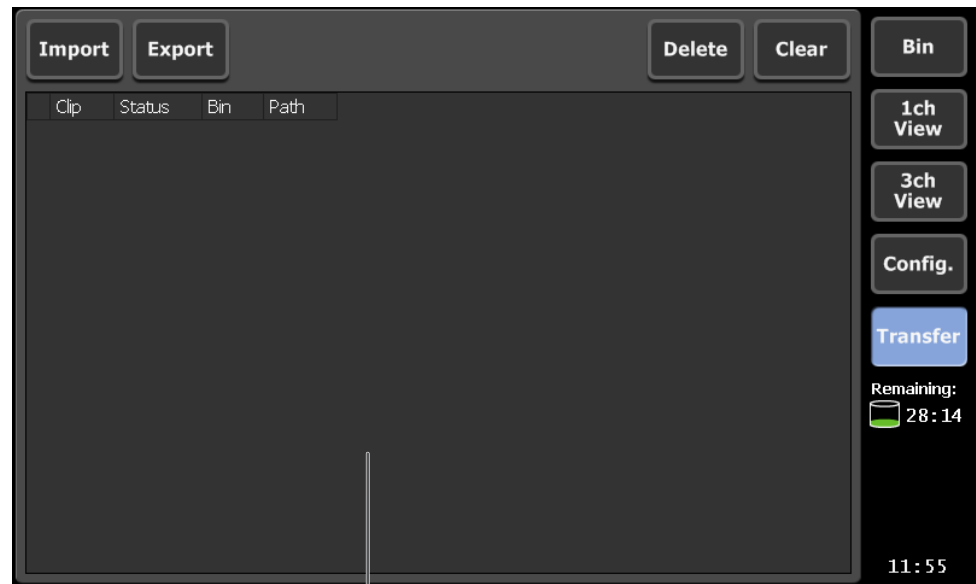
Job list

Import button	Displays the Import screen.
Export button	Displays the Export screen.
Delete button	Deletes the selected job. Touching the button while transferring will stop the transfer.
Clear button	Deletes all jobs on the job list.
Job list	Lists the registered jobs. **Clip** Displays the name of the target clip. **Status** Displays the progress. **Bin** Displays the target Bin. **Path** Displays the name (full path) of the target media file.

Import screen

Source folder   Source File list   Destination   Import Clip list

Add to List button   Delete button
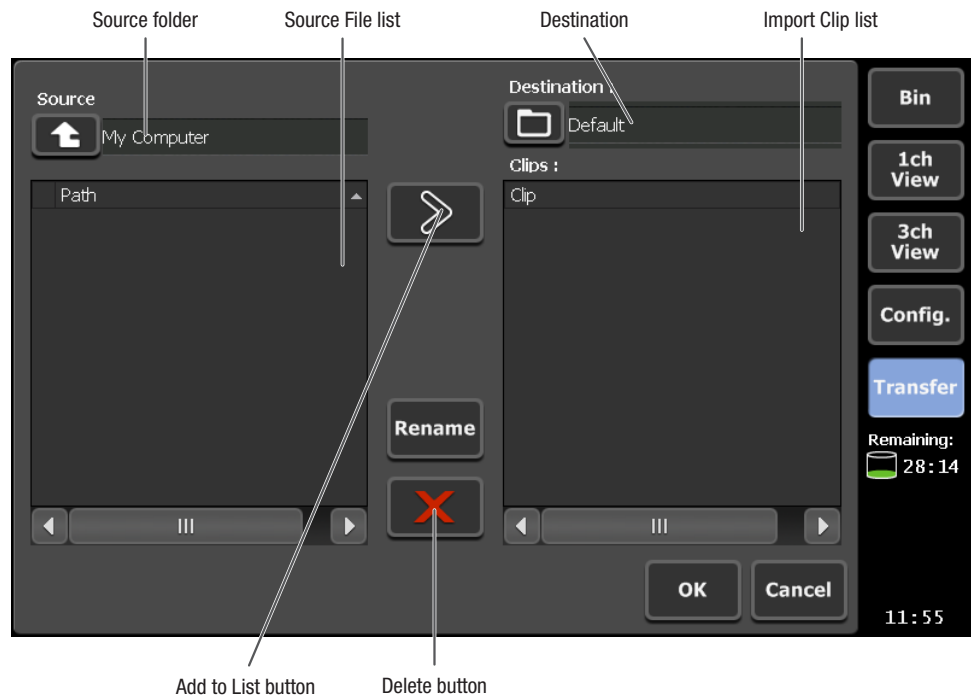
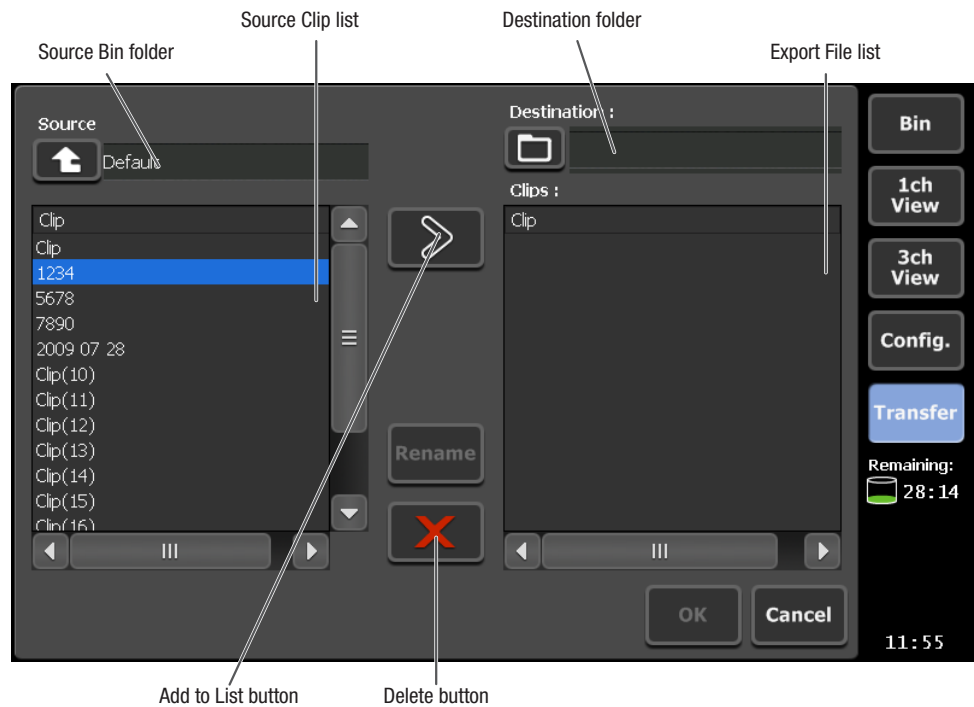|	
Source folder	Displays the source folder that the contents are imported from. Touching the button on the left opens the parent folder.
Source File list	Lists the media files (and folders) stored in the source folder.
Destination	Displays the destination Bin folder that the contents are imported to. Touching the button on the left opens the folder selection dialog to change the destination folder.
Import Clip list	Lists the clips that will be imported.
Add to List button	Adds the media files selected in the Source File list to the Import Clip list. When the clips are redundant in the destination folder, the clip name will automatically be changed.
Rename button	Renames the selected clip chosen in the Import Clip list. (Only the clip to be imported can be renamed.)
Delete button	Deletes the selected clips chosen in the Import Clip list. (Only the clips to be imported will be deleted.)
OK button	Starts importing according to the Import Clip list registered (ie: Adds jobs to the Transfer screen), and closes the Import screen.
Cancel button	Closes the Import screen.

Export screen

Source Clip list Destination folder

Source Bin folder Export File list

Add to List button   Delete button

Source Bin folder	Displays the Bin folder that the contents are exported from. Touching the button on the left opens the Bin selection dialog to change the Bin folder.
Source Clip list	Lists the clips stored in the source Bin folder.
Destination folder	Displays the destination folder that the contents are exported to. Touching the button on the left opens the parent folder.
Export File list	Lists the clips (file name) to be exported. When the file is redundant in the destination folder, the file name will automatically be changed.
Add to List button	Adds the clips chosen in the Source Clip list to the Export File list.
Rename button	Renames the clips chosen in the Export File list from the list. (Only the clips to be exported can be renamed.)
Delete button	Deletes the clips chosen in the Export File list from the list. (Only the clips to be exported will be deleted.)
OK button	Starts exporting according to the Export File list registered (ie: Adds jobs to the Transfer screen), and closes the Export screen.
Cancel button	Closes the Export screen.

S/W Keyboard screen

When you touch any area where data input is available, this screen appears.
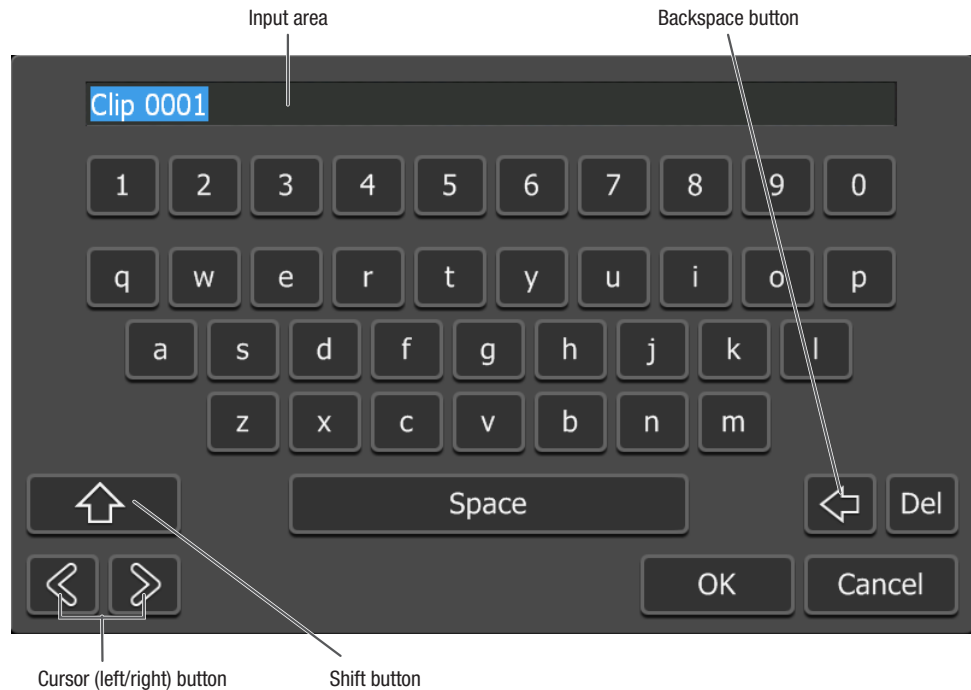
Input area	The string entered with the software keyboard is displayed here. Touching the **OK** button inputs the string.
Shift button	Used as the Shift key. Toggles Uppercase/Lowercase. Default: Shift Off (lowercase)
Cursor (left/right) button	Moves the cursor in the input area.
Space button	Used as the Space key.
Backspace button	Used as the Backspace key.
Del button	Used as the Delete key.
OK button	Confirms the entered string, and closes the S/W Keyboard screen.
Cancel button	Cancels the entered string, and closes the S/W Keyboard screen.

S/W Keypad screen

Timecode input screen

When you touch any area where inputting a timecode is available, this screen appears.

Input area	The value entered with the S/W Keypad is displayed here. According to the digits of the value entered, the value will be converted to Hours, Minutes, Seconds, frames. When the **OK** button is touched, the value entered here will be set according to the relative value (− / +) or absolute value settings.
Cursor (left/right) button	Moves the cursor in the input area.
Relative value (-) button	Touch this button to use the value as a relative timecode (negative direction) from the current value.
Relative value (+) button	Touch this button to use the value as a relative timecode (positive direction) from the current value.
Absolute value button	Touch this button to use the value as an absolute timecode.
Backspace button	Used as the Backspace key.
Del button	Used as the Delete key.
OK button	Confirms the entered value, and closes the S/W Keypad screen.
Cancel button	Cancels the entered string, and closes the S/W Keypad screen.

Value input screen

When you touch any area where inputting a value is available, this screen appears.
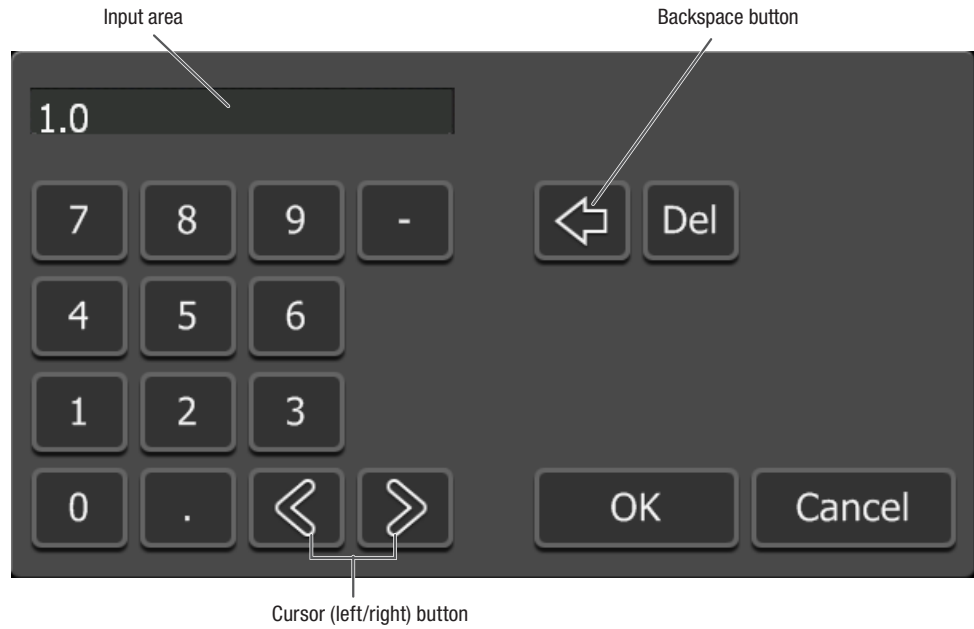
|	
Input area	The value entered with the S/W Keypad is displayed here. Touching the **OK** button inputs the value.
Cursor (left/right) button	Moves the cursor in the input area.
Backspace button	Used as the Backspace key.
Del button	Used as the Delete key.
OK button	Confirms the entered value, and closes the S/W Keypad screen.
Cancel button	Cancels the entered string, and closes the S/W Keypad screen.

VAR Control screen

Pressing the **VAR** button on the front panel opens the window to specify the speed for variable speed playback.
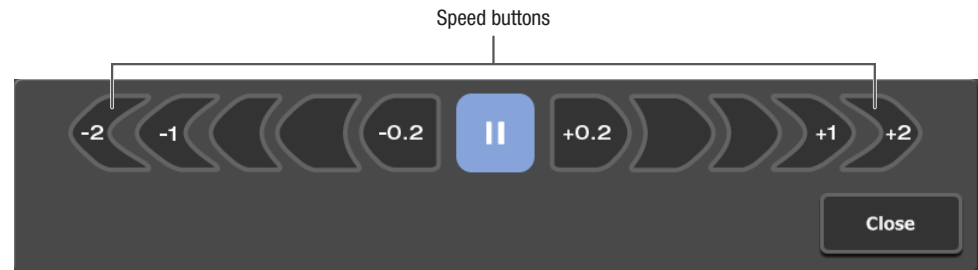
Speed buttons

Speed buttons	Specify the speed of the variable speed playback. – direction: -1/8 (displayed as -0.2) > -1/4 > -1/2 > -1 > -2 + direction: 1/8 (displayed as +0.2) > 1/4 > 1/2 > 1 > 2
Close button	Closes the VAR Control screen.

Button functions on the front panel

In the Front Panel mode, the following operations can be executed with the control buttons on the front panel.

Button	R1 channel	P1/P2 channel (Clip Player)	P1/P2 channel (Playlist Player)
Play button		Starts playback.	Starts playback.
Stop button	Stops recording.	Stops playback.	Stops playback.
Rew button		Moves back frame by frame. Pressing the button will rewind (x32).	Moves back frame by frame. Pressing the button will rewind (x32).
FF button		Moves forward frame by frame. Pressing the button will fast-forward (x32).	Moves forward frame by frame. Pressing the button will fast-forward (x32).
Rec button	Starts recording.		
Stop+Rew		Cues up to the IN point. *	Moves to the previous event's (IN point).
Stop+FF		Cues up to the OUT point. *	Moves to the next event's (IN point).
Play+Rew		Cues up to the IN point and starts playing.	Starts playing the previous event.
Play+FF		Cues up to the OUT point.	Starts playing the next event.

* Jumps to the top of the clip, the IN point of the clip, the OUT point of the clip, or the end of the clip according to the current position.

Properties screen

Clip properties

Clip Info tab
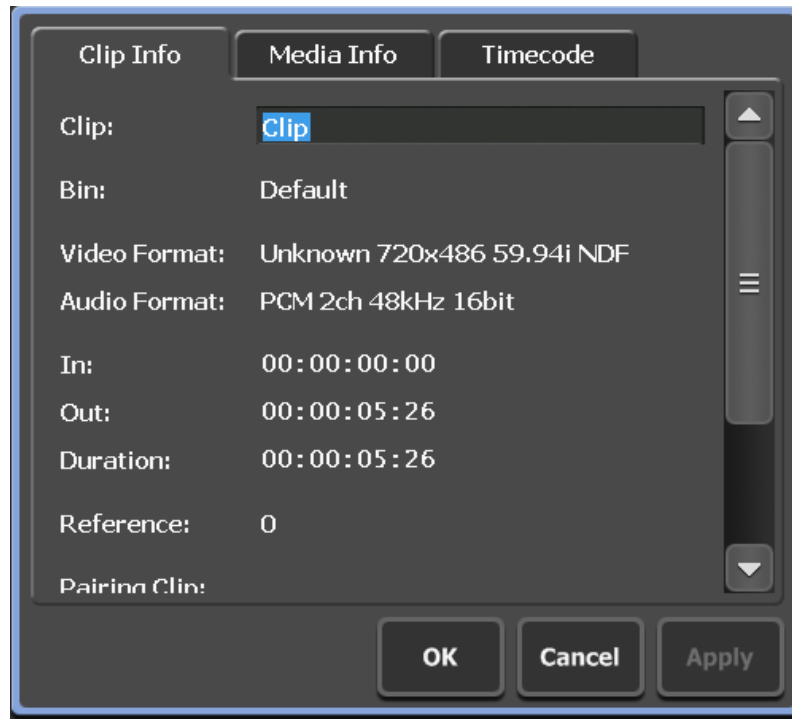
Clip	Displays the clip name. The clip name can be changed in this screen.
Bin	Displays the name of the Bin folder where the clip is registered.
Video Format	Displays the video format.
Audio Format	Displays the audio format.
In	Displays the timecode at the IN point.
Out	Displays the timecode at the OUT point.
Duration	Displays the duration of the clip.
Reference	Displays the number of playlists that refer to the clip.
Pairing Clip	Displays the clip name that is paired with this clip for the Sync mode.
Created	Displays the timestamp when the clip was created.
Modified	Displays the timestamp when the clip was updated.
Lock	Check this option to lock the clip.

Media Info tab
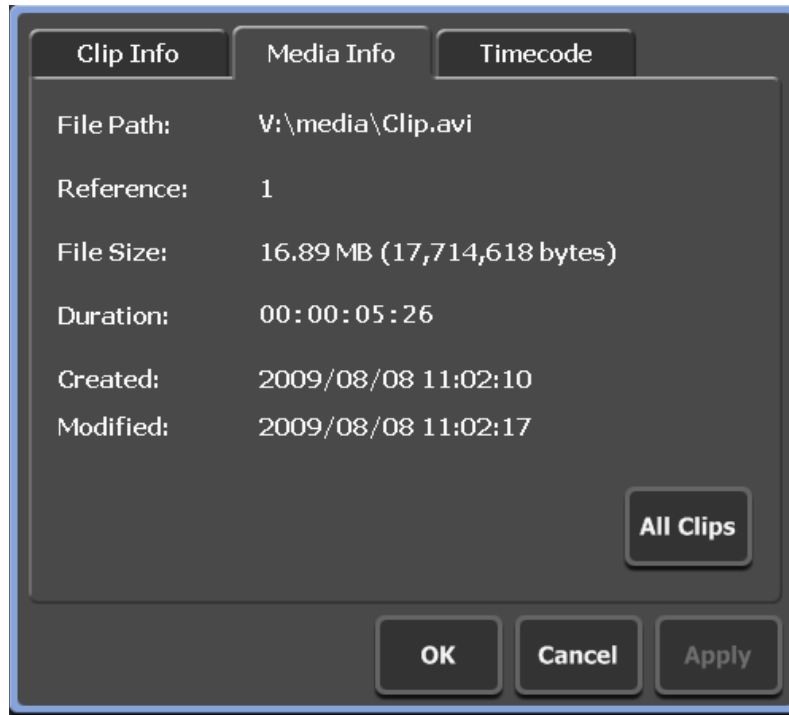
File Path	Displays the file name and the file path for the media file.
Reference	Displays the number of clips and playlists that refer to the media file.
File Size	Displays the size of the media file.
Duration	Displays the duration of the media file.
Created	Displays the timestamp when the clip media file was created.
Modified	Displays the timestamp when the clip media file was updated.
All Clips button	Displays the clips that refer to the media file.

Timecode tab

	Specifies the method to change the timecode.
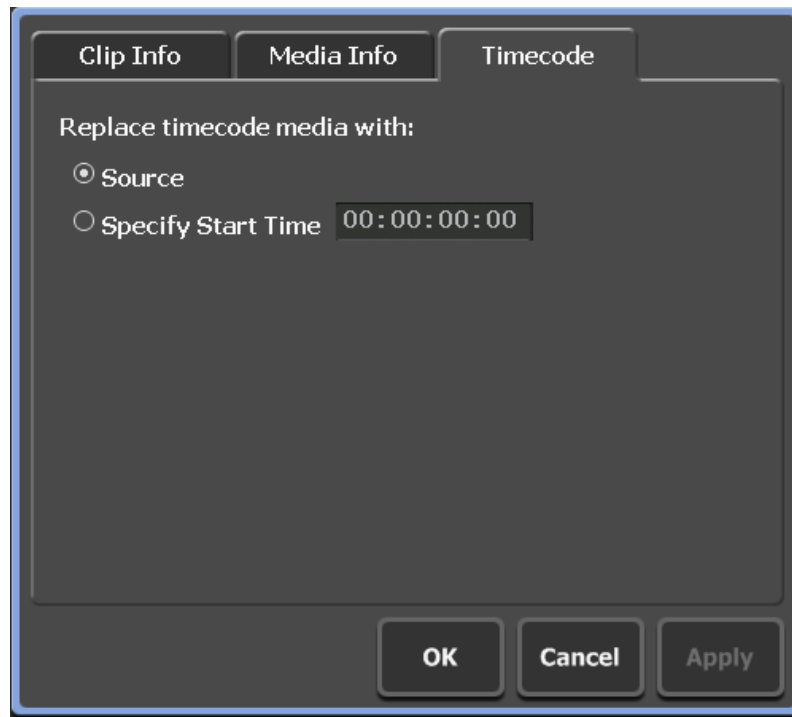
Replace timecode media with	**Source**
	  Check this option to replace with the timecode for the source.
	
	Specify Start Time
	  Check this option to specify the starting timecode, and specify the value.

Playlist properties

Playlist Info tab
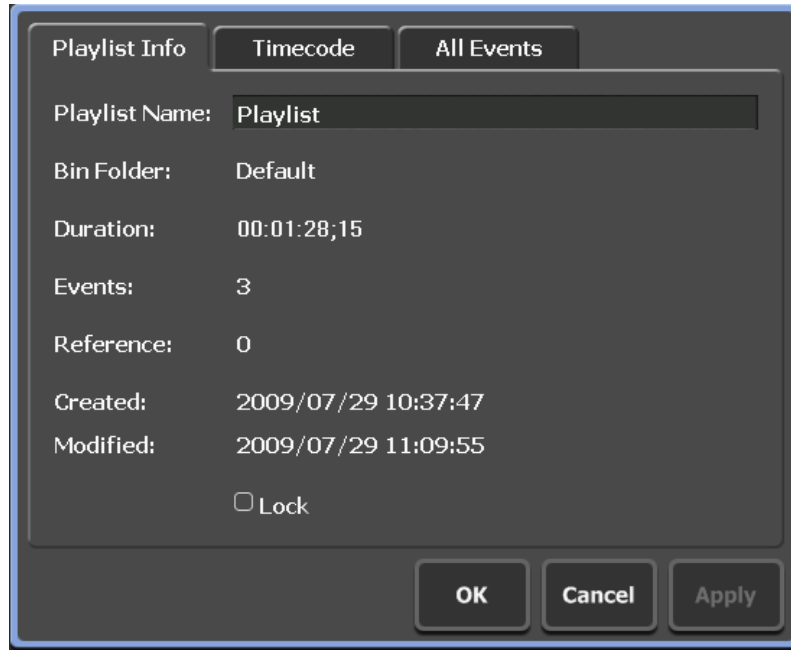
Playlist Name	Displays the playlist name. The playlist name can be changed on this screen.
Bin Folder	Displays the name of the Bin folder where the playlist is registered.
Duration	Displays the duration of the playlist.
Events	Displays the number of events registered on the playlist.
Reference	Displays the number of playlists that refer to the playlist.
Created	Displays the timestamp when the playlist was created.
Modified	Displays the timestamp when the playlist was updated.
Lock	Check this option to lock the playlist.

Timecode tab

Playlist Info	Timecode	All Events

Start timecode at: `00:00:00;00`

OK Cancel Apply
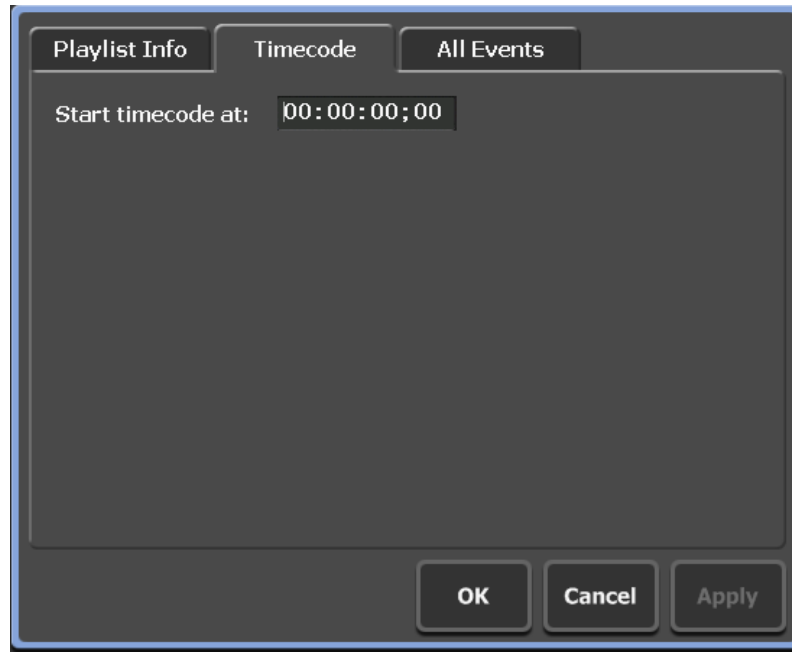
Start timecode at	Check this option to specify the starting timecode, and specify the value.

All Events tab

In this tab, the settings for all the events registered on the playlist can be modified globally.

	Check this option to change the start effect of the events.
Change start effects	**Remove all start effects** Removes the start effects from all the events.
	Add start effect to every event Adds start effects to all the events.
	Fade In Adds fade in to all the events. • Fade in (from black) ....Adds the fade in starting from a black screen. • Fade in (from white) ....Adds the fade in starting from a white screen.
	Fade Time Specify the duration between the beginning and the end of the fade in.

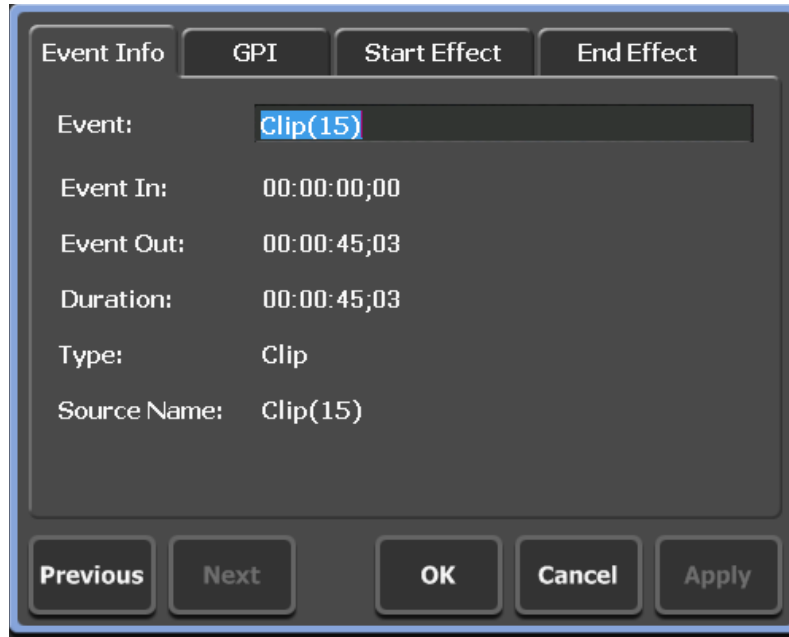|	
Change end effects	Check this option to change the end effect of the events. **Remove all end effects** Removes the end effects from all the events. **Add end effect to every event** Adds end effects to all the events. **Fade Out** Adds fade out to all the events. • Fade out (to black) ....Adds the fade out ending with a black screen. • Fade out (to white) ....Adds the fade out ending with a white screen. **Fade Time** Specify the duration between the beginning and the end of the fade out. **Action** Check this option to specify the action when the playback ends. • Pause (show black) ....Pauses the playback with a black screen displayed. • Pause (show white) ....Pauses the playback with a white screen displayed. • Pause (last frame) ....Pauses the playback with the last frame displayed. • Pause (next event)....................Pauses the playback with the first frame of the next event displayed. • Pause (show E to E)..................Displays the video input to the R1 channel with active through. • Loop.......................................Playbacks the selected event in loop.

Event properties

Event Info tab

Event	Displays the event name. The event name can be changed on this screen.
Event In	Displays the timecode at the IN point.
Event Out	Displays the timecode at the OUT point.
Duration	Displays the duration of the event.
Type	Displays the type of event (Clip or Playlist).
Source Name	Displays the clip name or the playlist name that the event refers to.

GPI tab
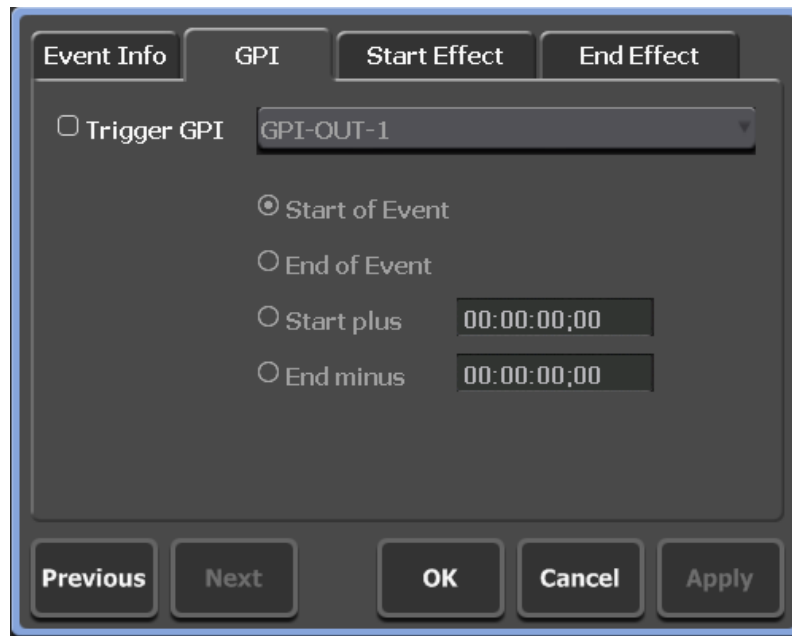
Trigger GPI	Choose the GPI trigger to specify setting.
Start of Event	Check this option to set the start of an event as a trigger.
End of Event	Check this option to set the end of an event as a trigger.
Start plus	Check this option to set a certain point from the top of an event as a trigger, and then specify the value.
End minus	Check this option to set a certain point before the end of an event as a trigger, and then specify the value.

Start Effect tab

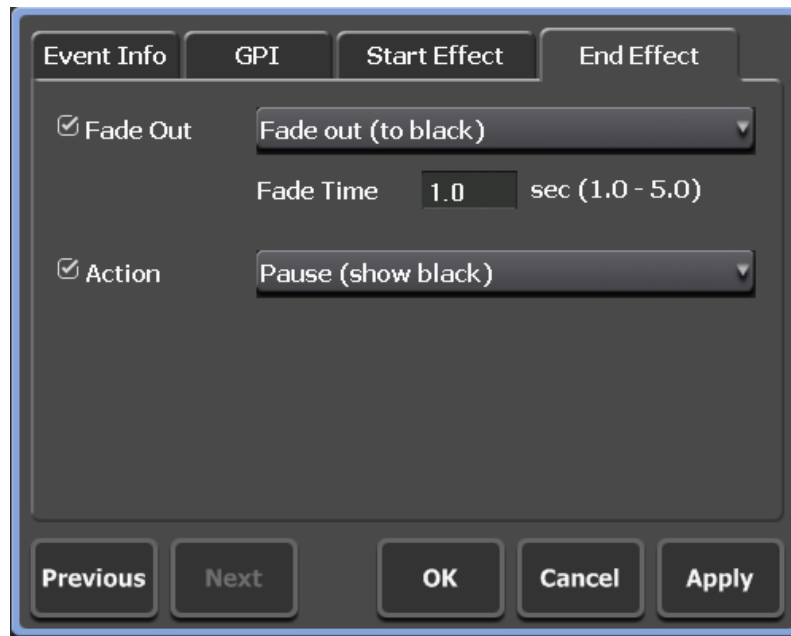|	
Fade In	Check this option to add the fade in effect to the chosen event, and choose the effect. • Fade in (from black) ....Adds the fade in starting from a black screen. • Fade in (from white) ....Adds the fade in starting from a white screen.
Fade Time	Specify the duration between the beginning and the end of the fade in.

End Effect tab

Fade Out	Check this option to add the fade out effect to the chosen event, and choose the effect.
	• Fade out (to black)................... Adds the fade out ending with a black screen.
	• Fade out (to white)................... Adds the fade out ending with a white screen.
Fade Time	Specify the duration between the beginning and the end of the fade out.
Action	Specify the action when the event comes to an end.
	• Pause (show black).....................Pauses the playback with a black screen displayed.
	• Pause (show white)....................Pauses the playback with a white screen displayed.
	• Pause (last frame) ....Pauses the playback with the last frame displayed.
	• Pause (next event)......................Pauses the playback with the first frame of the next event displayed.
	• Pause (show E to E)....................Displays the video input to the R1 channel with active through.
	• Loop..Playbacks the selected event in loop.

APPENDIX

T2   Hardware specifications

PC interface USB	USB		USB2.0 x2 (front), x6 (rear)
	IEEE1394		IEEE1394a x1 (front), x1 (rear), Up to 12V , 1A of bus power (total for both ports)
	PS/2		Mini DIN 6pin x2
	Display		Analog RGB D-SUB 15pin x1
	Serial		RS232C D-SUB 9pin x1 (Not used)
	LAN		RJ-45 Network connector x2, 10BASE-T/100BASE-TX/1000BASE-T
	Sound		Stereo mini jack x6 (Not used)
Removable media			DVD-ROM x1
			2.5 inched removable drive bay x1 (RAID/SSD model)
Video signal	Input	SDI	1 line, BNC x2 (Active through x1)
		DVI-I	1 line, DVI-I x1. The analog sections are also for YPbPr. (DVI-D does not support HDCP.)
		Composite	1 line, BNC x1
	Output	SDI	2 lines, BNC x2
		DVI-I	2 lines. The analog sections are also for RGB/YPbPr.
		Composite	2 lines, BNC x2
		Monitor	Composite, 2 lines, BNC x2
Audio signal	Input	Balanced audio	1 line, XLR-3-31 x2, Up to 24dBu
		Digital audio	1 line, AES/EBU BNC x1
	Output	Balanced audio	2 lines, XLR-3-32 x4
		Digital audio	1 line, AES/EBU, 2 lines, BNC x2
		Headphones	Stereo jack x1
		Monitor line	Stereo mini jack x1
Timecode	Input	LTC	1 line, BNC x1
	Output	LTC	2 lines, BNC x2
REF in			HD tri-level, BB compatible, BNC x2 (throughout x1)
Remote	GPI I/O		D-SUB 15pin x1, 6 input, 6 output pins.
	RS422		3 lines, D-SUB 9pin x3 (each one of the lines correspond to the R1, P1 or P2 channel)
Power supply			AC 100V - 240V, 50/60Hz
Power consumption			2.5A - 1.1A
Dimensions			430(W) x 132(H) x 550.8(D) (Projecting parts not included)
Weight			15kgf approximately
Operating temperature			+5 to +35 degrees C
Operating humidity			10% to 80% (Without condensation)

Supported resolutions

Profile	Available format for loading	Available video port	Conversion mode for PC		Output to monitor	R1 input, REF input signal for Sync mode
			DVI-D	DVI-A (RGB)		
720×486 59.94i	720×486 59.94i 720×480 59.94i (DVD) 720×480 59.94i (DV)	SDI Component Composite	×	×	NTSC	720×480 59.94i
720×576 50i	720×576 50i (DV) 720×576 50i (DVD)	SDI Component Composite	×	×	PAL	720×576 50i
1920×1080 59.94i	1920×1080 59.94i 1440×1080 59.94i 1280×1080 59.94i	SDI Component DVI-D *1	PC	PC	NTSC	720×480 59.94i, 1920×1080 59.94i
1920×1080 50i	1920×1080 50i 1440×1080 50i	SDI Component DVI-D *2	PC	PC	PAL	720×576 50i, 1920×1080 50i
1920×1080 24psf	1920×1080 24p 1440×1080 24p	SDI Component DVI-D(24p)	PC	PC	×	1920×1080 24psf (REF in only)
1920×1080 23.98psf	1920×1080 23.98p 1440×1080 23.98p 1280×1080 23.98p	SDI Component DVI-D (23.98p)	PC	PC	×	1920×1080 23.98psf (REF in only)
1920×1080 24p	1920×1080 24p 1440×1080 24p	SDI Component DVI-D	PC	PC	×	1920×1080 24p (REF in only)
1920×1080 23.98p	1920×1080 23.98p 1440×1080 23.98p 1280×1080 23.98p	SDI Component DVI-D	PC	PC	×	1920×1080 23.98p (REF in only)
1280×720 59.94p	1280×720 59.94p 960×720 59.94p	SDI Component DVI-D	PC	PC	NTSC	720×480 59.94i *3
1280×720 50p	1280×720 50p 960×720 50p	SDI Component DVI-D	PC	PC	PAL	720×576 50i *3
1280×720 24p	960×720 24p	SDI Component	×	×	×	1280×720 24p (REF in only)
1280×720 23.98p	1280×720 23.98p 960×720 23.98p	SDI Component	×	×	×	1280×720 23.98p (REF in only)

*1   Can be specified to 1920 x 1080p 59.94.

*2   Can be specified to 1920 x 1080p 50.

*3   As the playback of channels is synchronized with paired frames, the sync mode is not available in 3Sync phase

PC   Can be specified to VGA, SVGA, XGA, or SXGA.

Note 1   Component and DVI-A (RGB) cannot be used simultaneously.

Note 2   DVI-I and DVI-A outputs in PC conversion mode cannot be used for Sync mode.

Note 3   When the aspect ratios of the source and the profile differ, a black bar is added to the top/bottom or left/right sides.

Note 4   The DVI/RGB signal is output with a certain delay from the SDI/YPbPr output.

GPI I/O connector pinouts
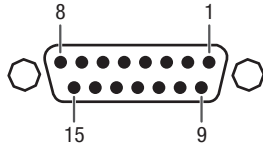
Pin	Signal
1	Output 1
2	Output 2
3	Output 3
4	Output 4
5	Output 5
6	Output 6
7	NC
8	Common Ground

Pin	Signal
9	Input 1
10	Input 2
11	Input 3
12	Input 4
13	Input 5
14	Input 6
15	NC
SHELL	Common Ground

Note T2 iDDR software supports outputs 1-6 and inputs 1-6 only. Pin 7 and Pin 15 are not used.

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