



Fastrack Timing Adjustments

INTRODUCTION

This technical note describes initial testing and adjustments to ensure precise editing with VTRs, video switcher and Profile XP video servers.

SYSTEM TIMING

System timing is based on the video black reference signal to the editing system. Ensure the same video black reference is used for the video switcher, audio mixer, digital effects, VTRs and all controlled devices for proper genlock of the entire editing system. Fastrack confirms proper black reference by the 'green light' illuminated in the upper right of the timeline screen.

Section 1: VTR EDIT TIMING (xxx.dev files)

Start with a new empty timeline (Input, New, Yes)

Select a Record Track on the Assign Dialog page [Shift]+[ASGN]

Track	On	Device Name	Class	Device	Auto	Port	Pool	V-Switcher		AudioMixer
								Video	Start	Count
1	<input type="checkbox"/>	xp3	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR3	p	4		
2	<input checked="" type="checkbox"/>	750	SONY	AJ-D750	<input type="checkbox"/>	P8	t	7	7	2
3	<input checked="" type="checkbox"/>	xp1	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR1	p	2	3	2
4	<input checked="" type="checkbox"/>	xp2	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR2	p	3	5	2
5	<input checked="" type="checkbox"/>	xp4 REC	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR4	p	5	9	2
6	<input checked="" type="checkbox"/>	950	SONY	AJ-D750	<input type="checkbox"/>	P4	t	8	1	2
7	<input checked="" type="checkbox"/>	20	SONY	DVR-20	<input type="checkbox"/>	P6	t	9		
8	<input checked="" type="checkbox"/>	65	SONY	BVW-65	<input type="checkbox"/>	P3	t	6		2

ASSIGN DIALOG

Record / Preview Mode

Linear SE Mode Black Program Black Auto Extend Events

Record Off Preset Preview Monitor Switch Only

Record Track:

Monitor Mode: Monitor Preread

Video Switcher

Enabled

Switcher Off

Settings

A/V Preview Switching

Enabled

Settings

Audio Mixer

Enabled

Mixer Off

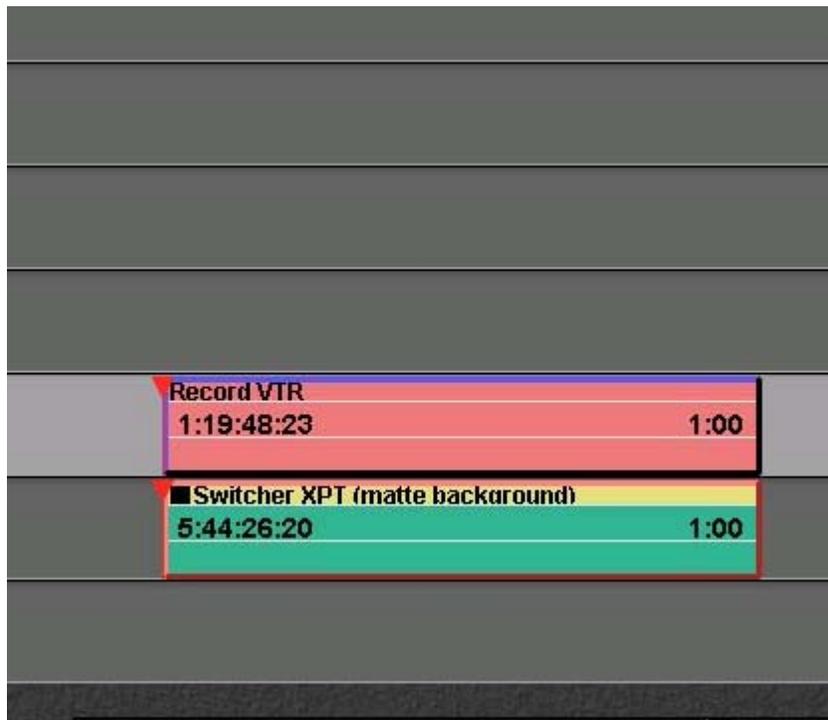
Settings

Note: the VTR on Track 6 has been set as the Record Track and Linear SE mode is ON

Press IN to create a new event on the record track (for the most accurate testing, the record tape should have pre-recorded "burned-in" timecode)

Set Duration to 1:00 (one second)

Select any source (XPNT only sources are best for this test) or turn VSWR off and select a matte or bars signal for the switcher to output "on air"



One second record event with simultaneous one second source event

Perform the recording of the timeline event to the Record VTR by pressing [RECORD]

After recording, zoom in to the tightest TL viewing mode (TL size, F1) and go to the IN point of the above edit by selecting the Record VTR track and pressing [Search]

Jog a few frames before the Edit IN point and then jog to the Edit IN point. Verify that the Record VTR went into record at EXACTLY the right field! (Note: it is easiest to check if the jogger is set to 50 for very precise control; [Shift]+[INIT] page)

Verify that the Record VTR came OUT of record at exactly the right field!

If either or both are incorrect, the settings are adjusted in the [Control] + [INIT] .dev file dialogue

- Select the Record VTR device type from the long list of VTR .dev files

- Select F1 (**Modify**, the window below will appear with full path to .dev file being modified)

- Adjust the **Edit In Delay** and/or **Edit Out Delay** time(s) [larger numbers mean 'sooner']

- SAVE (F1)** - If this is the first time this specific .dev file has been modified, the factory

- default will be saved as a .bak file with the updated file now having the *original.dev* suffix

This updated .dev file will now be used for all devices of this type. You can also **Save As (F2)** and give the modified .dev file a new name. Note that this new device will not appear in the dropdown device menu on the Assign Dialog page until the next time the Fastrack application is started.

C:\Fastrack\FtruntimeV3.2.0x17\DEV\DVW500A.DEV

Settings	Value
Sync Speed	20
Sync Window	00
Play Delay	03
PreRoll	4:00
TCG Delay	08
Preview In Delay	06
EE Delay	08
Preview Out Delay	06
Edit In Delay	06
Split Edit Delay	06
Edit Out Delay	06
Cue Speed	20
Cue Window	2

Now 're-load' the Record VTR device driver by de-selecting that device on the Assign Dialog page [Shift]+[ASGN] and re-selecting it (click off/on the X under the ON column)

Track	On	Device Name	Class	Device	Auto	Port	Pool	V-Switcher		AudioMixer
								Video	Start	Count
1	<input type="checkbox"/>	xp3	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR3	p	4		
2	<input checked="" type="checkbox"/>	750	SONY	AJ-D750	<input type="checkbox"/>	P8	t	7	7	2
3	<input checked="" type="checkbox"/>	xp1	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR1	p	2	3	2
4	<input checked="" type="checkbox"/>	xp2	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR2	p	3	5	2
5	<input checked="" type="checkbox"/>	xp4 REC	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR4	p	5	9	2
6	<input checked="" type="checkbox"/>	950	SONY	AJ-D750	<input type="checkbox"/>	P4	t	8	1	2
7	<input checked="" type="checkbox"/>	20	SONY	DVR-20	<input type="checkbox"/>	P6	t	9		
8	<input checked="" type="checkbox"/>	65	SONY	BVW-65	<input type="checkbox"/>	P3	t	6		2

ASSIGN DIALOG

Record / Preview Mode

Linear SE Mode Black Program Black Auto Extend Events

Record Off Preset Preview Monitor Switch Only

Record Track:

Monitor Mode: Monitor Preread

Video Switcher

Enabled

Switcher Off

Settings

A/V Preview Switching

Enabled

Settings

Audio Mixer

Enabled

Mixer Off

Settings

OK

If you did make changes to the factory default settings for the Edit In Delay and the Edit Out Delay, please note these changes will be stored in the C:\Fastrack\Ftruntime\DEV folder. These changes will be superceded if you update the Fastrack software into the same 'Ftruntime' folder. It is advisable that you rename the Ftruntime folder each time you install new Fastrack software as the new installation creates a new Ftruntime folder and overwrites any existing files and sub-folders. This will cause the loss of updated .dev files. It is advisable to save any changed/updated .dev files to floppy disk for easy re-installation after future updates of Fastrack software. And we at Editware would appreciate being informed of any changes to the defaults so we can do additional testing and, if necessary, make changes to the factory settings for that device.

Section 2: VIDEO SWITCHER TIMING

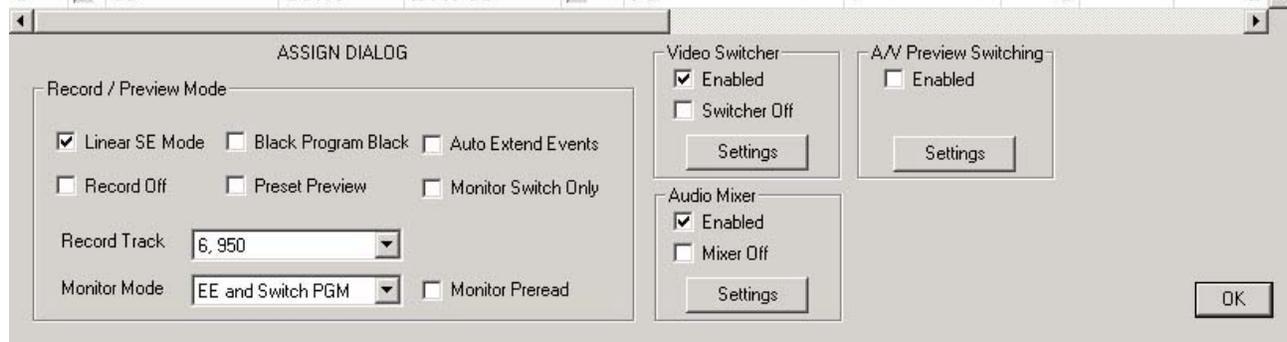
(.swi files in C:\Fastrack\Fruntime\Switcher folder)

To ensure proper switcher timing, some test recordings must be performed and reviewed carefully

Start with a new empty timeline (Input, New, Yes)

Select a Record Track on the Assign Dialog page [Shift]+[ASGN]

Track	On	Device Name	Class	Device	Auto	Port	Pool	V-Switcher			AudioMixer	
								Video	Start	Count		
1	<input type="checkbox"/>	xp3	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR3	p	4				
2	<input checked="" type="checkbox"/>	750	SONY	AJ-D750	<input type="checkbox"/>	P8	t	7	7	2		
3	<input checked="" type="checkbox"/>	xp1	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR1	p	2	3	2		
4	<input checked="" type="checkbox"/>	xp2	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR2	p	3	5	2		
5	<input checked="" type="checkbox"/>	xp4 REC	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR4	p	5	9	2		
6	<input checked="" type="checkbox"/>	950	SONY	AJ-D750	<input type="checkbox"/>	P4	t	8	1	2		
7	<input checked="" type="checkbox"/>	20	SONY	DVR-20	<input type="checkbox"/>	P6	t	9				
8	<input checked="" type="checkbox"/>	65	SONY	BVW-65	<input type="checkbox"/>	P3	t	6			2	



Note: the VTR on Track 6 has been set as the Record Track and Linear SE mode is ON

Press IN to create a new Record Event on the record track (for the most accurate testing, the record tape should have pre-recorded "burned-in" timecode)

Set Duration to 1:00 (one second)

Select any source track and add a new event to the timeline coincidental with the beginning of the Record Event [Shift]+[MarkIN] automatically positions the IN of the highlighted event at the beginning of the current Record Event

Set Duration to :10 (ten frames)

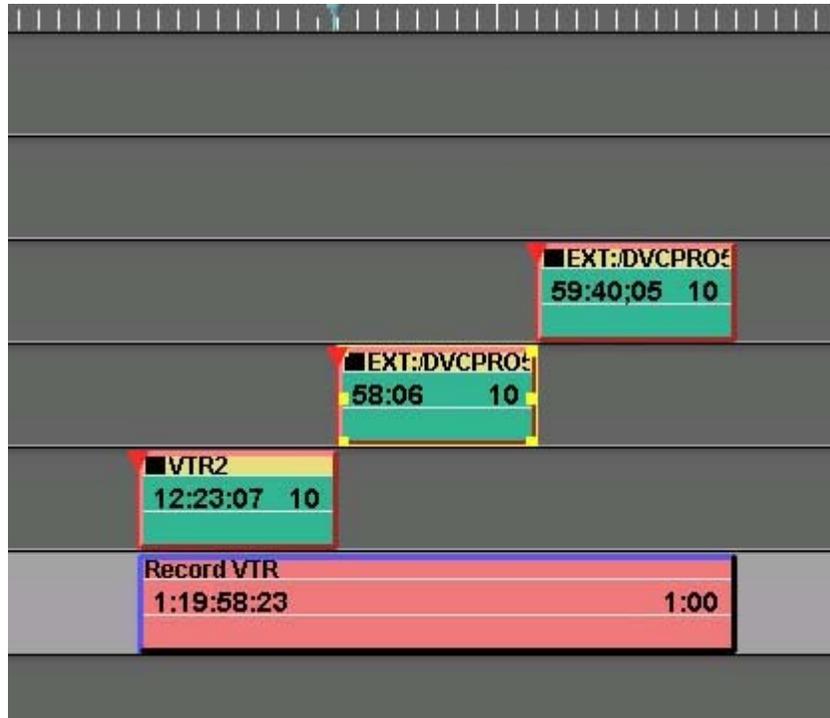
Select another source track and add a new event to the timeline coincidental with the ending of the first source (use the right arrow key to navigate to the right until at the end of the first source event)

Set Duration to :10 (ten frames)

Select a third source track and add a new event to the timeline coincidental with the ending of the second source (right arrow to navigate to the right until at the end of the second source event)

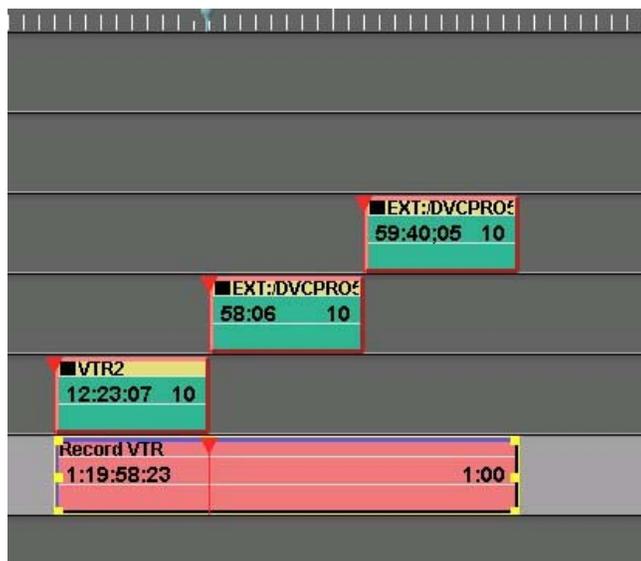
Set Duration to :10 (ten frames)

The timeline should look like image below

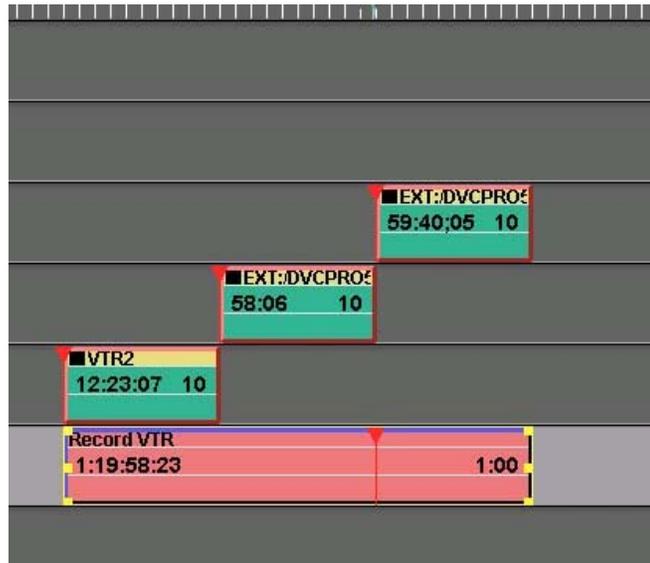


Press RECORD to initiate the recording process.

After the recording is complete, review the timing of the switched sources *inside* this one second duration recording. It may be easiest to "park" between the first and second clips on the timeline by using the right and left arrows to navigate and pressing GotoCTI while highlighting the Record VTR track. The Record VTR's CPI should now be directly under the 'edit' point between the first and second events as in the image below.



If switcher timing is correct, you will SEE the switch to the second event at the first field of the **tenth** frame into the recorded edit, and between the second and third events at the **twentieth** frame into the recorded edit (shown below)



Each video switcher *switch* should occur at the precise *frame* between the first and second source event and again between the second and third events.

If NOT, adjust the switcher's **Transition Delay** by opening the Video Switcher "**Settings**" dialog on the Assign Dialog page [Shift]+[ASGN]

<input type="checkbox"/>	xp3	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR3	p	4
<input checked="" type="checkbox"/>	750	SONY	AJ-D750	<input type="checkbox"/>	P8	t	7
<input checked="" type="checkbox"/>	xp1	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR1	p	2
<input checked="" type="checkbox"/>	xp2	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR2	p	3
<input checked="" type="checkbox"/>	xp4 REC	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR4	p	5
<input checked="" type="checkbox"/>	950	SONY	AJ-D750	<input type="checkbox"/>	P4	t	8
<input checked="" type="checkbox"/>	20	SONY	DVR-20	<input type="checkbox"/>	P6	t	9
<input checked="" type="checkbox"/>	65	SONY	BVW-65	<input type="checkbox"/>	P3	t	6

ASSIGN DIALOG

Record / Preview Mode

Linear SE Mode
 Black Program Black
 Auto Extend Events

Record Off
 Preset Preview
 Monitor Switch Only

Record Track:

Video Switcher

Enabled

Switcher Off

Settings

A/V Preview Switching

Enabled

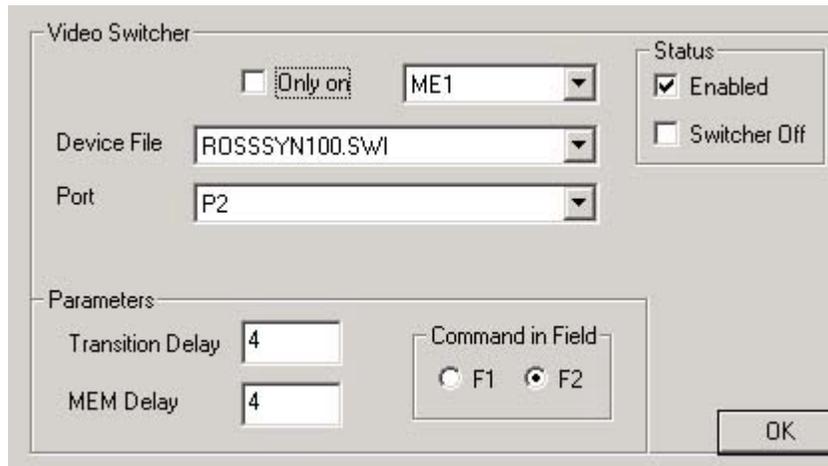
Settings

Audio Mixer

Enabled

Mixer Off

Note: the Video Switcher "Settings" button will open the dialog box shown below



*For the Ross Synergy 100 shown above, the **Transition Delay** is set at **4** and the **Command in Field** is set to **F2** for precisely switched source timing*

Any adjustments to the **Transition Delay** or **Command in Field** will be updated and stored in the *switchername.swi* file. If you did make changes to the default settings, please note these changes will be stored in the C:\Fastrack\Ftruntime\Switcher sub-folder. These changes will be lost if you update the Fastrack software into the same 'Ftruntime' folder as the previous version of Fastrack. It is advisable to rename the current Ftruntime folder (FtruntimeV3.1) each time you install Fastrack software as the new installation creates a new Ftruntime folder, overwriting all files and sub-folders, hence losing the updated switcher settings. It is advisable to save any changed/updated .swi files to another location (My Documents, floppy disk, etc) for easy recall after future updates of Fastrack software. Simple copy the *switchername.swi* file to the current Ftruntime/Switcher sub-folder. We at Editware would appreciate being informed of any changes to the defaults of the switcher protocol so we can, if necessary, make changes to the factory settings for that particular video switcher.

Section 3: PROFILE XP TIMING

To ensure proper Profile playback and record timing, some test previews and recordings must be performed and reviewed carefully. The Frames Offset (on each Track's "INIT" setting) can be adjusted for each Profile channel, with all channels typically using the same offset.

Ensure proper Profile set-up in the Assign Dialog page [Shift]+[ASGN]

Track	On	Device Name	Class	Device	Auto	Port	Pool	V-Switcher		AudioMixer
								Video	Start	Count
1	<input checked="" type="checkbox"/>	xp1	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR1	xp	2	3	2
2	<input checked="" type="checkbox"/>	xp2	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR2	xp	3	5	2
3	<input checked="" type="checkbox"/>	xp3	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR3	xp	4		2
4	<input checked="" type="checkbox"/>	xp4 REC	PROFILE	XP	<input type="checkbox"/>	GV011250:VTR4	xp	5	9	2
5	<input checked="" type="checkbox"/>	750	SONY	AJ-D750	<input type="checkbox"/>	P8	tape	7	7	2
6	<input checked="" type="checkbox"/>	950	SONY	AJ-D750	<input type="checkbox"/>	P4	tape	8		
7	<input checked="" type="checkbox"/>	20	SONY	DVR-20	<input type="checkbox"/>	P6	tape	9		
8	<input checked="" type="checkbox"/>	65	SONY	BVW-65	<input type="checkbox"/>	P3	tape	6		

Tracks 1-4 Profile channels with IP addresses and configuration file names (GV011250:VTR1, etc.)

Select each Profile track and Assign [ASGN] a single event to each track, starting at the exact same time on the timeline (see image below).

Note in this example that the same clip has been assigned to all four channels, simplifying the testing process (no concerns with different timecodes, durations, etc).

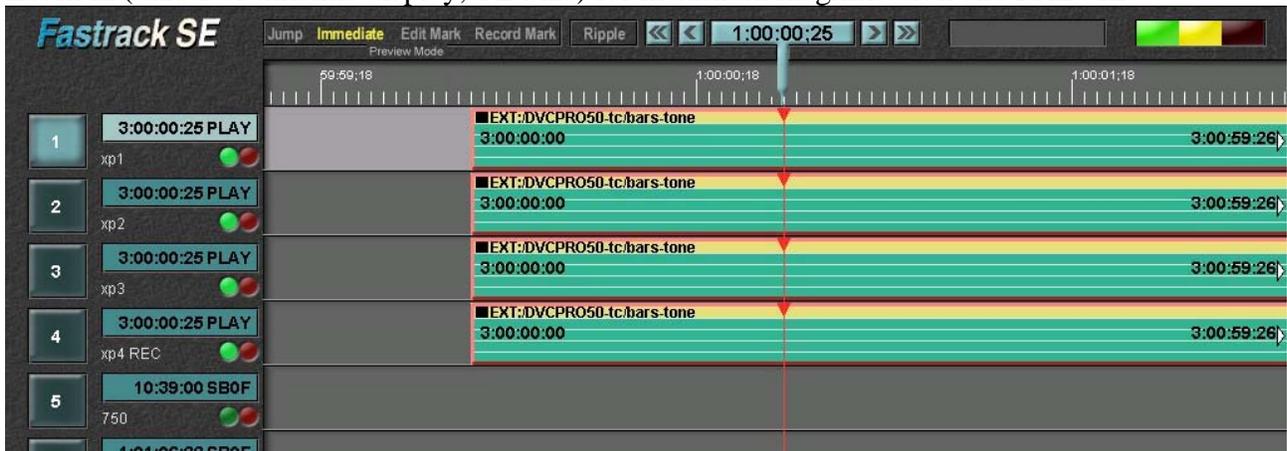


If the Function Keys (lower left of Fastrack main page) appear as above, select F8 (TL Size)



This brings up the Timeline Size Function Key choices. F1 zooms in for maximum close-up view. F8 will Return to Help and Version "top level" Function Keys.

Zoom in (Size 1 of timeline display, TL Size) for maximum magnification and PREVIEW



The image above shows correct CPI positions (Current Position Indicator; the downward pointing red triangle on the video line of each event) for each track precisely synchronized at the red vertical line representing the current timeline time (under the CTI; Current Timeline Indicator which reads 1:00:00:25). The CPI shows the current relative position on the event, representing that position on the event by the "play head" (timecode in the STATUS area (3:00:00:25) is the current position.

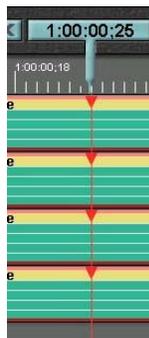
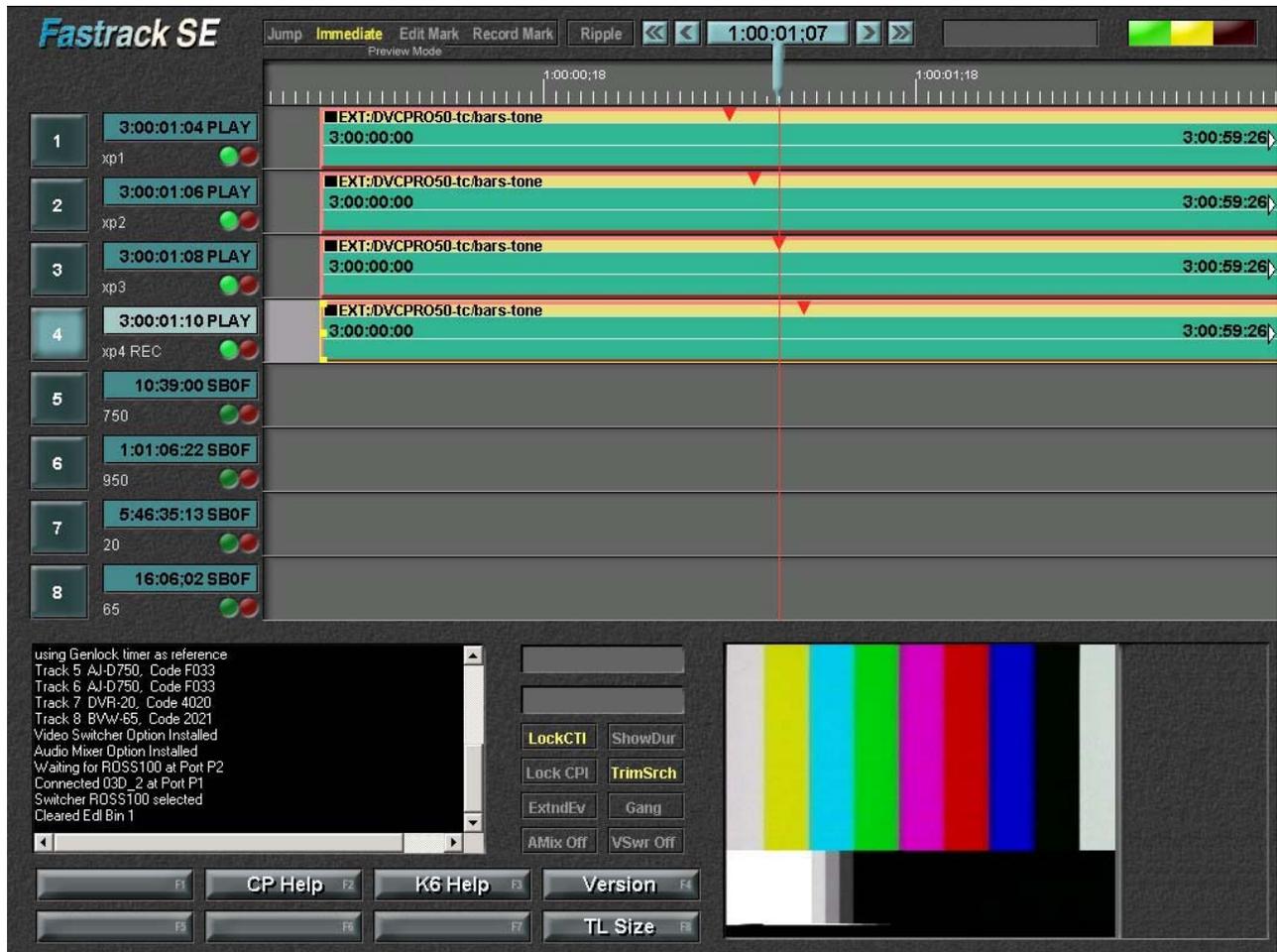
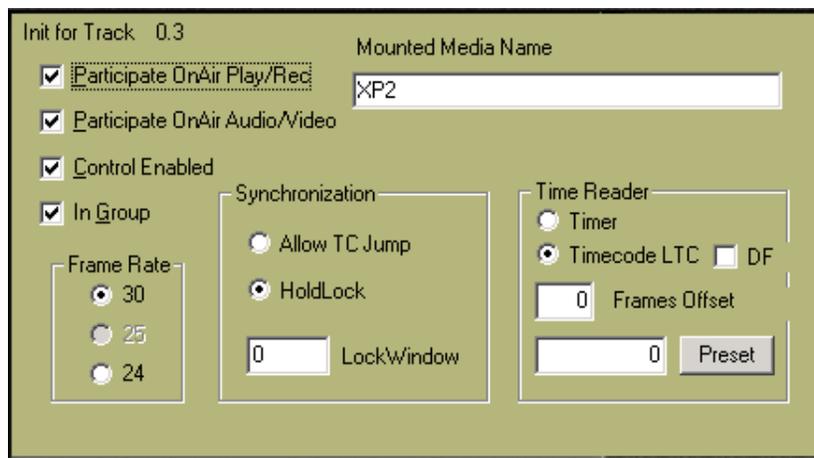


Image at left shows details of the four CPIs all tracking exactly at the CTI during preview as they should appear

The example below shows various Frames Offsets (Track 1=4, Track 2=2, Track 3=0, Track 4= -2)



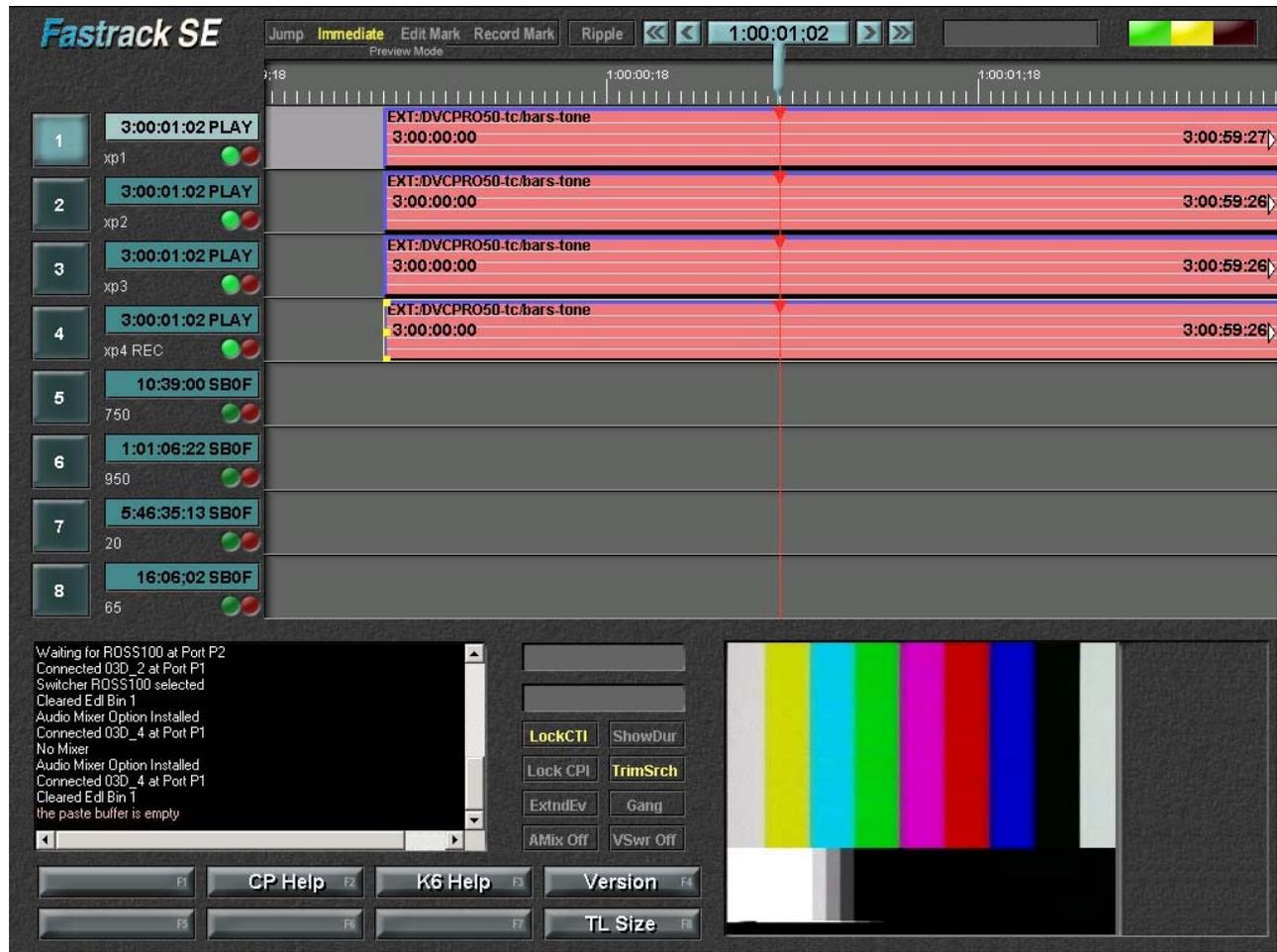
If the CPI for any channel is 'offset' from the CTI during a preview (as Track 1, 2, and 4 above), then adjust that individual track's Frames Offset by highlighting the track and pressing [INIT]. Each Profile should have the same Frames Offset on all channels (unless going through a different video path into the video switcher).



The Init for Track 0.3 dialog box. Frames Offset equals zero in this example.

After setting and re-previewing the Frames Offset until all Profile XP playback channels' CPIs are synchronized with the CTI, change the mode of each event on the timeline to RECORD.

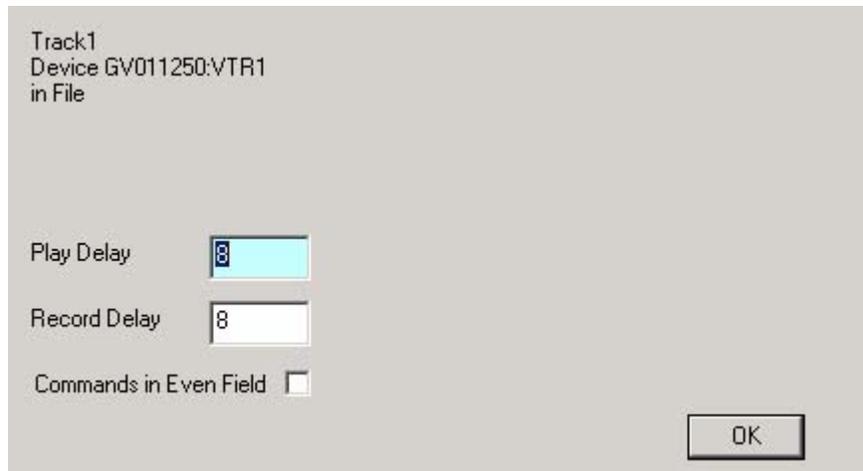
The event MODE key [Shift]+[Video] brings up the MODE dialog. Select Record for each event or use the shortcut keystroke of [Alt]+[Event] to toggle between Play and Record on each event.



Now Preview (not necessary to actually Record) and look carefully at the CPI of each track.

The image above shows the correct CPI (Current Position Indicator) positions for each track precisely synchronized at the red vertical line representing current timeline time (under the CTI; Current Timeline Indicator which reads 1:00:01:02)

Typically, the default Record Delay is correct and the same on all Profile XP server channels.



The Play and Record Delay dialog box. Profile XP defaults of 8 shown.

Adjustments, if necessary, to the Record Delay are made by pressing [Control]+[INIT] to access the above dialogue box. Adjust by single frame increments until satisfied with proper Record timing. If less than a frame adjustment is necessary, select "Commands in Even Field" for a single field adjustment on when the Record Delay command is sent. Re-preview until proper CPI tracking is achieved on all Profile XP server channels.

Any adjustments to the Record Delay will be updated and stored in the Fastrack configuration file. These changes will be stored in the C:\Fastrack\Fruntime\FTConfig.ini file (or in specified file with the press of [Control]+[Output]).

It is advisable to store a copy of your FTConfig.ini file in another place (floppy disk, My Documents folder, etc) for safe-keeping and archive.