MMR Hybrid Protocol for External Control

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INFORMATION FIELD INDEX

I/F Name	Token [see hybprot.h]	Cmd/stat	Msg data len	Application data type
Timecode				
MMR TIME CODE	cHyb_MmrTimeCode	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
MASTER TIME CODE	cHyb_MasterCode	– /stat	7	HYB_TIMECODE (HybTimeCode)
REQUESTED OFFSET	cHyb_RqstdOfst	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
OFFSET DELTA	cHyb_OfstDelta	cmd/ –	7	HYB_TIMECODE (HybTimeCode)
LYNX SYNC POINT	cHyb_LynxSyncPoint	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
TRACK SLIP OFFSET [8]	cHyb_TrkSlipOfst	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
TRACK SLIP DELTA	cHyb_TrkSlipDelta	cmd/ –	7	HYB_TIMECODE (HybTimeCode)
MEMORY [10]	cHyb_Memory	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
LOCATE POINT	cHyb_LocPoint	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
IN POINT	cHyb_InPoint	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
OUT POINT	cHyb_OutPoint	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
PRE ROLL	cHyb_PreRoll	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
POST ROLL	cHyb_PostRoll	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
START POINT	cHyb_StartPoint	– /stat	7	HYB_TIMECODE (HybTimeCode)
END POINT	cHyb_EndPoint	– /stat	7	HYB_TIMECODE (HybTimeCode)
LOOP START	cHyb_LoopStart	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
LOOP END	cHyb_LoopEnd	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
NEXT EDIT	cHyb_NextEdit	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
PREVIOUS EDIT	cHyb_PrevEdit	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
LOCAL ZERO	cHyb_LocalZero	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
AVAILABLE RECORD TIME	cHyb_AvailRecTime	– /stat	7	HYB_TIMECODE (HybTimeCode)
EDIT SLIP DELTA COMMAND	cHyb_EdSlipDeltaCmd	cmd/ –	7	HYB_TIMECODE (HybTimeCode)
TAPE MODE START	cHyb_TapeModeStart	cmd/stat	7	HYB_TIMECODE (HybTimeCode)

TAPE MODE LEADER	cHyb_TapeModeLeader	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
TAPE MODE PROJECT LENGTH	cHyb_TapeModeProjLen	cmd/stat	7	HYB_TIMECODE (HybTimeCode)
TRANSPORT COMMAND WITH TIMECODE	cHyb_TranCmdTimecode	cmd/ –	7	HYB_TIMECODE (HybTimeCode)

Transport Commands and Tallies

TRANSPORT COMMAND	cHyb_TranCmd	cmd/ –	1	BYTE
TRANSPORT TALLY	cHyb_TranTally	– /stat	6	HYB_TRAN_TALLY (HybTranTally)
VELOCITY COMMAND	cHyb_VelCmd	cmd/ –	4	HYB_VELOCITY (INT16)
TRANSPORT LOCATE MACRO	cHyb_TranLocMac	cmd/ –	2	BYTE[2]

Track Controls

TRACK RECORD STATUS	cHyb_TrkRecStat	– /stat	var	HYB_TRACK_BITMAP (HybTrackBitmap)
TRACK RECORD READY	cHyb_TrkRecRdy	cmd/stat	var	HYB_TRACK_BITMAP (HybTrackBitmap)
TRACK INPUT MONITOR	cHyb_TrkInputMon	cmd/stat	var	HYB_TRACK_BITMAP (HybTrackBitmap)
TRACK INPUT STATUS	cHyb_TrkInputStat	– /stat	var	HYB_TRACK_BITMAP (HybTrackBitmap)
TRACK CUE MONITOR	cHyb_TrkCueMon	cmd/stat	var	HYB_TRACK_BITMAP (HybTrackBitmap)
TRACK SLIP SELECT	cHyb_TrkSlipSel	cmd/stat	var	HYB_TRACK_BITMAP (HybTrackBitmap)
TRACK SELECT COMMAND	cHyb_TrkSelCmd	cmd/ –	3	BYTE[3]
TRACK NEXT/PREV SELECT	cHyb_TrkNextPrev	cmd/stat	var	HYB_TRACK_BITMAP (HybTrackBitmap)
TRACK RECORDABLE	cHyb_TrkRecordable	– /stat	var	HYB_TRACK_BITMAP (HybTrackBitmap)
TRACK SLIP COMMIT	cHyb_TrkSlipCommit	cmd/ –	1	BYTE

Disk/Backup/Tracks/Editing

DEVICE TALLY	cHyb_DeviceTally	– /stat	1	BYTE
DISK COMMAND	cHyb_DiskCmd	cmd/ –	2	BYTE[2]
DISK STATUS	cHyb_DiskStatus	– /stat	6	BYTE[6]
SCSI DEVICES MOUNTED	cHyb_ScsiDevMounted	– /stat	2	WORD
RECORD DISK SELECT [8]	cHyb_RecDiskSel	cmd/stat	2	BYTE[2]
RECORD DISK CURRENT	cHyb_RecDiskCurr	– /stat	2	BYTE[2]
EDIT	cHyb_Edit	cmd/ –	1	BYTE
EDIT TALLY	cHyb_EditTally	– /stat	3	BYTE[3]
EDIT EVENT CAPTURE	cHyb_EditEvCapt	cmd/ –	0	n/a
EDIT SYNC MODE	cHyb_EditSyncMode	cmd/stat	1	BYTE

System

EXTERNAL ERROR CLEAR	cHyb_ExtErrorClear	cmd/ –	0	n/a
SYSTEM TIME	cHyb_SysTime	cmd/stat	4	DWORD

USER LOAD/SAVE	cHyb_UserLodSav	cmd/ –	1	BYTE
USER STORE	cHyb_UserSto	cmd/ –	1	BYTE
USER MEMORY	cHyb_UserMem	cmd/ –	1	BYTE
MACHINE TYPE	cHyb_MachType	– /stat	1	BYTE
SERIAL NUMBER	cHyb_SerNum	– /stat	2	WORD
SILICON SERIAL NUMBER	cHyb_SilSerNum	– /stat	6	BYTE[6]
STATUS REQUEST	cHyb_StatusRqst	cmd/ –	1	BYTE
STATUS REQUEST ERROR	cHyb_StatusRqstError	– /stat	2	BYTE[2]

Remote

REMOTE BUS SELECT COMMAND	cHyb_RmtBusSelectCmd	cmd/stat	1	BYTE

Remote Meters

REMOTE METER SOURCE	cHyb_RmtMeterSrc	cmd/stat	1	BYTE

Setup: System Controls and References

CONTROL MODE COMMAND	cHyb_ControlModeCmd	cmd/stat	1	BYTE
CONTROL MODE TALLY	cHyb_ControlModeTally	– /stat	1	BYTE
FRAME REFERENCE COMMAND	cHyb_FrmRefCmd	cmd/stat	1	BYTE
FRAME REFERENCE TALLY	cHyb_FrmRefTally	– /stat	1	BYTE
SAMPLE CLOCK REFERENCE COMMAND	cHyb_SampClkRefCmd	cmd/stat	1	BYTE
SAMPLE CLOCK REFERENCE TALLY	cHyb_SampClkRefTally	– /stat	1	BYTE
FRAME RATE AND TIMECODE TYPE COMMAND	cHyb_FpsTctCmd	cmd/stat	1	(BYTE)FpsTct
SAMPLE RATE COMMAND	cHyb_SampRateCmd	cmd/stat	1	(BYTE)SampleRate
RATE TALLY	cHyb_RateTally	– /stat	7	HYB_RATE_TALLY (HybRateTally)
MASTER TIMECODE TYPE TALLY	cHyb_MasterTctTally	– /stat	1	BYTE
VARISPEED RATE	cHyb_VariRate	cmd/stat	2	WORD
LYNX BUS COMMAND	cHyb_LynxBusCmd	cmd/stat	1	BYTE
LYNX BUS TALLY	cHyb_LynxBusTally	– /stat	1	BYTE
LYNX BUS ADDRESS	cHyb_LynxBusAddr	cmd/stat	1	BYTE
LYNX BUS V500 SAL MODE	cHyb_LynxBusV500	cmd/stat	1	BYTE
CAN BUS COMMAND	cHyb_CanBusCmd	cmd/stat	1	BYTE
CAN BUS TALLY	cHyb_CanBusTally	– /stat	1	BYTE
CAN BUS IDENT COMMAND	cHyb_CanBusIdCmd	cmd/stat	1	BYTE
BUS SELECT COMMAND	cHyb_BusSelectCmd	cmd/stat	1	BYTE

Setup: Input/Output

AES/EBU REFERENCE CHANNEL	cHyb_AESRef	cmd/stat	1	BYTE
AES/EBU INPUT RATE AUTO	cHyb_AESInpRateAuto	cmd/stat	1	BYTE
AES/EBU RATE CONVERSION CHANNEL	cHyb_AESRateConv	cmd/stat	1	BYTE
AES/EBU RATE CONVERSION ALGORITHM	cHyb_AESRateAlgo	cmd/stat	1	BYTE
EXTERNAL DIGITAL INPUT DELAY	cHyb_ExtDigInDly	cmd/stat	2	BYTE[2]
EXTERNAL DIGITAL OUTPUT DELAY	cHyb_ExtDigOutDly	cmd/stat	2	BYTE[2]
AES/EBU INPUT STATUS [8]	cHyb_AESInStat	– /stat	1	BYTE

Setup: Control

LOOP MODE	cHyb_LoopMode	cmd/stat	1	BYTE
LOOP RECORD MODE	cHyb_LoopRecMode	cmd/stat	1	BYTE
NEXT/PREV MODE	cHyb_NxtPrvMode	cmd/stat	1	BYTE
RECORD KEY MODE	cHyb_RecKeyMode	cmd/stat	1	BYTE
REHEARSE KEY MODE	cHyb_RehKeyMode	cmd/stat	1	BYTE

Setup: Audio

RECORD MONITOR	cHyb_RecMon	cmd/stat	1	BYTE
RECORD INPUT SOURCE	cHyb_RecInSrc	cmd/stat	1	BYTE
RECORD FILE TYPE	cHyb_RecFileType	cmd/stat	1	BYTE
RECORD DESTRUCTIVE	cHyb_RecDestr	cmd/stat	1	BYTE
CROSSFADE LENGTH IN SAMPLES	cHyb_CrossfadeSamples	cmd/stat	5	HYB_SAMPLE_NUM
GAPLESS PUNCHOUT	cHyb_GaplessPunchout	cmd/stat	1	BYTE
DAILIES MODE	cHyb_DailiesMode	cmd/stat	1	BYTE

Setup: Meters & Calibration

METER OPERATING LEVEL	cHyb_MeterOp	cmd/stat	1	BYTE
METER CALIBRATE	cHyb_MeterCal	cmd/stat	1	BYTE
METER PLAYBACK CLIP	cHyb_MeterPlayClip	cmd/stat	1	BYTE
TONE ENABLE	cHyb_ToneEnbl	cmd/stat	1	BYTE

Setup: MIDI

MIDI DEVICE ID	cHyb_MidiDevId	cmd/stat	1	BYTE
MIDI COMM TALLY	cHyb_MidiComms	- /stat	1	BYTE

Setup: Lynx Transport

FILM TACH AND DIRECTION	cHyb_FilmTachDir	cmd/stat	1	BYTE
FILM FRAME RATE	cHyb_FilmFrameRate	cmd/stat	1	BYTE

FILM PULSE RATE	cHyb_FilmPulseRate	cmd/stat	1	BYTE
READER CODE SOURCE TALLY	cHyb_RdrCodeSrc	– /stat	1	BYTE
SERIAL TRAN COMM TALLY	cHyb_SerTranComms	– /stat	1	BYTE

Setup: Parallel Remote

PARALLEL RECORD MODE	cHyb_ParaRecMode	cmd/stat	1	BYTE

Setup: Editor Interface

EDITOR EDIT FIELD	cHyb_EdFld	cmd/stat	1	BYTE
EDITOR DEVICE TYPE	cHyb_EdDev	cmd/stat	1	BYTE
EDITOR TRACK MAPPING	cHyb_EdTrkMapping	cmd/stat	1	BYTE
EDITOR AUTO EE ENABLE	cHyb_EdAutoEe	cmd/stat	1	BYTE
EDITOR CHASE SOURCE	cHyb_EdChaseSrc	cmd/stat	1	BYTE

1   INTRODUCTION

There are 2 message types:

      Command   (writes information fields)

      Status   (return of information field data)

All internal data is considered as being stored in "information fields" (abbr. i/f). Each i/f is designated as either "cmd/stat", " - /stat" or "cmd/ - ".

CONVENTIONS

1.   All numeric quantities in this text should be assumed to be <u>hexadecimal</u>, unless otherwise noted.
2.   All bit fields will be shown with the most significant bit first.
3.   Multi-byte data values are transmitted in BIG-ENDIAN mode (msb first), for compatability with MMC.

COMMUNICATIONS MESSAGE FORMAT

Messages Embedded in Sony Protocol

Commands:

```
<cmd1=0xe0 | dataCount>  <i/f token>  <data......>  <Sony cksm>
```

Status:

```
<cmd1=0xf0 | dataCount>  <i/f token>  <data......>  <Sony cksm>
```

Notes:

1.   Messages with data field byte counts (`dataCount`) greater than 15 are not supported.
2.   `dataCount` is the length of the data field only, and does not include the token.
3.   `Sony cksm` adds a maximim of 17 bytes from the cmd1 byte to immediately before the checksum.

Messages Embedded in MIDI Protocol

[TBD]

NOTE

This document will eventually list the actual token values for the various commands and information fields. In the meantime, most tokens are indicated as "xx", or some number which may or may not be accurate.

For actual values, refer to HybExt.hpp and use the enum values cHyb_... listed in the index at the top of this document.

2 STANDARD SPECIFICATIONS

STANDARD TIME CODE:

ii hh mm ss ff xx tt

ii = Index	Used for timecode arrays (TRACK SLIP OFFSET and MEMORY)	
hh = BCD hours	[00 thru 23]	
mm = BCD minutes	[00 thru 59]	
ss = BCD seconds	[00 thru 59]	
ff = BCD frames	[00 thru 29]	
xx = BCD subframes	[00 thru 99]	
tt = flags:	shzxaaaa	

aaaa = timecode rate and type (FpsTct):

0 = 30 non-drop	[cFpsTct_30ndf]
1 = 30 drop	[cFpsTct_30df]
2 = 25	[cFpsTct_25]
3 = 24	[cFpsTct_24]
4 = 29 non-drop	[cFpsTct_29ndf]
5 = 29 drop	[cFpsTct_29df]
6 thru 0xd = reserved	
0xe = use Master setting	[cFpsTct_UseMaster]
0xf = use Global setting	[cFpsTct_UseGlobal]

x = subframe display flag:
- 0 = subframes off
- 1 = subframes on

z = Zero Adjust flag
- 0 = no adjustment
- 1 = displayed value to be adjusted by LOCAL ZERO value

h = 12 hour display flag:
- 0 = display timecode in 0~24 hour range (default)
- 1 = display timecode in +/-12 hour range

s = sign:
- 0 = positive time code
- 1 = negative

STANDARD SAMPLE NUMBER:

s1 s2 s3 s4 s5

40-bit sample number in BIG-ENDIAN order.

STANDARD VELOCITY:

Velocity is represented by the direction and number of samples to be interpolated within the period of one "slab" of the master slab clock. Since there are 1024 samples in a slab, playspeed is encoded as +1024. Reverse play is -1024. It may also be thought of as a signed 6-bit integer plus 10-bit fraction which measures velocity relative to playspeed.

v1 v2

Signed 16-bit speed value in BIG-ENDIAN order (i.e. msb arrives first).
Playspeed = +1024, or 0x0400.

STANDARD TRACK BITMAP:

This variable length field contains a single bit for each audio or video "track" supported by the Controlled Device. A bit value of 1 indicates an active state, while 0 indicates an inactive state. All unused or reserved bits must be reset to 0. The Standard Track Bitmap is currently used by the Information Fields TRACK RECORD READY, TRACK RECORD STATUS, TRACK INPUT MONITOR and TRACK INPUT STATUS.

When sent as Status, the Controlled Device need transmit only as many bytes of the Standard Track Bitmap as are required. Any track not included in a Status transmission will be assumed to be inactive, with its bit reset to zero. A message byte count of 01 (dataLen = 0) may be used if all tracks are inactive.

When written to, tracks not included in the transmission will have their individual bits reset to zero (track inactive). A message byte count of 01 (dataLen = 0) may be used if all tracks are to be reset.

```
r0 r1 r2 . .

        r0      Bitmap 0: hgfedcba
                    a = Video
                    b = 0
                    c = Time Code
                    d = Aux A ???
                    e = Aux B ???
                    f = 0
                    g = 0
                    h = 0
        r1      Bitmap 1: ponmlkji
                    i = Track 1
                    j = Track 2
                    k = Track 3
                    l = Track 4
                    m = Track 5
                    n = Track 6
                    o = Track 7
                    p = Track 8
        r2      Bitmap 2:  Tracks 9-16
        r3      Bitmap 3:  Tracks 17-24
        r4      Bitmap 4:  Tracks 25-32
        r5      Bitmap 5:  Tracks 33-40
        r6      Bitmap 6:  Tracks 41-48
        r7      Bitmap 7:  Tracks 49-56
        r8      Bitmap 8:  Tracks 57-64
          .
          .
          .
        etc
```

3 DETAILED INFORMATION FIELD DESCRIPTIONS

Time Code

01   MMR TIME CODE   [cmd/stat]
Contains the time code normally used to reference the Controlled Device's current position.
(distribute on CAN bus when CAN master???)

01	MMR TIME CODE
00	Index/subtype unused.
<.....>	Standard Time Specification

02   MASTER TIME CODE [- /stat]
Contains the time value of the time code relative to which all synchronization operations are to take place.
According to the CONTROL MODE and Lynx and CAN Bus information fields, data in this register may be
taken from the hardware timecode reader, the biphase reader, the RS-422 transport control port, the CAN bus
(another MMR being the master), or the Lynx bus (an external Lynx being the master). There is currently no
separate indication of the source of the timecode data.

02	MASTER TIME CODE
00	Index/subtype unused.
<....>	Standard Time Specification

03   REQUESTED OFFSET [cmd/stat]
Contains the desired time offset between the MMR TIME CODE and the MASTER TIME CODE for use when
in chase mode, and is defined as follows:
REQUESTED OFFSET = MMR TIME CODE - MASTER TIME CODE
This offset represents the desired difference in frames between the master and slave positions, <u>and need not be
expressed as a non-drop-frame number</u>.
REQUESTED OFFSET may be expressed in any positive or negative range. Devices will interpret an offset of
+23:00:00:00.00, for example, as being equivalent to one of -01:00:00:00.00.

03	REQUESTED OFFSET
00	Index/subtype unused.
<...>	Standard Time Specification

xx   OFFSET DELTA   [cmd/ -]
Writing to this register causes the written time value to be added to the REQUESTED OFFSET. Value will be
positive or negative. This field may not be read as status.

xx	OFFSET DELTA
00	Index/subtype unused.
<.....>	Standard Time Specification

xx   **LYNX SYNC POINT   [cmd/stat]**

Writing this register causes automatic calculation of REQUESTED OFFSET, relative to the current master sync point (maintained elsewhere, and not visible). Only active when connected to the Lynx Bus.

xx	LYNX SYNC POINT
00	Index/subtype unused.
<...>	Standard Time Specification

xx   **TRACK SLIP OFFSET   [cmd/stat]**

Contains the desired time offset between an individual track's timecode and MMR TIME CODE, and is defined as follows:
TRACK SLIP OFFSET = <track timecode> - MMR TIME CODE
TRACK SLIP OFFSET may be expressed in any positive or negative range. Devices will interpret an offset of +23:00:00:00.00, for example, as being equivalent to one of -01:00:00:00.00.

xx	TRACK SLIP OFFSET
<trk>	Track number (MMR: 0~7)
	Indices greater than the maximum are interpreted as "all tracks"<.....> Standard Time Specification

xx   **TRACK SLIP DELTA   [cmd/ -]**

Writing to this register causes the written time value to be added to all TRACK SLIP OFFSET registers specified by the TRACK SLIP SELECT field. Value will be positive or negative.
This field may not be read as status.

xx	TRACK SLIP DELTA
00	Index/subtype unused.
<.....>	Standard Time Specification

xx   **MEMORY   [cmd/stat]**

xx	MEMORY
<num>	Memory number (MMR: 0~9)
	Indices greater than the maximum are interpreted as "all memories"<.....> Standard Time Specification

08   **LOCATE POINT   [cmd/stat]**

Contains the target time code for the LOCATE command.

08	LOCATE POINT
00	Index/subtype unused.
<.....>	Standard Time Specification

09   IN POINT [cmd/stat]
Contains the target time code for looped record and rehearse commands.
Always re-calculates IN POINT SAMPLES when written.

09	IN POINT
00	Index/subtype unused.
<.....>	Standard Time Specification

0A   OUT POINT [cmd/stat]
Contains the target time code for the looped exit command.
Always re-calculates OUT POINT SAMPLES when written.

0A	OUT POINT
00	Index/subtype unused.
<.....>	Standard Time Specification

10   PRE ROLL [cmd/stat]

xx	PRE ROLL
00	Index/subtype unused.
<.....>	Standard Time Specification

11   POST ROLL [cmd/stat]

xx	POST ROLL
00	Index/subtype unused.
<.....>	Standard Time Specification

12   START POINT   [- /stat]
Integer hour timecode point which is closest to the leading edge of the first edit from any track.

xx	START POINT
00	Index/subtype unused.
<.....>	Standard Time Specification

13   END POINT   [- /stat]
Location of trailing edge of last edit from any track, plus 2 seconds.

xx	END POINT
00	Index/subtype unused.
<.....>	Standard Time Specification

16   LOOP START   [cmd/stat]

xx	LOOP START
00	Index/subtype unused.
<.....>	Standard Time Specification

17   LOOP END   [cmd/stat]

xx	LOOP END
00	Index/subtype unused.
<.....>	Standard Time Specification

xx   NEXT EDIT   [cmd/stat]

When read, contains the timecode value at which the most recently calculated "next" edit point occurs. Writing this field as a command will not result in the command timecode being placed in the field, but will cause a calculation which leaves the field contaning the timecode of the closest edit point following the command timecode value. Calculation parameters are taken from the fields TRACK NEXT/PREV SELECT and NEXT/PREV MODE.

xx	NEXT EDIT
00	Index/subtype unused.
<.....>	Standard Time Specification

xx   PREVIOUS EDIT   [cmd/stat]

When read, contains the timecode value at which the most recently calculated "prev" edit point occurs. Writing this field as a command will not result in the command timecode being placed in the field, but will cause a calculation which leaves the field contaning the timecode of the closest edit point prior to the command timecode value. Calculation parameters are taken from the fields TRACK NEXT/PREV SELECT and NEXT/PREV MODE.

xx	PREVIOUS EDIT
00	Index/subtype unused.
<.....>	Standard Time Specification

18   LOCAL ZERO   [cmd/stat]

Reference point in MMR TIME CODE at which the feet and frames display will be zero. Does not affect timecode itself.

xx	LOCAL ZERO
00	Index/subtype unused.
<.....>	Standard Time Specification

xx   AVAILABLE RECORD TIME   [- /stat]

Contains a timecode value indicating the amount of time (i.e. disk space) which is available for recording, given the current MMR TIME CODE position, the current TRACK RECORD READY status, and the current setting of the RECORD DESTRUCTIVE field.

xx	AVAILABLE RECORD TIME
00	Index/subtype unused.
<.....>	Standard Time Specification

xx   EDIT SLIP DELTA COMMAND   [cmd/ -]

This is a edit command. Writing to this register causes the material between the IN POINT and OUT POINT on the currently selected edit tracks to be moved by the amount of time specified (equavalent to a Clear and Paste). The operation does not affect the clipboard, and may be undone with a single UNDO command. The time code value may be positive or negative.

This field may not be read as status.

xx	EDIT SLIP DELTA COMMAND
00	Index/subtype unused.
<.....>	Standard Time Specification

xx   TAPE MODE START   [cmd/stat]

Time used during Tape Mode to determine the nominal start time of any new track. Actual track start time is TAPE MODE START – TAPE MODE LEADER

xx	TAPE MODE START
00	Index/subtype unused.
<.....>	Standard Time Specification

xx   TAPE MODE LEADER   [cmd/stat]

Time used during Tape Mode to determine the pre-start interval. Actual track start time is TAPE MODE START – TAPE MODE LEADER

xx	TAPE MODE LEADER
00	Index/subtype unused.
<.....>	Standard Time Specification

xx   TAPE MODE PROJECT LENGTH   [cmd/stat]

Establishes a maximum total time for a tape mode project. Punching into record beyond the specified length will be prohibited.

xx	TAPE PROJECT LENGTH
00	Index/subtype unused.
<.....>	Standard Time Specification

xx   TRANSPORT COMMAND WITH TIMECODE   [cmd/ -]
Enters transport commands into a deferred queue for execution at the specified timecode.

xx	TRANSPORT COMMAND WITH TIMECODE
<cmd>	Index/subtype = TRANSPORT COMMAND [see definitions below]
	Currently supported commands:
	PLAY (usually used in place of EXIT)
	EXIT
	RECORD
	RECORD IF PLAY
	REHEARSE
	REHEARSE IF PLAY
	STROBE
< . . . . .>	Standard Time Specification

Transport Commands and Tallies

xx   TRANSPORT COMMAND   [cmd/ -]
All "motion" and edit controls. Tallied in the CONTROL TALLY i/f.

xx	TRANSPORT COMMAND
<cmd>	Command

MOTION CONTROL STATE (MCS) COMMANDS
Basic transport commands such as PLAY, STOP, FAST FORWARD and REWIND will each move
the Controlled Device to a new and mutually exclusive motion state. These commands are therefore
collectively labelled as the "Motion Control State" commands. Each MCS command causes a
transition into a new transport state and cancels the previous Motion Control State.
Receipt of a directly issued MCS command will also automatically terminate an active Motion Control
Process (MCP) or Loop Command, as described below (except for the PLAY and REVERSE PLAY
commands when received during a LOCATE MCP).
MCS commands may be either:
    (i)   directly issued by this command set,
or   (ii)   indirectly issued as steps in the execution of a Motion Control Process (see below).
Motion Control State activity is tallied in the "Most recently activated Motion Control State" (*ms*) byte
of the TRANSPORT TALLY Information Field. The device's success in achieving the requested state
is tallied in the same field, in the "MCS Online and Idle Status" (*ss*) byte.

    01   STOP
            Stop as soon as possible. STOP will be cancelled by the receipt of another MCS or
            MCP command.
            Recording [rehearsing] tracks <u>exit from record [rehearse]</u>. Velocity i/f is reset to
            zero.

    02   PLAY
            Enter playback mode, with the exception that if the device is currently executing a
            MCP:LOCATE, then PLAY mode will not be invoked until the LOCATE is
            completed.
            Receipt of any other MCS or MCP command will cancel PLAY.
            When received while a LOCATE is in progress, the "MCP Status" field of the
            TRANSPORT TALLY Information Field will be set to indicate "Locate with
            Deferred Play pending" for the duration of the LOCATE. When the LOCATE has
            concluded:

(i)   An automatic MCS:PLAY command will be issued;

(ii)   The TRANSPORT TALLY " Most recently activated Motion Control State" byte will switch to "PLAY";

(iii)   The TRANSPORT TALLY "MCP Status" byte will clear the "Locate with Deferred Play pending" bit.

Recording [rehearsing] tracks <u>exit from record [rehearse]</u>. Velocity i/f is reset to zero.

03   REVERSE PLAY

Enter reverse playback mode, with the exception that if the device is currently executing a MCP:LOCATE, then REVERSE PLAY mode will not be invoked until the LOCATE is completed.

REVERSE PLAY will be cancelled by the receipt of another MCS or MCP command.

When received while a LOCATE is in progress, the "MCP Status" field of the TRANSPORT TALLY Information Field will be set to indicate "Locate with Deferred Reverse Play pending" for the duration of the LOCATE. When the LOCATE has concluded:

(i)   An automatic MCS:REVERSE PLAY command will be issued;

(ii)   The TRANSPORT TALLY " Most recently activated Motion Control State" byte will switch to "REVERSE PLAY";

(iii)   The TRANSPORT TALLY "MCP Status" byte will clear the "Locate with Deferred Reverse Play pending" bit.

Recording [rehearsing] tracks <u>exit from record [rehearse]</u> upon receipt of the REVERSE PLAY command. Velocity i/f is reset to zero.

04   FAST FORWARD

Move forward at maximum possible speed. FAST FORWARD will be cancelled by the receipt of another MCS or MCP command. Recording [rehearsing] tracks <u>exit from record [rehearse]</u>. Velocity i/f is reset to zero.

05   REWIND

Move in reverse direction at maximum possible speed. REWIND will be cancelled by the receipt of another MCS or MCP command. Recording [rehearsing] tracks <u>exit from record [rehearse]</u>. Velocity i/f is reset to zero.

06   SHUTTLE

Causes the Controlled Device to travel at direction and velocity specified by the VELOCITY COMMAND i/f. SHUTTLE will be cancelled by the receipt of another MCS or MCP command. Recording [rehearsing] tracks <u>exit from record [rehearse]</u>.

08   STOP IF INTERNAL JOG/SHUTTLE

Identical to STOP, but only effective if the current MCS is INTERNAL JOG or SHUTTLE. Typically used when the control wheel is required for setup or data trim modes.

0B   INTERNAL SHUTTLE

Identical to standard SHUTTLE command with the exception that speed information is generated by a direct link between front panel hardware and the SYNC-2 card. The VELOCITY COMMAND field is therefore ignored while executing this command.

0C   INTERNAL JOG
        Identical to standard JOG command with the exception that speed information is
        generated by a direct link between front panel hardware and the SYNC-2 card. The
        VELOCITY COMMAND field is therefore ignored while executing this command.

MOTION CONTROL PROCESS (MCP) COMMANDS
Motion Control Processes are overriding control commands that cause the Controlled Device to
automatically issue it's own Motion Control State commands to achieve the desired result.
Motion Control Processes are mutually exclusive and are commanded by MCP commands.
Receipt of an MCP command will override any previously received MCS command.
 Motion Control Process activities are tallied in the "Most recently activated Motion Control Process"
(*mp*) byte of the TRANSPORT TALLY Information Field. The device's success in executing the
requested process is tallied in the same field, in the "MCP Status " (*ps*) byte.
In addition, during a Motion Control Process, each automatically activated Motion Control State will
be registered in the TRANSPORT TALLY Information Field in the manner described in the previous
section.

11   LOCATE
        Causes the Controlled Device to move to the time code position specifed by the
        LOCATE POINT field, in accordance with the MMR TIME CODE.
        With the exception of the MCS:PLAY and MCS:REVERSE PLAY commands,
        LOCATE will be cancelled by the receipt of any other MCS or MCP command.

LOOP COMMANDS
Loop processes are high-level overriding control commands that cause the Controlled Device to
automatically issue it's own Motion Control Process and Motion Control State commands to achieve
the desired result.
Loop commands are mutually exclusive.
Receipt of a Loop command will override any previously received MCP or MCS command.
Loop activities are tallied in the "Most recently activated Loop command" (*lc*) byte of the
TRANSPORT TALLY Information Field.
In addition, during a Loop process, each automatically activated Motion Control Process and Motion
Control State will be registered in the TRANSPORT TALLY Information Field in the manner
described in the previous sections.
Note: Changes to the LOOP START and/or LOOP END fields **will be recognized** during the
execution of the Loop commands.

20   LOOP PLAY
        Causes the Controlled Device to:
        (a)   Invoke the MCP LOCATE command to locate immediately to the LOOP
        START point minus the PRE ROLL value, if not already there
        (b)   Enter Play mode
        (c)   Continue until reaching the LOOP END point plus the POST ROLL value,
        at which time it should re-locate back to the LOOP START + PRE ROLL point.
        (d)   If the LOOP MODE field indicates "Repeat" mode, then go to (b).

21   LOOP RECORD
        Same as LOOP PLAY, except punch into record at the LOOP START point and
        punch out of record at the LOOP END point.
        If the LOOP RECORD MODE field indicates "Record Once", then recording will
        occur during the first pass only, with subsequent passes being Play only.
        When this command is received, LOOP START and LOOP END are transferred to
        IN POINT and OUT POINT respectively.

22 LOOP REHEARSE
Same as LOOP RECORD, except uses rehearse mode, and the LOOP RECORD
MODE field does not apply here.
When this command is received, LOOP START and LOOP END are transferred to
IN POINT and OUT POINT respectively.

23 LOOP C-LOOP
Causes the Controlled Device to:
(a)   Invoke the MCP LOCATE command to locate immediately to the LOOP
START point minus the PRE ROLL value, if not already there
(b)   Enter Play mode
(c)   Continue until reaching the LOOP END point plus the POST ROLL value,
at which time it should REVERSE PLAY back to the LOOP START + PRE ROLL
point.
(d)   If the LOOP MODE field indicates "Repeat" mode, then go to (b).

xx LOOP PREROLL
 Invokes the MCP LOCATE command to locate immediately to the LOOP START
point minus the PRE ROLL value, if not already there.

EDIT COMMANDS
All recording and rehearsing. Tallied in the TRANSPORT TALLY i/f.

30 EXIT
Causes a record [rehearse] exit on all currently recording tracks.

34 RECORD
Operational only if the TRANSPORT TALLY field "Most Recent Record/Rehearse
Activity" is not "ALL SAFE ON".

Switches the Controlled Device into record according to the setting of the TRACK
RECORD READY i/f. EDIT:RECORD will be honored under two MCS conditions
only:

CONDITION 1: Controlled Device already Playing:
If the Controlled Device is already playing (i.e. the "Most recently activated Motion
Control State" in the TRANSPORT TALLY Information Field is PLAY), then
EDIT:RECORD will cause record entry on all tracks which are presently in a record
ready state. *1*8*9

CONDITION 2: Controlled Device Stopped:
If, when EDIT:RECORD is received, the Controlled Device is completely stopped as
a result of an explicit STOP command (i.e. [i] the "Most recently activated Motion
Control State" in the TRANSPORT TALLY Information Field is STOP; and [ii] the
"Most recently activated Motion Control Process" byte is set to "No MCP's currently
active"), then:
(i)   An automatic MCS:PLAY command will be issued; *3
(ii)   At an appropriate point in the start up phase of the device, record entry will
occur on all tracks which are presently in a record ready state. *1*5

NOTES:
    *1.   Tracks are switched in and out of the record ready state using the TRACK RECORD READY Information Field.

    2.   No recording [rehearsing] will take place following an EDIT:RECORD command unless at least one track is in a record ready state.

    *3.   Under CONDITION 2, an automatic MCS:PLAY command will be issued <u>only under the STOP conditions specified</u>. At no other time does EDIT:RECORD have any implications regarding play mode or playing speed.

    *4.

    *5.

    6.

    7.   A Controlled Device will ignore any EDIT:RECORD command which is received while it is neither already in play mode nor completely stopped as described.

    *8.   Under CONDITION 1, "Controlled Device already Playing", it is not necessary for the PLAY command to have been "successful" before EDIT:RECORD is accepted. If, however, the desired play motion has not yet been achieved when EDIT:RECORD is received, it may be necessary for the device to defer the onset of recording until an appropriate point in its start up phase.

    *9.   Note also that, under CONDITION 1, recording is not inhibited by Motion Control Process activity.

35   RECORD IF PLAY

Same as RECORD but only supports "CONDITION 1". In other words, the MMR must already be Playing.

38   REHEARSE

Switches the Controlled Device into rehearse according to the setting of the TRACK RECORD READY i/f. All conditions applying to the EDIT:RECORD command also apply here.

39   REHEARSE IF PLAY

Same as REHEARSE but only supports "CONDITION 1". In other words, the MMR must already be Playing.

3C   STROBE

Operational only if the TRANSPORT TALLY field "Most Recent Record/Rehearse Activity" is RECORD or REHEARSE, and if the device is already playing (CONDITION 1).

Switches tracks into and out of record or rehearse according to:

(a)   "Most Recent Record/Rehearse Activity" is RECORD or REHEARSE

(b)   the setting of the TRACK RECORD READY i/f.

EDIT:STROBE will cause record (rehearse) entry on all tracks which are presently in a record ready state, and cause record (rehearse) exit on any currently recording (rehearsing) tracks which are no longer record ready.

LOCAL EDIT COMMANDS
Functionally the same as the normal commands, except will never be transmitted by a CAN Bus master.

    1f   HYB_LOCAL_EXIT
    20   HYB_LOCAL_REC
    21   HYB_LOCAL_REC_IF_PLAY
    1a   HYB_LOCAL_REC_IF_ARMED_PLAY
    22   HYB_LOCAL_REH
    23   HYB_LOCAL_REH_IF_PLAY
    24   HYB_LOCAL_STROBE
    1b   HYB_LOCAL_REH_IF_ARMED_PLAY

ALL SAFE COMMANDS

    40   ALL SAFE ON
                Place device in all safe mode, from which no editing can take place. Bitmap TRACK RECORD READY is <u>not</u> cleared on receipt of this command, nor is writing to that field affected by ALL SAFE status. User interface functions should however hide the contents of TRACK RECORD READY while ALL SAFE is on.

    41   ALL SAFE OFF
                Cancel all safe mode (default).

    42   ALL SAFE TOGGLE
                Toggles all safe mode.

ONLINE/OFFLINE COMMANDS

    50   ONLINE
                Inititiates chase activity if device is connected to Lynx and/or CAN bus, or if CONTROL MODE is TC Chase or Biphase Chase, etc
                If the INTERLOCK MODE i/f calls for a recalc, then the current offset is first recalculated: offset = current position - current master position.

    xx   ONLINE NO RECALC
                Same as ONLINE, except that offset is NEVER re-calculated.

    51   OFFLINE
                Cancels chase activity. Sets transport offline relative to both the Lynx and CAN buses. Has no other direct effect on MCS, MCP or EDIT states.

    52   ONLINE TOGGLE

    xx   ONLINE TOGGLE NO RECALC
                Same as ONLINE TOGGLE, except that offset is NEVER re-calculated.

xx　　　**TRANSPORT TALLY [- /stat]**

Tallies: (a)　　the current "Motion Control State" of the Controlled Device,
　　　　　　　　and specifies its success in achieving that state,
　　　　　(b)　　the current "Motion Control Process" of the Controlled Device,
　　　　　　　　and specifies its success at accomplishing that process.
　　　　　(c)　　the current Loop command status
　　　　　(d)　　actual record and rehearse operations taking place at the Controlled Device.
　　　　　(e)　　on/offline status.

xx	TRANSPORT TALLY
ms	Most recently activated Motion Control State:
	01 = STOP (default)
	02 = PLAY
	03 = REVERSE PLAY
	04 = FAST FORWARD
	05 = REWIND
	06 = SHUTTLE
	0B = INTERNAL SHUTTLE
	0C = INTERNAL JOG
lc	Most recently activated Loop command:
	00 = No loop command active (default)
	20 = LOOP PLAY
	21 = LOOP RECORD
	22 = LOOP REHEARSE
	23 = LOOP C-LOOP
	xx = LOOP PREROLL
ed	Most recent Edit Activity
	30 = EXIT (default)
	34 = RECORD
	38 = REHEARSE
	3C = ALL SAFE ON
ss	MCS, Online and Idle Status: *rsssnxit*
	t = MCS transition in progress
	i = Idle
	x = Idle transition in progress
	n = Online
	sss = Encoded actual velocity tally:
	000 = No speed data
	001 = Zero velocity (still)
	010 = n/a
	011 = Between zero and playspeed
	100 = Playspeed
	101 = Between playspeed and max wind velocity
	110 = n/a
	111 = Maximum wind velocity
	r = Reverse (sign of current velocity)
ps	MCP Status: *m0lrdksp*
	p = Parked (chasing) or Locate Complete (LOCATE)
	s = Lock Servo Active (chasing or resolved PLAY)
	k = Locked (chasing or resolved PLAY)
	d = Locate with Deferred Play pending
	r = Locate with Deferred Reverse Play pending
	l = Locate MCP active

<div align="right"><i>m</i> = Lock mode on (will attempt to lock while playing)</div>

es   Edit Status: <i>n000000r</i>

<div align="right"><i>r</i> = True record/rehearse (OR of TRACK RECORD STATUS bits)</div>

<div align="right"><i>n</i> = Not ready (NOR of TRACK RECORD READY bits)</div>

xx   VELOCITY COMMAND   [cmd/ -]

Sets the desired velocity for a subsequent MCS:SHUTTLE command. May also be used to change velocity while in the SHUTTLE mode. Velocity is reset to zero by any MCS command other than SHUTTLE. Not used by INTERNAL SHUTTLE or INTERNAL JOG commands.

xx	VELOCITY COMMAND
v1 v2	Standard Velocity Specification

xx   TRANSPORT LOCATE MACRO   [cmd/ -]

Quick locate macro's replace timecode field manipulation.

xx	TRANSPORT LOCATE MACRO
<tc>	Token of timecode field containing locate target.
	Valid fields are:

LYNX SYNC POINT	0x06	
MEMORY	0x09	
IN POINT	0x0b	
OUT POINT	0x0c	
PRE ROLL	0x0d	[In – preroll]
POST ROLL	0x0e	[Out + postroll]
START POINT	0x0f	
END POINT	0x10	
LOOP START	0x11	
LOOP END	0x12	
NEXT EDIT	0x13	
PREVIOUS EDIT	0x14	
FILM START LIMIT	0x17	
FILM END LIMIT	0x18	

<mem>	Memory number (if cHyb_Memory)

Track Controls

4E   TRACK RECORD STATUS [- /stat]

Contains bitmap of the tracks that are currently recording [or rehearsing]. Whether recording or rehearsing is tallied by the TRANSPORT TALLY Information Field.

In all cases, the appropriate bit is set to 1 if the track is recording [rehearsing]. Unused bits must be zero. The Controlled Device need transmit only as many bytes of this response as are required. Tracks not included in a Status transmission will be assumed <u>not</u> to be recording [rehearsing]. A message byte count of 01 (dataLen = 0) may be used if no tracks are recording [rehearsing].

4E	TRACK RECORD STATUS
r0 r1 r2 . .	Standard Track Bitmap (see Section 3).

4F   **TRACK RECORD READY [cmd/stat]**
A "track" is moved into a "record ready" state when its bit is set to *1* in this track bitmap.
Upon receipt of the next EDIT:RECORD or EDIT:REHEARSE command, tracks which are "record ready" will enter record [or rehearse].
Changing this Information Field will not in itself cause tracks to enter or to exit record [or rehearse], if the device is already recording [rehearsing].
When read as Status, the Controlled Device need transmit only as many bytes as are required. Tracks not included in a Status transmission will be assumed not to be in a TRACK RECORD READY state. A message byte count of 01 (dataLen = 0) may be used if no tracks are in a ready state.
When written to, tracks not included in the transmission will be set to the not ready state. A message byte count of 01 (dataLen = 0) may be used if all tracks are to be disabled.

> *4F*   TRACK RECORD READY
> *r0 r1 r2 . .*   Standard Track Bitmap (see Section 3).

53   **TRACK INPUT MONITOR [cmd/stat]**
Selects individual tracks that will monitor Input signals at their respective Outputs.
When read as a Response, the Controlled Device need transmit only as many bytes of TRACK INPUT MONITOR as are required. Tracks not included in a Response transmission will be assumed **not** to be selected for individual Input monitoring. A message byte count of 01 (dataLen = 0) may be used if no tracks are individually selected.
When written to by a WRITE command, tracks not included in the transmission will have their individual TRACK INPUT MONITOR bits reset to zero. A message byte count of 01 (dataLen = 0) may be used if all tracks are to be reset.

> *53*   TRACK INPUT MONITOR
> *r0 r1 r2 . .*   Standard Track Bitmap (see Section 3).

xx   **TRACK INPUT STATUS [- /stat]**
Tallies the actual input state of each channel, merging the effects of Record monitor switching with the TRACK INPUT MONITOR selections.
The Controlled Device need transmit only as many bytes of TRACK INPUT STATUS as are required. Tracks not included in a Response transmission will be assumed **not** to be in Input monitor mode. A message byte count of 01 (dataLen = 0) may be used if no tracks are in input.

> *xx*   TRACK INPUT STATUS
> *r0 r1 r2 . .*   Standard Track Bitmap (see Section 3).

xx   **TRACK CUE MONITOR [cmd/stat]**
Selects tracks to be monitored by the local Cue/Headphone Monitor.
When read as a Response, the Controlled Device need transmit only as many bytes of TRACK CUE MONITOR as are required. Tracks not included in a Response transmission will be assumed not to be selected for monitoring. A message byte count of 01 (dataLen = 0) may be used if no tracks are individually selected.
When written to by a WRITE command, tracks not included in the transmission will have their individual TRACK CUE MONITOR bits reset to zero. A message byte count of 01 (dataLen = 0) may be used if all tracks are to be reset.

> *xx*   TRACK CUE MONITOR
> *r0 r1 r2 . .*   Standard Track Bitmap (see Section 3).

xx   **TRACK SLIP SELECT** `[cmd/stat]`

Selects tracks which will be affected by subsequent TRACK SLIP DELTA commands.

xx	TRACK SLIP SELECT
r0 r1 r2 . .	Standard Track Bitmap (see Section 3).

xx   **TRACK SELECT COMMAND** `[cmd/ - ]`

Individual track select. Works in conjunction with the track bitmap commands and status.

xx	TRACK SELECT COMMAND
tk	Track number (0~7 for MMR-8)
ty	Type (use token enum's):
	xx = TRACK RECORD READY
	xx = TRACK INPUT MONITOR
	xx = TRACK CUE MONITOR
	xx = TRACK SLIP SELECT
	xx = TRACK NEXT/PREV SELECT
nf	Track Off/On:
	00 = Off
	01 = On
	02 = Toggle

xx   **TRACK NEXT/PREV SELECT** `[cmd/stat]`

Selects tracks which will be used for calculation by subsequent NEXT EDIT, PREVIOUS EDIT, EDIT and EDIT SLIP DELTA COMMAND commands. Only the specified tracks will be considered for the calculation.

xx	TRACK NEXT/PREV SELECT
r0 r1 r2 . .	Standard Track Bitmap (see Section 3).

xx   **TRACK RECORDABLE [- /stat]**

Indicates which tracks are available for recording.

xx	TRACK RECORDABLE
r0 r1 r2 . .	Standard Track Bitmap (see Section 3).

xx   **TRACK SLIP COMMIT   [cmd/ -]**

Moves selected slipped tracks to their slipped positions and clears the slip registers. If the selected track is not slipped then no action takes place.

xx	TRACK SLIP COMMIT
<trk>	Track number (0xff = all tracks)

Disk/Backup/Tracks/Editing

xx   DEVICE TALLY   [- /stat]

xx	DEVICE TALLY
<num>	Number of physical devices attached (typically SCSI devices)

xx   DISK COMMAND   [cmd/ -]

xx	DISK COMMAND
<cmd>	Command:
	00 = Mount
	Mount media on all drives.
	(Ignore "Device number"and "Partition")
	01 = Unmount
	Unmount all mounted media. Removeable media devices
	eject media (cassette or disk etc.) from the transport
	mechanism.
	(Ignore "Device number"and "Partition")
	02 = Format
	Formats the selected device.
	03 = Low level format
	Low-level formats the selected device.
	(Ignore "Partition")
	04 = Cleanup
<dev>	Device number
<par>	Partition

xx   DISK STATUS   [- /stat]

xx	DISK STATUS
<cmd>	Command in progress:
	00 = Mount
	01 = Unmount
	02 = Format
	03 = Low level format
	04 = Cleanup
	0xff = None (default)
<dev>	Command device number
<par>	Command device partition
<pc>	Previous command
<pd>	Previous command device number
<pp>	Previous command device partition
<pr>	Previous command result:

	Mount:	Number of volumes mounted
	Unmount:	Number of volumes unmounted
	Format:	00=failure; 01=success
	Low level format:	00=failure; 01=success **n/u??**
	Cleanup:	00=nothing to clean; 01=success

<num>	Number of volumes currently mounted

xx   **SCSI DEVICES MOUNTED   [- /stat]**

xx	SCSI DEVICES MOUNTED
<msb>	Msb of 16-bit Bitmap of devices mounted:
	0 = Unmounted
	1 = Mounted
<lsb>	Lsb of 16-bit Bitmap

xx   **RECORD DISK SELECT   [cmd/stat]**
Selects disk, per track, on which to record new tracks.

xx	RECORD DISK SELECT
<trk>	Track number: *0xff* = all tracks (default)
<dev>	Device number *00* thru *06*
<par>	Partition

xx   **RECORD DISK CURRENT   [- /stat]**
Disk, per track, upon which recording will currently take place.

xx	RECORD DISK CURRENT
<trk>	Track number
<dev>	Device number *00* thru *06*
<par>	Partition

xx   **EDIT   [cmd/ -]**
Note: all editing is performed relative to the IN POINT and OUT POINT fields.

xx	EDIT
<code>	Edit code:
	00 = Cut
	01 = Copy
	02 = Clear
	03 = Paste
	04 = Insert
	05 = Open
	06 = Undo
	07 = Redo

xx   EDIT TALLY   [- /stat]

Echoed **upon completion** of each and every edit operation.

xx	EDIT TALLY
<code>	Edit code for most recent edit:
	00 = Cut
	01 = Copy
	02 = Clear
	03 = Paste
	04 = Insert
	05 = Open
	06 = Undo
	07 = Redo
	08 = Slip Delta
	(status only; see EDIT SLIP DELTA COMMAND)
<undo>	Current UNDO level
	Only valid for Undo and Redo

xx   EDIT EVENT CAPTURE   [cmd/ -]

Moves into the IN POINT and OUT POINT registers the current event start and end times from the lowest
track number selected for editing. Error if no track selected.
Sample accuracy is maintained.

xx	EDIT EVENT CAPTURE

xx   EDIT SYNC MODE   [cmd/stat]

The default edit method is to CUT/PASTE/etc using the IN POINT as the start of the marked area and as the
sync point i.e. the start of of copied area may be inserted at the current IN POINT.
The alternate method uses the "play head" (current position) as sync point. The position of the play head
relative to the IN POINT is recorded by the COPY/CUT/etc commands. During a PASTE/INSERT/etc
operation, that position in the copied material is aligned with the play head position at the time of the
PASTE/INSERT/etc.

xx	EDIT SYNC MODE
<md>	Mode:
	00 = Sync at IN POINT (default)
	01 = Sync at "play head"

System

xx   EXTERNAL ERROR CLEAR   [cmd/ -]

Local error clear from external device.

xx	ERROR CLEAR

xx   **SYSTEM TIME** `[cmd/stat]`
Set/read system time. Format is a 32-bit number representing the seconds elapsed since midnight (00:00:00), January 1, 1970

       xx   SYSTEM TIME
       `<d3 d2 d1 d0>`   32-bit time_t value, msb first

xx   **USER LOAD/SAVE** `[cmd/ - ]`
Load and/or save User memories to disk [NOT IMPLEMENTED]

       xx   USER LOAD/SAVE
       <sc>   Command:
                                00 = Load **all** user settings from floppy.
                                01 = Save **all** user settings to floppy.

xx   **USER STORE** `[cmd/ - ]`
Store the current settings to a User memory.

       xx   USER STORE
       <un>   User number:
                                00 thru 09 = Save current settings to User 1 thru User 10

xx   **USER MEMORY** `[cmd/ - ]`
Recalls current settings from a User memory.

       xx   USER MEMORY
       <un>   User number:
                                  00 thru 09 = User 1 thru User 10
                                0xfe = Previous
                                0xff = Factory default

xx   **MACHINE TYPE** `[ - /stat]`
Identifies the attached machine or remote control. Range is 0 thru 0x7f.

       xx   MACHINE TYPE
       <tt>   Type:
                                00 = MMR-8
                                01 = MMP-16
                                02 = Remote Lite

xx   **SERIAL NUMBER** `[ - /stat]`
Integer version of ASCII manufacturing serial number of device, as stamped on rear panel (typically also saved on disk). Currently limited to 65535 units, but may be expanded by creating additional MACHINE TYPE's.

       xx   SERIAL NUMBER
       <ms>   Msb of 16-bit number
       <ls>   Lsb

xx   SILICON SERIAL NUMBER   [- /stat]
Hidden serial number from silicon identifier.

xx	SILICON SERIAL NUMBER
<s0>	Msb of 48-bit identifier
<s1>	.
<s2>	.
<s3>	.
<s4>	.
<s5>	Lsb of 48-bit identifier

xx   STATUS REQUEST   [cmd/ -]
Requests that the device respond with the contents of the status field indicated. Erroneous requests will result in the field STATUS REQUEST ERROR being returned.
This command is to be used at specific external interface ports, and is not supported internally.

xx	STATUS REQUEST
<i/f>	Status field token.
<indx>	Possible timecode, track or other index.

xx   STATUS REQUEST ERROR   [- /stat]
Contains status field token of most recently erroneous STATUS REQUEST command.
This status field is to be used at specific external interface ports, and is not supported internally.

xx	STATUS REQUEST ERROR
<i/f>	Status field token.
<eb>	Error bitmask: *000000mk*
	k = Bad token
	m = Internal message too long for Sony protocol

Remote

xx   REMOTE BUS SELECT COMMAND   [cmd/stat]
Requests a specific CAN bus for the attached remote control. REMOTE BUS SELECT COMMAND status is forwarded to the CAN bus re-poll mechanism. A fresh CAN BUS POLL TALLY status should be the normal outcome.

xx	REMOTE BUS SELECT COMMAND
<bus>	Number
	0~3 = Bus number (default = 0)

Remote Meters

xx   REMOTE METER SOURCE   [cmd/stat]
Determines the source of remote meter data.

> *xx*   REMOTE METER SOURCE
> *<src>*   Data Source:
> > *00* = CAN Bus (default)
> > *01* = Local

Setup: System Controls and References

xx   CONTROL MODE COMMAND   [cmd/stat]
Requests overall operating mode of the device. Changes in this field cause CAN BUS COMMAND to be transmitted to the CAN Bus Controller for Bus Master arbitration.

> *xx*   CONTROL MODE COMMAND
> *md*   Mode:
> > 00 = Standalone (default)
> > 01 = TC Chase
> > 02 = Biphase Chase
> > 03 = n/u
> > 04 = Serial Transport
> > 05 = Editor
> > 06 = Varispeed

xx   CONTROL MODE TALLY   [- /stat]
Tallies overall operating mode of the device.
An automatic BUS OFF command will be issued for the LYNX BUS whenever this field is changed.
CONTROL MODE TALLY may differ from CONTROL MODE COMMAND when CAN bus conditions dictate that the device operate temporarily in Standalone mode.

> *xx*   CONTROL MODE
> *md*   Mode:
> > 00 = Standalone (default)
> > 01 = TC Chase
> > 02 = Biphase Chase
> > 03 = n/u
> > 04 = Serial Transport
> > 05 = Editor
> > 06 = Varispeed

xx   FRAME REFERENCE COMMAND   [cmd/stat]

> xx   FRAME REFERENCE COMMAND
> <fr>   Select:
> > 00 = Auto (default)
> > 01 = Video

xx   FRAME REFERENCE TALLY [- /stat]

xx	FRAME REFERENCE TALLY
<fr>	Tally: *s000rrrr*

       rrrr = Frame reference:
          1 = Video
          2 = Sample clock (default)
          3 = Time code reader
          4 = n/u
          5 = Biphase reader
          6 = Lynx bus
       s = Status:
          0 = Missing
          1 = Good (internal frame lock)

xx   SAMPLE CLOCK REFERENCE COMMAND   [cmd/stat]

xx	SAMPLE CLOCK REFERENCE COMMAND
<ref>	Reference select:

       00 = Frame reference (default)
       01 = AES/EBU
       02 = External

xx   SAMPLE CLOCK REFERENCE TALLY   [- /stat]

xx	SAMPLE CLOCK REFERENCE TALLY
<ref>	Reference tally: *s000rrrr*

       rrrr = Sample clock reference
          0 = Frame reference
          1 = AES/EBU
          2 = External
          3 = CAN bus
          4 = Internal (default)
       s = Status:
          0 = Missing
          1 = Good (internal clocks locked)

40   FRAME RATE AND TIMECODE TYPE COMMAND   [cmd/stat]

40	FRAME RATE AND TIMECODE TYPE COMMAND
rt	Rate/Type specification: *tr000fff*

t = Timecode type change only [command only]

r = Rate change only [command only]

fff = Frame rate and timecode type:

	Rate	Timecode type
0:	30fps,	30 ndf (default)
1:	30fps,	30 df
2:	25fps,	25
3:	24fps,	24
4:	29.97fps,	30 ndf
5:	29.97fps,	30 df

46   SAMPLE RATE COMMAND [cmd/stat]

46	SAMPLE RATE COMMAND
sr	Sample rate code:

00 =	44.056 kHz	// 44100 pulldown
01 =	44.100 kHz	// 44100
02 =	44.144 kHz	// 44100 pullup
03 =	47.952 kHz	// 48000 pulldown
04 =	48.000 kHz (default)	// 48000
05 =	48.048 kHz	// 48000 pullup

// Film <-> PAL pullups and pull downs . .

06 = 42.294 kHz	// 44100 * 23.976 / 25
07 = 42.336 kHz	// 44100 * 24 / 25
08 = 45.938 kHz	// 44100 * 25 / 24
09 = 45.983 kHz	// 44100 * 25 / 23.976
0a = 46.034 kHz	// 48000 * 23.976 / 25
0b = 46.080 kHz	// 48000 * 24 / 25
0c = 50.000 kHz	// 48000 * 25 / 24
0d = 50.050 kHz	// 48000 * 25 / 23.976

xx   RATE TALLY [- /stat]

xx	RATE TALLY
<rt>	Frame rate and timecode type specification:

	Rate	Timecode type
00:	30fps,	30 ndf (default)
01:	30fps,	30 df
02:	25fps,	25
03:	24fps,	24
04:	29.97fps,	30 ndf
05:	29.97fps,	30 df

<sr>	Nominal sample rate:
	00 = 44.056 kHz
	01 = 44.100 kHz
	02 = 44.144 kHz
	03 = 47.952 kHz
	04 = 48.000 kHz (default)
	05 = 48.048 kHz
	06 = 42.294 kHz
	07 = 42.336 kHz
	08 = 45.938 kHz
	09 = 45.983 kHz
	0a = 46.034 kHz
	0b = 46.080 kHz
	0c = 50.000 kHz
	0d = 50.050 kHz
<nm>	Sample rate to field ratio: bits 8~15 of 16-bit numerator (0 if no data)
<nl>	Sample rate to field ratio: bits 0~7 of 16-bit numerator (0 if no data)
<rv>	Sample rate to field ratio: 8-bit denominator
	(Default n/r = 48000/60)

xx   MASTER TIMECODE TYPE TALLY   [- /stat]

Used by MASTER TIME CODE and REQUESTED OFFSET fields. Always tracks the RATE TALLY timecode type with the exception that drop frame / non-drop frame variances are permitted.

xx	MASTER TIMECODE TYPE TALLY
<tct>	Timecode type specification:
	00: 30 ndf (default)
	01: 30 df
	02: 25
	03: 24

5F   VARISPEED RATE   [cmd/stat]

Speed data when Control Mode = Varispeed only.

5F	VARISPEED RATE
mm	Msb of 16-bit signed speed delta in .01% steps
	Range: +1250 thru -1250 decimal
	0000 = unadjusted normal playspeed
	1250 = playspeed plus 12.5%
	etc
ll	Lsb

xx   LYNX BUS COMMAND   [cmd/stat]

Establishes the desired connection to the Lynx bus when the device is ONLINE.

If at the time a Master command is received the device cannot become a master, then master status will not be reflected in the LYNX BUS TALLY, but will remain active here.

Changes in this field cause CAN BUS COMMAND to be transmitted to the CAN Bus Controller for Bus Master arbitration (we need to be the CAN Bus Master if we are slaving to the Lynx Bus)..

> *xx*   LYNX BUS COMMAND
> *<cmd>*   Command:
> > *00* = Off (disconnected from bus)
> > *01* = Slave
> > *02* = Master

xx   LYNX BUS TALLY   [- /stat]

> *xx*   LYNX BUS TALLY
> *<st>*   Status: *rams000c*
> > *c* = comm's ok
> > *s* = slave
> > *m* = master
> > *a* = standalone
> > *r* = remote control   <<<<<<<< ???????

xx   LYNX BUS ADDRESS   [cmd/stat]

> xx   LYNX BUS ADDRESS
> <addr>   Address:
> > 0~7F   (default = 01)

xx   LYNX BUS V500 SAL MODE   [cmd/stat]

Determines bus mode for standalone master.

Extra timecode status bits are enabled in the Off state (V600/700 mode).

> xx   LYNX BUS V500 SAL MODE
> *<md>*   Mode:
> > *00* = Off (V700/V700 mode)
> > *01* = On (V500 mode)

xx   **CAN BUS COMMAND   [cmd/stat]**

Establishes the desired connection to the MMR (CAN) bus when the device is ONLINE.

If at the time a Master command is received the device cannot become a master (decided by the CAn Bus Controller), then master status will not be reflected in the CAN BUS TALLY, but will remain active here. CAN BUS COMMAND status is re-transmitted to the CAN Bus Controller for Bus Master arbitration. It is also transmitted on the CAN Bus following changes to CONTROL MODE COMMAND or LYNX BUS COMMAND, as these commands may indicate chase to an external device, in which case the local device needs to be Bus Master on the CAN Bus. The Bus Controller will issue CAN BUS MASTER ASSIGN messages based on this data.

xx	CAN BUS COMMAND
<cmd>	Command:
	00 = Off (disconnected from bus)
	01 = Slave (default)
	02 = Master

xx   **CAN BUS TALLY   [- /stat]**

Tallies machine's current connectivity to the CAN bus.

Bit precedences TBD!

xx	CAN BUS TALLY
<st>	Status: *00msgxrc*
	c = comm's ok
	r = surrogate master (see CAN BUS MASTER ASSIGN)
	x = remote group slave
	g = remote group master
	s = bus slave
	m = bus master

xx   **CAN BUS IDENT COMMAND   [cmd/stat]**

Identification number desired for the machine.

xx	CAN BUS IDENT COMMAND
<id>	Ident:
	00~63 [Decimal 0~99]
	7f = Auto (default)

xx   **BUS SELECT COMMAND   [cmd/stat]**

Requests a specific CAN and Biphase bus. BUS SELECT COMMAND status is forwarded to the CAN bus re-poll mechanism. A fresh CAN BUS POLL TALLY status should be the normal outcome.

xx	BUS SELECT COMMAND
<bus>	Number
	0~3 = Bus number (default = 0)

Setup: Input/Output

xx   AES/EBU REFERENCE CHANNEL   [cmd/stat]

xx	AES/EBU REFERENCE CHANNEL
<chan>	Input channel number to be used as AES/EBU sample clock reference (default = 0)

xx   AES/EBU INPUT RATE AUTO   [cmd/stat]

xx	AES/EBU INPUT RATE AUTO
<rc>	Rate control:
	00 = Fixed: use rate set by user (default)
	01 = Auto: use the encoded rate, if available

xx   AES/EBU RATE CONVERSION CHANNEL   [- /stat]
Whether rate conversion is active or not is determined by the RECORD INPUT SOURCE field. The channel(s) to be converted are determined by the most recent TRACK RECORD READY or TRACK INPUT MONITOR selections. Those selections are in turn restricted to 2 adjacent active tracks at any one time.

xx	AES/EBU RATE CONVERSION CHANNEL
<chan>	Apply digital rate conversion to this digital input channel.
	0xff = conversion Off

xx   AES/EBU RATE CONVERSION ALGORITHM   [cmd/stat]

xx	AES/EBU RATE CONVERSION ALGORITHM
<algo>	Algorithm:
	0x00 = Fast (default)
	0x01 = Slow

xx   EXTERNAL DIGITAL INPUT DELAY   [cmd/stat]
Delay due to converter.

xx	EXTERNAL DIGITAL INPUT DELAY
<trk>	Track number: 0xff = all tracks (default)
<dly>	Delay in samples:
	00 = Use internal analog input delay (default)
	01~ff = Delay in samples

xx   EXTERNAL DIGITAL OUTPUT DELAY   [cmd/stat]
Delay due to converter.

xx	EXTERNAL DIGITAL OUTPUT DELAY
<trk>	Track number: 0xff = all tracks (default)
<dly>	Delay in samples:
	00 = Use internal analog output delay (default)
	01~ff = Delay in samples

xx   **AES/EBU INPUT STATUS   [- /stat]**

Keep one per track.

xx	AES/EBU INPUT STATUS
<trk>	Track number (MMR: 0~7) (also 0xff = All, for initialization only)
<stat>	Status: *pe0000rr*

                  rr = Sample rate indication:
                         00 = Unspecified (default)
                         01 = 48000
                         02 = 44100
                         03 = 32000
                  e = Emphasis flag:
                         0 = Off (default)
                         1 = On
                  p = Professional flag
                         0 = Consumer
                         1 = Professional (default)

Setup: Control

xx   **LOOP MODE   [cmd/stat]**

Loop to repeat or execute just once.

xx	LOOP MODE
<md>	Mode:

                00 = Repeat (default)
                01 = Once plus re-cue
                02 = Once plus stop

xx   **LOOP RECORD MODE   [cmd/stat]**

Loop to always record, once requested, or just the first time.

xx	LOOP RECORD MODE
<rm>	Record mode:

                00 = Record at each iteration of the loop (default)
                01 = Record once
                02 = Record at each iteration of the loop, plus
                         auto-unload recorded tracks at end of loop.

xx   **NEXT/PREV MODE   [cmd/stat]**

Establishes whether the NEXT EDIT and PREVIOUS EDIT commands calculate the beginning of the next/previous Event, based on the current event list, or calculate the beginning of the next/prev user-established Cue, which may cross multiple events.

xx	NEXT/PREV MODE
<md>	Mode

                00 = Event (default)
                01 = Cue

xx   **RECORD KEY MODE**   [`cmd/stat`]

xx	RECORD KEY MODE
<md>	Mode

           00 = Two key: Record + Play (default)
           01 = Single key: Record

xx   **REHEARSE KEY MODE**   [`cmd/stat`]

xx	REHEARSE KEY MODE
<md>	Mode

           00 = Two key: Rehearse + Play (default)
           01 = Single key: Rehearse

Setup: Audio

51   **RECORD MONITOR [cmd/stat]**
Selects the conditions under which track Inputs are to be monitored at their respective Outputs during Record operations.

51	RECORD MONITOR
dd	Mode:

           00 = Record Only
           01 = Record or Non-Play (default)
           02 = Record or Record-Ready

"Record Only":
     Tracks to monitor *Input* only when recording. Upon the conclusion of a record operation, revert back to *Playback*.
"Record or Non-Play":
     Tracks to monitor *Input* when recording. Upon the conclusion of a record operation, revert back to *Playback*. In addition, all Record Ready tracks will monitor *Input* when not in PLAY mode.
"Record or Record-Ready":
     Tracks to monitor *Input* at all times while Recording or set to Record Ready.

NOTES:
1.   Actual monitoring may be overridden by the TRACK INPUT MONITOR Information Field.
2.   An Input tally is returned in TRACK INPUT STATUS.

xx   **RECORD INPUT SOURCE [cmd/stat]**

xx	RECORD INPUT SOURCE
<src>	Source:

           00 = Analog (default)
           01 = AES/EBU Digital
           02 = Rate converter

xx   RECORD FILE TYPE   [cmd/stat]

> *xx*   RECORD FILE TYPE
> *<ft>*   File type:
> > *00* = DAW-80, 16-bit
> > *01* = DAW-80, 24-bit
> > *02* = SD2/ProTools, 16-bit
> > *03* = SD2/ProTools, 24-bit

xx   RECORD DESTRUCTIVE [cmd/stat]
Enable/disable destructive record mode.

> *xx*   RECORD DESTRUCTIVE
> *<md>*   Mode:
> > *00* = Off (default)
> > *02* = Tape mode

xx   CROSSFADE LENGTH IN SAMPLES [cmd/stat]
Length of internally generated crossfades, as well as the length of crossfade used for output switching.

> *xx*   CROSSFADE LENGTH IN SAMPLES
> *<.....>*   Standard Sample Number Specification

xx   GAPLESS PUNCHOUT [cmd/stat]
Determines whether or not underlying tracks are read while recording is taking place. "Off" choice is not available in Tape Mode.

> *xx*   GAPLESS PUNCHOUT
> *<gp>*   00 = Off, 01 = On (default)

xx   DAILIES MODE [cmd/stat]
When enabled, if recording/rehearsing has been initiated while chasing an external source, then the unit will re-initiate record/rehearse following a synchronization dropout.

> *xx*   DAILIES MODE
> *<md>*   00 = Off (default), 01 = On

Setup: Meters & Calibration

xx   METER OPERATING LEVEL [cmd/stat]

> xx   METER OPERATING LEVEL
> <op>   Range = 15 thru 24:
> > 15 = meter 0 level is 15dB below clipping
> > 20 = meter 0 level is 20dB below clipping (default)
> > 24 = meter 0 level is 24dB below clipping

xx   **METER CALIBRATE**   `[cmd/stat]`

     xx   METER CALIBRATE
     <md>   00 = Off (default), 01 = On

xx   **METER PLAYBACK CLIP**   `[cmd/stat]`
When off, clipped status is only displayed during record mode (per track).

     xx   METER PLAYBACK CLIP
     <md>   00 = Off (default), 01 = On

xx   **TONE ENABLE**   `[cmd/stat]`
Enables/disables a 1kHz tone, level = meter 0dB, at all audio outputs.
     xx   TONE ENABLE
     <md>   00 = Off, 01 = On

Setup: MIDI

4E   **MIDI DEVICE ID**   **[cmd/stat but not writeable from MIDI port!]**

     4E   MIDI DEVICE ID
     id   Currently assigned MIDI device ID 00 thru 7E
                     (7F is reserved as the "all-call" device id)

xx   **MIDI COMM TALLY**   **[- /stat]**

     xx   MIDI COMM TALLY
     <st>   Status: `0000000c`
                          `c` = comm's ok

Setup: Lynx Transport

xx   **FILM TACH AND DIRECTION**   **[cmd/stat]**

     xx   FILM TACH AND DIRECTION
     <mode>   Mode:
                          00 = Off (Biphase)
                          01 = On: Tach and Direction
                          02 = On: Tach and Inverted Direction

xx   FILM FRAME RATE   [cmd/stat]
Biphase frame rate. Works in combination with FILM PULSE RATE to establish the actual biphase frequency.

xx	FILM FRAME RATE
<fr>	Frame Rate:
	00 = 30fps
	02 = 25fps
	03 = 24fps

xx   FILM PULSE RATE   [cmd/stat]
Determines nominal bihase frequency depending on the FILM FRAME RATE setting.
(Was "transport" selection in Lynx terminology)

xx	FILM PULSE RATE	
<pr>	Pulse Rate (for FILM FRAME RATE = 24/25/30):	
	00 = 48/50/60 Hz	2 pulses per frame
	01 = 96/100/120 Hz	4 ppf
	02 = 240/250/300 Hz	10 ppf
	03 = 480/500/600 Hz	20 ppf
	04 = 600/625/750 Hz	25 ppf
	05 = 1200/1250/1500 Hz [input only]	50 ppf
	06 = 2400/2500/3000 Hz [input only]	100 ppf

xx   READER CODE SOURCE TALLY   [- /stat]

xx	READER CODE SOURCE TALLY
<src>	Source:
	00 = invalid (code absent)
	01 = code ok

xx   SERIAL TRAN COMM TALLY   [- /stat]

xx	SERIAL TRAN COMM TALLY
<st>	Status: 0000000c
	c = comm's ok

Setup: Parallel Remote

xx   PARALLEL RECORD MODE   [cmd/stat]

xx	PARALLEL RECORD MODE
<md>	Mode:

  00 = Pulse (default)
  01 = Pulse plus track select transition to selected state implies an
        EDIT:RECORD command.
  02 = Hold
  03 = Hold plus track select transition to selected state implies an
        EDIT:RECORD command.
  04 = Pulse to Punch In, pulse on "Input" pin to Punch Out, plus
        track select transition to selected state implies an
        EDIT:RECORD command.

Setup: Editor Interface

4C   EDITOR EDIT FIELD   [cmd/stat]

4C	EDITOR EDIT FIELD
fd	Field:

  00 = Auto: edit field depends upon timing of received edit
  (record in/out) command. (default)
  01 = Field 1
  02 = Field 2

4D   EDITOR DEVICE TYPE   [cmd/stat]

4D	EDITOR DEVICE TYPE
dt	Device Type code:

  00 = Responds as itself [Device Type = XX XX] (default)
  01 = Responds as a Sony PCM-7030 [Device Type = 70 00]
  02 = Responds as a Sony BVU-950 [Device Type = 10 1C]
  (03 = Responds as a Sony PCM-3324S [Device Type = 60 03] *)*

xx   EDITOR TRACK MAPPING   [cmd/stat]
Establishes relationship between protocol track selects and actual track arming.

xx	EDITOR TRACK MAPPING
<map>	Track map method:

  00 = Use Sony digital tracks D1 thru Dn explicitly (default)
  01 = Use Sony analog tracks A1 thru A4
  02 = Local track select: edit if **any** Sony track **Vid,A1~4** armed
  03 = Local track select: edit if **any** Sony track **A1~4** armed
  04 = Local track select: edit if Sony track **A1** armed
  05 = Local track select: edit if Sony track **A2** armed
  06 = Local track select: edit if Sony track **A3** armed
  07 = Local track select: edit if Sony track **A4** armed

5D   EDITOR AUTO EE ENABLE   [cmd/stat]

<table>
<tr><td>5D</td><td>EDITOR AUTO EE ENABLE</td><td></td></tr>
<tr><td>ee</td><td>Switch:</td><td></td></tr>
<tr><td></td><td>00 = Off (default)</td><td></td></tr>
<tr><td></td><td>01 = On:</td><td>switch to EE (All Input) when stopped.</td></tr>
</table>

xx   EDITOR CHASE SOURCE   [cmd/stat]
Determines source to follow when CHASE command received. When disabled, the device will not respond to P2 CHASE or OFFSET commands, and in addition will ignore non-editting transport commands while in local chase modes.

<table>
<tr><td>xx</td><td>EDITOR CHASE SOURCE</td></tr>
<tr><td><src></td><td>Source:</td></tr>
<tr><td></td><td>00 = Disabled</td></tr>
<tr><td></td><td>01 = TC Chase (default)</td></tr>
<tr><td></td><td>02 = Biphase Chase</td></tr>
</table>