

ZETA - REMOTE AUTOLOCATOR / CONTROLLER

GUIDE TO OPERATION

8/1/88

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DIRECTORY OF INSTRUCTION

Part ONE - Zeta Remote Operation Guide

Outline of operation....page 1

Level key....page 1

Display selection....page 2

SHIFT / RECORD KEYS....page 2

Transport controls....page 3

Solo modes....page 3

Multiple Zeta Three control....page 3

Zeta Remote Memory System....page 4

Autolocator memory....page 4

Capture data into memory....page 4

Subframe time code values....page 5

MIDI bar/beat values....page 5

Upper and Lower displays with memory....page 6

Decimal point enable identifiers....page 6

Erasing memory....page 8

Store Data in Autolocator memory....page 5

Recall Data from Autolocator memory....page 5

Edit Memory....page 8

Storing an Edit....page 8

Recalling an Edit....page 8

Using Edit memory as a quick setup tool....page 20

Autolocating....page 7

Sneaky *GOTO LOCATE* command....page 7

UNDO key....page 9

Time code calculator operation....page 9

DIRECTORY OF INSTRUCTION continued

Function key operation....page 10

Recording a Function key list....page 10

Editing a Function key list....page 10

Special function actions....page 11

Force the Lower Display....page 11

Force the Upper Display....page 12

Store Enable Status....page 12

Function Pause....page 12

Wait for System park (stop)....13

Aborting a function...13

Part TWO - Zeta Remote Application Guide

List of typical system configurations....page 14

Overview of MIDI Tempo Maps and time code....page 15

Audio/MIDI session setup....page 15

Entering Tempo Maps into the Zeta Three....page 16

Humanizing Drum Machines....page 17

HELPFUL HINTS....page 17

Automatic looping setup....17

Using Auto Edit....page 17

Using Bar/Beat values instead of Time Code....page 18

Using Tempo Maps in NON MIDI systems for musical editing....page 18

Tempo Map Learning Guidelines....page 18

Recommended Time Code Practice....page 19

Recording Session documentation....page 19

Other Time Code Tips....page 20

DIRECTORY OF INSTRUCTION continued

Tachometer only Autolocating.....	page 21
Aborting a Function key.....	page 23
Session setup information - A day in the life.....	page 24
Audio/MIDI setup guidelines.....	page 24
Audio/Video setup guidelines.....	page 25
Multiple Zeta Three applications setup.....	page 26
Hidden key combinations for the advanced user.....	page 27
Special situations - OOPS I didn't mean to do that.....	page 28
Cancel Memory STORE/RECALL.....	page 28
Cancel Locate command.....	page 28
Cancel Function key execution.....	page 28
Undo advice and special cases.....	page 28
Level key hints.....	page 29
Multiple transport control.....	page 29
Autolocating with multiple Zeta Threes.....	page 29

This manual assumes the reader has a complete working knowledge of Zeta Three operations.

Please review the main Zeta Three manual as well as the added manual sections for each of the software upgrades, 2.00, 3.00 AND the MIDI operation.

It is very important that you take the time to learn about all the features of the Zeta Three so that you can handle any problem or question during the studio session and not have to dive into a corner with the manual to look up the answer.

IMPORTANT* *IMPORTANT* *IMPORTANT

**WHEN CONNECTING THE ZETA-REMOTE AUTOLOCATOR/CONTROLLER
TO THE ZETA THREE, MAKE SURE POWER IS OFF BEFORE CONNECTING
THE REMOTE CABLES.**

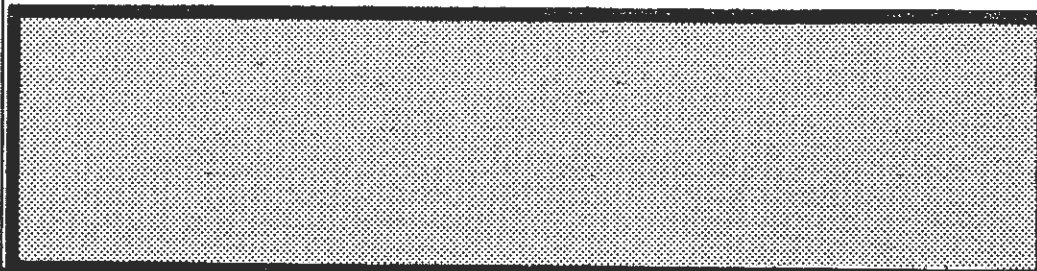
**THIS IS ALSO TRUE FOR TRANSPORT CONTROL CABLES, VIDEO AND
TIME CODE CONNECTIONS ON THE ZETA THREE REAR PANEL.**

IMPORTANT* *IMPORTANT* *IMPORTANT

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ZETA~REMOTE
AUTOLOCATOR



IDENT.	BPM	HOURS	MINUTES	SECONDS BAR	ENABLE S-REC	FRAMES BEAT
<input type="radio"/> XREF	COPY GEN RUN	LEVEL 2 LEVEL 1		M-REC		LEARN
<input type="radio"/> MTC	<input checked="" type="radio"/> <input checked="" type="radio"/>	<input checked="" type="radio"/> <input checked="" type="radio"/>		<input checked="" type="radio"/> <input checked="" type="radio"/>	<input checked="" type="radio"/> <input checked="" type="radio"/>	<input checked="" type="radio"/> <input checked="" type="radio"/>
<input type="radio"/> STC		GEN RUN		MASTER	SLAVE	MIDI
<input type="radio"/> CHASE					PREV MENU	CLEAR CAPTURE
<input type="radio"/> LOCK		SHIFT			<input checked="" type="radio"/>	<input checked="" type="radio"/>

DISPLAY	
ARM	TC/BB
EVENT	MEMORY
S-OPS	D-OPS
SLAVE	MIDI
GEN	REH
MASTER	ZETA

DATA ENTRY			
STO-ED	-	=	+
STORE	7	8	9
RCL-ED	F4	F5	F6
RECALL	4	5	6
UNDO	F1	F2	F3
0	1	2	3

<input checked="" type="radio"/> <input checked="" type="radio"/>	<input checked="" type="radio"/> <input checked="" type="radio"/>
RECORD	LOCATE
REHEARSE	GOTO

<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/> <input checked="" type="radio"/>
REW	FF	STOP	PLAY
		PAUSE	VARI

Entering Data into a Group Selection

DISPLAY GROUP	CURSOR \rightleftarrows	INDEX \otimes
X_XX	(to number to be changed)	(to change number)

Set GOTO Point

DISPLAY GROUP	SHIFT SELECT	CURSOR \rightleftarrows	INDEX \otimes
Z_XX	Z_60	(to number to be changed)	(to change number)

Synchronize Master Slave MIDI

ENABLE MASTER	ENABLE SLAVE	ENABLE MIDI
---------------	--------------	-------------

Capturing a GOTO Point

(move tape to desired GOTO point)	DISPLAY GROUP	SHIFT SELECT	CAPTURE
	Z_XX	Z_60	captures current master time code

Transport Start / Stop

ENABLE TRANSPORT(S)	SYSTEM STOP / CONT
---------------------	--------------------

Entering an END Point

DISPLAY GROUP	SHIFT SELECT	CURSOR \rightleftarrows	INDEX \otimes
Z_XX	Z_END	(to number to be changed)	(to change number)

Generator Start / Stop

DISPLAY GROUP	SHIFT SELECT	(enter generator starting address)	GEN RUN
G_XX	G_TC		

Set Slave Lock Mode

DISPLAY GROUP	MENU	INDEX \otimes	CURSOR \rightleftarrows	INDEX \otimes
S_XX	SXX	S02 lock mode = XX	(move cursor to right)	(choose lock mode)

Locating to GOTO Point

(enter or CAPTURE GOTO point)	SHIFT GOTO
-------------------------------	------------

Setting CYCLE Function

(enter GOTO and END points)	DISPLAY GROUP	MENU	INDEX \otimes	CURSOR \rightleftarrows	INDEX \otimes
	Z_XX	ZXX	Z04	(move cursor to right)	(loop = cycle)

Capture Slave Offset

DISPLAY GROUP	SHIFT SELECT	CAPTURE offset =
S_XX	S_0FS	STC – MTC

Slewing Slave Offset

DISPLAY GROUP	SHIFT SELECT	CURSOR \rightleftarrows	INDEX \otimes	CAPTURE or CLEAR
S_XX	S_SLEW	(select slew rate)	advance/retard (slave xport)	

Pressing DISPLAY GROUP changes the display to the next group.

Pressing DISPLAY SHIFT SELECT moves to the next selection in the group.

Pressing MENU shows the current group menu.

Pressing PREV (SHIFT MENU) moves the display to the previously accessed menu level.

Set System Frame Rate

DISPLAY GROUP	MENU	INDEX \otimes	CURSOR \rightleftarrows	INDEX \otimes
Z_XX	ZXX	Z05 frames = XX	(move cursor to right)	(choose frame rate)

Regenerate Time Code

Connect old code into master reader
Select XFER or JAM in GEN COPY menu
Press SHIFT COPY
Start old code source
Generator outputs regenerated code

Select Master (or Slave) Transport

	DISPLAY GROUP	MENU	INDEX \otimes	MENU	INDEX \otimes	CAPTURE
			M05	.XX	(to name of master xport)	CONSTS LOADED
Master:	M_XX	HXX	TRANSPORT ->	TRANSPORT		
			S06	.XX	(to name of slave xport)	CONSTS LOADED
Slave:	S_XX	SXX	TRANSPORT ->	TRANSPORT		

Resolving

DISPLAY GROUP	MENU	INDEX \otimes	CURSOR \rightleftarrows	INDEX \otimes	connect external reference to VIDEO IN or AUX IN	amber LED will be on solid if locked to XREF
Z_XX	ZXX	Z06 resolve = XX	(move cursor to right)	(choose EXT SYNC source) VIDEO / AUX / OFF		

Setting an Event

DISPLAY GROUP	SHIFT SELECT	enter or CAPTURE desired time code address or event	DISPLAY GROUP	MENU	INDEX \otimes	CURSOR \rightleftarrows then INDEX \otimes	CURSOR \rightleftarrows then INDEX \otimes
E_XX	E_01 (tip) or E_02 (ring)		E_XX	EXX	E01	EV_01 (to arm event 1) EV_02 (to arm event 2)	(choose to arm or disarm event listed on display)

Automate Record Function (Punch In / Punch Out)

enter or CAPTURE record start address (punch in)	enter or CAPTURE record stop address (punch out)	MENU	INDEX \otimes	INDEX \otimes	ENABLE M-REC and/or S-REC
Z_IN	Z_OUT	ZXX	Z01 in/out = XX	(choose RECORD or REHEARSE function)	(to arm master and/or slave record function)

Groups	Selections	Menu Items
1) Generator (G)	G_TC 01 00 00 00 G_UB 00 00 00 00	G01 PRESET 01000000 G02 COPY MODE = JAM/XFER G03 TC COPY = AUTOTIME TC/UB G04 UB COPY = TC UB/OFF G05 CONSTANTS ->
2) Master (M)	M_TC 00 00 00 00 M_UB 00 00 00 00	M01 PRESET ----- M02 MASTER = READER/ GENERATOR M03 OUTPUT = TRANSPORT/ OFF/EV-3-10 M04 LIMIT ----- M05 TRANSPORT -> M06 SAVE TRANSPORT-> M07 CONSTANTS ->
3) Slave (S)	S_TC 00 00 00 00 S_UB 00 00 00 00 S_OFS 00 00 00 00.00 S_ERR 00 00 00 00.00 S_SLEW 00.00	S01 PRESET ----- S02 LOCK MODE = ADR/FWL/AUTO S03 SLOW RELOCK = OFF/ON S04 SPLICE TRAP = OFF/ON S05 LIMIT ----- S06 TRANSPORT -> S07 SAVE TRANSPORT-> S08 CONSTANTS ->
4) MIDI (D)	D_B120.00 0001/0/.1 D_TC 00 00 00 00 D_OFS 00 00 00 00.00 D_ERR 00 00 00 00.00 D_SLEW 00.00	D01 EDIT -> D02 SONG SETUP -> D03 LEARN MODE -> D04 LEARN QNTIZE = 8 D05 FPB FRM = 24 D06 MERGE = ALL/OFF/REAL TIME/ NO REAL TIME D07 MIDI OUT = ON/OFF/SSEL D08 MIDI THRU = IN/OUT-2 D09 MIDI TC = AUTOTIME/OFF D10 LOCK MODE = ADR/FWL/AUTO D11 SLOW RELOCK = OFF/ON D12 SPLICE TRAP = OFF/ON D13 TIMEBASE -> D14 MAP LOAD/SAVE -> D15 RMT BEEPER = COUNT/ON/OFF D16 MIDI CONSTS ->
5) System (Z)	Z_GO --- -- -- -- Z_IN --- -- -- -- Z_OUT --- -- -- -- Z_END --- -- -- --	Z01 IN/OUT = RECORD/REHEARSE Z02 AUTO EDIT = OFF/ON Z03 PREROLL = 00 00 Z04 LOOP = OFF/CYCLE/ AUTO REW/AUTO STDP Z05 FRAMES = 30.00/24/25 29.97/29.97 DF Z06 RESOLVE = VIDEO/AUX/OFF Z07 AUTOTIME = MASTER/SLAVE Z08 COMPUTER PORT -> Z09 RS-232 BAUD -> Z10 RS-232 FORMAT -> Z11 CONTROL PORT -> Z12 SYS ADDR = 0/8282 Z13 XOUT TIP = AUX 1/OFF/ TIMBASE Z14 XOUT RING = AUX 2/OFF Z15 LOCAL CHASE = ON/OFF Z16 CLEAR REGISTERS
6) Event (E)	E_01 --- -- -- -- E_02 --- -- -- --	E01 EV_01 = DISARMED/ARMED EV_02 = DISARMED/ARMED E02 EVENT CDNSTANTS ->

This manual assumes the reader has a complete working knowledge of Zeta Three operations.

PART ONE - ZETA REMOTE AUTOLOCATOR CONTROLLER

OPERATION GUIDE

The Zeta-Remote Autolocator/Controller performs the same functions as the front panel of the Zeta Three, plus adds many new and powerful features to Zeta Three operation. Some of the new features are; a 100 point autolocator, additional 100 point edit memory, data keypad, six function keys, time code calculator, tempo beeper, direct transport control, two independent alphanumeric displays, multiple Zeta operation and a life saving undo key.

The top half of the Remote looks similar to the front panel of the Zeta Three, with the left half of the Zeta keys on the first row and the right half of the Zeta keys on the second row. Missing on the Remote is the blue Display key and added is the Level key.

The single Display key has been replaced by five green display keys, located on the lower left of the Remote, which now select the individual display groups. Pressing each specific display key either brings back the last item of the group (if previously at a different group) or the next item in the group.

For example, to view Z_GO (system go-to point) on the lower display, press the green ZETA display key until Z_GO appears. To view the MIDI beat map (bar/beat) on the upper display, Hold RECORD and press MIDI until the MIDI beat map display is shown on the upper display. Holding RECORD and pressing a green display key forces the use of the upper display.

LEVEL KEY

The Level key is used to integrate multiple Zeta Threes into the system allowing for multi-transport operation. The Remote is a window into a single Zeta operating environment at any one time. Additional Zeta Threes may be added to the Remote system with an ADD ONE Y EXPANDER Remote cable adapter to allow the Remote to communicate to each additional Zeta Three.

The level key acts as a toggle control between all of the Zeta Threes in a system (0,1,2,3). Each time the level key is pressed, the Remote connects to the next level. Pressing SHIFT / LEVEL connects the Remote directly to level zero (*system "master" is level 0*).

The remainder of the keys in the first two rows of the Remote operate identically to the equivalent keys on the Zeta Three front panel.

DISPLAY SELECTION

The Remote has two displays, the lower (main) display and a new upper (secondary) display. The second (top) display allows a group item to be selected independently of the lower (main) display. The top display has ONLY the display groups available for viewing. The menu system of the Zeta operates only in the lower (main) display. The lower (main) display is a copy of the Zeta front panel display while the top (secondary) display can only be seen at the Remote and is not viewable at the Zeta Three front panel.

The lower display is selected by using the green keys and the SHIFTED versions of the green keys. The upper display is selected by pressing and HOLDING the RECORD key and using the green keys or the SHIFTED green keys.

To select the next / last item in the MIDI display group

press MIDI

You may notice there are special "speed" shifted display keys to get to important displays directly. These shifted keys save time and get you to the display fast.

To select the slave offset in the lower display

press SHIFT / S-OFS

To select the slave offset in the upper display

HOLD RECORD and press SHIFT / S-OFS

In addition to the Display key being replaced by five Group display keys the Remote has a number of totally new keys. The new keys are; the Transport control keys, Memory key, Data Entry keypad, Store, Recall and Locate keys. Additionally, there is a piezo beeper inside the Remote to prompt the operator for count in and tempo guides.

SHIFT / RECORD KEYS

**** NOTE ****

The SHIFT key is a latched key which toggles on and off the same as in normal Zeta Three operation. The RECORD key is only valid while it is being held down.

The transport record arming and MIDI learn enable are activated on the Remote by holding RECORD and pressing the Record / Learn enable action desired.

The new Remote Transport Solo Modes are enabled by pressing a SHIFT / Enable

TRANSPORT CONTROLS - PLAY, STOP, FAST FWD, REWIND

To use the transport control keys at the bottom of the Zeta Remote, one or more of the blue enable keys must be selected. The transport control keys issue commands to the Zeta system (the combination of transports currently enabled).

All of the system commands are issued to the current system master (the left most blue enable key lit). Thus, to Start, Stop, Fast Forward or Rewind the current Zeta system (all amber leds illuminated on the blue enable keys), press the transport key to achieve the desired action. The exception to this rule is when a transport or MIDI device is solo enabled, (SHIFT Enabled with amber led blinking), the transport controls then go directly to the soloed device and do not affect the remainder of the system.

For example, to play the entire Zeta system, have Master, Slave and MIDI amber enable leds on solid and press Play. To Rewind only the slave transport and MIDI system, disable the Master and press Rewind. Only the slave transport and MIDI system will respond. Then, to position the slave transport and MIDI system back to where the master transport is, press master enable (see amber master enable led on solid) and both the slave transport and MIDI system will chase to the master transport.

Solo modes

Using the Solo modes, (SHIFT / ENABLE), individual transports may be assigned to the Remote transport controls. For example, if Master, Slave and MIDI are enabled, playing and locked, press (SHIFT / SLAVE ENABLE), now you can move the slave around independent of the Master/MIDI system. Press Slave Enable again when you want the slave to be part of the Zeta Three system again.

Soloing a device (SHIFT / Enable) is a quick way to redirect the Remote transport controls without disturbing the current enable pattern. After you are finished moving the soloed transport independently, pressing the enable key again for the soloed transport returns the transport its original enabled status.

For example, to Rewind only the slave while the Master and MIDI keep playing, press SHIFT Slave Enable (see amber Slave enable led blink), and press Rewind. Then, to Rewind the entire system, press Slave Enable again (see amber Slave Enable led on solid) and press Rewind.

Multiple Zeta Three Operation

If you are using multiple Zeta Threes, the best way to think of the Remote is as a window into a Zeta Three. When you change levels, the remote only displays information from the addressed Zeta. Transport commands are issued to the Zeta Three at address zero ("master Zeta") unless you redirect the commands. To issue independent commands to any transport, you must first use the level key to address the Zeta Three that the transport is connected to and then SOLO enable (SHIFT / ENABLE) the transport you wish to move (solo redirects the commands to the soloed transport). If the Zeta is slaved to another Zeta Three, you can disable the time code only master on the secondary Zeta to have local control of the Slave / MIDI combination. Remote transport commands are issued to the addressed Zeta Three when it is not linked to the system master Zeta Three.

ZETA REMOTE MEMORY SYSTEM

One of the most powerful features of the Remote is the Memory system. There are two types of memory in the Remote, the Autolocator Memory and the Edit Memory. Both types of memory have 100 independent storage positions. The Remote Autolocator Memory can store a list of 100 time code or MIDI bar/beat locations while the Edit Memory stores a list of seven parameters, Z_IN, Z_OUT, Z_GO, Z_END, S_OFS, D_OFS and the MIDI song number, in each of the 100 Edit Memories.

Autolocator Memory

To view any Autolocator Memory value press the Memory key and enter the two-digit value, 00 through 99 of the memory location to be viewed. (pressing memory at any time allows a new memory location position to be entered) After entering a two digit memory location, (leading zeros from 00 to 09 must be entered), the Autolocator Memory display cursor moves to the frames / subframe position and is ready for keypad data entry or a capture entry from the top display. The cursor and index keys are also valid to increment to a Memory location and for data entry.

Autolocator Memory example:

To view Autolocator Memory location #04:

press Memory

press key pad #0 (remember the leading zero)

press key pad #4

Then, to enter data into the Autolocator Memory, one can:

Use the keypad to type in a value;

Use the index and cursor keys to adjust value/position;

Capture the value from the upper display;

press SHIFT / Clear (erase value in Memory) then key in data;

Press SHIFT / MEMORY to enable bar/beat data entry.

Capture Data into Memory

When viewing a memory location the capture key will transfer the upper display into the current memory position. This is a convenient way to enter data into the memory without typing in the value. *The capture key normally (when memory is not on) loads the current master time code position to the lower display.*

SUBFRAME TIME CODE VALUES IN MEMORY

The Memory defaults with subframe operation disabled. To enable subframes in memory, HOLD RECORD and press Cursor and the subframes will appear in the Memory display. (SHIFT / Clear will erase the current Memory value).

MIDI BAR/BEAT VALUES IN MEMORY

While in Memory, a MIDI bar/beat value may be entered by Capturing a MIDI value from the top display or by pressing SHIFT / Memory (TC/BB) and entering the bar/beat value directly. Pressing SHIFT Memory (TC/BB) at any time while in the Memory will default the current Memory display to a bar/beat value of zero.

ALTERNATE MEMORY DATA ENTRY METHODS

Store Memory key

Time code or MIDI bar/beat values may be stored into Memory without actually looking at the Memory by **pressing Store** and **entering a two-digit Memory** location. The act of pressing Store captures the value in the lower display and places the value at the specified location.

For example, to capture and store the current lower display into Memory #23;

- press Store (data is captured internally)
- press keypad #2
- press keypad #3 (data is now stored at MEM23)

Recall Memory key

Memory values can be loaded directly to lower time code displays without viewing the actual memory data. Data can be recalled from memory into the current lower (main) display by **pressing Recall** and **a two-digit memory location**. The data stored at the keyed in memory position is then directly loaded into the lower display.

For example, to recall data from Memory #23 into the current lower display:

- press Recall
- press keypad #2
- press keypad #3 (data is now loaded to current lower display)

(the keypad is also available to type in values directly to valid timecode type lower displays if you want to modify the recalled value)

Applications of Upper and Lower Displays

The lower display is the main display of the Remote control. The lower display corresponds to the display on the front panel of the Zeta Three and follows the same conventions for viewing menus and using the cursor/index keys. The lower display is also the only display where data can be entered or modified with the keypad. The lower display values can be stored and recalled directly from memory with the STORE and RECALL keys.

The upper display is used for viewing only. Data entry and access to the menus are not available on the upper display. It is often convenient to capture numbers from the top display into the memory from the top display.

MEMORY DECIMAL POINT IDENTIFIERS

The Memory does not use decimal points to separate the whole number time code from the subframes because the decimal points in memory identify which transport the data in memory was captured from. In other words, decimal points are used to specify the source of captured time code data stored in Memory. When no identifying decimal points are shown, the number is assumed to be a Master time code value.

For example, if M_TC is in the top display and the lower display is at MEM00, pressing capture will enter the master timecode value from the top display into Memory #00 and a decimal point will be seen above the Master Enable key. The decimal point above the Master Enable key signifies that the timecode number at the current memory location is a master time code number. Moreover, if the number was captured from the S_TC display, the decimal point would have been over the Slave Enable key and if the data was captured from the D_TC display the identifying decimal point would be over the MIDI enable key. If MIDI bar/beat data is entered at the current Memory location, the display is unique and needs no special decimal point identifiers.

Knowing where the time code or MIDI value originated is very important. If an offset exists between any transports in the system, the Zeta Remote will automatically compensate for the offset for any combination of enable keys and memory data recalled into any Group display. For example, if you want to punch the slave transport into record at bar 35, beat 2, but you do not know the correct slave time code value, you can simply recall or enter into a Memory location the value in terms of MIDI bar/beat information and then Recall the MIDI data to the Z_IN display. The Zeta will automatically calculate the equivalent time code value. This same principle is true between any combination of devices in the system using time code or MIDI bar/beat data.

There is no decimal point identifier used if the number is typed in manually or is captured from a non offset related source. When no identifier is found, and the value is loaded to an offset related display (such as Z_IN, Z_OUT, Z_GO, Z_END or Events) the value is assumed to be expressed in terms of a current Master time code value.

USING THE ZETA REMOTE AUTOLOCATOR

Any of the time code or MIDI values stored in the Remote autolocator memory may be used as a position to locate the system of transports currently enabled.

For example, to locate the system to Memory #04;

press Locate

press keypad #0

press keypad #4 (system will now locate to the equivalent position specified by the memory value)

Remember that a position from any one of the transports or MIDI devices in the system is a valid place to locate any other transport or MIDI device in the system because the Zeta Remote keeps track of which transport the original value in memory came from. Thus, using internal offset adjustments, the Zeta Remote loads the offset adjusted position to the specified transport.

For example, if the master tape begins at 01:00:00:00 and the slave tape begins at 02:00:00:00, the slave offset is 01:00:00:00 (slave offset = STC minus MTC). During the recording studio session, both the master and slave transports have been in the system all day, (Master and Slave Enable amber leds on solid), and all of the locate points stored in memory happen to be Master time code numbers. However, now you disable the master transport and you want to use only the slave transport, (only Slave Enable amber led on), and the slave time code values are offset one hour from the master numbers you have been using. You can still use all of the same master time code memory values to locate the slave transport, because the Zeta Remote will automatically adjust the memory values by the 01:00:00:00 slave offset. This offset compensation takes place for any combination of enabled transports for both the Autolocator and Edit memory.

Remember that the Remote Memory keeps track of where the time code values came from and can be easily identified by noting the location of the decimal point identifier in each memory location, (except for MIDI Bar/Beat values which are unique looking and are clearly MIDI related valued).

Sneaky GO-TO Locate Command (*locate locate*)

The Z_GO position is used to provide a single locate position on the Zeta Three front panel and as a starting position for the cycle modes. The Zeta Remote has a 100 position autolocator memory which is normally used to autolocate the Zeta system. However, very often, the Z_GO point is the place where you want the system to locate to. Thus, an alternate to storing the Z_GO time code value in memory, is to automatically load the Z_GO position to the autolocator with a *GOTO Locate*. You could use the traditional SHIFT/GOTO key combination as on the front panel of the Zeta Three but the *GOTO Locate* is faster. Pressing the Locate key twice autolocates the Zeta Three system to the Z_GO position. The result is that you autolocate (to the Z_GO point) by pressing fewer keys (*only locate, locate vs locate, #, #*) and avoid using a place in memory to store the Z_GO data.

USING THE EDIT MEMORY

The Remote allows the user to Store and Recall up to 100 individual Edits. An Edit comprises a list of seven specific display values required to recreate the Record In and Out points plus the relative positions of the tape machines and MIDI devices at any given time during the Edit. The edit values necessary are; Z_IN, Z_OUT, Z_GO, Z_END, S_OFS, D_OFS, and the MIDI song number.

Each edit stores all of these values and allows the user to quickly swap the critical positioning information of the system. This is useful when several versions of an edit exist and the final version is not decided on. Simply save each version as an edit and when the best "take" is decided on, the exact time code values may be stored and recalled without error or manual listing on paper.

EDIT STORE / EDIT RECALL

To *SAVE* an *EDIT* press SHIFT / STORE (STO-ED) and a two digit location.

The lower display will show * *STORE EDIT OK* *
to confirm the *edit* has been *saved*

To *RECALL* an *EDIT* press SHIFT / RECALL (RCL-ED) and a two digit location.

The lower display will show * *PLEASE WAIT* *
while the *edit* values are *recalled*.

If there is no edit data to recall, the lower display
will show *NO EDIT DATA STORED*

When you recall and Edit the Z_GO, Z_IN, Z_OUT, Z_END, S_OFS, D_OFS AND MIDI Song Number are over written with the new values. It is not possible to look at the values of an edit memory without recalling the edit and replacing the old values. However, one may freely swap edit list formats in and out to review the edit data.

(remember to Store the Edit you are working on before Recalling another edit)

MEMORY INITIALIZATION

To *ERASE* the entire contents of **ALL MEMORY**:

Look at MEM99, (Press MEMORY, Keypad #9, Keypad#9) and HOLD RECORD/SHIFT/MEMORY. This will cause all AUTOLOCATOR and EDIT MEMORY to be ERASED.

USING UNDO

Some time code values such as offsets and Record In/Out points are found after much effort. If a mistake is made when entering data and an important value such as an offset or a Record In/Out point is lost, the UNDO key will restore the previous value at the display which last used the CAPTURE key, CLEAR key or the DATA ENTRY keypad. It is important to use UNDO immediately after an accidental capture/clear or faulty keypad entry else the user may become confused. When using Undo, the Remote lower display type and data will switch back to the last display type that used the keypad, capture or clear. *(Capture, Clear and the Data Entry Keypad are the only three undoable actions)*

USING THE TIME CODE CALCULATOR

The sum or difference between two time code values may be found by using the Remote calculator functions. The Zeta Remote time code calculator is just like a regular calculator except that it works with hours, minutes, seconds and frames.

To add/subtract two time code values, place the first value in the lower display and press SHIFT / PLUS / MINUS (+/-), *(this is the number I want to add/subtract to/from)* then, place the second value in the lower display and press SHIFT / EQUALS (=) *(this is the number I want to be added/subtracted to/from the first number, please give me the result)*, the calculation result will appear in the top display. You can throw away the calculation result (Shift / Clear) or load the calculation result value into another display or memory location by placing the desired destination in the lower display and pressing the Capture key. Pressing the Capture key transfers the calculation result into the lower display and turn off the calculator mode. Pressing the Clear key will erase the calculation result and turn off the calculator mode.

The calculator result MUST be either CAPTURED into a lower display or CLEARED (discarded or thrown away) to turn off the calculator mode.

Only two time code values may be worked on at a time. If multiple values are to be operated on, the Memory or other display must be used to store the result after each calculator operation.

Quick example: you want to subtract 12 frames from Z_IN;

Place Z_IN in the lower display, press SHIFT / MINUS, SHIFT / CLEAR, enter 12 frames, press SHIFT / EQUAL, press Capture. Z_IN now has the original value less 12 frames.

**** NOTE ****

THE ZETA REMOTE WILL REMIND YOU WITH A DISPLAY PROMPT IF YOU FORGET TO CAPTURE OR CLEAR THE CALCULATOR RESULT DISPLAY

BASIC FUNCTION KEY OPERATION

A Function is a sequence of key strokes that can be executed with a single action, (SHIFT / F#). The function is very helpful by simplifying repetitive key operations used consistently during a session.

The Remote has six function keys which can play back a preprogrammed sequence of key strokes by pressing SHIFT / F#. Each Function key can store up to 125 key strokes and one Function key may call another Function key in the key list. This allows for very simple or very complicated functions to be executed without key-in errors. The user should carefully think through the order of key operations stored in a Function key list.

RECORDING A FUNCTION

To OPEN a FUNCTION list for RECORDING key strokes

HOLD RECORD and press SHIFT / F#

ALL KEY STROKES ENTERED ARE NOW SAVED IN THE FUNCTION KEY

To CLOSE a FUNCTION list and STOP RECORDING the key list

HOLD RECORD and press SHIFT / F# AGAIN

**** NOTE ****

THE ZETA REMOTE WILL REMIND YOU WITH A DISPLAY PROMPT IF YOU FORGET THAT YOU ARE IN THE MIDDLE OF A FUNCTION RECORD AND DO NOT PRESS ANY KEYS FOR ABOUT TEN SECONDS

FUNCTION EDITING

The Remote allows each function to be edited and review by stepping forward and backward through the function key list. While a function is open for recording, pressing SHIFT / F# will advance one step into the function sequence (displaying the key stroke name in the top display), and HOLDING RECORD and pressing F# will back up one step in the function sequence (displaying the key name backed over in the top display).

The end of a function is determined by where in the key list the function record process is turned off. WHEN YOU USE FUNCTION EDIT, YOU MUST REVIEW THE FUNCTION ALL THE WAY TO THE "END OF FUNCTION" MESSAGE TO KEEP THE EXISTING FUNCTION SEQUENCE INTACT. A new End of Function location will be entered wherever you close the function. Likewise, new keystrokes can be added to the function key list at any time while reviewing (editing) the function key list, however keys added during edit review *OVER WRITE AND REPLACE* any key strokes which existed at that position in the function key previously.

FUNCTION EDITING continued

It is suggested that the last review action used before adding new keystrokes is a forward review, (SHIFT / F#), since this will display the last key entered in the key list while the reverse review (RECORD / F#) will tell you the key position which would be replaced if a new key was pressed. (both methods are valid however)

SPECIAL FUNCTION ACTIONS

In addition to the normal key actions on the Remote there are five special function keystrokes which can only be entered into a function key. These special action keys make the Function keys very powerful when inserted at appropriate positions within the function key sequence.

The special function key actions are:

FORCE THE LOWER DISPLAY

FORCE THE UPPER DISPLAY

FORCE THE ENABLE STATUS

FUNCTION PAUSE

WAIT FOR SYSTEM PARK (STOP)

Because there are many possible displays and system setups in the Zeta Remote, it is very useful to be able to FORCE the system to a particular KNOWN STATE. When any of the FORCE type special functions are executed in a function key, that part of the Zeta system returns to the status that existed when the key was saved in the function key list.

FORCE THE LOWER DISPLAY

Any GROUP display or base (lowest layer) MENU display may be forced. (a BASE MENU is the first layer of MENU selections after pressing MENU only once from a Group and then only using index up/down to select the MENU display. You can not force second level menus reached from arrow -> prompts) To save the lower display in a function key list, HOLD RECORD and press RECALL while recording a function key list. The identity of the lower display will be saved in the key list. When the function key is played back, the lower display will be forced to the saved display when the Function key executes the FORCE THE LOWER DISPLAY action.

EACH FUNCTION KEY CAN STORE ONLY ONE "FORCE THE LOWER DISPLAY" VALUE, MULTIPLE USES OF "FORCE THE LOWER DISPLAY" WILL CAUSE ALL OCCURRENCES TO USE THE LAST LOWER DISPLAY VALUE FORCED IN THE FUNCTION KEY LIST

FORCE THE UPPER DISPLAY

ANY display shown on the upper display may be forced from a function key. To save the upper display in a function key list, HOLD RECORD and press SHIFT/RECALL while recording a function key list. The identity of the upper display will be saved in the key list. When the function key is played back, the upper display will be forced to the saved display when the Function key executes the FORCE THE UPPER DISPLAY action.

EACH FUNCTION KEY CAN STORE ONLY ONE "FORCE THE UPPER DISPLAY" VALUE, MULTIPLE USES OF "FORCE THE UPPER DISPLAY" WILL CAUSE ALL OCCURRENCES TO USE THE LAST UPPER DISPLAY VALUE FORCED IN THE FUNCTION KEY LIST

STORE ENABLE STATUS

Any combination of Master, Slave, or MIDI enable, solo or record status may be forced on the system. To force enable status in a function key list, HOLD RECORD and press STORE while recording a function key list, the enable status will be saved in the key list. When the function key is played back, the enable pattern will be forced to the saved enable pattern when the Function key executes the FORCE ENABLE STATUS action.

EACH FUNCTION KEY CAN STORE ONLY ONE "STORE ENABLE STATUS" VALUE, MULTIPLE USES "STORE ENABLE STATUS" WILL CAUSE ALL OCCURRENCES TO USE THE LAST ENABLE STATUS FORCED IN THE FUNCTION KEY LIST

FUNCTION PAUSE

The execution of a Function key may be suspended by placing a Function Pause in the key list. Function Pause is used to suspend function key execution for the user to capture or enter a time code value or for the operator to make a judgement before continuing with the function key list execution. Function Pause may be used many times in a function.

To enter a Function Pause press SHIFT / STOP

When an executing Function key list comes to a Function Pause, the Function execution will Halt UNTIL:

CAPTURE or CLEAR are pressed

OR

The SAME Function key is pressed AGAIN (SHIFT / F#)

WAIT FOR SYSTEM PARK (STOP)

This special action is identical to Function Pause with the additional action of automatically halting a Function key sequence until the Zeta system PARKS or STOPS. Once a PARK or STOP status is received, the function key sequence resumes operation.

To enter a WAIT FOR SYSTEM PARK in a Function key list;

HOLD RECORD and press LOCATE

The wait for system park action is very helpful when performing function keys that require transports to locate somewhere before an action can take place.

For example, if you want the function key to locate to a point *and then* (only after the system had stopped), capture a MIDI bar/beat value *and then* Play the system. A Wait for System Park in a function key list after a locate command and before the capture command would wait for the system to park *and then* capture the MIDI bar/beat value.

**** NOTE ****

THE ZETA REMOTE WILL REMIND YOU WITH A DISPLAY PROMPT IF YOU FORGET THAT YOU ARE IN THE MIDDLE OF A *FUNCTION PAUSE* OR *WAIT FOR SYSTEM PARK*, DURING FUNCTION KEY EXECUTION.

**** IMPORTANT REMINDER ****

TO EXIT FUNCTION PAUSE, (after data entry or other action);
PRESS SHIFT / F# OR CAPTURE / CLEAR.

TO EXIT WAIT FOR SYSTEM PARK;
PRESS STOP OR PRESS SHIFT / F# OR CAPTURE / CLEAR.

IF YOU ARE EXECUTING A FUNCTION KEY AND FORGET WHAT YOU ARE SUPPOSED TO DO NEXT OR BECOME CONFUSED AS TO THE CONTENTS OF A FUNCTION OR, JUST GENERALLY CONFUSED, THEN...

FUNCTION ABORT ** SPECIAL NOTE **

Because a function key can be paused and you may also forget what keys are stored in a function, sometimes the best thing to do is ABORT the function execution so that you can review the contents of the function key.

EXECUTION OF A FUNCTION KEY MAY BE ABORTED AT ANY TIME BY HOLDING RECORD AND PRESSING SHIFT/STOP

PART TWO - ZETA REMOTE AUTOLOCATOR APPLICATION GUIDE

Typical studio setups for a Zeta Three Remote Autolocator system

VIDEO/AUDIO/MIDI - basic video post production

U-Matic 3/4" video (vhs/beta or 1" C-type) Master
 Multi-track audio Slave
 MIDI sequencing system (sequencer,samplers,etc...)

AUDIO/AUDIO/MIDI - large audio multi-track studio

Multi-track audio Master (typical 48 track system)
 Multi-track audio Slave
 MIDI sequencing system (sequencer,samplers,etc...)

AUDIO/MIDI - basic musicians work studio

Multi-track audio Master (typical 8/16/24 track)
 MIDI sequencing system (sequencer,samplers,etc...)

TIME CODE ONLY MASTER/AUDIO/MIDI - video editor or home type VHS deck

Time code only Master (non-controllable home type VHS
 video machine or professional video editing system)
 Multi-track audio Slave (typical 8/16/24 track)
 MIDI sequencing system (sequencer,samplers,etc...)

VIDEO/AUDIO/MIDI/AUDIO/MIDI - large video post room

Dual Zeta Three system

U-Matic 3/4" video (vhs/beta or 1" C-type) Master
 Multi-track audio Slave (typical 8/16/24 track system)
 Multi-track audio Slave sound effect source
 MIDI sequencing system (sequencer,samplers,etc...)

OVERVIEW OF MIDI TEMPO MAPS AND TIME CODE

In the Zeta Three system, MIDI sequencers are controlled by Song Position Pointer or by MIDI TIME CODE. The most common method of controlling a sequencer is with Song Position Pointer. To relate a sequence to time code with Song Position Pointer, the Zeta needs a time code START time and a tempo map (where all the tempo changes in the song occur). Given this information, there exists a mathematical relationship between tempo, bar, beat and the start time code value which can be calculated for any position in the song.

The Zeta uses the beat map to mathematically translate the current bar/beat position to an equivalent D_TC value (an internal time code generator dedicated to MIDI). It is the D_TC value which allows the MIDI system to be linked to tape machines and actually perform like a virtual tape transport. Thus, the MIDI system has many of the same type of capabilities as a tape machine such as locating, vari-speed, offset and slewing.

A complete Tempo Map contains all tempo changes in the song as well as all time signature changes. The tempo map and a master time code start time is all the Zeta Three needs control a sequencer with Song Position Pointer.

AUDIO/MIDI SESSION SETUP

If you are starting a session with a striped tape and a sequencer beat map, a good place to start recording material is to choose a nice start time like 01:00:00:00 and use the sequencer to block out the song and tempo adjustments.

ONCE YOU HAVE RELATED MATERIAL ON BOTH THE SEQUENCER AND THE TAPE MACHINE, THE TEMPO MAP SHOULD NOT BE CHANGED.

Once you block out the sequence Tempo Map and start recording analog tracks, any changes to the Tempo Map will cause a time shift of all the MIDI performance material after the tempo adjustment position.

If you are using MIDI time code, the Zeta does not need a start time or a Tempo Map. Using MIDI TIME CODE shifts the burden of tempo map adjustment to the MIDI sequencing device and bypasses many of the MIDI related features in the Zeta Three. MIDI TIME CODE and Song Position Pointer may be used at the same time if you have devices which use both as they operate independently inside the Zeta Three.

**** IMPORTANT NOTE ****

PLEASE READ AND REVIEW THE ZETA THREE MIDI SECTION AGAIN AND BECOME VERY FAMILIAR WITH THE TEMPO MAP EDITING TECHNIQUES.

IF YOU KNOW MIDI WILL BE USED IN YOUR SYSTEM, DETERMINE THE MIDI TEMPO MAP BEFORE RECORDING PERFORMANCE MATERIAL ON THE TAPE MACHINES.

The best way to work with tape machines and MIDI is to define the performance tempo map BEFORE putting any material on a tape machine. The performance data can always be changed however the relationship between the MIDI tempo map and time code must remain the same. The tempo map can be very complicated and have tempo changes on every sixteenth note and time signature changes on every bar, however once you place related performance material on the tape machine, any changes to the tempo map will shift the MIDI performance material in relation to the tape machine performance material.

ENTERING THE TEMPO MAP INTO THE ZETA

Once you have a time code recorded on tape (suggestion: record time code from 00:59:00:00 as this will give you one minute before the song for unknown situations) there are several methods of entering the beat map into the Zeta.

If the song is not complicated in terms of tempo changes simply cut and paste the tempo map directly using the quick edit mode. (set up tempo override in BPM part of beat map display and mark (capture) two positions (adjusting the bar/beat song location) between which the new tempo exists)

If the sequence has so many subtle changes in tempo that it would be difficult to enter manually, then use the MIDI LEARN mode to enter the tempo map in real time from the sequencer.

Connect sequencer MIDI OUT to ZETA MIDI IN

Set the Zeta bar beat display to 0001/01.1

Select MIDI LEARN mode in the MIDI menu

Learn enable MIDI (HOLD RECORD and Press LEARN)

Start the sequencer (must be in XMIT MIDI clock mode)

When the sequence finishes playing examine the tempo map by adjusting the bar position of the beat map display (up/down) and note the tempo changes (if any) which the Zeta learned from the sequence.

**** NOTE ****

The Zeta Three MIDI system must be stopped to perform MIDI Tempo Map Editing .

HUMANIZING DRUM MACHINE PATTERN WITH TEMPO CHANGES

If you are using a drum machine playing fixed patterns and the drums feel is too rigid, you can use the Zeta Three Tempo Map learning modes to adjust the Tempo Map in subtle or not so subtle ways.

You can humanize any part of the Zeta three tempo map by using Exact Capture Tap method of Tempo Map learning. (in Exact Capture Tap learn mode, tempo adjustments are made for every beat in song according to the tempo "tapped" in on the Capture key)

Position the song to where tempo learning is to begin

Enter exact capture tap mode in the MIDI menu

Learn enable MIDI press SHIFT Learn

Tap in the new tempo for the duration desired

The typical application of humanizing occurs after a song has been written and recorded using a drum machine, often the tempo feel is too rigid. The tempo map can be humanized by tapping along with the analog performance material on the tape machine, then the MIDI performance will sound more natural.

(You can select the beat value tapped into the song with the count CXX variable part of the beat map - default count is one beat = quarter note value).

HELPFUL HINTS WHEN USING THE REMOTE

AUTOLOCATING WITH THE ZETA REMOTE

Any valid position from any transport in the system stored in Memory may be used as a locate point. Set any positions where locating is desired into the Memory. It is good practice to add locate points to Memory sequentially (lower Memory numbers have locate points earlier in the song) and/or use groups of Memory for each song (Memory 00-09 for song #1, Memory 10-19 for song #2, etc ...).

AUTOMATIC LOOPING SETUP

If you are practicing or repeating a section of material, choose appropriate Z_GO and Z_END points and use the CYCLE, AUTO REWIND or AUTO STOP options in the Zeta menu.

USING AUTO EDIT

Use the Zeta Three Auto Edit mode to automatically calculate Z_GO and Z_END positions when you capture Z_IN and Z_OUT.

Remember, if you want to set a different Z_GO or Z_END you must do it *after* you capture your IN / OUT points or new GO / END points will be calculated and automatically entered.

Using MIDI bar/beat values instead of time code numbers

If you are working with musical scores, it is often more convenient to specify locate, record-in, and record-out points in terms of the bar/beat position in the song. When one is using MIDI in the system, the existing Tempo Map can be used to specify positions in the song.

TO USE BAR/BEAT VALUES IN THE SYSTEM, A TEMPO MAP THAT MATCHES THE MATERIAL MUST BE ENTERED INTO THE ZETA THREE.

REMEMBER - You can still use bar beat position in the song even without a real MIDI sequencing system connected by entering an equivalent Tempo Map with the Exact Capture Tap learn mode. If no new Tempo Map is entered, the Zeta will use either the last map entered or the default Tempo Map of 120 BPM in 4/4 for 500 bars if no Tempo Map was entered.

Using MIDI Tempo Maps for musical editing WITH NO MIDI EQUIPMENT IN THE SYSTEM

It may be of great use to use bar/beat numbers to work an audio/video session when no MIDI sequencers are needed. If there is a complete rhythm blocked out on tape, a Tempo Map can be created by tapping the beats of the entire song once into the Zeta while in the Exact Capture Tap Learn mode.

To create a virtual Tempo Map with out a real MIDI system connected (*or with one*):

Select Exact Capture Tap Learn mode from the MIDI menu

Position the MIDI bar/beat display at 0001 / 01.1
(*start time will not be captured unless beat map display is at 0001 / 01.1*)
(use the cursor and index keys)

Position the audio tape machine to *before* the song

Select Slave Enable (*or master enable or both*)
(you need tape machines in system to hear music to tap along with)

Select MIDI Learn Enable
(HOLD RECORD and press MIDI Enable)

Play the audio/video tape machine and **accurately tap along** with the song

If you make a mistake, you can always back up and tap the Tempo Map in again or "edit" the Tempo Map by starting the capture tap at any position in the song. (follow the above procedure the Tempo Map will update from where you start to tap along and stop when you stop)

MIDI TEMPO LEARNING

You must have a time code reference for the Zeta Three to learn and map MIDI bar/beat values. This usually means playing one of the tape machines in the system or the internal time code generator can be used.

RECOMMENDED TIME CODE PRACTICE

In general, time code provides an absolute position and speed reference to allow synchronizing, locating and events, (punch-in and punch-out plus auxiliary triggers) to be activated. Practically any speed (frame rate) of time code can be used to provide the information as long as the same rate is used through out the entire system.

Time code was originally created for video tape editing. Thus, if one had to choose a single frame rate to be used in a studio, a video rate time code is probably the best choice. The modern video rates are:

NTSC = U.S.A 29.97 frames/second (Drop and non-Drop Frame)

PAL = EUROPE 25.00 frames/second

In this way, any audio material may be used in a video tape application with the least amount of confusion. This means that a studio that is strictly audio may wish to use a video rate time code so that material created in their studio may some day be used for video.

To select a video rate system reference, go to the Zeta menu list and choose the appropriate rate.

Press Zeta display key

Press Menu

Use index UP/DOWN to find FRAMES=XX.XX

Use CURSOR and UP/DOWN to select system frame rate

Document Your System Setup

Before every session ends, it is *VERY IMPORTANT* that the entire system set up be documented. This means saving all of the critical positioning information such as Slave and MIDI offsets/start times, MIDI Tempo Map data and any unusual information about the system setup such as modified transport constants.

IT IS VERY IMPORTANT TO WRITE THIS INFORMATION DOWN !

Do not rely on your memory!

Save the information with the tape reels (*maybe in the tape box*) as well as storing the information in several other creative ways. (*you choose*)

IF YOU HAVE A COMPLICATED TEMPO MAP, SAVE THE MIDI TEMPO MAP AT THE END OF YOUR TAPE (MIDI MENU - MAP LOAD/SAVE) AND AS A SYSTEM EXCLUSIVE ON YOUR SEQUENCER AND AT LEAST WRITE DOWN THE MIDI START TIME IF NOT THE ENTIRE TEMPO MAP.

OTHER TIME CODE TIPS

Always record time code on the entire tape, not just part of it for convenience. (some day it will confuse you)

Record time code between -10 and -3 dB

Start your time code generator at whole hour/minute numbers like 00:59:00:00. Leave a minute of time code at the head of the tape to allow for locating and unknown additions to the start of the material.

Start recording time code as close as possible to the head of the tape.

Choose whole numbers to start songs at, such as 01:00:00:00 or 01:08:00:00 or 05:10:00:00 to keep all your setups simple and repeatable. (if all your tapes start at 00:59:00:00 and all you songs start on minute boundaries, session setup and operation is greatly simplified!)

Never dub time code from one tape machine to another, always regenerate the time code through the Zeta Three generator's XFER COPY or JAM COPY modes.

Audio transports MUST be on INTERNAL or FIXED speed when time code is recorded. (no enable buttons lit on the Zeta Three plus any INT/EXT switch properly set to internal on the transport).

When recording time code on a video tape machine, resolve (lock to video sync) both the time code generator and the video transports with the same video reference.

To record video rate time code, in the absence of a video sync reference, an audio only studio needs to select a video frame rate reference and the Zeta time code generator will automatically reference the output time code to the internal video crystal.

To resolve the Zeta to video, loop video sync through Zeta and set Zeta menu resolve=video. (when resolved, the amber XREF LED should be on solid, a blinking LED means the Zeta Three is not locked to an external reference and when the LED is off, the Zeta is on Internal crystal reference.)

USE THE EDIT MEMORY AS A QUICK SETUP TOOL

The Zeta Remote Edit Memory can be used in a variety of helpful ways. Some of the applications for example are saving system offsets for sessions which may regularly use a room, saving groups of sync points for a sound effects library or multiple record-in/record-out locations when experimenting on versions of takes.

If multiple engineers use the room, each one can be given a range of Edit Memory to work with (Eddie uses Edits 00-49 and Rocko uses Edits 50-99). This way you can build information up over several days of session work and minimize the chances of data corruption.

USING THE ZETA REMOTE AS A TACHOMETER ONLY AUTOLOCATOR

(NO TIME CODE ON TAPE)

When you do not need to synchronize a system together, and it is impossible to get time code on tape, you can still control and locate with the Zeta Remote using the tachometer and direction signals from your transport. (These signals are connected to the Zeta Three with the control cable)

NOTE: *It is always better to have time code recorded on the entire tape to locate and automatically record-in/out your transport. Having Time code on the entire tape also keeps you prepared to synchronize when the tape requires material to be added before or after the original performance.*

The wide band time code readers on the on the Zeta Three always automatically switch to tachometer updating when time code is not being read. The switch over can not take place unless the time code reader has a value to update. (the reader defaults to a blank value "--- -- --" on initial power up) Both the master and slave time code readers may be loaded with the preset value stored in the respective master or slave time code preset menus. The master and slave preset load operation is the same as loading the generator preset time code start number. To load a time code reader preset, look at the lower master/slave time code display and press capture. The master/slave preset value is then loaded into the time code reader as if it had actually been read off tape and then any tachometer pulses received by the Zeta will be used to update the current time code value. (which has been chosen to be a convenient starting value to make the session easier)

It is good practice to set the master or slave preset value to a number like 01:00:00:00 and then capture the preset at the very beginning of a tape reel or song to keep the simulated (tachometer updated) timecode values used for the autolocating operation consistent with real timecode operation and practice.

* SYNCHRONIZING IS NOT POSSIBLE WHEN IN TACHOMETER MODE *

TIME CODE MUST BE USED WHEN TRANSPORT SYNCHRONIZING IS REQUIRED.

IT IS ALWAYS SUGGESTED THAT TIME CODE BE RECORDED ON THE ENTIRE TAPE WHEN EVER POSSIBLE.

TO AUTOLOCATE WITH TACHOMETER ONLY, THE USER **MUST** HAVE A TRANSPORT CONTROL CABLE CONNECTED BETWEEN THE ZETA THREE AND THE TRANSPORT.

REMEMBER TO POWER OFF ZETA THREE WHEN CONNECTING THE ZETA THREE TO THE ZETA REMOTE CONTROLLER, TAPE MACHINES OR ANY OTHER EQUIPMENT.

FUNCTION KEY APPLICATION EXAMPLE

A Function Key Setup for Fast Editing

Reaction time compensation - If you try to watch a Rambo movie and capture time code points for each gun shot, (a large task), and then trigger digital gunshot sounds into the sound track, you would find that all of the gunshots are late. They are late because of human reaction time. Some people can guess right and press early to get the right position, however it is easier to let the Zeta Remote compensate automatically in a Function key when you capture the time code values.

Here is a function key list example for placing a sound effect into a video with an average reaction time error of 5 frames, and an effect duration of 3 seconds. This function uses memory locations to hold the reaction time adjustments, and adjusts the in point values captured to be closer to the actual edit point. The function will be stored in F1:

Place time code value of 00:00:00:05 in MEMORY #21

Place time code value of 00:00:03:00 in MEMORY #22

Press Zeta Display until lower display is at Z_IN

Open function with SHIFT/RECORD/FUNCTION #1 (F1)

Force low display to be at Z_IN (RECORD/RECALL)

Function Pause (SHIFT/Stop) (wait for capture key)

SHIFT/Minus(-) tell calculator to use Z_IN as operand)

Press Memory, Press keypad #2, Press keypad #1

SHIFT/Equal(=) tell calculator to subtract MEMORY #21

Press Zeta Display key

Press Capture (calculator result is loaded to Z_IN)

SHIFT/Plus(+) tell calculator to use Z_IN as operand

Press MEMORY, Press keypad #2, Press keypad #2

SHIFT/Equal(=) tell calculator to add MEM #22 to Z_IN

Press Zeta display key TWICE (should be at Z_OUT)

Press capture (record out value now in Z_OUT)

Close Function (SHIFT/RECORD/FUNCTION #1) (F1)

Function Key Applications continued

Now when you press SHIFT / F1, the Zeta Remote will put Z_IN in the low display and then the Remote will wait in a Function Pause mode for you press Capture. After you press capture, the Zeta Remote grabs the current Master time code number and subtracts five frames, then the result is stored into Z_IN (reaction time compensation). Next, the Z_OUT display is loaded with a time code value three seconds later than the Z_IN time (from the known effect duration).

The previous Function key example can be made more powerful by using Auto Edit mode which will automatically calculate Z_GO and Z_END from the Z_IN and Z_OUT. Thus, you have a set up to lay in sound effects with a minimum of key punching effort. The important part of designing efficient Function Keys is thinking through your common studio operations and using the Function keys as a tool to make your life easier.

When you record a Function key list it is good practice to try the Function several times to confirm that the key sequence is correct and contains no ambiguities. If errors are found, the entire Function key can be redone or only parts of the key list modified using Function key editing techniques..

**** FUNCTION KEY SPECIAL ACTION DISPLAY REMINDER ****

THE REMOTE WILL REMIND YOU WITH DISPLAY MESSAGES OF SPECIAL MODES ENCOUNTERED IN THE EXECUTION OF A FUNCTION KEY IF YOU FAIL TO TAKE THE REQUIRED ACTION WITHIN APPROXIMATELY TEN SECONDS.

TO EXIT FUNCTION PAUSE, PRESS SHIFT / F# OR CAPTURE / CLEAR.

TO EXIT WAIT FOR SYSTEM PARK, PRESS STOP OR PRESS SHIFT / F# OR CAPTURE / CLEAR.

FUNCTION ABORT

IF YOU ARE EXECUTING A FUNCTION KEY AND YOU FORGET WHAT YOU ARE SUPPOSED TO DO NEXT OR YOU BECOME CONFUSED AS TO THE CONTENTS OF A FUNCTION OR JUST GENERALLY CONFUSED.

THEN:

THE FUNCTION KEY LIST EXECUTING CAN BE ABORTED BY HOLDING RECORD AND PRESSING SHIFT/STOP.

A DAY IN THE LIFE OF A ZETA REMOTE AUTOLOCATOR CONTROLLER

A check list of items for typical audio/video/MIDI sessions

Session type - Audio/MIDI song performance

A typical session is using a multi-track tape recorder with a MIDI system to expand a recording system. There are two basic approaches;

1) Create MIDI material first - then you take the following steps

Choose a whole number MIDI START TIME such as whole number hour and minute values from the master transports time code.

Let Zeta Three learn any tempo changes in song (or simply enter the changes manually and enter in any time signature changes. The default Tempo Map in the Zeta Three is 500 bars of 4/4 at 120 BPM.

Place sequencer in external MIDI SYNC mode and connect Zeta MIDI OUT to sequencer MIDI IN. (you may want to connect your master keyboard upstream of the Zeta Three and use the MIDI merge on the Zeta Three to merge the MIDI SYNC and new performance data to add MIDI material while the sequencer is locked to the tape machine)

Add performance material to the multi-track by listening to the MIDI performance and playing along. (note that Remote beeper modes may help in starting your performance)

2) Add MIDI material to existing multi-track material (more difficult)

The key to adding MIDI material is capturing a MIDI START TIME on the Zeta Three. Position your tape machine several seconds before the song begins and look at the MIDI START TIME menu. (in song setup, you can use the offset display as an alternative display since they are actually the same number) Now press the CAPTURE key when you hear the song begin. This action will enter a start time close to the beginning of your tape machine performance.

You will usually need to modify this value to match the real beginning of the song by using the SLEW feature (slew offset) or by manual adjustment of the MIDI START TIME.

The procedure for capturing a MIDI START TIME described above can be simplified by using the exact capture learn mode and tapping in the Tempo Map of the entire song by listening to the tape machine performance material. (the Tempo Map position should be at 0001/01.1 and the Zeta Three will automatically capture a start time on the first pressing of Capture)

**** IMPORTANT NOTE ****

PLEASE READ AND REVIEW THE ZETA THREE MIDI SECTION AGAIN AND BECOME VERY FAMILIAR WITH THE TEMPO MAP EDITING TECHNIQUES.

A DAY IN THE LIFE OF A ZETA REMOTE AUTOLOCATOR continued

Audio/video sweetening setup

A typical situation for a video post production session is to request a 3/4" or 1/2" video tape with time code on both address track (3rd time code channel) and audio channel two if possible as well as the same time code "burned into" the picture. This gives the audio for video studio the most flexibility in editing, system setup and video play back time code recovery/compatibility.

The first thing to be done is copy the time code numbers from the video tape machine to the audio tape machine. One should regenerate the exact time code numbers on the audio tape machine from the video using the Zeta Three copy modes.
(typically xfer copy mode if not resolved and jam copy mode if system is resolved).

The regeneration of time code is important to keep all time code first generation (dubbing of time code is not recommended) and to keep the time code offsets at zero for simple system setup.

Remember your audio tape transport should be on internal or fixed speed when recording time code and on external when synchronizing is desired. Also, remember to select the correct time code frame rate in the Z-menu before recording time code on your transport.

Next, you add performance or sound effect material to your audio transport by using the automatic record in/out of the Zeta Three or with manual editing. Additionally, a MIDI system can be added to the video system for even more creative flexibility.

When using a video system, it is best to resolve the entire system if possible. (connect video to the Zeta and the VCR and place both the Zeta and VCR in external sync mode)

**** NOTE ****

When generating time code to be recorded on a VCR, the time code generator must be locked to the same video sync as the VCR or the video and time code will not correlate, one frame of video for one frame of time code. In other words, the video and time code will drift apart because they are not locked to the same video sync timing reference.

MULTIPLE ZETA THREE APPLICATIONS

Zeta THREES can be linked together in a system with the XFER / COPY method. The XFER/COPY method uses the generator of the "master" Zeta Three as a system time code reference to the "slave" Zeta Three. Connect the "master" Zeta Three generator to the master reader in on the "slave" Zeta Three. Each additional Zeta becomes the "master" to the next "slave" Zeta Three's generator in the XFER / COPY interconnection scheme. The generator menu must be set to COPY MODE = XFER and TC COPY = ZETATIME. Then the generator time code output remains as a consistent number stream irregardless of the current system Master/Slave/MIDI offsets.

The Zeta menu should be set to ZETATIME=MASTER to automatically offset the generator output to appear as a non offset number stream irregardless of what combination of enables or offsets exist in the system. If the Zeta and Generator menus are not set correctly, the generator would switch to outputting offset slave time code numbers if the master was disabled. If an offset existed between master and slave, the additional Zeta would think the original master had moved by the system offset value. Using the ZETATIME feature automatically adjusts the generator output to appear as though the generator was the master for the entire system.

The generator, in XFER / COPY mode, will also output code updated from tachometer so that the current position of the system master is always passed through out the entire system even when locating. This is very important because additional Zeta Threes are used as time code only masters, and each additional "slave" Zeta Three only sees the time code from the "virtual master" generator upstream.

Each additional Zeta Three is set up normally except there is no master transport to select or connect, only a Mic cable from the "Master Zeta Three"

Interconnecting Multiple Zeta Threes for Remote Control

The remote can cascade to multiple Zeta Three by using an "ADD ONE Y EXPANDER" remote cable Y adapter. To use more than one Zeta Three with a Zeta Remote you must adjust the System Address of the slave Zeta Three. (System Address is found in the Z-MENU) This is how the Zeta Remote can see who it is speaking to. For a two Zeta Three system, the Master Zeta Three has SYSTEM ADDRESS = 0 (level 0) and the Slave Zeta Three has SYSTEM ADDRESS = 1 (level 1).

You must use the ADD ONE "Y" ADAPTER cable to interconnect the Remote to both of the Zeta Threes. The Master end of the "Y" connects to the Zeta Three with the lower system address (N), and the Slave end of the "Y" connects to the Zeta three with next higher system address (N+1) The third end of the "Y" connects to the Zeta Remote cable.

**** NOTE ****

Extension cables are available for the Zeta Remote Autolocator/Controller and can be combined to allow the Zeta Remote to operate up to 120 feet away from the Zeta Three.

"HIDDEN" KEY COMBINATIONS OF INTEREST

The Zeta Remote has several "back door" operations which only you intelligent people who read this manual will know about. These key combinations are:

<i>HOLD SHIFT/RECORD/CAPTURE</i>	-	RESTART ZETA REMOTE SAME AS POWER UP
<i>HOLD SHIFT/CURSOR/CAPTURE</i>	-	DO THIS DURING REAL POWER UP AND ALL MEMORY AND FUNCTION KEY LISTS ARE ERASED AND THE ZETA REMOTE BRAIN IS RESET FACTORY FRESH
<i>HOLD SHIFT/RECORD/SLAVE ENABLE</i>	-	SOFTWARE VERSION IS DISPLAYED R#.#
<i>HOLD SHIFT/RECORD/MIDI ENABLE</i>	-	KEY SELF TEST: PRESS ANY KEY TO TEST OPERATION; USE SAME PATTERN TO EXIT OR KEY IN RESTART
<i>HOLD SHIFT/RECORD/MEMORY</i>	-	WHILE AT MEMORY 99 WILL ERASE ALL MEMORY POSITIONS
<i>HOLD SHIFT/RECORD</i>	-	ALLOWS SERIAL COMMUNICATION ERRORS TO BE DISPLAYED (IF PRESENT) ONLY VALID WHILE HELD DOWN

** NOTE **

There are other "hidden" key combinations which are used only in factory testing of the remote. If you get confused or stuck in a special hidden key combination, use the restart key combination (SHIFT/RECORD/CAPTURE) or power down Zeta Three, wait 5 seconds and then power Zeta Three up again.

SPECIAL SITUATIONS - OOPS! I DID NOT MEAN TO DO THAT

Cancel Memory Store/Recall

There are ways to terminate a Zeta Remote multi-key stroke actions should you change your mind or accidentally initiate a multi-key stroke combination.

Store in Autolocator memory, Recall from Autolocator memory, Store Edit and Recall Edit can all be terminated by pressing the action key again. For example:

If you press Recall and then decide you do not want to Recall a value from memory anymore, press Recall again and the Recall action is turned off. This is true of the memory keys I/O keys; Store, Recall, Edit Store and Edit Recall.

Cancel Locate

The Locate command can be prematurely terminated by HOLDING RECORD and pressing Locate again. (*Locate, Locate will cause the Remote to use the Z_GO position as a locate position*)

FUNCTION KEY TERMINATIONS

To exit Function Pause, press SHIFT / F# OR CAPTURE/CLEAR.

TO exit WAIT FOR SYSTEM PARK, press STOP OR press SHIFT/F# OR CAPTURE / CLEAR.

IF YOU ARE EXECUTING A FUNCTION KEY AND YOU FORGET WHAT YOU ARE SUPPOSED TO DO NEXT OR YOU BECOME CONFUSED AS TO THE CONTENTS OF A FUNCTION OR JUST GENERALLY CONFUSED.

THEN:

THE FUNCTION KEY LIST EXECUTING CAN BE ABORTED BY HOLDING RECORD AND PRESSING SHIFT/STOP.

UNDO ADVICE AND SPECIAL CASE

USE THE UNDO KEY AS THE NEXT KEY STROKE AFTER A MISTAKE.

You can undo the last use of CAPTURE, CLEAR, or DATA KEYPAD. A special case of UNDO is the memory TC/BB key which acts both as a data type toggle key and also performs a memory clear such that the UNDO capability is useful.

DATA KEYPAD

Only time code parameter displays can be updated with the data entry keypad. Displays not allowed to be updated by the keypad are M_TC, S_TC, and D_TC which may only be set through the preset register found in their respective menus.

Special Situations continued.

Using the Level Key

The Level key will toggle access to multiple Zeta Threes in a system. Level toggles between system addresses zero, one, two and three and will only attempt to connect to a Zeta Three if it is on line and its system address is set properly.

If multiple Zeta Threes are used then each system address must be unique and in an ascending order. The level key will automatically sequence to the next Zeta in line when pressed. (0,1,2,3,0 ... for four Zeta Threes and 0,1,0,1,0 for a two Zeta Three system).

You can force the Remote to be at level zero by pressing SHIFT / LEVEL. Using shift/level gives you a method to guaranty which Zeta Three you are connected to and is very useful when programming function keys.

Multiple Zeta Three Transport Control

Transport commands are issued to the Zeta at address (level) zero no matter which level you are currently connected to. To control any one slave machine independent of the system, you must SOLO Enable (SHIFT/ENABLE) the transport to redirect the Remote transport controls. Another alternative is to disable the time code only master which unlinks the Zeta Three from the system and directs the transport controls to the currently addressed Zeta Three.

Remember, when linking Zeta Threes together with the xfer copy mode:

The generator output of the first Zeta Three goes to the master time code input of the second Zeta Three as a time code only master.

Generator menu is set to COPY MODE = XFER and TC COPY = ZETATIME.

Zeta menu is set to ZETATIME = MASTER

Run each generator in copy mode (SHIFT / COPY)
(if you forget this step the additional Zeta Three will not see motion)

Autolocating with multiple Zeta Threes

When using multiple slave transports, the best situation is to have all of the transports working with no offset. The Remote will autolocate the system master and use the slave and MIDI offsets stored at level zero if a translation is required. When all offsets are zero, any value stored in autolocator memory is always valid to autolocate to. Care should be taken when multiple slave transports are used to enter slave positions as autolocator memory values. Each slave may have a unique offset to the time code only master. Thus, incorrect autolocation will result if the slave value stored in memory was not offset the same as the system masters slave (the slave at level zero). When multiple slave offsets are necessary, it is best to save autolocator values directly from the time code only master on each Zeta Three so that no offset interference is created.