



# USER BULLETIN

## ZETA-THREE USER BULLETIN #5

### Software Revision 3.00 Differences . .

July 31, 1988

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## 1. MAJOR DIFFERENCES

- 1.1 The addition of a **REMOTE CONTROL** interface (see the new Remote Controller/Autolocator manual).
- 1.2 The addition of a complete **SERIAL INTERFACE** section, using standard Adams-Smith protocols through the existing Computer Port (see manual Chapter 13 **COMPUTER PORT** [Adams-Smith Protocols]).
- 1.3 The addition of a **MIDI TIME CODE** generator, which will follow either of the attached transports.
- 1.4 The introduction of a new feature called **ZETATIME**. This feature is used by both the Longitudinal (regular) Time Code generator and by the new MIDI Time Code generator, and allows the generation of time code with an **OFFSET** to the time code it is copying. Explained below.
- 1.5 The transport Enable switches can now operate in **SOLO MODE**, such that all transport commands (Stop/Continue etc.) are directed to the solo'd transport (see 3.6). This feature is mainly used by the Zeta Remote, which has a full set of transport control keys.

## 2. MINOR DIFFERENCES

- 2.1 The Generator **COPY OPTIONS** have been upgraded, allowing separate specification of Time and User Bits copy sources, including the new **ZETATIME**.
- 2.2 Both the Master and Slave time code **READERS** may now be **PRESET** to any desired time code number. This is very useful for running with tach only (no time code) from the Remote, or if it is necessary to capture an offset having been given particular master and slave time code numbers which must match up.

### 3. DIFFERENCES BY SECTION

#### 3.1 GENERATOR

3.1.1 The generator PRESET register (menu G01) may now be captured from the main generator display.

3.1.2 Generator menu G03 (COPY = TC AND UB'S etc.) has been expanded into two menu items, allowing separate selection of copy "sources" (i.e. the time code or user bits to be copied) for time code and user bits generation.

```
G03 TC COPY=TC
      UB
      ZETATIME
```

```
G04 UB COPY=UB
      TC
      OFF
```

3.1.3 A new Constant has been added (Constant 10 msd, i.e. left hand digit) which allows the beeper in the Remote Control to sound whenever there is a generator REJAM error while copying time code. When set to a 1, the beeper is enabled, when set to 0 it is disabled.

Note: The generator Constants are now described in Appendix G of the manual.

#### 3.2 MASTER

3.2.1 Master Time Code may now be Captured from the new PRESET menu (M01), and cleared to "blanks" (dashes on the display) by pressing Clear (shift Capture). The PRESET register itself may be set digit by digit, Captured from the Master time code reader itself, or Cleared to blanks.

When using the Zeta Remote as a tach-only Autolocator, the PRESET register may be used to establish a starting point on the Master tape.

e.g. If a certain song or passage has been marked in a previous session as starting at the 5 minute mark on the tape, then it is only necessary to roll the tape to the start of the passage, set the PRESET to 5 minutes, and, returning to the M\_TC (Master Time Code) display, hit the Capture key to load the current position.

The PRESET register may also be used to Capture specific master to slave OFFSETS.

e.g. If the times for both master and slave at a certain point in a production are known, it is possible to establish the correct offset (i.e. have the Zeta do the calculation) by loading the times into the Master and Slave time code displays (via their PRESET registers), and simply Capturing the Slave Offset. This saves having to roll the transports to those positions and then Capturing.

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3.2.2 In order to allow the insertion of the new menu, all the other menus have been "bumped up" by one:

```
M01 PRESET -----  
M02 MASTER=READER  
M03 OUTPUT=TRANSPORT  
M04 LIMIT -----  
M05 TRANSPORT ->  
M06 SAVE TRANSPORT ->  
M07 CONSTANTS ->
```

3.2.3 A new Constant has been added so that the operator can control the amount of time the Zeta takes to recognize a STOPPED condition when the Master is running "CODE ONLY" (i.e. with no tach or control track). The delay is used so that the Zeta will not interpret a time code dropout as being a cessation of transport motion (remember that when operating "code only" the only evidence of transport motion that the Zeta can see is the time code). Longer delays are required for "bad" time code, but can be annoying when the master transport has really stopped.

The new Constant is number 83, msd (i.e. the left hand digit).

### 3.3 SLAVE

3.3.1 Slave Time Code may be Captured and set in exactly the same way as Master Time Code. See 3.2.1.

3.3.2 Other slave menus have also been bumped up by one:

```
S01 PRESET -----  
M02 LOCK MODE=ADR  
S03 SLOW RELOCK=OFF  
S04 SPLICE TRAP=OFF  
S05 LIMIT -----  
S06 TRANSPORT ->  
S07 SAVE TRANSPORT ->  
S08 CONSTANTS ->
```

3.3.3 A "CODE-ONLY" constant has also been added to the slave section.

### 3.4 MIDI Section

3.4.1 The new MIDI Time Code generator can be accessed via menu item D09:

D09 MIDI TC=OFF  
ZETATIME

As can be seen, the MIDI Time Code output is either OFF, or following the internal ZETATIME (see section 3.5.1). This means that, if ZETATIME is set to be Master code, then it doesn't matter which tape transport is playing, the MIDI device receiving MIDI Time Code will ALWAYS BE RECEIVING MASTER TIME CODE NUMBERS. In other words, the receiving device need not "know" anything about the master to slave offset which the Zeta has taken care of.

Note that the MIDI Time Code generator operates independantly from the MIDI Chase section (Song Pointer, MIDI Clocks, etc.). MIDI Time Code is enabled or disabled in menu D09, and the Song Pointer / Clock output is enabled and disabled via menu D07 (see below).

3.4.2 The Zeta-Remote beeper can be used as a METRONOME, and is set up in the new menu D15:

D15 RMT BEEPER=OFF  
ON  
COUNT

In the "COUNT" mode, the beeper will operate only for the count-in (by default, the count-in runs for 2 bars before the start of the song).

When "ON", the beeper operates during both the count-in and the body of the song.

The number of bars of count-in may be set in MIDI Constant number 53 (0 thru 99 bars I).

## 3.00 Differences UB5-6

## 3.4.3

As for both the master and slave sections, the MIDI section menu numbers have been shifted slightly:

D01 EDIT ->  
D02 SONG SETUP ->  
D03 LEARN MODE ->  
D04 LEARN QNTIZE=MIN  
                                  1 thru MAX  
D05 FPB FRM=24  
                                  25  
                                  30  
                                  24/25  
                                  24/25/30  
D06 MERGE=OFF  
                                  REAL TIME  
                                  NO REAL TM  
                                  ALL  
D07 MIDI OUT=ON  
                                  ON+SSEL  
                                  OFF  
D08 MIDI THRU-IN  
                                  OUT 2  
D09 MIDI TC=OFF  
                                  ZETATIME  
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=OFF  
                                  ON  
                                  COUNT  
D16 MIDI CONSTS ->

## 3.4.4

Several new MIDI Constants have been added to cope with MIDI Time Code (Constants 12,13,15,16), beeper count-in (53), and a new Song Pointer mode constant (51 msd) to cater to MIDI devices which prefer to receive one and only one Song Pointer before being told to run.

Please refer to the new MIDI Constants listing in Appendix F of the manual.

### 3.5 ZETA SYSTEM

3.5.1 ZETATIME has been created to solve the following problem:

If two Zeta-Three's are being linked by sending Copied Time Code from the Generator in Zeta #1 to the Master TC Input of Zeta #2, then everything is fine as long as the #1 Master Transport is Enabled.

i.e. Generator #1 output = Master #1 Time Code

However, if the operator wishes to run only the Slave in Zeta #1, and if the Slave offset is non-zero, then the Generator output will now be a different time code (i.e. the #1 Slave time), which will not be good for Zeta #2.

ZETATIME solves this problem by calculating a backwards offset from the Slave Time Code to re-create a version of Master Time Code before sending it to the Generator (this includes subframe offsets).

i.e. if the Generator is set to Copy ZETATIME (Menu G03), then . .

With Master ENABLED, the Generator will copy Master Time Code.

With Master DISABLED and the Slave ENABLED, the Generator will copy "Slave Time Code + Slave Offset".

ZETATIME can also be set to synthesize Slave Time Code via the Zeta Menu Z07 i.e. when running the Master, Slave Time will be re-created; when running only the Slave, the TC will pass through the Generator unchanged.

Copying ZETATIME through the generator is also useful for other Time Code controlled devices (some Sequencers accept real time code).

The other major use for ZETATIME is for MIDI Time Code (see 3.4.1).

3.5.2 The new COMPUTER PORT protocols are enabled and controlled by menus Z08, Z09 and Z10.

Menu Z08 selects Adams-Smith Protocols over either an RS-232 or an RS-422 connection (see Chapter 13 for details):

Z08 COMPUTER PORT ->

- .1 OFF
- .2 ADAMSSMITH 232
- .3 ADAMSSMITH 422

## 3.00 Differences UB5-8

Menu Z09 selects the serial baud rate FOR AN RS-232 CONNECTION ONLY. The RS-422 connection runs at a FIXED baud rate of 38.4Khz.

```
Z09 RS-232 BAUD ->
      .1 150
      .2 300
      .3 600
      .4 1200
      .5 2400
      .6 4800
      .7 9600
      .8 19200
      .9 38400
```

Menu Z10 selects the data format FOR AN RS-232 CONNECTION. The RS-422 format is fixed, with 8 DATA BITS, no PARITY, and one STOP BIT.

```
Z10 RS-232 FORMAT ->
      .01 7DATA NONE 1STP
      .02 7DATA NONE 2STP
      .03 7DATA EVEN 1STP
      .04 7DATA EVEN 2STP
      .05 7DATA ODD 1STP
      .06 7DATA ODD 2STP
      .07 8DATA NONE 1STP
      .08 8DATA NONE 2STP
      .09 8DATA EVEN 1STP
      .10 8DATA EVEN 2STP
      .11 8DATA ODD 1STP
      .12 8DATA ODD 2STP
```

## 3.5.3

Another new menu has been added to help mainly in serial control situations (using the Computer Port).

```
Z15 LOCAL CHASE=ON
      OFF
```

Normally, the front panel "Enable" switches not only Enable and Disable transport control, but also put the transports into CHASE mode. This is not always desirable when operating through the Serial Port. If LOCAL CHASE=OFF, then the Enable Switches simply Enable and Disable transport control, and do not affect Chase mode.

LOCAL CHASE ON/OFF corresponds exactly to the Control L serial command for the "Zeta System" module.



## 3.00 Differences UB5-9

3.5.4 The Zeta System menus have been re-arranged as follows:

Z01 IN/OUT-RECORD  
REHEARSE  
Z02 AUTO EDIT-OFF  
ON  
Z03 PREROLL 00 00  
Z04 LOOP-OFF  
CYCLE  
AUTO REWIND  
AUTO STOP  
Z05 FRAMES-24  
25  
29.97  
29.97DF  
30.00  
Z06 RESOLVE-OFF  
VIDEO  
AUX IN  
Z07 ZETATIME-MASTER  
SLAVE  
Z08 COMPUTER PORT ->  
Z09 RS-232 BAUD ->  
Z10 RS-232 FORMAT ->  
Z11 CONTROL PORT ->  
Z12 SYS ADDR=0/8282 thru F/BE82  
Z13 XOUT TIP=AUX 1  
TIMBASE  
OFF  
Z14 XOUT RNG=AUX 2  
OFF  
Z15 LOCAL CHASE-ON  
OFF  
Z16 CLEAR REGISTERS

### 3.6 SOLO MODES (Enable Keys)

3.6.1 When locking slave to master, or MIDI and slave to master, it is sometimes necessary to access a slaved device without disturbing the others in the system. The new SOLO MODES achieve this end.

Although the Solo Modes are intended primarily for use by the Zeta Remote, they are available at the front panel.

e.g. If both the Slave transport and the MIDI section are chasing the Master transport (all three Enable LED's lit), then by holding down the RIGHT HAND SIDE SHIFT KEY and pressing the Slave Enable key, we may put the Slave transport into SOLO MODE (the Slave Enable LED WILL FLASH to indicate this condition).

If we now operate the STOP/CONTINUE or the GOTO key, then only the Slave transport will respond, leaving the Master and MIDI chase section unaffected.

As soon as the Slave is thus commanded, it will be taken OUT OF CHASE in order to perform the commanded function. Note that this occurs WHEN A COMMAND IS GIVEN, and NOT at the time that the transport is placed in Solo Mode.

In order to return the Slave of our example to Chasing the Master, simply press the Slave Enable key.

In order to disable it completely, press again the right-hand-shift-key and slave-enable-key combination.

Note: When disabled in this way (i.e. from the Solo Mode), NO AUTOMATIC STOP COMMAND will be sent to the transport (or MIDI section), thus allowing the transport to continue whatever it was doing, unmolested by any Zeta Three.

3.6.2 A special "SINGLE SOLO" mode is also available for use in tach-only situations (once again, primarily used by the Zeta Remote).

Should a transport, or the MIDI section, be in SOLO MODE when NO OTHER devices are enabled, then the Enable switches will perform slightly differently.

Now, pressing ANOTHER Enable switch (with NO shift keys), will shift the Solo mode to the new device, switching off the originally solo'd device. At the same time, the display will be switched to show the current time of the selected device.

Note that, as before, no automatic stop will be given to the disabled transport.

This provides a very convenient method of moving control from one transport to another when running in tach-only (non-synchronizing) situations.