# TX802 MIDI SYSTEM EXCLUSIVE MESSAGES

## 1. PARAMETER CHANGE

**The TX802 receives seven types of System Exclusive Parameter Change. (These messages are not transmitted!) When a Parameter Change message is received, the LCD will show the current value of the affected value. (In the case of 7. Remote Switch, the LCD will show the effect of pressing the specified switch.)**

1. VCED (voice edit buffer)
2. ACED (additional voice edit buffer)
3. PCED (performance edit buffer)
4. SYCED (system setup)
5. Micro tuning
6. Fractional scaling
7. Remote switch

**Parameter change messages 1-4 and 7 have the following format:**

| | | |
|---|---|---|
| 11110000 | F0H | |
| 01000011 | 43H | |
| 0001nnnn | nnnn | = device # |
| 0ggggggghh | ggggg | = group number, hh = subgroup number |
| 0ppppppp | ppppppp | = parameter number |
| 0ddddddd | ddddddd | = data |
| 11110111 | F7H | |

**gg/hh param is 0x1B for switch**

**Details of "gggg/hh/ppppppp/ddddddd" are given in the respective sections.**

**The format for parameter change message 5 (micro tuning) is given in section 1.5**

**The format for parameter change message 6 (fractional scaling) is given in section 1.6**

### 1.1 VCED Parameter Change

ggggg = 00110 (6)
hh = 00 (0)

**These messages affect the VCED (voice edit buffer) data one parameter at a time. ppppppp (parameter number) and ddddddd (data) are explained in Table 1**

### 1.2 ACED Parameter Change

ggggg = 00110 (6)
hh = 00 (0)

**These messages affect the ACED (additional voice edit buffer) data one parameter at a time. ppppppp (parameter number) and ddddddd (data) are explained in Table 2**

### 1.3 PCED Parameter Change

ggggg = 00110 (6)
hh = 00 (2)

**These messages affect the PCED (performance edit buffer) data one parameter at a time. ppppppp (parameter number) and ddddddd (data) are explained in Table 3**

### 1.4 SYCED Parameter Change

**The only system setup data that can be accessed via Parameter Change is the Voice Data Receive Block and Master Tuning.**

**Voice data receive block:**

ggggg = 00110 (6)
hh = 01 (1)
ppppppp = 1001101 (77)
ddddddd = 0 (voice data 1-32) or 1 (voice data 33-64)

**Master tuning:**

ggggg = 00001 (1)
hh = 00 (0)
ppppppp = 1000000 (64)
ddddddd = 0 - 127

## 1.5 Micro Tuning Parameter Change

| | | |
|---|---|---|
| 11110000 | F0H | |
| 01000011 | 43H | |
| 0001nnnn | nnnn | = device # |
| 0ggggggh | ggggg | = 00110 (6), hh = 00 (0) |
| 0ppppppp | ppppppp | = 1111110 (126) |
| 0kkkkkkk | kkkkkkk | = key number |
| 0hhhhhhh | hhhhhhh | = data (upper) |
| 0lllllll | lllllll | = data (lower) |
| 11110111 | F7H | |

These messages affect the data in the micro tuning edit buffer one note at a time!

## 1.6 Fractional Scaling Parameter Change

| | | |
|---|---|---|
| 11110000 | F0H | |
| 01000011 | 43H | |
| 0001nnnn | nnnn | = device # |
| 0ggggggh | ggggg | = 00110 (6), hh = 00 (0) |
| 0ppppppp | ppppppp | = 1111111 (127) |
| 00000ooo | ooo | = operator number |
| 00kkkkkk | kkkkkkk | = key group number |
| 0hhhhhhh | hhhhhhh | = data (upper) |
| 0lllllll | lllllll | = data (lower) |
| 11110111 | F7H | |

These messages affect the data in the fractional scaling edit buffer one operator, one key group at a time!

## 1.7 Remote Switch Parameter Change

| | | |
|---|---|---|
| ggggg | = 00110 | (6) |
| hh | = 11 | (3) |
| ddddddd | = don't care | |

Remote control is possible for all panel switches, and will have the same effect as actually pressing the switch.
For "ppppppp" (switch number) see Table 4.

## 2.0 VOICE DATA BULK DUMP

There are two types of bulk dump for voice data

1. Voice edit buffer bulk dump
2. Voice memory bulk dump

For details of the format of each bulk dump, see Fig. 1

When "device # = all", data will be transmitted as if "device # = 1"

## 2.1 Voice Edit Buffer Bulk Dump

These messages transmit or receive the data in the voice edit buffer.

Transmission is in the following order:

1. Fractional scaling edit buffer bulk data
2. ACED (additional voice edit buffer) bulk data
3. VCED (voice edit buffer) bulk data

Reception is in the order of 1, 2, 3. However, if VCED is received immediately after receiving ACED, the additional voice edit buffer is initialized.

## 2.2 Voice Memory Bulk Dump

These messages transmit or receive voice data, either 1 – 32 or 33 - 64:

1. Voice data receive block parameter change
2. Fractional scaling cartridge bulk data
3. AMEM (additional voice memory) bulk data
4. VMEM (voice memory) bulk data

However, "2" is transmitted only when a cartridge is inserted!

Reception is in the order of 1, 2, 3, 4. However, if VMEM is received immediately after receiving AMEM, the additional voice memory is initialized.

## 3.0 PERFORMANCE DATA BULK DUMP

**There are two types of bulk dump for performance data**

1. **Performance edit buffer bulk dump**
2. **Performance memory bulk dump**

### 3.1 Performance Edit Buffer Bulk Dump

**These messages transmit or receive the data in the performance edit buffer. For details of the format, see Fig. 1**

### 3.2 Performance Memory Bulk Dump

**These messages transmit or receive the 64 performances in memory. For details of the format, see Fig. 1**

## 4.0 SYSTEM SETUP DATA BULK DUMP

**These messages transmit or receive system setup data; i.e. settings made in System Setup Mode except for Micro Tuning data. For details of the format, see Fig. 1**

## 5.0 MICRO TUNING DATA BULK DUMP

**There are three types of bulk dump for micro tuning data. For details of the format, see Fig. 1**

1. **Micro tuning edit buffer bulk dump**
   **Transmits or receives the micro tuning data in the edit buffer.**

2. **Micro tuning memory with memory # bulk dump**
**Transmits or receives the micro tuning data 1-2 in internal micro tuning memory together with the memory number.**

3. **Micro tuning cartridge bulk dump**
   **Transmits or receives the data for 64 micro tunings in a cartridge**

## 6.0 FRACTIONAL SCALING DATA BULK DUMP

**There are two types of bulk dump for fractional scaling data. For details of the format, see Fig. 1**

1. **Fractional scaling edit buffer bulk dump**
   **Transmits or receives the fractional scaling data in the edit buffer.**

2. **Fractional scaling cartridge bulk dump**
   **Transmits or receives the data for 64 fractional scalings in a cartridge**

## 7.0 DUMP REQUEST

**The following data dumps can be requested:**

| | |
|---|---|
| **VECD** | **F0H, 43H, 2nH, 00H, F7H** |
| **VMEM** | **F0H, 43H, 2nH, 09H, F7H** |
| **ACED** | **F0H, 43H, 2nH, 05H, F7H** |
| **PCED** | **F0H, 43H, 2nH, 7EH, LM--8952PE, F7H** |
| **PMEM** | **F0H, 43H, 2nH, 7EH, LM--8952PM, F7H** |
| **System setup** | **F0H, 43H, 2nH, 7EH, LM--8952S-, F7H** |
| **Micro tuning edit buffer** | **F0H, 43H, 2nH, 7EH, LM--MCRYE-, F7H** |
| **Micro tuning internal memory** | **F0H, 43H, 2nH, 7EH, LM--MCRYMx, F7H** |
| **Micro tuning cartridge data** | **F0H, 43H, 2nH, 7EH, LM--MCRYC-, F7H** |
| **Fractional scaling edit buffer** | **F0H, 43H, 2nH, 7EH, LM--FKSYE-, F7H** |
| **Fractional scaling cartridge data** | **F0H, 43H, 2nH, 7EH, LM--FKSYC-, F7H** |

## Figure 1 - Details of Bulk Dump Format

**NOTE: The contents of VCED, VMEM, ACED, AMEM, Micro Tuning Edit Buffer, Micro Tuning Internal Memory, Micro Tuning Cartridge Data, Fractional Scaling Edit Buffer and Fractional Scaling Cartridge Data are the same format as the DX7II.**

**VCED (voice edit buffer)**
**F0H, 43H, 0nH, 00H, 01H, 1BH, <VCED data>, sum, F7H**
**Data size = 155 (009BH)**
**Data format = 7-bit binary**
**Total bulk size = 155 + 8 = 163**

**VMEM (voice memory)**
**F0H, 43H, 0nH, 09H, 20H, 00H, <VMEM data>, sum, F7H**
**Data size = 128 x 32 = 4096 (1000H)**
**Data format = 7-bit binary**
**Total bulk size = 4096 + 8 = 4104**

**ACED (additional voice edit buffer)**
**F0H, 43H, 0nH, 05H, 00H, 31H, <ACED data>, sum, F7H**
**Data size = 49 (0031H)**
**Data format = 7-bit binary**
**Total bulk size = 49 + 8 = 57**

**AMEM (additional voice memory)**
**F0H, 43H, 0nH, 06H, 08H, 60H, <AMEM data>, sum, F7H**
**Data size = 35 x 32 = 1120 (460H)**
**Data format = 7-bit binary**
**Total bulk size = 1120 + 8 = 1128**

**PCED (performance edit buffer)**
**F0H, 43H, 0nH, 7EH, 01H, 68H, LM--8952PE <PCED data>, sum, F7H**
**Data size = 116 x 2 + 10 = 242 (00F2H)**
**Data format = ASCII hexadecimal**
**Total bulk size = 242 + 8 = 250**

**Data as shown in Table 3 PCED format is split into upper and lower 4 bits, and converted into ASCII codes 0 – F**

**PMEM (performance memory)**
**F0H, 43H, 0nH, 7EH,**
**01H, 28H, LM--8952PM, <PMEM data 1>, sum,**
**01H, 28H, LM--8952PM, <PMEM data 2>, sum,**
**……, ……, ……, ……, ……,**
**01H, 28H, LM--B952PM, <PCED data 64>, sum, F7H**
**Block division = 64**
**Data size = 10 + 84 x 2 + 10 = 178 (00B2H)/block**
**Data format = ASCII hexadecimal**
**Total bulk size = 4 + (178 + 3) x 64 + 1 = 11589**

**Data as shown in Table 5 PMEM format is split into upper and lower 4 bits, and converted into ASCII codes 0 – F**

## Figure 1 - Details of Bulk Dump Format (Continued)

**System setup**

**F0H, 43H, 0nH, 7EH, 02H, 11H, LM--8952S-, <system data>, sum, F7H**
**Data size = 10 + 263 = 273 (0111H)**
**Data format = 7-bit binary**
**Total data size = 273 + 8 = 281**

**The data format is explained in Table 3. However, PROTCT and MCTMEM are not transmitted.**

**Micro tuning edit buffer**

**F0H, 43H, 0nH, 7EH, 02H, 0AH, LM—MYCRE-, <MCR edit buffer>, sum, F7H**
**Data size = 256 + 10 = 266 (010AH)**
**Data format = 7-bit binary**
**Total data size = 266 + 8 = 274**

**Micro tuning internal memory**

**F0H, 43H, 0nH, 7EH, 02H, 0AH, LM--MCRYMx, <MCR Int1 data>, sum, F7H**
**F0H, 43H, 0nH, 7EH, 02H, 0AH, LM--MCRYMx, <MCR Int2 data>, sum, F7H**
**Data size = 256 + 10 = 266 (010AH)**
**Data format = 7-bit binary**
**Total data size = 266 + 8 = 274**

**Micro tuning cartridge data**

**F0H, 43H, 0nH, 7EH,**
**02H, 0AH, LM—MCRYC-, <MCR CRT1 data>, sum,**
**02H, 0AH, LM—MCRYC-, <MCR CRT2 data>, sum,**
**……, ……, ……, ……, ……,**
**02H, 0AH, LM—MCRYC-, <MCR CRT63 data>, sum, F7H**

**Fractional scaling edit buffer**

**F0H, 43H, 0nH, 7EH, 03H, 76H, LM--FKSYE, <FKS edit buffer>, sum, F7H**
**Data size = 264 x 2 + 10 = 502 (01F6H)**
**Data format = ASCII hexadecimal**
**Total bulk size = 502 + 8 = 510**

**Fractional scaling cartridge data**

**F0H, 43H, 0nH, 7EH,**
**02H, 76H, LM—FKSYC-, <FSK CRT1/32 data>, sum,**
**02H, 76H, LM—FKSYC-, <FSK CRT2/33 data>, sum,**
**……, ……, ……, ……, ……,**
**02H, 76H, LM—FKSYC-, <FSK CRT32/64 data>, sum, F7H**

## Table 1 - VCED Parameter Change

| g | h | p | Parameter | Description | Data Value |
|---|---|---|---|---|---|
| 0 | 0 | 0 | R1 | EG-Rate 1 | 0 - 99 |
| | | 1 | R2 | EG-Rate 2 | 0 - 99 |
| | | 2 | R3 | EG-Rate 3 | 0 - 99 |
| | | 3 | R4 | EG-Rate 4 | 0 - 99 |
| | | 4 | L1 | EG-Level 1 | 0 - 99 |
| | | 5 | L2 | EG-Level 2 | 0 - 99 |
| | | 6 | L3 | EG-Level 3 | 0 - 99 |
| | | 7 | L4 | EG-Level 4 | 0 - 99 |
| | | 8 | BP | Break Point | 0 - 99 |
| | | 9 | LD | Left depth | 0 - 99 |
| | | 10 | RD | Right depth | 0 - 99 |
| | | 11 | LC | Left curve | 0 - 3 |
| | | 12 | RC | Right curve | 0 - 3 |
| | | 13 | RS | Rate scaling | 0 - 7 |
| | | 14 | AMS | Modulation sensivity | 0 - 3 |
| | | 15 | TS | Touch sensivity | 0 - 7 |
| | | 16 | TL | Level | 0 - 99 |
| | | 17 | PM | Oscillator mode | 0 - 1 |
| | | 18 | PC | Oscillator coarse | 0 - 31 |
| | | 19 | PF | Oscillator fine | 0 - 99 |
| | | 20 | PD | Detune | 0 - 14 |
| | | 126 | PR 1 | PEG rate 1 | 0 - 99 |
| | | 127 | PR 2 | PEG rate 2 | 0 - 99 |
| 0 | 1 | 0 | PR 3 | PEG rate 3 | 0 - 99 |
| | | 1 | PR 4 | PEG rate 4 | 0 - 99 |
| | | 2 | PL 1 | PEG level 1 | 0 - 99 |
| | | 3 | PL 2 | PEG level 2 | 0 - 99 |
| | | 4 | PL 3 | PEG level 3 | 0 - 99 |
| | | 5 | PL 4 | PEG level 4 | 0 - 99 |
| | | 6 | ALS | Algorithm selector | 0 - 31 |
| | | 7 | FBL | Feedback level | 0 - 7 |
| | | 8 | OPI | Oscillator phase initialize | 0 - 1 |
| | | 9 | LFS | LFO speed | 0 - 99 |
| | | 10 | LFD | LFO delay time | 0 - 99 |
| | | 11 | LPMD | LFO pitch modulation depth | 0 - 99 |
| | | 12 | LAMD | LFO amplitude modulation depth | 0 - 99 |
| | | 13 | LFKS | LFO key sync | 0 - 1 |
| | | 14 | LFW | LFO wave | 0 - 5 |
| | | 15 | LPMS | LFO pitch modulation sensivity | 0 - 7 |
| | | 16 | TRNP | Transpose | 0 - 48 |
| | | 17 | VNAM 1 | Voice name | ASCII |
| | | 18 | VNAM 2 | Voice name | ASCII |
| | | 19 | VNAM 3 | Voice name | ASCII |
| | | ↓ | ↓ | ↓ | ↓ |
| | | 26 | VNAM 10 | Voice name | ASCII |
| | | 27 | OPE | Operator enable (bit 5: OP1, -- bit 0: OP6) | |
| | | 28 | OPSEL | Operator select (0: OP6, -- bit 5: OP1) | |

## Table 2 - ACED Parameter Change

| g | h | p | Parameter | Description | Data Value |
|---|---|---|---|---|---|
| 6 | 0 | 0 | SCM | OP 6 scaling mode | 0 - 1 |
| | | 1 | SCM | OP 5 scaling mode | 0 - 1 |
| | | 2 | SCM | OP 4 scaling mode | 0 - 1 |
| | | 3 | SCM | OP 3 scaling mode | 0 - 1 |
| | | 4 | SCM | OP 2 scaling mode | 0 - 1 |
| | | 5 | SCM | OP 1 scaling mode | 0 - 1 |
| | | 6 | AMSN | OP 6 amplitude modulation sensivity | 0 - 7 |
| | | 7 | AMSN | OP 5 amplitude modulation sensivity | 0 - 7 |
| | | 8 | AMSN | OP 4 amplitude modulation sensivity | 0 - 7 |
| | | 9 | AMSN | OP 3 amplitude modulation sensivity | 0 - 7 |
| | | 10 | AMSN | OP 2 amplitude modulation sensivity | 0 - 7 |
| | | 11 | AMSN | OP 1 amplitude modulation sensivity | 0 - 7 |
| | | 12 | PEGR | Pitch EG range | 0 - 3 |
| | | 13 | LTRG | LFO key trigger mode | 0 - 1 |
| | | 14 | VPSW | Velocity pitch sensivity | 0 - 1 |
| | | 15 | PMOD | mono/poly | 0 - 3 |
| | | 16 | PBR | Pitch bend range | 0 - 12 |
| | | 17 | PBS | Pitch bend step | 0 - 12 |
| | | — | — | — | |
| | | 19 | RNDP | Random pitch depth | 0 - 7 |
| | | 20 | PORM | Portamento mode | 0 - 1 |
| | | 21 | PONT | Portamento step | 0 - 12 |
| | | 22 | POS | Portamento time | 0 - 99 |
| | | 23 | MWPM | Mod. Wheel - Pitch modulation | 0 - 99 |
| | | 24 | MWAM | Mod. Wheel - Amplitude modulation | 0 - 99 |
| | | 25 | MWEB | Mod. Wheel - EG bias | 0 - 99 |
| | | 26 | FCPM | Foot controller - Pitch modulation | 0 - 99 |
| | | 27 | FCAM | Foot controller - Amplitude modulation | 0 - 99 |
| | | 28 | FCEB | Foot controller - EG bias | 0 - 99 |
| | | 29 | FCVL | Foot controller - Volume | 0 - 99 |
| | | 30 | BCPM | Breath controller - Pitch modulation | 0 - 99 |
| | | 31 | BCAM | Breath controller - Amplitude modulation | 0 - 99 |
| | | 32 | BCEB | Breath controller - EG bias | 0 - 99 |
| | | 33 | BCPB | Breath controller - Pitch bias | 0 - 100 |
| | | 34 | ATPM | After touch - Pitch modulation | 0 - 99 |
| | | 35 | ATAM | After touch - Amplitude modulation | 0 - 99 |
| | | 36 | ATEB | After touch - EG bias | 0 - 99 |
| | | 37 | ATPB | After touch - Pitch bias | 0 - 100 |
| | | 38 | PEGS | Pitch EG rate scaling | 0 - 7 |

## Table 3 - PCED Parameter Change

| g | h | p | Parameter | Description | Data Value |
|---|---|---|---|---|---|
| 6 | 2 | 0 - 7 | VCHOFS | Voice channel offset | 0 - 7 |
| | | 8 - 15 | RXCH | MIDI receive channel (16: OMNI on) | 0 - 16 |
| | | 16 - 23 | VNUM | Voice number (2 bytes, 0-63: Internal, 64-127: Cartridge, 128-191: Preset A, 192-255: Preset B | |
| | | 24 - 31 | DETUNE | Detune (7: Center) | 0 - 14 |
| | | 32 - 39 | OUTVOL | Output volume | 0 - 99 |
| | | 40 - 47 | OUTCH | Output assign (0: off 1: I, 2: II, 3: I + II) | 0 - 3 |
| | | 48 - 55 | NTMTL | Note limit low (C-2 - C-8) | 0 - 127 |
| | | 56 - 63 | NTMTH | Note limit high (C-2 - C-8) | 0 - 127 |
| | | 64 - 71 | NSHFT | Note shift (24: Center, +/- 2 octaves) | 0 - 48 |
| | | 72 - 79 | FDAMP | EG forced damp (0: off, 1: on) | 0 - 1 |
| | | 80 - 87 | KASG | Key assign group | 0 - 1 |
| | | 88 - 95 | MTTNUM | Micro tuning table # (2 bytes) | 0 - 254 |
| | | 96 - 115 | PNAM | Performance name | ASCII |

## Table 4 - Remote Switch Parameter Change

| g | h | p | Parameter | Description | Data Value |
|---|---|---|---|---|---|
| 6 | 3 | 64 | | Power on | |
| | | 65 | | 0 | |
| | | 66 | | 1 | |
| | | ↓ | | ↓ | |
| | | 74 | | 9 | |
| | | 75 | | Cursor left | |
| | | 76 | | Cursor right | |
| | | 77 | | Enter | |
| | | 78 | | -1 | |
| | | 79 | | +1 | |
| | | 80 | | – | |
| | | 81 | | Performance select | |
| | | 82 | | Voice select | |
| | | 83 | | System setup | |
| | | 84 | | Utility | |
| | | 85 | | Performance edit | |
| | | 86 | | Voice edit (I) | |
| | | 87 | | Voice edit (II) | |
| | | 88 | | Store | |
| | | 89 | | Tone generator on/off – 1 | |
| | | ↓ | | ↓ ↓ ↓ ↓ | |
| | | 96 | | Tone generator on/off – 8 | |

## Table 5 - PMEM Data Format

| No. | Parameter | | Bit 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 - 7 | VCHOFS/RXCH | (TG1 - 8) | VCHOFS | | | | | RXCH | | |
| 8 - 15 | VNUM | (TG1 - 8) | VNUM | | | | | | | |
| 16 - 23 | MTTNUM | (TG1 - 8) | MTTNUM | | | | | | | |
| 24 - 31 | OUTVOL | (TG1 - 8) | – | OUTVOL | | | | | | |
| 32 - 39 | DETUNE/KASG/OUTCH | (TG1 - 8) | – | DETUNE | | | KASG | OUTCH | | |
| 40 - 47 | NLMTL | (TG1 - 8) | – | NLMTL | | | | | | |
| 48 - 55 | NLMTH | (TG1 - 8) | – | NLMTH | | | | | | |
| 56 - 63 | FDAMP/NSHFT | (TG1 - 8) | – | FDMP | | | | | | |
| 64 - 83 | PNAM | (20 characters) | PNAM (ASCII) | | | | | | | |

## Table 6 - SYCED Data Format

| No. | Parameter | Description | Data Value |
|---|---|---|---|
| 0 | PROTCT | Internal memory protect | 0 - 1 |
| 1 | PRXCH | MIDI receive channel for performance select | 0 - 17 |
| 2 | DEVNO | System exclusive device # | 0 - 15 |
| 3 | VBLOK | Voice bulk receive block | 0 - 1 |
| 4 | PGMSW | Program change receive switch | 0 - 17 |
| 5 | AFTSW | After touch receive switch | 0 - 17 |
| 6 | PBSW | Pitch bend receive switch | 0 - 17 |
| 7 | NOTESW | Note on/off receive switch | 0 - 2 |
| 8 | PRTSW | Program change assign table enable switch | 0 - 1 |
| 9 | BNK802 | Bank selekt for TX802 format | 0 - 15 |
| 10 | BNKFRAC | Bank selekt for fractional scaling | 0 - 15 |
| 11 | BNKMCT | Bank selekt for micro tuning | 0 - 15 |
| 12 | MTUNING | Master tuning | 0 - 127 |
| 13 | CONTSW | Control change receive switch | 0 - 17 |
| 14 - 135 | CTABLE | Control # assign table | * |
| 136 - 263 | PTABLE | Program # table for performance select | 0 - 127 |
| 264 - 755 | MCTMEM | Micro tuning internal user's memory | ** |

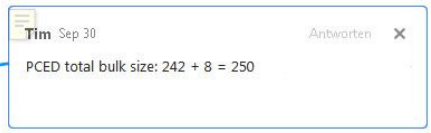
NOTE: * 0, 1, 2, 4, 5, 7, 64, 65 ( 0: off, Others: standard control # )
** 0 – 10,794 x 4 ( 0 – 43,176 ), 2 bytes for 1 key

The lowest 2 bit are always zero

# TX802 MIDI SYSTEM EXCLUSIVE MESSAGES

## Addendum

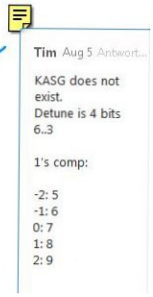
PCED (performance edit buffer)
F0H, 43H, 0nH, 7EH, 01H, 68H, LM--8952PE, 〈PCED data〉, sum, F7H
Data size = 116 x 2 + 10 = 242 (00F2H)
Data format = ASCII hexadecimal
~~Total bulk size = 258 + 8 = 266~~
Data as shown in Table 3 PCED format is split into upper and lower 4 bits, and converted into ASCII codes 0-F.




**I've already corrected that PCED total bulk size in this document according to Tim's remark…**

**Table 5 - PMEM Data Format**

| No. | Parameter | | Bit 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 — 7 | VCHOFS/RXCH | (TG1-8) | VCHOFS | | | | RXCH | | | |
| 8 — 15 | VNUM | (TG1-8) | | | | VNUM | | | | |
| 16 — 23 | MTTNUM | (TG1-8) | | | | MTTNUM | | | | |
| 24 — 31 | OUTVOL | (TG1-8) | — | | | OUTVOL | | | | |
| 32 — 39 | DETUNE/KASG/OUTCH | (TG1-8) | — | DETUNE | | KASG | | OUTCH | | |
| 40 — 47 | NLMTL | (TG108) | — | | | NLMTL | | | | |
| 48 — 55 | NLMTH | (TG1-8) | — | | | NLMTH | | | | |
| 56 — 63 | FDAMP/NSHFT | (TH1-8) | — | FDMP | | NSHFT | | | | |
| 64 — 83 | PNAM | (20 chara.) | PNAM (ASCII) | | | | | | | |




**Tim's remark for Table 5 – PMEM Data Format… (I don't know the exact use of it!)**

**Miks, 05/2022**