

CASIO CZ-1

MIDI SPECIFICATION

Extract

(filler)

Parameter Change Message Formats

<SysEx>

```

<Casio ID> (44H)
<00> (Sub ID 1)
<00> (Sub ID 2)
<7n> (n= Basic channel)
<Operation Code> *
<data>
  
```

<EOX>

- * defined operation codes for parameter changes are 40H-59H (see table).
 Level (46H), Tone 2 Pitch (52H) have 2 data bytes.
 Key Code Sweep (59H) has 3 data bytes.
 All other parameter change messages have 1 data byte.

This table shows which parameter change messages are recognized by the different CZ instruments. Note that the CZ-1000 recognizes the same messages as the CZ-101, and the CZ-3000 recognizes the same messages as the CZ-5000 (with the exception of sequencer data).

Hex Code	Message Description	CZ1	CZ101	CZ5000	CZ230	CZ6500
40	Bend Range	•	•	•	•	•
41	Transpose	•	•	•	•	•
42	Tone Mix	•	•			•
43	Glide Note	•		•		
44	Glide Time	•		•		
45	Mod Wheel Depth	•		•		
46	Level	•		•		
47	Glide On/Off	•		•		
48	Portamento Sweep	•				
49	Modulation On/Off	•				
4A	Mod After Touch Depth •					
4B	Amp After Touch Range •					
4C	Cartridge On/Off	•				
4D	CZ-1 Mode	•				
4E	Cursor	•				
4F	Page	•				
Hex Code	Message Description	CZ1	CZ101	CZ5000	CZ230	CZ6500
50	Multi-Channel Mode On/Off	•				
51	Number of Poly 1/2	•				
52	Tone 2 Pitch	•				
53	Split Point	•				
54	Sus Pedal ENA/DIS	•				
55	Octave Shift	•				
56	Chorus On/Off	•				
57	Time Break 1	•				
58	Time Break 2	•				
59	Key Code Sweep	•				

Casio

CZ-1 (Digital PD Synthesizer) +

The CZ-1 is capable of sending and receiving the system exclusive messages noted in the table below. The send/receive status of each message is also noted.

I. SYSTEM EXCLUSIVE MESSAGE

SYSTEM EXCLUSIVE MESSAGE	NORMAL				TONE MIX		KEY SPLIT		OPERATION MEMORY	
	POLY MODE		MULTI CH MODE		POLY MODE		POLY MODE		POLY MODE	
	RECEIVE	SEND	RECEIVE	SEND	RECEIVE	SEND	RECEIVE	SEND	RECEIVE	SEND
(1) SEND REQUEST 1	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(2) RECEIVE REQUEST 1	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(3) SEND REQUEST 2	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(4) RECEIVE REQUEST 2	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(5) SEND REQUEST 3	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(6) RECEIVE REQUEST 3	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(7) BEND RANGE	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(8) KEY TRANSPOSE	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(9) GLIDE NOTE	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(10) GLIDE TIME	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(11) MOD WHEEL DEPTH	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(12) LEVEL	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(13) GLIDE ON/OFF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(14) PORTAMENTO SWEEP	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(15) MODULATION ON/OFF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(16) MOD. AFTER TOUCH DEPTH	<input type="radio"/>				<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(17) AMP. AFTER TOUCH RANGE	<input type="radio"/>				<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(18) CARTRIDGE ON/OFF	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
(19) CZ-1 MODE	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(20) CURSOR	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(21) PAGE	<input type="radio"/>				<input type="radio"/>		<input type="radio"/>			
(22) MULTI CHANNEL MODE	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(23) POLY 1			<input type="radio"/>							
(24) POLY 2			<input type="radio"/>							
(25) TONE 2 PITCH	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>			
(26) SPLIT POINT	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>			
(27) SUS. PEDAL ENA/DIS	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>			
(28) OCT. SHIFT	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>			
(29) CHORUS ON/OFF	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>			
(30) TIME BREAK	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
(31) KEY CODE SWEEP	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	

II. TIMBRE DATA AND OPERATION MEMORY DATA EXCLUSIVE MESSAGES

The following six messages are used by the CZ-1 for the transmission of timbre data and operation memory data.

- (1) SEND REQUEST 1
- (2) RECEIVE REQUEST 1
- (3) SEND REQUEST 2
- (4) RECEIVE REQUEST 2
- (5) SEND REQUEST 3
- (6) RECEIVE REQUEST 3

- Messages (1) and (2) are used for transmission of timbre data with such keyboards as the CZ-5000 and CZ-101 whose formats do not include VELOCITY (LINE 1, 2), LEVEL (DCA 1, DCA 2), NAME.
- Messages (3) and (4) are used for the communication of CZ-1 operation memory data.
- Details for each data format are included on pages 00 through 00.

(1) SEND REQUEST 1

The CZ-1 sends the specified number timbre data (1 timbre) when a SEND REQUEST 1 message is received. The SEND REQUEST 1 message is also sent from the CZ-1 when timbre data are received from a CZ-5000 by CZ-1 key operation.

	Personal Computer → CZ-1 CZ-1 → CZ-5000	CZ-1 → Personal Computer CZ-5000 → CZ-1
1	F 0 4 4 0 0 0 0 7 N 1 0 d ₁ d ₂	
2		F 0 4 4 0 0 0 0 7 N 3 0
3	7 N 3 1	
4		Timbre data F 7
5	F 7	

- 1 (i) INTERNAL A-1 ~ H-8 → d₁d₂H = 00 ~ 3FH
- (ii) SOUND AREA → d₁d₂H = 60H
- SOUND AREA indicates the sound production area when the keyboard of the CZ-1 is pressed
- The transmission shown in the above table repeats 64₁₀ times when timbre data are received from a CZ-5000 by CZ-1 key operation. (d₁d₂ take successive values from 00 through 3FH).
- 2 (i) BASIC CH - 1 = N (0H ~ FH) when the CZ-1 receives a SEND REQUEST 1 message.
- (ii) KBCH - 1 = N (0H ~ FH) when the CZ-1 sends a SEND REQUEST 1 message.
- 3 Details on timbre data are included on page 43.

(2) RECEIVE REQUEST 1

The CZ-1 stores the single timbre data received following a RECEIVE REQUEST 1 message to the specified memory number. The SEND REQUEST 1 message is also sent from the CZ-1 when timbre data are sent from the CZ-1 to a CZ-5000 by CZ-1 key operation.

	Personal Computer → CZ-1 CZ-1 → CZ-5000	CZ-1 → Personal Computer CZ-5000 → CZ-1
1	F 0 4 4 0 0 0 0 7 N 2 0 d ₁ d ₂	
2		F 0 4 4 0 0 0 0 7 N 3 0
3	Timbre data	F 7
4		F 7

- 1 (i) INTERNAL A-1 ~ H-8 → d₁d₂H = 00 ~ 3FH
 (ii) SOUND AREA + COP/RECALL AREA → d₁d₂H = 60H
 * The transmission shown in the above table repeats 64 times when timbre data are sent to a CZ-5000 from the CZ-1 by CZ-1 key operation. (d₁d₂H take successive values from 00 through 3FH.)
 In the case of a CZ-5000, 00H through 1FH is the preset areas (ROM), so 32 timbres are actually sent into the area of d₁d₂H = 20H ~ 3FH.
- 2 (i) BASIC CH - 1 = N (0H ~ FH) when the CZ-1 receives a RECEIVE REQUEST 1 message.
 (ii) KBCH - 1 * N (0H ~ FH) when the CZ-1 sends a RECEIVE REQUEST 2 message.
- 3 Details on timbre data are included on page 43.

(3) SEND REQUEST 2

The CZ-1 sends the specified number timbre data (1 timbre) when a SEND REQUEST 2 message is received. The SEND REQUEST 2 message is also sent from the CZ-1 (MASTER) when timbre data are received from another CZ-1 (SLAVE) by CZ-1 (MASTER) key operation.

	Personal Computer → CZ-1 CZ-1(MASTER) → CZ-1(SLAVE)	CZ-1 → Personal Computer CZ-1(SLAVE) → CZ-1(MASTER)
1	F 0 4 4 0 0 0 0 7 N 1 1 d ₁ d ₂	
2		F 0 4 4 0 0 0 0 7 N 3 0
3	7 N 3 1	
4		Timbre data
5	F 7	F 7

1 (i) INTERNAL A-1 ~ H-8 → d₁d₂H = 00 ~ 3FH

(ii) SOUND AREA → d₁d₂H = 60H

- The transmission shown in the above table repeats 64 times when timbre data are received from a CZ-1(SLAVE) by CZ-1(MASTER) key operation. (d₁d₂H take successive values from 00H through 3FH.)

2 (i) BASIC CH - 1 = N (0H ~ FH) when the CZ-1 receives a SEND REQUEST 1 message.

(ii) KBCH - 1 = N (0H ~ FH) when the CZ-1 sends a SEND REQUEST 2 message.

(4) RECEIVE REQUEST 2

The CZ-1 stores the single timbre data received following a RECEIVE REQUEST 2 message to the specified memory number. The SEND REQUEST 2 message is also sent from the CZ-1 (MASTER) when timbre data are sent from the CZ-1 (MASTER) to another CZ-1(MASTER) key operation.

	Personal Computer → CZ-1 CZ-1(MASTER) → CZ-1(SLAVE)	CZ-1 → Personal Computer CZ-1(SLAVE) → CZ-1(MASTER)
1	F 0 4 4 0 0 0 0 7 N 2 1 d ₁ d ₂	
2		F 0 4 4 0 0 0 0 7 N 3 0
3	Timbre data F 7	
4		F 7

1 (i) INTERNAL A-1 ~ H-8 → 00 ~ 3FH

(ii) SOUND AREA + COP/RECALL AREA → 60H

- The transmission shown in the above table repeats 64 times when 64 timbre data are sent collectively (SAVE operation) to another CZ-1 (SLAVE) from the CZ-1 (MASTER) by CZ-1 (MASTER) key operation. (d₁d₂ take successive values from 00 through 3FH.)
- The transmission shown in the above table repeats once (d₁d₂ = 60H) when a single timbre data is sent by CZ-1 (MASTER) key operation to another CZ-1 (SLAVE).

2 (i) BASIC CH - 1 = N (0H ~ FH) when the CZ-1 receives a RECEIVE REQUEST 2 message.

(ii) KBCH - 1 = N (0H ~ FH) when the CZ-1 sends a RECEIVE REQUEST 2 message.

3 Details on timbre data are included on page 43.

(5) SEND REQUEST 3

The CZ-1 sends the specified operation memory data (1 area) when a SEND REQUEST 3 message is received. The SEND REQUEST 3 message is also sent from the CZ-1 (MASTER) when operation memory data are received from another CZ-1 (SLAVE) by CZ-1 (MASTER) key operation.

	Personal Computer → CZ-1 CZ-1(MASTER) → CZ-1(SLAVE)	CZ-1 → Personal Computer CZ-1(SLAVE) → CZ-1(MASTER)
1	F 0 4 4 0 0 0 0 7 N 1 2 d ₁ d ₂	
2		F 0 4 4 0 0 0 0 7 N 3 0
3	7 N 3 1	
4		Operation data F 7
5	F 7	

1 OPERATION MEMORY

A-1~H-8 → d₁d₂ = 00_H ~ 3F_H

- The transmission shown in the above table repeats 64 times when operation data are received from a CZ-1 (SLAVE) by CZ-1 (MASTER) key operation. (d₁d₂ take successive values from 00 through 3F_H.)

- 2 (i) BASIC CH-1 = N (0_H ~ F_H) when the CZ-1 sends a SEND REQUEST 3 message.
 (ii) KBCH-1 = N (0_H ~ F_H) when the CZ-1 receive a SEND REQUEST 3 message.

(6) RECEIVE REQUEST 3

The CZ-1 stores the single area operation memory data received following a RECEIVE REQUEST 3 message to the specified memory number. The SEND REQUEST 3 message is also sent from the CZ-1 (MASTER) to another CZ-1 (SLAVE) by CZ-1 (MASTER) key operation.

	Personal Computer → CZ-1 CZ-1(MASTER) → CZ-1(SLAVE)	CZ-1 → Personal Computer CZ-1(SLAVE) → CZ-1(MASTER)
1	F 0 4 4 0 0 0 0 7 N 2 2 d ₁ d ₂	
2		F 0 4 4 0 0 0 0 7 N 3 0
3	Operation data F 7	
4		F 7

1 (i) OPERATION MEMORY

A-1~H-8 → $d_1d_2 = 00_H \sim 3F_H$

- * The transmission shown in the above table repeats 64 times when 64 area data are sent collectively (SAVE operation) to another CZ-1 (SLAVE) from the CZ-1 (MASTER) by CZ-1 (MASTER) key operation. (d_1d_2 from 00 through 3F_H.)
- * The transmission shown in the above table repeats once when a single area data is sent by CZ-1 (MASTER) key operation to another CZ-1 (SLAVE). d_1d_2 in this case take on a value in the range of 00_H through 3F_H according to the CZ-1 (MASTER) key operation.

2 (i) BASIC CH-1 = N (0_H ~ F_H) when the CZ-1 receives a RECEIVE REQUEST 3 message.

(ii) KBCH-1 = N (0_H ~ F_H) when the CZ-1 sends a RECEIVE REQUEST 3 message.

3 Details on operation memory data are included on page 53.

III. EXCLUSIVE MESSAGE

(7) BEND RANGE

The bend range of the CZ-1 changes in accordance with BEND RANGE data received from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	0	d ₁ d ₂	F	7

HEX

- 1 BEND RANGE 0 ~ 12 → d₁d₂ = 0 ~ C_H
- 2 BASIC CHANNEL - 1 = N (0_H ~ F_H)

(8) KEY TRANSPOSE

The key transpose of the CZ-1 changes in accordance with KEY TRANSPOSE data received from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	1	d ₁ d ₂	F	7

HEX

- 1 KEY TRANSPOSE

KEY	G	A _b	A	B _b	B	C	C _#	D	E _b	E	F	F _#												
d ₁ d ₂	4	5	4	4	4	3	4	2	4	1	0	0	0	1	0	2	0	3	0	4	0	5	0	6

HEX

- 2 BASIC CHANNEL-1 = N (0_H ~ F_H)

(9) GLIDE NOTE

The glide note of the CZ-1 changes in accordance with GLIDE NOTE data received from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	3	d ₁ d ₂	F	7

HEX

- 1 GLIDE NOTE
 + 1 ~ + 12 → d₁d₂ = 1_H ~ C_H
 - 1 ~ - 12 → d₁d₂ = 4_H ~ 4C_H

- 2 BASIC CHANNEL - 1 = N (0 ~ F_H)

(10) GLIDE TIME

The glide time of the CZ-1 changes in accordance with GLIDE TIME data received from a personal computer.

Personal Computer → CZ-5000															
1	F	0	4	4	0	0	0	0	7	N	4	4	d ₁ d ₂	F	7

HEX

- 1 GLIDE TIME 0 ~ 99 → d₁d₂ = 0 ~ 63_H
- 2 BASIC CHANNEL - 1 = N (0 ~ F_H)

(11) MOD WHEEL DEPTH

The mod wheel depth time of the CZ-1 changes in accordance with MOD WHEEL DEPTH data received from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	5	d ₁ d ₂	F	7

 HEX

- 1 MOD WHEEL DEPTH 0 ~ 99 → d₁d₂ = 0 ~ 63_H
- 2 BASIC CHANNEL - 1 = N (0_H ~ F_H)

(12) LEVEL

The volume level of the CZ-1 changes in accordance with LEVEL data received from a personal computer.

Personal Computer → CZ-1																
1	F	0	4	4	0	0	0	0	7	N	4	6	d ₁ d ₂	d ₃ d ₄	F	7

 HEX

- 1 LEVEL 01 ~ 15 → d₁d₂ = 01_H ~ 0F_H
- 2 BASIC CH-1 = d₃d₄ (0_H ~ F_H)

* CHECK CH-1 = d₃d₄ (0_H ~ F_H) when CZ-1 is in the MULTI CHANNEL mode.

- 3 N → DON'T CARE

The following elements can be changed by LEVEL data.

(1) NORMAL MODE

- (i) The level of each timbre is set commonly for lines 1 and 2, regardless of the LINE VOLUME level in the PARAMETER SECTION.
- (ii) In the MULTI CHANNEL mode, the level of each CHECK CH can be set independently.

(2) TONE MIX mode

The levels of TONE 1 and TONE 2 can be set independently. The level can be changed at the current cursor position on the LCD of the CZ-1.

(3) KEY SPLIT mode

The levels of UPPER and LOWER can be set independently. The level can be changed at the current cursor position on the LCD of the CZ-1.

(4) OPERATION MEMORY mode

- (i) Same as (1)-(i) when NORMAL mode conditions are stored in memory.
- (ii) Same as (2) when TONE MIX mode conditions are stored in memory.
- (iii) Same as (3) when KEY SPLIT mode conditions are stored in memory.

(13) GLIDE ON/OFF

Personal Computer → CZ-1															
1	F	0	4	4	C	0	0	0	7	N	4	7	d ₁ d ₂	F	7

HEX

(14) PORTAMENTO SWEEP

The portamento sweep of the CZ-1 is set in accordance with PORTAMENTO SWEEP data received from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	8	d ₁ d ₂	F	7

HEX

1 PORTAMENTO SWEEP = 0 -> d₁d₂ = 00_H
1 -> d₁d₂ = 40_H

2 BASIC CH-1 = N (0 ~ F_H)

(15) MODULATION ON/OFF

MODULATION ON/OFF data is output through MIDI OUT when the MODULATION ON/OFF key of CZ-1 of the CZ-1 is switched ON and OFF. Also, the MODULATION ON/OFF setting of the CZ-1 is set in accordance with MODULATION ON/OFF data sent from an external source.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	9	d ₁ d ₂	F	7

HEX

1 MODULATION ON -> d₁d₂ = 40_H
OFF -> d₁d₂ = 00_H

2 (i) BASIC CH-1 = N (0_H ~ F_H) when the CZ-1 receives a MODULATION ON/OFF.

(ii) KBCH-1 = N (0_H ~ F_H) when the CZ-1 sends a MODULATION ON/OFF message.

• CHECK CH-1 = (0_H ~ F_H) when the CZ-1 is in the MULTI CHANNEL mode.

However, it is necessary to make the BASIC CH data value and CHECK CH data value correspond with each other.

BASIC CHANNEL

MULTI
CH = 03 PRG = ENA

CHECK CHANNEL

CHECK CHANNEL = 03
POLY = 2 LEVEL = 15

(16) MOD AFTER TOUCH DEPTH

The mod after touch depth of the CZ-1 is set in accordance with MOD AFTER TOUCH data received from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	A	d ₁ d ₂	F	7

HEX

- 1 MOD. AFTER TOUCH
DEPTH = 00 ~ 99_H → 00 ~ 63_H
- 2 BASIC CH-1 = N (0 ~ F_H)

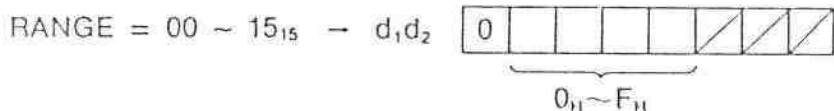
(17) AMP AFTER TOUCH RANGE

The amp after touch range of the CZ-1 is set in accordance with AMP AFTER TOUCH data received from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	B	d ₁ d ₂	F	7

HEX

AMP AFTER TOUCH



(18) CARTRIDGE ON/OFF

CARTRIDGE ON/OFF data is output through MIDI OUT when the CARTRIDGE key of the CZ-1 is switched ON and OFF. Also, the cartridge ON/OFF setting of the CZ-1 is set in accordance with CARTRIDGE ON/OFF data sent from an external source.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	C	d ₁ d ₂	F	7

HEX

- 1 CARTRIDGE ON → d₁d₂ = 40_H
OFF → d₁d₂ = 00_H
- 2 (i) BASIC CH-1 = N (0_H ~ F_H) when the CZ-1 receives a CARTRIDGE ON/OFF.
(ii) KBCH-1 = N (0_H ~ F_H) when the CZ-1 sends a CARTRIDGE ON/OFF message.

(19) CZ-1 MODE

The mode of the CZ-1 is set in accordance with MODE data received from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	D	d ₁ d ₂	F	7

 HEX

- 1 NORMAL MODE → d₁d₂ = 00_H
- TONE MIX MODE → d₁d₂ = 20_H
- KEY SPLIT MODE → d₁d₂ = 40_H
- OPERATION MEMORY → d₁d₂ = 60_H

2 BASIC CH-1 = N (0 ~ F_H)

(20) CURSOR

The cursor position is set in accordance with CURSOR data received from a personal computer. This message is used by the CZ-1 for movement of the cursor by an external source to set the two timbre numbers, volume levels, and EFFECT ON/OFF for TONE MIX and KEY SPLIT timbres.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	E	d ₁ d ₂	F	7

 HEX

1 Cursor position → d₁d₂ = 00 ~ 7F_H

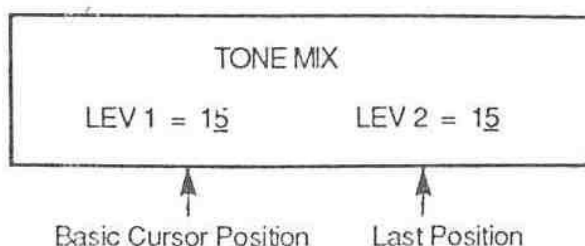
Taking the leftmost position to which the cursor can move (or the upper leftmost position in the case that the cursor can move between two lines of the LCD) as the basic cursor position, the cursor movement range is from the basic cursor position to the last (extreme right) position on the display.

d₁d₂ = 00 Move to the basic cursor position.

d₁d₂ = 01 Move to the position reached when the cursor is at the basic cursor position and the CURSOR RIGHT key on the MX 154 is pressed once.

d₁d₂ = xx Move to the position reached when the cursor is at the basic cursor position and the CURSOR RIGHT key is pressed xx times.

Example



The cursor moves to the last position on the display when the value of d₁d₂ exceeds that of the last position on the display (d₁d₂ > = 02 in the above example).

2 BASIC CH-1 = N (0 ~ F_H)

(21) PAGE

The LCD page changes in accordance with PAGE SELECT data received from a personal computer. This function is almost identical to the operation of the PAGE UP/PAGE DOWN keys of the CZ-1.

The PAGE SELECT message is used for page changes in the NORMAL, TONE MIX and KEY SPLIT modes by an external source followed by CHORUS ON/OFF settings.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	4	F	d ₁ d ₂	F	7

HEX

1 page 1 - 4 → d₁d₂ = 00_H ~ 03_H

The details of the PAGE that can be changed by the PAGE SELECT message is as follows:

(i) NORMAL mode page change

PAGE 1
(d₁d₂ = 00_H)

(LCD ; TIMBLE DISPLAY)

* INTERNAL * A-1 BRASS 1

PAGE 2
(d₁d₂ = 01_H)

(LCD ; CHORUS DISPLAY)

CHORUS ON

(ii) TONE MIX mode page change

PAGE 1
(d₁d₂ = 00_H)

(LCD ; LEVEL DISPLAY)

TONE MIX LEV 1 = 15 LEV 2 = 15

PAGE 2
(d₁d₂ = 01_H)

(LCD ; TONE 2 PITCH DISPLAY)

TONE 2 (+) OCT = 2 NOTE = 10 FINE = 03

PAGE 3
(d₁d₂ = 02_H)

(LCD ; CHORUS ON/OFF DISPLAY)

CHORUS TN 1 = ON TN 2 = OFF

(iii) KEY SPLIT mode page change

PAGE 1
(d₁d₂ = 00_H)
30 LEV 1 = 15 LEV 2 = 15

(LCD ; LEVEL DISPLAY)

SP	LOWER	UPPER
30	LEV=15	LEV=15

PAGE 2
(d₁d₂ = 01_H)

(LCD ; SUS. PEDAL ENA/DIS DISPLAY)

SUS. PEDAL LOW=ENA UPP=ENA

PAGE 3
(d₁d₂ = 02H)

(LCD; OCT. SHIFT DISPLAY)

OCT. SHIFT LOW = +1 UPP = -1

PAGE 4
(d₁d₂ = 03H)

(LCD; CHORUS ON/OFF DISPLAY)

CHORUS LOW = ON UPP = OFF

2 BASIC CH-1 = N (0 ~ F_H)

(22) MULTI CHANNEL MODE ON/OFF

The MULTI CHANNEL mode and POLY mode of the CZ-1 are switched in accordance with MULTI CHANNEL mode data sent from a personal computer.

Personal Computer → CZ-1	
1	F 0 4 4 0 0 0 0 7 N 5 0 d ₁ d ₂ F 7

HEX

1 MULTI CHANNEL MODE ON → d₁d₂ = 40H
OFF → d₁d₂ = 00H

NOTE: The MULTI CHANNEL mode of the CZ-1 switches OFF and the POLY mode switches on if data are received when d₁d₂ = 00H

2 BASIC CH-1 = N (0 ~ F_H)

(23) NUMBER OF POLY 1

The number of polyphonics for each CHECK channel in the MULTI CHANNEL mode of the CZ-1 is set in accordance with the NUMBER OF POLY 1 data sent from a personal computer.

The NUMBER OF POLY 1 message is only valid when the CZ-1 is in the MULTI CHANNEL mode.

Personal Computer → CZ-1	
1	F 0 4 4 0 0 0 0 7 N 5 1 d ₁ d ₂ F 7

HEX

1 NUMBER OF POLY 0 ~ 8₁₀ → d₁d₂ = 00 ~ 08H

2 CHECK CH-1 → N (0 ~ F_H)

(24) NUMBER OF POLY 2

The following two numbers of polyphonics are set in the MULTI CHANNEL mode of the CZ-1 is set in accordance with the NUMBER OF POLY 2 data sent from a personal computer.

- (i) The number of polyphonics for the CHECK channel that equals the BASIC channel and channel number only.
- (ii) The number of polyphonics for all CHECK channels other than that notes in (i) are set to zero.

The NUMBER OF POLY 2 message is only valid when the CZ-1 is in the MULTI CHANNEL mode.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	5	1	d ₁ d ₂	F	7

HEX

- 1 NUMBER OF POLY 0 ~ 8₁₀ → d₁d₂ = 40 ~ 48_H
- 2 BASIC CH-1 → N (0 ~ F_H)

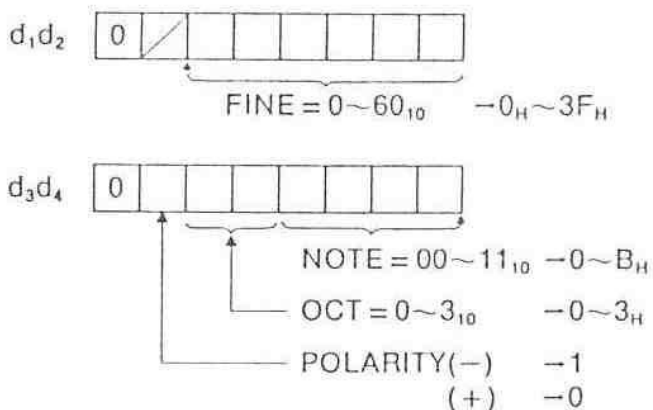
(25) TONE 2 PITCH

The TONE 2 pitch in the TONE MIX MODE of the CZ-1 is set in accordance with the TONE 2 PITCH data sent from a personal computer.

Personal Computer → CZ-1																
1	F	0	4	4	0	0	0	0	7	N	5	2	d ₁ d ₂	d ₃ d ₄	F	7

HEX

- 1 TONE 2 PITCH



- 2 BASIC CH-1 → N (0 ~ F_H)

NOTE: FINE data (0 → 60₁₀) are divided into 6-bit data (0_H ~ 3F_H) and then sent. The division method is illustrated in the table below:

FINE DATA 0 ~ 60 ₁₀	0 ₁₀ ~ 15 ₁₀	16 ₁₀ ~ 30 ₁₀	31 ₁₀ ~ 45 ₁₀	46 ₁₀ ~ 60 ₁₀
MIDI DATA 0 _H ~ 3F _H	0 _H ~ 0 _H	11 _H ~ 1F _H	21 _H ~ 2F _H	31 _H ~ 3F _H

(26) SPLIT POINT

The SPLIT POINT of the CZ-1 is set in accordance with SPLIT POINT data sent from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	5	3	d ₁ d ₂	F	7

HEX

1 SPLIT POINT (SP) 1 ~ 60₁₀ → d₁d₂ = 24_H ~ 5F_H

d ₁ d ₂	CZ-1 LOWER keyboard
0~23 _H	1
24 _H ~5F _H	d ₁ d ₂ - 23 _H
60 _H ~7F _H	3C _H

2 BASIC CH-1 = N (0 ~ F_H)

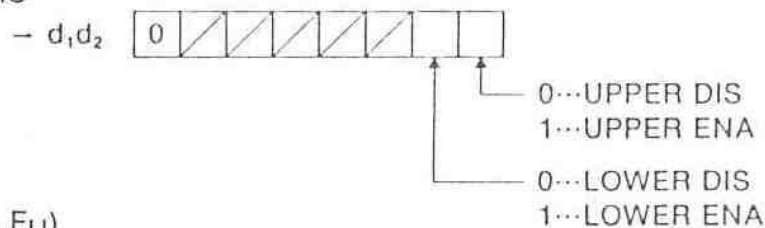
(27) SUS PEDAL ENA/DIS

The SUS PEDAL ENA/DIS in the KEY SPLIT mode of the CZ-1 is set in accordance with SUS PEDAL ENA/DIS data sent from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	5	4	d ₁ d ₂	F	7

HEX

1 SUS PEDAL ENA/DIS



2 BASIC CH-1 = N (0 ~ F_H)

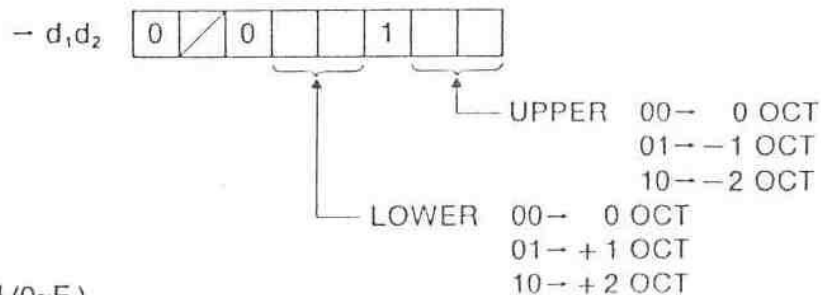
(28) OCT. SHIFT

The OCT. SHIFT in the KEY SPLIT mode of the CZ-1 is set in accordance with OCT. SHIFT data sent from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	5	5	d ₁ d ₂	F	7

HEX

1 OCT. SHIFT



2 BASIC CH-1 = N (0~F)

(29) CHORUS ON/OFF

The CHORUS ON/OFF of the CZ-1 is set in accordance with CHORUS ON/OFF data sent from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	5	6	d ₁ d ₂	F	7

- 1 CHORUS ON → d₁d₂ = 40_H
 OFF → d₁d₂ = 00_H

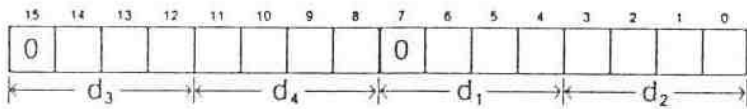
- 2 BASIC CH-1 = N (0 ~ F_H)

(30) TIME BREAK

The TIME BREAK* of the CZ-1 is changed in accordance with TIME BREAK data sent from a personal computer.

Personal Computer → CZ-1															
1	F	0	4	4	0	0	0	0	7	N	5	7	d ₁ d ₂	F	7

Personal Computer → CZ-1															
2	F	0	4	4	0	0	0	0	7	N	5	8	d ₃ d ₄	F	7



The minimum time break for each LSB is approximately 8.192 msec and the value of d₁d₂d₃d₄ is greater than 1C₁₆ (approximately 230 msec). A value less than this is equivalent to a setting of 1C₁₆. The default value is 1C₁₆ when the power of the CZ-1 is switched ON.

- * TIME BREAK
 Time break occurs and exclusive message control ends when each data byte transmission exceeds the time set above (the time between data bytes) during input of exclusive messages in the CZ-1.

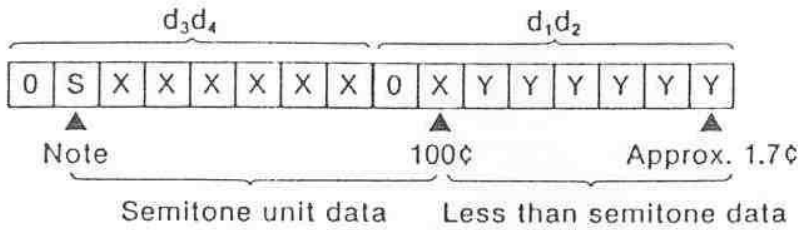
(31) KEY CODE SWEEP

The pitch of the CZ-1 is changed in accordance with KEY CODE SWEEP data sent from a personal computer.

Personal Computer → CZ-1																	
1	F	0	4	4	0	0	0	0	7	N	5	9	d ₁ d ₂	d ₃ d ₄	d ₅ d ₆	F	7

HEX

1 Pitch



- (i) Note + → S = 0
- → S = 1
- (ii) Semitone unit data (7 bit)
LSB ; 100¢
- (iii) Less than semitone data (6 bit)
LSB ; Approx. 1.7¢

2 BASIC CH-1 = d₅d₆ (0 ~ F_H)

* BASIC CH-1 = N (0 ~ F_H) when the CZ-1 enters the MULTI CHANNEL mode.

3 N → DON'T CARE

IV TIMBRE DATA

(1) TIMBRE DATA

1 In the following explanation, indicates 8-bit data, but actual MIDI output divides the data into the high order 4 bits and the low order 4 bits. Each of these is assigned to the low order 4 bits of 8-bit data and output in the sequence low order – high order.

For example, d₁d₂ is output as 0d₂ 0d₁.

2 Tone data is always LINE 1/ LINE 2 common data regardless of the LINE SELECT status. The format for all LINE 1 data and LINE 2 data is shown on the following page.

- 2 Tone data is always LINE 1/LINE 2 common data regardless of the LINE SELECT status. The format for all LINE 1 data and LINE 2 data is shown on the following page.

(2) TIMBRE DATA

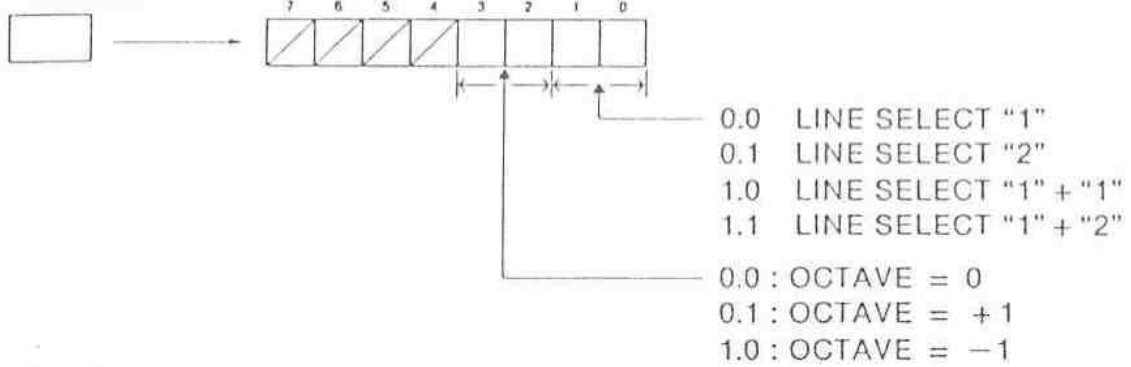
	DATA NAME	DATA FORMAT
1	PFLAG (LINE SELECT OCTAVE)	<input type="checkbox"/>
2	PDS (DETUNE)	<input type="checkbox"/>
3	PDEL, PDEH (DETUNE DATE LSB. MSB)	<input type="checkbox"/> <input type="checkbox"/>
4	PVK (VIBRATO WAVE)	<input type="checkbox"/>
5	PVDLD, PVDLV (VIBRATO DELAY TIME)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6	PVSD, PVSU (VIBRATO RATE)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
7	PVDD, PVDV (VIBRATO DEPTH)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
8	MFV (DCO1 WAVE FORM, MODULATION)	<input type="checkbox"/> <input type="checkbox"/>
* 9	MAMD, MAMV (DCA1 KEY FOLLOW, LEVEL)	<input type="checkbox"/> <input type="checkbox"/>
* 10	MWMD, MWMV (DCW1 KEY FOLLOW)	<input type="checkbox"/> <input type="checkbox"/>
* 11	PMAL (DCA1 ENVELOPE END STEP, LINE1 VELOCITY(AMP))	<input type="checkbox"/>
12	PMA (DCA1 ENVELOPE RATE, LEVEL)	<input type="checkbox"/> <input type="checkbox"/>
* 13	PMWL (DCW1 ENVELOPE END STEP, LINE1 VELOCITY(WAVE))	<input type="checkbox"/>
14	PMP (DCW1 ENVELOPE RATE, LEVEL)	<input type="checkbox"/> <input type="checkbox"/>
* 15	PMPL (DCO1 ENVELOPE END STEP, LINE1 VELOCITY(PITCH))	<input type="checkbox"/>
16	PMW (DCO1 ENVELOPE RATE, LEVEL)	<input type="checkbox"/> <input type="checkbox"/>
17	SFV (DCO2 WAVE FORM)	<input type="checkbox"/> <input type="checkbox"/>
* 18	SAMD, SAMV (DCA2 KEY FOLLOW, LEVEL)	<input type="checkbox"/> <input type="checkbox"/>
* 19	SWMD, SWMV (DCW2 KEY FOLLOW)	<input type="checkbox"/> <input type="checkbox"/>

*20	PSAL (DCA2 ENVELOPE END STEP, LINE1 VELOCITY(AMP))	<input type="checkbox"/>	
21	PSA (DCA2 ENVELOPE RATE, LEVEL)	<input type="checkbox"/>	<input type="checkbox"/>
*22	PSWL (DCW2 ENVELOPE END STEP, LINE2 VELOCITY(WAVE))	<input type="checkbox"/>	
23	PSW (DCW2 ENVELOPE RATE, LEVEL)	<input type="checkbox"/>	<input type="checkbox"/>
*24	PSPL (DCO2 ENVELOPE RATE, LEVEL)	<input type="checkbox"/>	
25	PSP (DCO2 ENVELOPE RATE, LEVEL)	<input type="checkbox"/>	<input type="checkbox"/>
26	NAME (TIMBER NAME)	<input type="checkbox"/>	<input type="checkbox"/>

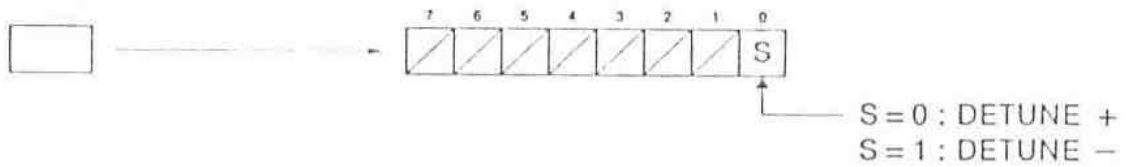
- Data contents differ according to the transmission methods shown in (1) and (2) below. See the following pages for details on each data.
 - (1) Data transmission using SEND REQUEST 1/RECEIVE REQUEST 1 according to the CZ-5000/CZ-101 timbre data format.
 - (2) Data transmission using SEND REQUEST 2/RECEIVE REQUEST 2 according to the CZ-1 timbre data format.
- #26 NAME data is only transmitted for method (2).
- The number of tone bytes transmitted is as follows for each method:
 - (1) 128 bytes/timbre
 - (2) 144 bytes/timbre

(3) DETAIL OF DATA

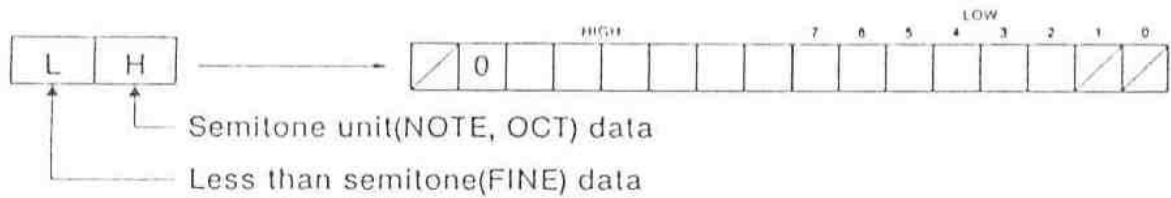
1 PFLAG



2 PDS



3 PDETL PDETH



(i) LOW (less than semitone data)

Less than semitone data-(FINE) data (0 ~ 60₁₀ divided into 0 ~ 63₁₀ 6-bit data (bit 7 ~ bit 2).

Less than semitone (FINE data)	conversion	MIDI send data
0 15	+0	0 0 15 ₁₀ F _H
16 30	+1	17 11 31 ₁₀ 1F _H
31 45	+2	33 21 47 ₁₀ 2F _H
46 60 ₁₀	+3	49 31 63 ₁₀ 3F _H

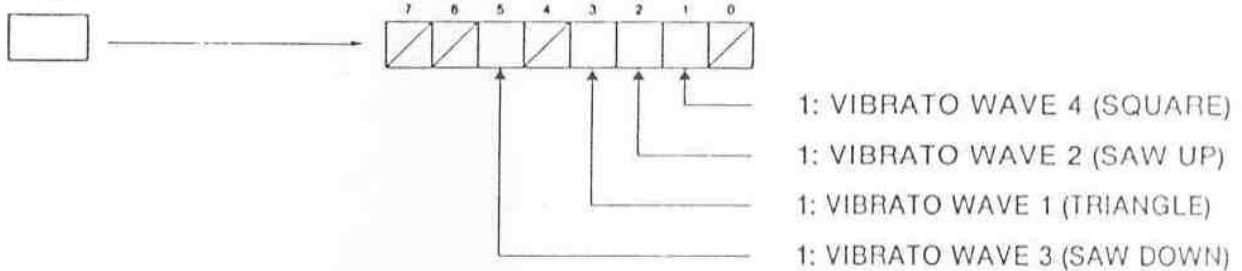
(ii) HIGH data

ALL NOTE and OCT. data are converted to semitone units, and made into 0 ~ 47₁₀ semitone HIGH data.

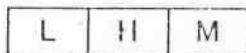
NOTE, OCT DATA	MIDI DATA
0 NOTE 0 OCT }	0
11 ₁₀ NOTE 3 ₁₀ OCT	47 ₁₀ (2F ₁₆)

* Transmitted in the sequence LOW < HIGH.

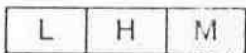
4 PVK



5 PVDLD, PVDLV → See Table 1



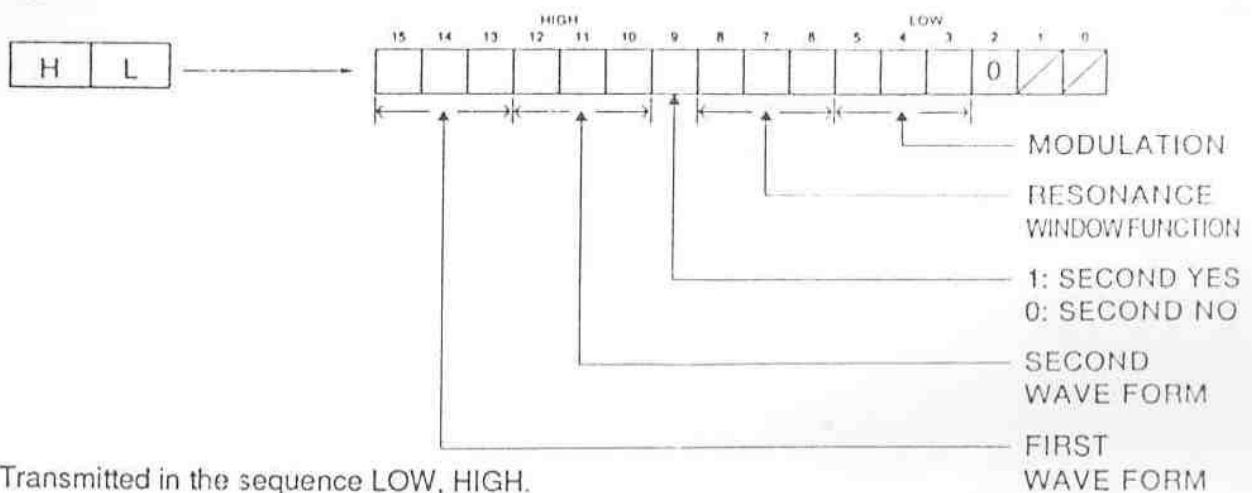
6 PVSD, PVSV → See Table 2



7 PVDD, PVDV → See Table 3



8 MFW



* Transmitted in the sequence LOW, HIGH.

WAVE FORM, MODULATION	16 bit DATA															
FIRST=1	0	0	0					0	0	0						
FIRST=2	0	0	1					0	0	0						
FIRST=3	0	1	0					0	0	0						
FIRST=4	1	0	0					0	0	0						
FIRST=5	1	0	1					0	0	0						
FIRST=6	1	1	0					0	0	1						
FIRST=7	1	1	0					0	1	0						
FIRST=8	1	1	0					0	1	1						
SECOND=1				0	0	0	1	0	0	0						
SECOND=2				0	0	1	1	0	0	0						
SECOND=3				0	1	0	1	0	0	0						
SECOND=4				1	0	0	1	0	0	0						
SECOND=5				1	0	1	1	0	0	0						
SECOND=6				1	1	0	1	0	0	1						
SECOND=7				1	1	0	1	0	1	0						
SECOND=8				1	1	0	1	0	1	1						
MODULATION OFF											0	0	0			
RING ON											1	0	0			
NOISE ON											0	1	1			

9 -1 MAMD, MAMV (Timbre data transmitted by SEND REQUEST 1, RECEIVE REQUEST 1

L	H
---	---

 messages)

DCA 1 KEY FOLLOW	MAMD, MAMV (HEX)				
0	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">0</td></tr></table>	0	0	0	0
0	0	0	0		
1	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">1</td><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">8</td></tr></table>	0	1	0	8
0	1	0	8		
2	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">2</td><td style="padding: 2px 5px;">1</td><td style="padding: 2px 5px;">1</td></tr></table>	0	2	1	1
0	2	1	1		
3	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">3</td><td style="padding: 2px 5px;">1</td><td style="padding: 2px 5px;">A</td></tr></table>	0	3	1	A
0	3	1	A		
4	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">4</td><td style="padding: 2px 5px;">2</td><td style="padding: 2px 5px;">4</td></tr></table>	0	4	2	4
0	4	2	4		
5	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">5</td><td style="padding: 2px 5px;">2</td><td style="padding: 2px 5px;">F</td></tr></table>	0	5	2	F
0	5	2	F		
6	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">6</td><td style="padding: 2px 5px;">3</td><td style="padding: 2px 5px;">A</td></tr></table>	0	6	3	A
0	6	3	A		
7	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">7</td><td style="padding: 2px 5px;">4</td><td style="padding: 2px 5px;">5</td></tr></table>	0	7	4	5
0	7	4	5		
8	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">8</td><td style="padding: 2px 5px;">5</td><td style="padding: 2px 5px;">2</td></tr></table>	0	8	5	2
0	8	5	2		
9	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">9</td><td style="padding: 2px 5px;">5</td><td style="padding: 2px 5px;">F</td></tr></table>	0	9	5	F
0	9	5	F		

9 -2 MAMD, MAMV (Timbre data transmitted by SEND REQUEST 2, RECEIVE REQUEST 2

L	H
---	---

 messages)

DCA 1 KEY FOLLOW	MAMD, MAMV (HEX)				
0	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">0</td></tr></table>	d	0	0	0
d	0	0	0		
1	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">1</td><td style="padding: 2px 5px;">0</td><td style="padding: 2px 5px;">8</td></tr></table>	d	1	0	8
d	1	0	8		
2	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">2</td><td style="padding: 2px 5px;">1</td><td style="padding: 2px 5px;">1</td></tr></table>	d	2	1	1
d	2	1	1		
3	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">3</td><td style="padding: 2px 5px;">1</td><td style="padding: 2px 5px;">A</td></tr></table>	d	3	1	A
d	3	1	A		
4	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">4</td><td style="padding: 2px 5px;">2</td><td style="padding: 2px 5px;">4</td></tr></table>	d	4	2	4
d	4	2	4		
5	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">5</td><td style="padding: 2px 5px;">2</td><td style="padding: 2px 5px;">F</td></tr></table>	d	5	2	F
d	5	2	F		
6	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">6</td><td style="padding: 2px 5px;">3</td><td style="padding: 2px 5px;">A</td></tr></table>	d	6	3	A
d	6	3	A		
7	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">7</td><td style="padding: 2px 5px;">4</td><td style="padding: 2px 5px;">5</td></tr></table>	d	7	4	5
d	7	4	5		
8	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">8</td><td style="padding: 2px 5px;">5</td><td style="padding: 2px 5px;">2</td></tr></table>	d	8	5	2
d	8	5	2		
9	<table border="1" style="display: inline-table;"><tr><td style="padding: 2px 5px;">d</td><td style="padding: 2px 5px;">9</td><td style="padding: 2px 5px;">5</td><td style="padding: 2px 5px;">F</td></tr></table>	d	9	5	F
d	9	5	F		

d: DCA1 LEVEL

DCA1 LEVEL = $01_{10} \sim 15_{10} \rightarrow d = E_H \sim 0_H$