

SONY

VIDEOCASSETTE RECORDER

BETACAM SERIES

BETACAM SP SERIES

BETACAM

BETACAM SPTM

PROTOCOL OF REMOTE-1 (9 Pin) CONNECTOR

1st Edition

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The Betacam and Betacam SP series VTR, Remote Control Connector Panel, incorporates a 9-pin D-Subminiature connector designated as REMOTE-1 (BVW-60/65/70/75/95/96, for IN and OUT). This connector is utilized in a serial control system. The contents of the serial Protocol/Command sequence is explained here.

The definition of CONTROLLER and DEVICE shall be as shown in the follows.

"CONTROLLER" means the unit which controls VTR.

"DEVICE" means the unit (VTR) which is controlled.

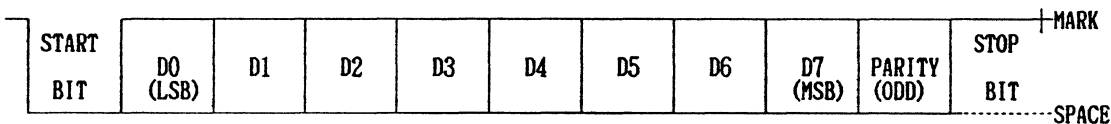
ex.1) When the Betacam and Betacam SP series VTRs are connected by REMOTE-1 (9 pin) connector, the VTR on the recorder means CONTROLLER and the VTR on the player means DEVICE.

ex.2) When the controller for editing is connected with one or plural Betacam and Betacam SP series VTR(s), this controller for editing means CONTROLLER and all VTRs means DEVICE.

1. INTERFACE SYSTEM OVERVIEW

- . Confirming to EIA RS-422A
- . Four-wire communications channel is utilized.
- . Data is transmitted asynchronously, bit serial, word serial with data exchange between devices being digital.
- . Standard transmission rate on the interface bus is 38.4 kilobits per second (kb/s).
- . The data words utilized by the interface system shall be as follows:

1 START Bit + 8 DATA Bits + 1 PARITY Bit + 1 STOP Bit



ODD parity ... The total of D0 + D1 + ... + D7 + Parity Bit equals an odd number.

NOTE: The contents of this manual are adapted to PAL, PAL-M and SECAM models.

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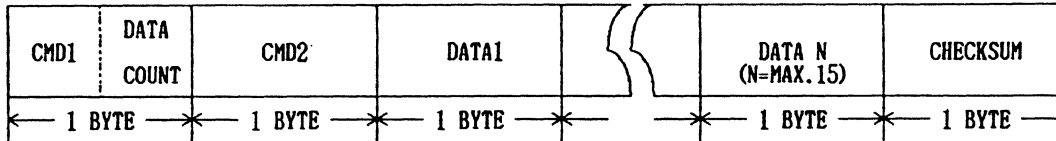
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2. COMMAND BLOCK FORMAT (CMD BLOCK)

The communication between the CONTROLLER and the DEVICE is composed of CMD 1/DATA COUNT, CMD 2 and DATA CHECKSUM, and is transmitted from CMD 1/DATA COUNT in order. When the DATA COUNT is zero, the DATA is not transmitted. When it is not zero, the DATA corresponded with the value is inserted between CMD 2 and CHECKSUM.

MSD LSD



CMD 1 : CMD 1 classifies the COMMAND into the main groups which indicates the Function and Direction of the DATA Words to follow.

CMD 1	FUNCTION	DIRECTION	
		CONTROLLER	DEVICE
0	SYSTEM CONTROL	→	
1	SYSTEM CONTROL RETURN	←	
2	TRANSPORT CONTROL	→	
4	PRESET & SELECT CONTROL	→	
6	SENSE REQUEST	→	
7	SENSE RETURN	←	

DATA COUNT : DATA COUNT indicates the number of DATA Words added following CMD 2. (0 to FH)

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CMD 2 : CMD 2 is the designated COMMAND to the Device or the COMMAND return from the DEVICE.

DATA : The number of DATA Words and their contents are defined by the specific CMD 2.

CHECKSUM : The CHECKSUM is the sum of the DATA (D0 to D7) contained in each DATA Word, from CMD 1/DATA COUNT to last DATA Word before CHECKSUM. The CHECKSUM is used to verify DATA accuracy and reject communication sequences that contain bit errors.

3. CONNECTOR PIN ASSIGNMENT

Interface connector : 9 pin D-subminiature female (D-9S)

The pin assignment for the CONTROLLER and the DEVICE shall be as shown in the following table.

The Betacam series VTR had the function as CONTROLLER (BVW-40, BVW-75 etc.) is become pin assignment of CONTROLLER when RECORDER or PLAYER lamp on the control panel is lit. Except for that, it's become pin assignment of DEVICE.

The VTR not had the function as CONTROLLER (BVW-10, BVW-15, BVW-60, BVW-65 etc.) is always become pin assignment of DEVICE.

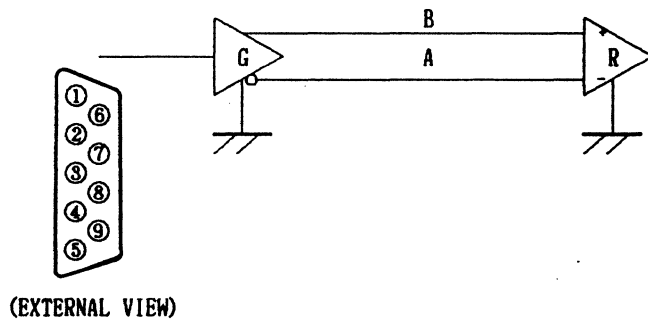
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Signal Pin	CONTROLLER	DEVICE
1	Frame Ground	Frame Ground
2	Receive A	Transmit A
3	Transmit B	Receive B
4	Transmit Common	Receive Common
5	Spare	Spare
6	Receive Common	Transmit Common
7	Receive B	Transmit B
8	Transmit A	Receive A
9	Frame Ground	Frame Ground

A and B shall be as follows.



$A < B \rightarrow$ "1" (MARK)

$A > B \rightarrow$ "0" (SPACE)

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4. COMMUNICATION PROTOCOL

- (1) All communication between the CONTROLLER and the DEVICE will be under the direct supervision of the CONTROLLER.

When the DEVICE (Betacam and Betacam SP series VTR) receives the COMMAND sent from CONTROLLER, the following COMMAND is returned.

- . In case that the DEVICE receives the COMMAND not required the data
... ACK
 - . In case that the DEVICE receives the COMMAND required the data
... COMMAND + DATA
 - . In case that the error communication is detected or the undifined COMMAND is received ... NAK + ERROR DATA
- (2) The CONTROLLER shall not transmit additional COMMAND blocks to a DEVICE (Betacam and Betacam SP series VTR) prior to receivers an appropriate response to a previous COMMAND block.
- (3) The CONTROLLER shall not interrupt transmission of a byte in a COMMAND block for more than 10 msec. A DEVICE (Betacam and Betacam SP series VTR) detecting an interruption of a byte in a COMMAND BLOCK that exceeds 10 msec. shall execute a TIME-OUT error sequence. A DEVICE shall void the receiving COMMAND block and transmit a NAK (TIME OUT).
- (4) A DEVICE, following receipt of a COMMAND Block from the CONTROLLER (Betacam and Betacam SP series VTR) shall transmit a response within 9 msec. Therefore if the CONTROLLER cannot receive the appropriate response from the DEVICE within 10 msec. after performing the COMMAND block transmission, it will execute as the communication is not performed under the normal condition, and shall process as necessary.

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(5) The DEVICE, upon detection of an error, shall immediately transmit a NAK to the CONTROLLER. (The contents of an error is shown on the COMMAND tables.) The CONTROLLER, upon receipt of NAK, shall immediately stop transmission of the COMMAND block. The DEVICE, following transmission of NAK, shall receive a subsequent COMMAND block within 10 msec. (except NAK-UNDEFINED COMMAND) and shall process as necessary.

5. COMMAND TABLE

The marks shown in the tables mean the following contents.

- 1) ○ marked COMMAND's model can correspond. If the contents are in the RETURN column, RETURN + DATA will be returned. If the contents are not in the RETURN column, "10.01:ACK" will be returned.
- 2) △ marked COMMAND returns ACK as RETURN, but doesn't operate.
- 3) × marked COMMAND doesn't correspond and returns "11.12.01:NAK UNDEFINED".
- 4) * marked COMMAND is sent to DEVICE when the corresponding model is CONTROLLER.

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COMMAND	RETURN	BVM-10	BVM-11	BVM-15	BVM-35	BVM-40	BVM-60	BVM-65	BVM-70	BVM-75	BVM-95	BVM-96	
00.0C: LOCAL DISABLE	○→10.01: ACK ×→11.12.01: NAK UNDEFINED	×	○	○	×	○*	○	○	○*	○*	○	○*	
00.11: DEVICE TYPE REQUEST	12.11: DEVICE TYPE RETURN	○ 2X.00	○ 2X.02	○ 2X.03	○ 2X.10	○* 2X.01	○ 2X.20	○ 2X.21	○* 2X.24	○* 2X.25	○ 2X.22	○* 2X.23	
00.1D: LOCAL ENABLE	○→10.01: ACK ×→11.12.01: NAK UNDEFINED	×	○	○	×	○*	○	○	○*	○*	○	○*	
20.00: STOP	○, △→10.01: ACK ×→11.12.01: NAK UNDEFINED	○	○	○	○	○*	○	○	○*	○*	○	○*	
20.01: PLAY		○	○	○	○	○*	○	○	○*	○*	○	○*	
20.02: REC		×	×	×	○	○	△	△	○*	○*	△	○*	
20.04: STANDBY OFF		○	○	○	○	○*	○	○	○*	○*	○	○*	
20.05: STANDBY ON		○	○	○	○	○*	○	○	○*	○*	○	○*	
20.0D: DMC START		×	×	×	×	×	△	○	△	○	○	○	
20.0F: EJECT		○	○	○	○	○*	○	○	○*	○*	○	○*	
20.10: F. FWD		○	○	○	○	○*	○	○	○*	○*	○	○*	
2X.11: JOG FWD		○	○	○	○	○*	○	○	○*	○*	○	○*	
2X.12: VAR FWD		○	○	○	○	○	○	○	○*	○*	○	○*	
2X.13: SHUTTLE FWD		○	○	○	○	○*	○	○	○*	○*	○	○*	
20.20: REWIND		○	○	○	○	○*	○	○	○*	○*	○	○*	
2X.21: JOG REV		○	○	○	○	○*	○	○	○*	○*	○	○*	
2X.22: VAR REV		○	○	○	○	○	○	○	○*	○*	○	○*	
2X.23: SHUTTLE REV		○	○	○	○	○*	○	○	○*	○*	○	○*	
20.30: PREROLL		○	○	○	○	○*	○	○	○*	○*	○	○*	
24.31: CUE UP WITH DATA		○, △→10.01: ACK ×→11.12.01: NAK UNDEFINED	○	○	○	○	○*	○	○	○*	○*	○	○*
21.38: PROGRAM PLAY +		×	×	×	×	×	○	○	○*	○*	○	○*	
21.39: PROGRAM PLAY -		×	×	×	×	×	○	○	○*	○*	○	○*	
20.3C: DMC PREROLL		×	×	×	×	×	△	○	△	○	○	○	
20.40: PREVIEW		×	×	×	×	×	△	△	○	○	○	○	
20.41: REVIEW		×	×	×	×	×	△	△	○	○	○	○	
20.42: AUTO EDIT		×	×	×	×	×	△	△	○	○	○	○	
20.4B: DMC RUN		×	×	×	×	×	△	○	△	○	○	○	
20.4C: DMC PREVIEW		×	×	×	×	×	△	○	△	○	○	○	
20.52: TENSION RELEASE		×	○	×	×	×	○	○	○	○	○	○	
20.54: ANTI-CLOG TIMER DISABLE		○	○	○	×	○*	○	○	○*	○*	○	○*	
20.55: ANTI-CLOG TIMER ENABLE		○	○	○	×	○*	○	○	○*	○*	○	○*	
2X.5C: DMC SET FWD		×	×	×	×	×	△	○	△	○	○	○	
2X.5D: DMC SET REV		×	×	×	×	×	△	○	△	○	○	○	
20.60: FULL EE OFF		×	×	×	○	○	△	△	○*	○*	△	○*	
20.61: FULL EE ON		×	×	×	○	○	△	△	○*	○*	△	○*	
20.63: SELECTED EE ON	×	×	×	○	○	△	△	○	○	△	○		
20.64: EDIT OFF	×	×	×	○	○	△	△	○	○	△	○		
20.65: EDIT ON	×	×	×	○	○	△	△	○	○	△	○		

COMMAND	RETURN	BVW-10	BVW-11	BVW-15	BVW-35	BVW-40	BVW-60	BVW-65	BVW-70	BVW-75	BVW-95	BVW-96
40.00: TIMER-1 PRESET		×	×	×	○	○	○	○	○	○	○	○
44.04: TIME CODE PRESET		×	×	×	○	○	△	△	○*	○*	△	○*
44.05: U-BIT PRESET		×	×	×	○	○	△	△	○*	○*	△	○*
40.08: TIMER-1 RESET		○	○	○	○	○*	○	○	○*	○*	○	○*
40.10: IN ENTRY		○	○	○	○	○*	○	○	○*	○*	○	○*
40.11: OUT ENTRY		○	○	○	○	○*	○	○	○*	○*	○	○*
40.12: A IN ENTRY		×	×	×	×	×	○	○	○*	○*	○	○*
40.13: A OUT ENTRY		×	×	×	×	×	○	○	○*	○*	○	○*
44.14: IN PRESET		○	○	○	○	○	○	○	○	○	○	○
44.15: OUT PRESET		○	○	○	○	○*	○	○	○*	○*	○	○*
44.16: A IN PRESET		×	×	×	×	×	○	○	○	○	○	○
44.17: A OUT PRESET		×	×	×	×	×	○	○	○*	○*	○	○*
40.18: IN SHIFT +		○	○	○	○	○*	○	○	○*	○*	○	○*
40.19: IN SHIFT -		○	○	○	○	○*	○	○	○*	○*	○	○*
40.1A: OUT SHIFT +	○, △→10.01: ACK	○	○	○	○	○*	○	○	○*	○*	○	○*
40.1B: OUT SHIFT -	×→11.12.01: NAK UNDEFINED	○	○	○	○	○*	○	○	○*	○*	○	○*
40.1C: A IN SHIFT +		×	×	×	×	×	○	○	○*	○*	○	○*
40.1D: A IN SHIFT -		×	×	×	×	×	○	○	○*	○*	○	○*
40.1E: A OUT SHIFT +		×	×	×	×	×	○	○	○*	○*	○	○*
40.1F: A OUT SHIFT -		×	×	×	×	×	○	○	○*	○*	○	○*
40.20: IN RESET		○	○	○	○	○*	○	○	○*	○*	○	○*
40.21: OUT RESET		○	○	○	○	○*	○	○	○*	○*	○	○*
40.22: A IN RESET		×	×	×	×	×	○	○	○*	○*	○	○*
40.23: A OUT RESET		×	×	×	×	×	○	○	○*	○*	○	○*
40.24: IN RECALL		○	○	○	○	○	○	○	○*	○*	○	○*
40.25: OUT RECALL		○	○	○	○	○	○	○	○*	○*	○	○*
40.26: A IN RECALL		×	×	×	×	×	○	○	○*	○*	○	○*
40.27: A OUT RECALL		×	×	×	×	×	○	○	○*	○*	○	○*
40.2D: LOST LOCK RESET		×	×	×	×	×	○	○	○	○	○	○
41.30: EDIT PRESET		×	×	×	○	○	△	△	○	○	△	○
44.31: PREROLL TIME PRESET		○	○	○	○	○*	○	○	○*	○*	○	○*
41.32: TAPE/AUTO SELECT		×	×	×	○	×	△	△	○	○	△	○
41.33: SERVO REFERENCE SELECT		×	×	×	×	×	△	△	○	○	△	○
41.34: HEAD SELECT		×	×	×	×	×	△	△	△	○	△	○
41.35: COLOR FRAME SELECT		×	○	○	×	×	○	○	○	○	○	○
41.36: TIMER MODE SELECT		○	○	○	○	○	○	○	○	○	○	○
41.37: INPUT CHECK		×	×	×	○	○	△	△	○	○	△	○

COMMAND	RETURN	BVW-10	BVW-11	BVW-15	BVW-35	BVW-40	BVW-60	BVW-65	BVW-70	BVW-75	BVW-95	BVW-96
40.40: AUTO MODE OFF	○, △→10.01: ACK ×→11.12.01: NAK UNDEFINED	×	×	×	○	○	○	○	○	○	○	○
40.41: AUTO MODE ON		×	×	×	○	○*	○	○	○*	○*	○	○*
40.42: AUDIO SPLIT OFF		×	×	×	×	×	○	○	○	○	○	○
40.43: AUDIO SPLIT ON		×	×	×	×	×	○	○	○*	○*	○	○*
40.46: VARIABLE MEMORY OFF		×	×	×	×	×	△	○	△	○	○	○
40.47: VARIABLE MEMORY ON		×	×	×	×	×	△	○	△	○	○	○
40.48: VIDEO REFERENCE DISABLE OFF		×	×	×	×	○	△	△	○	○	△	○
40.49: VIDEO REFERENCE DISABLE ON		×	×	×	×	○	△	△	○	○	△	○
61.0A: TC GEN DATA SENSE	74.08: GEN TC DATA	×	×	×	○	○	×	×	○	○	×	○
	74.09: GEN UB DATA	×	×	×	○	○	×	×	○	○	×	○
	78.08: GEN TC & UB DATA	×	×	×	○	○	×	×	○	○	×	○
61.0C: CURRENT TIME SENSE	74.00: TIMER-1 DATA	○	○	○	○	○	○	○	○	○	○	○
	74.04: LTC TIME DATA	○	○	○	○	○	○	○	○	○	○	○
	74.14: LTC INTERPOLATED TIME DATA	○	○	○	○	○	○	○	○	○	○	○
	74.05: LTC UB DATA	○	○	○	○	○	○	○	○	○	○	○
	78.04: LTC TIME & UB DATA	○	○	○	○	○	○	○	○	○	○	○
	78.14: LTC INTERPOLATED TIME & UB DATA	○	○	○	○	○	○	○	○	○	○	○
	74.06: VITC TIME DATA	×	×	×	○	×	○	○	○	○	○	○
	74.16: VITC HOLD TIME DATA	×	×	×	×	×	○	○	○	○	○	○
	74.07: VITC UB DATA	×	×	×	○	×	○	○	○	○	○	○
	78.06: VITC TIME & UB DATA	×	×	×	○	×	○	○	○	○	○	○
	78.16: VITC HOLD TIME & UB DATA	×	×	×	×	×	○	○	○	○	○	○
	70.00: REQUEST TIME MISSING	○	○	○	○	○	○	○	○	○	○	○
60.10: IN DATA SENSE	74.10: IN DATA	○	○	○	○	○	○	○	○	○	○	○
60.11: OUT DATA SENSE	74.11: OUT DATA	○	○	○	○	○	○	○	○	○	○	○
60.12: A IN DATA SENSE	74.12: A IN DATA	×	×	×	×	×	○	○	○	○	○	○
60.13: A OUT DATA SENSE	74.13: A OUT DATA	×	×	×	×	×	○	○	○	○	○	○
61.20: STATUS SENSE	7X.20: STATUS DATA	○	○	○	○	○	○	○	○	○	○	○
60.2E: COMMAND SPEED SENSE	7X.2E: COMMAND SPEED DATA	×	×	×	×	×	○	○	○	○	○	○
60.2F: VAR MEM SPEED SENSE	7X.2F: VAR MEM SPEED SENSE	×	×	×	×	×	×	○	×	○	○	○
60.30: EDIT PRESET SENSE	71.30: EDIT PRESET DATA	×	×	×	○	○	○	○	○	○	○	○
60.31: PREROLL TIME SENSE	74.31: PREROLL TIME DATA	○	○	○	○	○	○	○	○	○	○	○
60.36: TIMER MODE SENSE	71.36: TIMER MODE DATA	○	○	○	○	○	○	○	○	○	○	○

00.0C : LOCAL DISABLE

When receiving this command, all functions of the DEVICE will be disabled.

00.11 : DEVICE TYPE REQUEST

12.11 : DEVICE TYPE

The "00.11 : DEVICE TYPE REQUEST" command is used for asking the model of the CONTROLLED DEVICE to be connected, and if the CONTROLLED DEVICE receives this command, the "12.11 : DEVICE TYPE" with 2 bytes data will be sent back as a response.

MODEL	DATA-1	DATA-2	MODEL	DATA-1	DATA-2	
BVW-10	: 2 X	0 0	BVW-60	: 2 X	2 0	· NTSC, PAL-M models X = 0
BVW-40	: 2 X	0 1	BVW-65	: 2 X	2 1	
BVW-11	: 2 X	0 2	BVW-95	: 2 X	2 2	· PAL, SECAM models X = 1
BVW-15	: 2 X	0 3	BVW-96	: 2 X	2 3	
BVW-35	: 2 X	1 0	BVW-70	: 2 X	2 4	
			BVW-75	: 2 X	2 5	

00.1D : LOCAL ENABLE

When receiving this command, the control panel operation will be enabled according to the DEVICE setting. When the power of the DEVICE is turned on, it will be set to the LOCAL ENABLE state.

10.01 : ACK

When receiving a command from the CONTROLLER, the DEVICE will send back this command as acknowledgement.

11.12 : NAK

When detecting the communication errors or receiving the undefined COMMAND, the CONTROLLER will send back this command as not-acknowledgement. Bit-7 to Bit-0 of DATA-1 will be set in accordance with the contents.

DATA-1

BIT-7	BIT-6	BIT-5	BIT-4	BIT-3	BIT-2	BIT-1	BIT-0
TIME OUT	FRAMING ERROR	OVERRUN ERROR	PARITY ERROR		CHECKSUM ERROR		UNDEFINED COMMAND

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- 20.00 : STOP
- 20.01 : PLAY
- 20.02 : REC
- 20.04 : STANDBY OFF
- 20.05 : STANDBY ON

When receiving one of the above commands, the DEVICE will be set to the specified mode. The "20.04 : STANDBY OFF" command is available only when the CONTROLLED DEVICE is in the STOP mode.

20.0D : DMC START : DMC = Dynamic Motion Control (= VAR MEMORY)

When receiving this command, the DEVICE will start running with a speed memorized by the "20.4B : DMC RUN" command.

- 20.10 : FAST FWD
- 20.20 : REWIND

When receiving this command, the DEVICE will become the REWIND mode.

- 2X.11 : JOG FWD
- 2X.12 : VAR FWD
- 2X.13 : SHUTTLE FWD
- 2X.21 : JOG REV
- 2X.22 : VAR REV
- 2X.23 : SHUTTLE REV

When receiving one of the above commands, the DEVICE will start running in accordance with speed data defined by the DATA-1 and the DATA-2.

When only DATA-1 is given, X is equal to 1 and the tape speed will be defined as follows.

$$\text{TAPE SPEED} = 10^{(N/32 - 2)}$$

N : SPEED DATA (DECIMAL)

EX. TAPE SPEED	SPEED DATA
STILL 0 (0H)
0.1 times normal speed 32 (20H)
1.0 times normal speed 64 (40H)
About 2.9 times normal speed 79 (4FH)

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When setting more precise value than the tape speed defined by DATA-1, DATA-2 will be added, however, the precise value is a linear approximate value. (X = 2) When both DATA-1 and DATA-2 are given, the tape speed will be defined as follows.

$$\text{TAPE SPEED} = 10^{(N/32-2)} + N'/256 \{10^{(N+1/32-2)} - 10^{(N/32-2)}\}$$

N : SPEED DATA OF DATA-1 (DECIMAL)

N' : SPEED DATA OF DATA-2 (DECIMAL)

CORRECTION
(Technical Memo)
BVWM 88-219

BVW-10/11/15/35/40, DATA-2 is always used as "0" even if DATA-1 or DATA-2 is given.

20.30 : PREROLL

When receiving this command, the CONTROLLED DEVICE will be prerolled to the tape position, that is, the value obtained by subtracting the time defined by the "44.31 : PREROLL TIME PRESET" command from the IN POINT data equivalent to the timer data or time code stored in the IN ENTRY memory by the "40.10 : IN ENTRY" command.

24.31 : CUE UP WITH DATA

The "24.31 : CUE UP WITH DATA" command is used for cueing up the CONTROLLED DEVICE to the position assigned by the time data of DATA-1 to DATA-4.

A unit of respective data are as follows:

DATA-1		DATA-2		DATA-3		DATA-4	
10	1	10	1	10	1	10	1
Frame	Frame	Second	Second	Minute	Minute	Hour	Hour
MSD	LSD	MSD	LSD	MSD	LSD	MSD	LSD

* Refer to page 38 for MSD of DATA-1 through DATA-4.

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21.38 : PROGRAM PLAY +

21.39 : PROGRAM PLAY -

These commands are used for playing back the CONTROLLED DEVICE in steps of 0.1% within the range of $\pm 25.5\%$ against the normal PLAY (1x) speed.

DATA-1



Relationship between the deviation (%) from the normal PLAY (1x) speed and SPEED DATA is defined as follows:

$$\text{DEVIATION (\%)} = 0.1 \times \text{SPEED DATA (Decimal Notation)}$$

BVW-60/65/70/75 operate every 1%.

20.3C : DMC PREROLL : DMC = Dynamic Motion Control (= VAR MEMORY)

This command is used for cueing up the CONTROLLED DEVICE to the point as follows:

IN POINT - (MEMORIZED INITIAL SPEED x PREROLL TIME)

20.40 : PREVIEW

20.41 : REVIEW

20.42 : AUTO EDIT

When receiving one of the above commands, the CONTROLLED DEVICE will go into the desired mode.

20.4B : DMC RUN : DMC = Dynamic Motion Control (= VAR MEMORY)

When receiving this command, the CONTROLLED DEVICE will perform a sequence of the following operations in the VAR MEMORY mode.

1. Cues up to the following point;

IN POINT - (INITIAL SPEED x PREROLL TIME)

2. Runs to the IN point with the initial speed which was set.

3. Memorize the speed given by the PLAY, VAR FWD or VAR REV from the IN point.

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20.4C : DMC PREVIEW : DMC = Dynamic Motion Control (= VAR MEMORY)

When receiving this command, the CONTROLLED DEVICE will perform a sequence of the following operations in the VAR MEMORY mode.

1. Cues up to the following point;
 IN POINT - (MEMORIZED INITIAL SPEED x PREROLL TIME)
2. Runs to the IN point with the initial speed which was memorized.
3. Plays back from the IN point with the memorized speed.

20.52 : TENSION RELEASE

When receiving the above command in STOP or SHUTTLE/JOG/VAR STILL mode, become TENSION RELEASE mode.

20.54 : ANTI-CLOG TIMER DISABLE

20.55 : ANTI-CLOG TIMER ENABLE

"20.54 : ANTI-CLOG TIMER DISABLE" command prohibits the operation of the ANTI-CLOG TIMER.

"20.55 : ANTI-CLOG TIMER ENABLE" command permitted the operation of the ANTI-CLOG TIMER. When turning on the power, ANTI-CLOG TIMER ENABLE mode is set.

2X.5C : DMC SET FWD : DMC = Dynamic Motion Control (= VAR MEMORY)

2X.5D : DMC SET REV

These commands are used for presetting the SPEED DATA to the DEVICE as the initial speed of the "20.4B : DMC RUM" command in the VAR MEMORY mode. The initial speed will be assigned in the DATA-1 of the above command. As for the SPEED DATA, refer to "2X.11 : JOG FWD" command.

20.60 : FULL EE OFF

20.61 : FULL EE ON

These commands are used for setting or clearing all channels to EE mode.

20.63 : SELECT EE ON

This command is used for setting each EDIT PRESET channel assigned by the DATA-1 of the "41.30 : EDIT PRESET" command to the E-E mode.

To clear the SELECT E-E mode, use the "20.64 : EDIT OFF" command.

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20.64 : EDIT OFF

This command is used for clearing the EDIT mode and also clearing the SELECT EE mode.

20.65 : EDIT ON

This command is used for setting the DEVICE, which is running at the normal PLAY speed during the EDIT PRESET mode, to the EDIT mode.

44.00 : TIMER-1 PRESET

This command is used for presetting the value, which has been given by the DATA-1 to DATA-4, to the TIMER-1 (CTL COUNTER) of the DEVICE. DF/NDF mode of TIMER-1 is set corresponding to DATA-1, Bit 6 as the following table.

DATA-1 BIT-6	DF
0	OFF
1	ON

NOTE:

NTSC and PAL-M models can set the DF/NDF mode.

As for the data format, refer to "24.31 : CUE UP WITH DATA" command.

44.04 : TIME CODE PRESET

This command is used for presetting the value, which has been given by the DATA-1 to DATA-4, to the TIME CODE of the time code generator.

As for the data format, refer to "24.31 : CUE UP WITH DATA" command.

The switching of COLOR FRAMING, DF/NDF mode of TIME CODE GENERATOR is set corresponding to Bit 7 and Bit 6 of DATA-1.

DATA-1 BIT-7	CF/ CL
0	OFF
1	ON

DATA-1 BIT-6	DF
0	OFF
1	ON

NOTE:

NTSC and PAL-M models can set the DF/NDF mode.

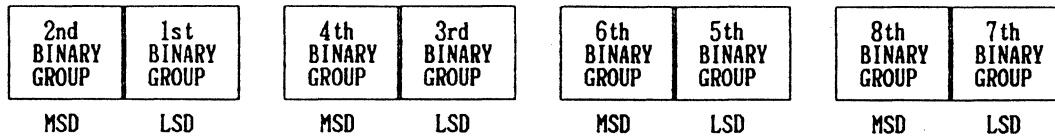
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44.05 : U-BIT PRESET

This command is used for presetting the value, which has been given by the DATA-1 to DATA-4, to the USER BIT of the time code generator.



40.08 : TIMER-1 RESET

This command is used for resetting the TIMER-1 (CTL COUNTER) to zero.

40.10 : IN ENTRY

40.11 : OUT ENTRY

40.12 : A IN ENTRY

40.13 : A OUT ENTRY

These commands are used for storing the value of the TIMER or the TIME CODE data which is displayed on the DEVICE into the IN, OUT, A IN or A OUT memory as an IN POINT, OUT POINT, A IN POINT or A OUT POINT data.

44.14 : IN PRESET

44.15 : OUT PRESET

44.16 : A IN PRESET

44.17 : A OUT PRESET

These commands are used for presetting the value, which has been given by the DATA-1 to DATA-4, into the IN, OUT, A IN or A OUT memory.

As for the data format, refer to the "24.31: CUE UP WITH DATA" command.

40.18 : IN SHIFT +

40.19 : IN SHIFT -

These commands are used for adding or subtracting the value of the TIME DATA, which has been stored as an IN POINT, by one frame.

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40.1A : OUT SHIFT +

40.1B : OUT SHIFT -

These commands are used for adding or subtracting the value of the TIME DATA, which is stored as an OUT POINT, by one frame.

40.1C : A IN SHIFT +

40.1D : A IN SHIFT -

These commands are used for adding or subtracting the value of the TIME DATA, which has been stored as an AUDIO IN POINT, by one frame.

40.1E : A OUT SHIFT +

40.1F : A OUT SHIFT -

These commands are used for adding or subtracting the value of the TIME DATA, which has been stored as an AUDIO OUT POINT, by one frame.

40.20 : IN RESET

40.21 : OUT RESET

40.22 : A IN RESET

40.23 : A OUT RESET

These commands are used when turning the IN, OUT, AUDIO IN or AUDIO OUT lamp to off.

40.24 : IN RECALL

40.25 : OUT RECALL

40.26 : A IN RECALL

40.27 : A OUT RECALL

These commands are used when turning the IN, OUT, AUDIO IN or AUDIO OUT lamp to on.

40.2D : LOST LOCK RESET

This command is used for resetting the "DATA No.8 Bit-6:LOST LOCK" of the "7X.20:STATUS DATA". The LOST LOCK status will be set when the servo is unlocked in the PLAY, REC or EDIT mode.

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41.30 : EDIT PRESET

Each bit in the DATA-1 is defined as follows.

DATA-1

BIT-7	BIT-6	BIT-5	BIT-4	BIT-3	BIT-2	BIT-1	BIT-0
	INSERT	ASSEMBLE	VIDEO		TIME CODE	A 2	A 1

INSERT or ASSEMBLE mode is defined by the Bit-6 and Bit-5, and each channel is defined by the Bit-4 to Bit-0. BVW-35, only INSERT, A1 and A2 can be defined.

44.31 : PREROLL TIME PRESET

This command is used for presetting the preroll time, which has given by the DATA-1 to DATA-4, to the CONTROLLED DEVICE.

As for the data format, refer to the "24.31:CUE UP WITH DATA" command.

41.32 : TAPE/AUTO SELECT

The TAPE/EE mode is selected by the state of the DATA-1.

DATA-1

00 : AUTO (TAPE/EE)

01 : TAPE

FF : It depends on the setting of the DEVICE.

41.33 : SERVO REFERENCE SELECT

The SERVO reference signal is selected by the state of the DATA-1.

DATA-1

00 : AUTO

01 : EXTERNAL

FF : It depends on the setting of the DEVICE.

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41.34 : HEAD SELECT

The VIDEO heads used in the play back mode are selected by the state of the DATA-1.

DATA-1

00 : R/P HEAD

01 : PLAY HEAD

FF : It depends on the setting of the DEVICE.

41.35 : COLOR FRAME SELECT

The color frame mode of the servo system is selected by the state of the DATA-1.

DATA-1

01 ~~0F~~ : 2 Field

02 ~~07~~ : 4 Field

03 ~~02~~ : 8 Field (PAL, PAL-M)

FF : It depends on the setting of the DAVICE.

Corrected by BVWM 89-002

41.36 : TIMER MODE SELECT

This command is used for selecting the TIMER system used in the AUTO mode which displays the IN ENTRY, OUT ENTRY, IN PRESET, OUT PRESET, PREROLL and CUE UP WITH DATA, etc. by the state of the DATA-1.

DATA-1

01 : TIME CODE

02 : TIMER-1

FF : It depends on the setting of the DEVICE.

41.37 : INPUT CHECK

When the DATA-1 is "01", the VIDEO and AUDIO CH-1/-2 shall be EE mode.

40.40 : AUTO MODE OFF

40.41 : AUTO MODE ON

This command is used for switching ON/OFF the AUTO mode of the DEVICE.

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40.44 : AUDIO SPLIT OFF

40.45 : AUDIO SPLIT ON

This command is used for switching ON/OFF the AUDIO SPLIT MODE of the DEVICE.

40.46 : VARIABLE MEMORY OFF

40.47 : VARIABLE MEMORY ON

This command is used for switching ON/OFF the VARIABLE MEMORY MODE of the DEVICE.

40.48 : VIDEO REFERENCE DISABLE OFF

40.49 : VIDEO REFERENCE DISABLE ON

When the DEVICE receives "40.49:VIDEO REFERENCE DISABLE ON", EXTERNAL must be selected as SERVO REFERENCE in the PB and EE mode.

When turning on the power, VIDEO REFERENCE DISABLE OFF is set.

61.0A : TC GEN DATA SENSE

This command is used for requesting the TIME CODE data that the CONTROLLED DEVICE is generating, and the CONTROLLED DEVICE will make a response according to the contents of the DATA-1.

DATA-1

BIT-7	BIT-6	BIT-5	BIT-4	BIT-3	BIT-2	BIT-1	BIT-0
.....	GEN UB	GEN TC

REQUEST COMMAND

RESPONSE COMMAND

DATA-1 = 01:Request for GEN TC — "74.08:GEN TIME DATA"

DATA-1 = 10:Request for GEN UB — "74.09:GEN UB DATA"

DATA-1 = 11:Request for GEN UB — "78.08:GEN TC & UB DATA"

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REQUEST COMMAND DATA-1								*3	*3	*3
RESPONSE COMMAND	0 1	0 2	0 3	0 4	1 0	2 0	3 0	1 1	2 2	3 3
74.00: TIMER-1 DATA				○						
74.04: LTC TIME DATA	○		○							
74.14: LTC INTERPOLATED TIME DATA	○		○							
74.05: LTC U-BIT DATA					○		○			
78.04: LTC TIME & U-BIT DATA								○		○
78.14: LTC INTERPOLATED TIME & U-BIT DATA								○		○
74.06: VITC TIME DATA		○*1	○*2							
74.16: VITC INTERPOLATED TIME DATA		○*1	○*2							
74.07: VITC U-BIT DATA						○*1	○*2			
78.06: VITC TIME & U-BIT DATA									○*1	○*2
78.16: VITC INTERPOLATED TIME & U-BIT DATA									○*1	○*2

- NOTE: 1) BVW-10/11/15/40 don't have the VITC READER, so they return "70.0D:REQUEST TIME DATA MISSING".
- 2) BVW-10/11/15/40 don't have the VITC READER, so they don't return the VITC DATA. (only LTC DATA)
- 3) The request command DATA-1 = 11,12,13 ; The response command DATA-1 to DATA-4 return the TIME DATA, and DATA-5 to DATA-8 return the USER BIT DATA.

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- 60.10 : IN DATA SENSE
- 60.11 : OUT DATA SENSE
- 60.12 : A IN DATA SENSE
- 60.13 : A OUT DATA SENSE

These commands are used for requesting the IN/OUT DATA and the AUDIO IN/OUT DATA. The CONTROLLED DEVICE will send back a response command according to the command from the CONTROLLING DEVICE.

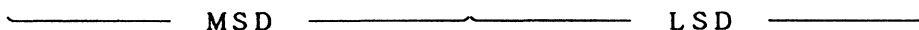
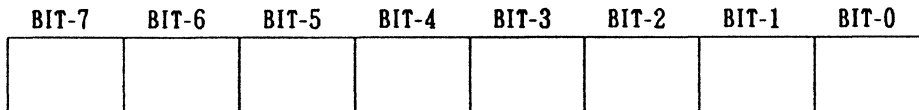
As for the data format of the CONTROLLED DEVICE, refer to the "24.31:CUEUP WITH DATA".

REQUEST COMMAND	RESPONSE COMMAND
IN DATA SENSE:	—— "74.10:IN DATA
OUT DATA SENSE:	—— "74.11:OUT DATA
A IN DATA SENSE:	—— "74.12:A IN DATA
A OUT DATA SENSE:	—— "74.13:A OUT DATA

61.20 : STATUS SENSE

This command is used for requesting the status of the CONTROLLED DEVICE, and the CONTROLLED DEVICE will send back a response command according to the contents of the DATA-1 of the CONTROLLING DEVICE.

DATA-1



MSD(Bit-7 to 4): Indicates the initial Data No. of the "7X.20:STATUS DATA" to be sent back.

LSD(Bit-3 to 0): Indicates the number of data bytes in "7X.20:STATUS DATA" to be sent back.

EX. When the DATA-1 of the "61.20:STATUS SENSE" command is 2A.
 The CONTROLLED DEVICE will send back ten bytes from the DATA No.2, i.e. DATA No.2 to DATA No.B, of the "7X.20:STATUS DATA".

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60.2E : COMMAND SPEED SENSE

This command is used for requesting the operating TAPE SPEED COMMAND of the DEVICE. When the DEVICE receives this command, "71.2E:COMMAND SPEED DATA" command will be sent back.

60.2F : VARIABLE MEMORY SPEED SENSE

This command is used for requesting the INITIAL SPEED DATA memorized by VARIABLE MEMORY mode of the DEVICE.

When the DEVICE receives this command, "71.2F:VARIABLE MEMORY SPEED DATA" command will be sent back.

60.36 : TIMER MODE SENSE

This command is used for requesting the setting of the TIMER MODE (TIMER-1 or TIME CODE) of the DEVICE. When the DEVICE receives this command, it will send back the "71.36:TIMER MODE STATUS" with DATA-1 that shows the switch setting.

"71.36:TIMER MODE STATUS" DATA-1: 00 — TIME CODE
01 — TIMER-1

74.08 : GEN TC DATA

When the DEVICE receives the "61.0A:TC GEN DATA SENSE" command, If the DATA-1 is "01", the TIME data of the TC which the CONTROLLED DEVICE is generating will be added to the DATA-1 to DATA-4 of the "74.08:GEN TC DATA" and it will be sent back to the CONTROLLING DEVICE.

For the data format, refer to the "24.31:CUE UP WITH DATA".

74.09 : GEN UB DATA

When the CONTROLLED DEVICE receives the "61.0A:TC GEN DATA SENSE" command, if the DATA-1 is "10", the UB data of TC which the CONTROLLED DEVICE is generating will be added to the DATA-1 to DATA-4 of the "74.09:GEN UB DATA" and it will be sent back to the CONTROLLING DEVICE.

For the data format, refer to the "44.05:U-BIT PRESET"

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78.08 : GEN TC & UB DATA

When the DEVICE receives the "61.0A:TC GEN DATA SENSE" command, if the DATA-1 is "11", the TIME DATA will be added to the DATA-1 to DATA-4 of the "74.08:GEN TIME DATA" command and the user bit data will be added to the DATA-5 to DATA-8, and then they will be sent back.

For the data format, refer to the "24.31:CUE UP WITH DATA" and "44.05:U-BIT PRESET".

74.10 : IN DATA

When the DEVICE receives the "60.10:IN DATA SENSE" command, the data that shows the IN point will be added to the DATA-1 to DATA-4 of the "74.10:IN DATA" and it will be sent back to the CONTROLLING DEVICE.

For the data format, refer to the "24.31:CUE UP WITH DATA".

74.11 : OUT DATA

When the DEVICE receives the "60.11: OUT DATA SENSE" command, the data that shows the OUT point will be added to the DATA-1 to DATA-4 of the "74.11:OUT DATA" and it will be sent back to the CONTROLLING DEVICE.

For the data format, refer to the "24.31:CUE UP WITH DATA"

74.12: A IN DATA

When the DEVICE receives the "60.12: A IN DATA SENSE" command, the data that shows the AUDIO IN point will be added to the DATA-1 to DATA-4 of the "74.12: A IN DATA" and it will be sent back to the CONTROLLING DEVICE. For th data format, refer to the "24.31: CUE UP WITH DATA".

74.13 : A OUT DATA

When the DEVICE receives the "60.13: A OUT DATA SENSE" command, the data that shows the AUDIO OUT point will be added to the DATA-1 to DATA-4 of the "74.13:A OUT DATA" and it will be sent back to the CONTROLLING DEVICE.

For the data format, refer to the "24.31:CUE UP WITH DATA".

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74.14 : LTC INTERPOLATED TIME DATA

When the DEVICE is required LTC TIME DATA by the "61.0C:CURRENT TIME SENSE" command and it interpolates with CTL or it had not read exactly, the LTC TIME DATA will be added to the DATA-1 to DATA-4 and be sent back.

For the data format, refer to the "24.31:CUE UP WITH DATA".

71.36 : TIMER MODE DATA

Refer to the "60.36:TIMER MODE SENSE" command.

74.00 : TIMER-1 DATA

When the DEVICE is required the TIMER-1 data by the "61.0C:CURRENT TIME SENSE" command, the TIMER-1 data (CTL COUNTER) will be added to the DATA-1 to DATA-4. At that time, the DF/NDF mode of TIMER-1 is set to the Bit-6 of DATA-1.

For the data format, refer to the "24.31:CUE UP WITH DATA".

74.04 : LTC TIME DATA

When the DEVICE is required the LTC TIME DATA by the "61.0C:CURRENT TIME SENSE" command and it is read, the LTC TIME DATA will be added to the DATA-1 to DATA-4 and be sent back.

78.04 : LTC TIME & UB DATA

When the DEVICE is required the LTC TIME DATA and USER BIT DATA by the "61.0C:CURRENT TIME SENSE" command and it is read, the LTC TIME DATA will be added to the DATA-1 to DATA-4 and the TC USER BIT DATA will be added to the DATA-5 to DATA-8, and then they will be sent back.

For the data format, refer to the "24.31:CUE UP WITH DATA" and "44.05:U-BIT PRESET".

74.05 : LTC UB DATA

The DEVICE is required the LTC USER BIT DATA by the "61.0C:CURRENT TIME SENSE" command, the LTC USER BIT DATA will be added to the DATA-1 to DATA-4 and be sent back.

For the data format, refer to the "44.05:U-BIT PRESET".

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73.14 : LTC INTERPOLATED TIME & UB DATA

The DEVICE is required the LTC TIME DATA and USER BIT DATA by the "61.0C:CURRENT TIME SENSE" command and it interpolates with CTL or it is not read exactly, the LTC TIME DATA will be added to the DATA-1 to DATA-4 and the LTC USER BIT DATA will be added to the DATA-5 to DATA-8, and then be sent back.

For the data format, refer to the "24.31:CUE UP WITH DATA" or "44.05:U-BIT PRESET".

74.06 : VITC TIME DATA

The DEVICE is required the VITC TIME DATA by the "61.0C:CURRENT TIME SENSE" command and it is read, the VITC TIME DATA will be added to the DATA-1 to DATA-4 and be sent back.

For the data format, refer to the "24.31:CUE UP WITH DATA".

78.06 : VITC TIME & UB DATA

When the DEVICE is required the VITC TIME DATA and USER BIT DATA by the "61.0C:CURRENT TIME SENSE" command and it is read, the VITC TIME DATA will be added to the DATA-1 to DATA-4 and the TC USER BIT DATA will be added to the DATA-5 to DATA-8, and then they will be sent back.

For the data format, refer to the "24.31:CUE UP WITH DATA" or "44.05:U-BIT PRESET".

74.07 : VITC UB DATA

The DEVICE is required the VITC USER BIT DATA by the "61.0C:CURRENT TIME SENSE" command, the VITC USER BIT DATA will be added to the DATA-1 to DATA-4 and be sent back.

For the data format, refer to the "44.05:U-BIT PRESET".

74.16 : VITC HOLD TIME DATA

The DEVICE is required the VITC TIME DATA by the "61.0C:CURRENT TIME SENSE" command and it is not read exactly, the VITC TIME DATA will be added to the DATA-1 to DATA-4 and be sent back.

For the data format, refer to the "24.31:CUE UP WITH DATA".

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78.16 : VITC HOLD TIME & UB DATA

The DEVICE is required the VITC TIME DATA and USER BIT DATA by the "61.0C:CURRENT TIME SENSE" command and it is not read exactly, the VITC USER BIT DATA will be added to the DATA-1 to DATA-4 and the VITC USER BIT DATA will be added to the DATA-5 to DATA-8. Then, they will be sent back.

For the data format, refer to the "24.31:CUE UP WITH DATA" and "44.05:U-BIT PRESET".

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BVW-75/70/65/60/95/96 STATUS DATA

DATA \ BIT	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
DATA 0			CASSETTE OUT	REF VD MISSING		HARD ERROR		LOCAL
DATA 1	STANDBY ON	TENSION RELEASE	STOP	EJECT	REW	F.FWD	REC *1	PLAY
DATA 2	SERVO LOCK	TSO	SHUTTLE	JOG	VAR	REV FWD	STILL	CUEUP COMPLETE
DATA 3	AUTO MODE				AUDIO OUT	AUDIO IN	OUT	IN
DATA 4	SELECT *1 EE ON	FULL *1 EE ON		EDIT *1	PREVIEW	AUTO *1 EDIT	REVIEW *1	PREROLL OR CUEUP
DATA 5		INSERT *1	ASSEMBLE *1	VIDEO *1		TIME *1 CODE	AUDIO *1 CH.2	AUDIO *1 CH.1
DATA 6								
DATA 7	VARIABLE *2 MEMORY	VAR *2 MEMORY ACTIVE	AUDIO SPLIT					IN~OUT STATUS
DATA 8		LOST LOCK		END OF TAPE	COLOR FARME LOCK			REC *3 INHIBIT
DATA 9								
DATA F								

CORRECTION BY
BYWM 88-133
TECHNICAL MEMO

- NOTE *1) BVW-65/60/95 don't set this bit.
 *2) BVW-70/60 which don't have DT HEAD don't set this bit.
 *3) BVW-65/60/95 always set this bit.

BVW-10/11/15/40 STATUS DATA

BIT DATA	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
DATA 0			CASSETTE OUT			HARD ERROR		LOCAL
DATA 1	STANDBY ON	*2 TENSION RELEASE	STOP	EJECT	REW	F.FWD	*1 REC	PLAY
DATA 2	SERVO LOCK		SHUTTLE	JOG	VAR	REV — FWD	STILL	CUEUP COMPLETE
DATA 3	AUTO MODE						OUT	IN
DATA 4	*1 SELECT EE ON	*1 FULL EE ON		*1 EDIT				PREROLL OR CUEUP
DATA 5		*1 INSERT	*1 ASSEMBLE	*1 VIDEO		*1 TIME CODE	*1 AUDIO CH.2	*1 AUDIO CH.1
DATA 6								
DATA 7								
DATA 8								*3 REC INHIBIT
DATA 9								
DATA F								

NOTE *1) BVW-10/11/15 don't set this bit.
 *2) BVW-10/15/40 don't set this bit.
 *3) BVW-10/11/15 always set this bit.

BVW-35 STATUS DATA

DATA \ BIT	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0
DATA 0			CASSETTE OUT		TAPE TROUBLE	HARD ERROR		*1 LOCAL
DATA 1	STANDBY ON		STOP	EJECT	REW	F. FWD	REC	PLAY
DATA 2	SERVO LOCK		SHUTTLE	JOG	VAR	REV FWD	STILL	CUEUP COMPLETE
DATA 3	AUTO MODE						OUT	IN
DATA 4	SELECT EE ON	FULL EE ON		EDIT				PREROLL OR CUEUP
DATA 5		INSERT					AUDIO CH.2	AUDIO CH.1
DATA 6								
DATA 7								
DATA 8				END OF TAPE				REC INHIBIT
DATA 9								
DATA F								

NOTE *1) BVW-35 don't set this bit.

DATA No.0

DATA No.0/BIT-5 : CASSETTE OUT

Bit-5 will be set to "1" when there is no cassette threading on the CONTROLLED DEVICE.

DATA No.0/BIT-4 : REFERENCE VIDEO MISSING

Bit-4 will be set to "1" when the REFERENCE VIDEO is not input REF VIDEO IN on the connector panel.

DATA No.0/BIT-3 : TAPE TROUBLE

Bit-3 will be set to "1" when the trouble is happened (the tape is sticking to the drum, the tape is slackening and so on.).

For details, refer to the maintenance manual "SELF DIAGNOSTICS".

DATA No.0/BIT-2 : HARD ERROR

Bit-2 will be set to "1" when the following troubles (the tape is sticking to the drum, the tape is slackening and so on).

For details, refer to the maintenance manual "SELF DIAGNOSTICS".

DATA No.0/BIT-0 : LOCAL

Bit-0 will be set to "1" when the REMOTE/LOCAL switch on the front panel is set to "LOCAL".

DATA No.1

DATA No.1/BIT-7 : STANDBY

Bit-7 will be set to "1" when the DEVICE is the STANDBY ON mode.

DATA No.1/BIT-6 : TENSION RELEASE

Bit-6 will be set to "1" when the DEVICE receives the TENSION RELEASE mode.

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DATA No.1/BIT-5 : STOP

Bit-5 will be set to "1" when the DEVICE receives the "20.00: STOP" command and goes into the STOP mode.

DATA No.1/BIT-3 : REW

Bit-3 will be set to "1" when the DEVICE receives the "20.20: REWIND" command and goes into the REWIND mode.

DATA No.1/BIT-2 : F.FWD

Bit-2 will be set to "1" when the DEVICE receives the "20.10: FAST FWD" command and goes into the FULL FORWARD mode.

DATA No.1/BIT-1 : REC

Bit-1 will be set to "1" when the DEVICE receives the "20.02: REC" command and goes into the REC mode.

Bit-1 will be also set to "1" when "DATA No.4/Bit-4 EDIT" is set to "1".

DATA No.1/BIT-0 : PLAY

Bit-0 will be set to "1" when the DEVICE receives the "20.01: PLAY", "20.02:REC" or "20.65:EDIT ON" command and goes into the PLAY, REC or EDIT mode. BIT-0 will be also set to "1" when the CONTROLLED DEVICE is in the CAPSTAN OVERRIDE mode.

DATA No.2

DATA No.2/BIT-7 : SERVO LOCK

Bit-7 will be set to "1" when the DEVICE is in the condition that the drum and the capstan servos are locked in the PLAY mode.

DATA No.2/BIT-6 : TSO MODE

Bit-6 will be set to "1" when the DEVICE is in the CAPSTAN OVERRIDE mode.

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DATA No.2/BIT-5 : SHUTTLE

Bit-5 will be set to "1" when the DEVICE receives the "2X.13:SHUTTLE FWD" and "2X.23: SHUTTLE REV", and goes into the SHUTTLE mode.

DATA No.2/BIT-4 : JOG

Bit-4 will be set to "1" when the DEVICE receives the "2X.11:JOG FWD" or "2X.21:JOG REV" command and goes into the JOG mode.

DATA No.2/BIT-3 : VAR

Bit-3 will be set to "1" when the CONTROLLED DEVICE is in the following mode. ("2X.12: VAR FWD" or "2X.23:VAR REV" command is received.)

- . VAR mode
- . CAPSTAN OVERRIDE mode

DATA No.2/BIT-2 : TAPE DIRECTION

Bit-2 shows the tape direction defined the DEVICE.

- 0 = FWD
- 1 = REV

DATA No.2/BIT-1 : STILL

Bit-1 will be set to "1" when the DEVICE is STOP mode or STILL mode of SHUTTLE/JOG/VAR.

DATA No.2/BIT-0 : CUE UP

Bit-0 will be set to "1" when the DEVICE receives "20.30": PREROLL" and "24.31: CUE UP WITH DATA" commands and then cue-up operation is completed.

DATA No.3

DATA No.3/BIT-7 : AUTO MODE

Bit-7 will be set to "1" when the DEVICE receives the "40.41: AUTO MODE ON" command.

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DATA No.3/BIT-3 : A OUT

DATA No.3/BIT-2 : A IN

DATA No.3/BIT-1 : OUT

DATA No.3/BIT-0 : IN

When the DEVICE receives ENTRY, PRESET and RECALL commands of each editing point (IN, OUT, AUDIO IN or AUDIO OUT), the corresponded bit will be set to "1", and TIMER-1 or TIME CODE data is memorized.

DATA No.4

DATA No.4/BIT-7 : SELECT EE ON

Bit-7 will be set to "1" when the DEVICE receives the "41.30:EDIT PRESET" command, and furthermore, receives the "20.63:SELECT EE ON" command.

DATA No.4/BIT-6 : FULL EE ON

Bit-6 will be set to "1" when the DEVICE receives the "20.61: FULL EE ON" command.

DATA No.4/BIT-4 : EDIT

Bit-4 will be set to "1" when the CONTROLLED DEVICE is in the EDIT mode, and at the same time, the "DATA No.1/BIT-1:REC" is also set to "1".

DATA No.4/BIT-3 : REVIEW

Bit-3 will be set to "1" when the CONTROLLED DEVICE is in the REVIEW mode.

DATA No.4/BIT-2 : AUTO EDIT

Bit-2 will be set to "1" when the CONTROLLED DEVICE is in the AUTO EDIT mode.

DATA No.4/BIT-1 : PREVIEW

Bit-1 will be set to "1" when the CONTROLLED DEVICE is in the PREVIEW mode.

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DATA No.4/BIT-0 : PREROLL

Bit-0 will be set to "1" when the CONTROLLED DEVICE receives the "20.30: PREROLL" and "24.31:CUE UP WITH DATA" commands, and goes into the PREROLL and CUE-UP mode, and Bit-0 will be also set to "1" when the PREROLL is performed in the AUTO EDIT or PREVIEW mode.

DATA No.5

DATA No.5/BIT-6 : INSERT

DATA No.5/BIT-5 : ASSEMBLE

DATA No.5/BIT-4 : VIDEO

DATA No.5/BIT-2 : TIME CODE (LTC)

DATA No.5/BIT-1 : A2

DATA No.5/BIT-0 : A1

When the CONTROLLED DEVICE receives the "41.30:EDIT PRESET" command, the corresponding bit of DATA No.5 will be set to "1" according to the state of the DATA-1 of the EDIT PRESET command.

DATA No.6

DATA No.6/BIT-6 : LAMP STILL

DATA No.6/BIT-5 : LAMP FWD

DATA No.6/BIT-4 : LAMP REV

When the DEVICE receives the SEARCH command, the corresponding bit of DATA No.6 will be set to "1" according to the speed data of the command.

DATA No.7

DATA No.7/BIT-7 : VAR MEMORY MODE

Bit-7 will be set to "1" when the DEVICE receives the "40.47:VAR MEM ON" command, and goes into the VARIABLE MEMORY mode.

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DATA No.7/BIT-6 : VAR MEMORY ACTIVE

Bit-6 will be set to "1" when the DEVICE receives the "40.47:VAR MEM ON" command, and memorizing the VARIABLE MEMORY mode.

DATA No.7/BIT-5 : AUDIO SPLIT

Bit-5 will be set to "1" when the DEVICE receives the "40.45:AUDIO SPLIT ON" command, and goes into the AUDIO SPLIT mode.

DATA No.7/BIT-0 : IN-OUT STATUS

Bit-0 will be set to "1" when the DEVICE is in the PREVIEW or AUTO EDIT mode and the tape is running between the IN point and OUT point.

DATA No.8

DATA No.8/BIT-6 : LOST LOCK

Bit-6 will be set to "1" when the capstan or drum servo lock of the DEVICE is lost during the PLAY, REC or EDIT mode.

When the CONTROLLED DEVICE receives the "40.2D:LOST LOCK RESET" command, Bit-6 will be reset.

DATA No.8/BIT-4 : EOT

Bit-4 will be set to "1" when the DEVICE detects BEGIN or END of the cassette tape.

DATA No.8/BIT-3 : COLOR FRAME LOCK

Bit-3 will be set to "1" when the DEVICE goes into the PLAY, REC or EDIT mode and the color framing is locked.

DATA No.8/BIT-0 : REC INHIBIT

Bit-0 will be set to "1" when the REC INHIBIT switch on the DEVICE is set to "ON" or the record is inhibited by the error-elimination preventing nail.

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TIME DATA FORMAT

The time data format used in this manual is as follows:

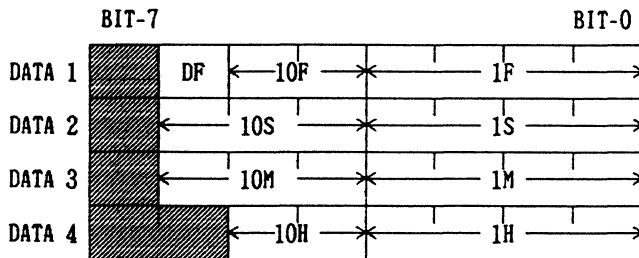
DATA1 BIT6: DF FLAG ("1"DF, "0" NDF)

... applicable only for NTSC and PAL-M models

This bit is set according to DF/NDF mode of the DEVICE when responding to the time data request command from the CONTROLLER, (i.e., "61.0C: CURRENT TIME SENSE").

It is also utilized for setting the DF/NDF mode of the DEVICE (i.e., "44.04: TIME CODE PRESET").

The bits shown in the shaded part in the above table are insignificant as time data. The logic levels of these bit are undefined.



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