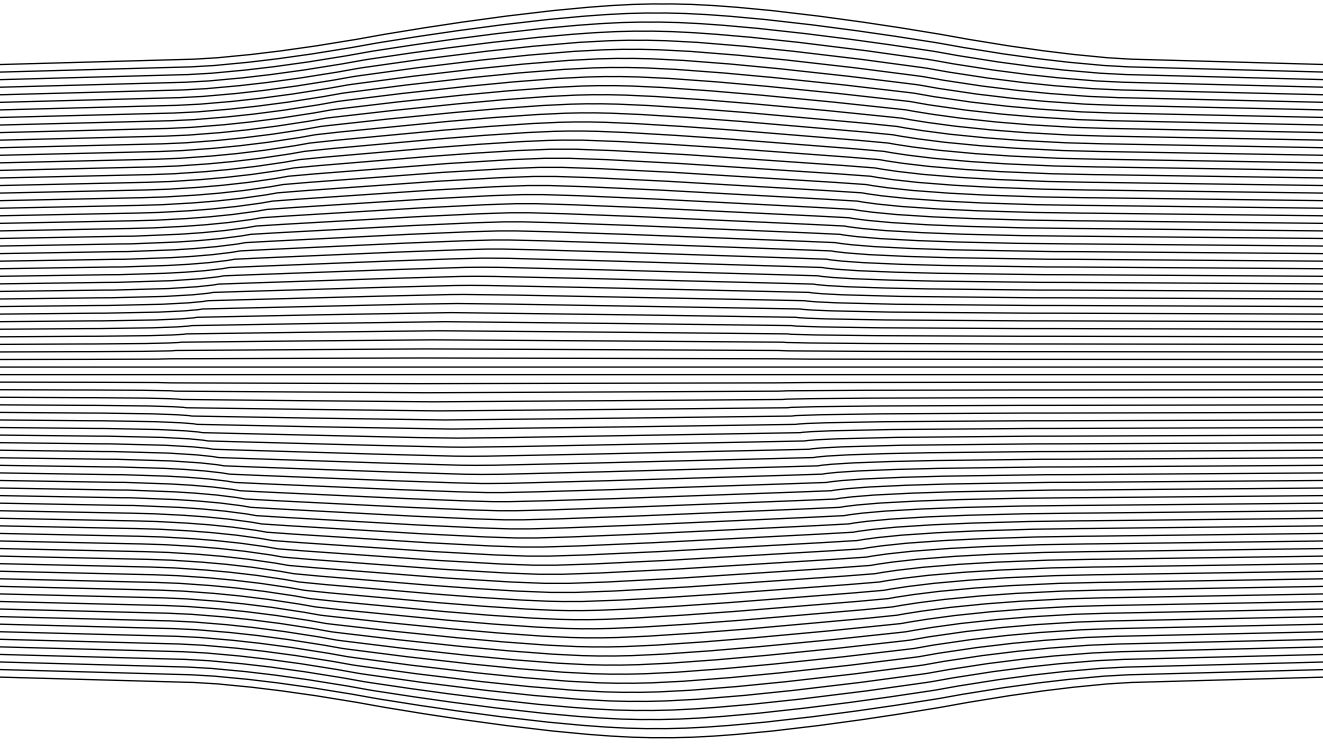
GPC-BASIC

SUPPLEMENTARY

MITSUBISHI PROGRAMMABLE CONTROLLER

MELSEC



MITSUBISHI

REVISIONS

※The manual number is given on the bottom left of the back cover.

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1. AD51-S3 SYSTEM SUBROUTINES

Table 1 shows system subroutines which are used by the AD51-S3 to access the programmable controller CPU.

Item			System Sub-routine	Processing	Number of Points Processed per AD51-S3, PC CPU Transaction	PC CPU State	
						During STOP	During RUN
Device memory	Batch read	Bit	SADR	Reads data from bit device (such as X, Y, and M) (for 1 point).	256 points	○	○
		Word		Reads data from bit devices (such as X, Y, and M) (for 16 points).	32 words (512 points)		
				Reads data from word device (such as D and R) (for 1 point).	64 points		
	Batch write	Bit	SADW	Writes data to bit device (such as X, Y, and M) (for 1 point).	160 points	○	○
		Word		Writes data to bit devices (such as X, Y, and M) (for 16 points).	10 words (160 points)		
				Writes data to word device (such as D and R) (for 1 point).	64 points		
	Test (during random write)	Bit	SADT	Sets/resets any specified bit device (such as X, Y, and M) and device number (for 1 point).	20 points	○	○
		Word		Sets/resets any specified bit devices (such as X, Y, and M) and device number (for 16 points).	10 words (160 points)		
				Writes data to any specified word device (such as D and R) and device number (for 1 point).	10 points		
	Monitor data entry	Bit	SADM0	Defines the bit device (such as X, Y, and M) to be monitored (for 1 point).	40 points*	○	○
		Word		Defines the bit devices (such as X, Y, and M) to be monitored (for 16 points).	20 words* (320 points)		
				Defines the word device (such as D and R) to be monitored (for 1 point).	20 points		
	Monitor	Bit	SADM1	Monitors the device specified in monitor data entry.		○	○
		Word					
Sequence program	Read	Main	SAAR	Reads main sequence program.	64 steps	○	○
		Sub		Reads subsequence program.			
	Write	Main	SAAW	Writes main sequence program.		○	×
		Sub		Writes subsequence program.			
Parameter	Read		SAPR	Reads parameters of PC CPU.	128 bytes	○	○
	Write		SAPW	Writes parameters of PC CPU.		○	×
	Analysis request		SAPS	Causes PC CPU to recognize and check rewritten parameters.		○	×

Table 1 System Subroutine List (Continue)

Item			System Sub-routine	Processing	Number of Points Processed per AD51, PC CPU Transaction	PC CPU State	
						During STOP	During RUN
PC CPU	Remote RUN		SKR	Requests remote RUN of PC CPU.			
	Remote STOP		SKP	Requests remote STOP of PC CPU.			
	PC type mode		SPC	Reads PC CPU type (A0J2, A1, A2, or A3).		○	○
Buffer memory	Batch read		SR2	Reads data from buffer memory.	128 bytes	○	○
	Batch write		SW2	Writes data to buffer memory.			
Extension file register	Batch read		SAER	Reads extension file register (R) data from PC CPU.	64 points	○	○
	Batch write		SAEW	Writes extension file register (R) data to PC CPU.			
	Test (during random write)		SAET	Writes data to any specified extension file register (R) and device number (for 1 point).	10 points		
	Monitor data entry		SAEM0	Defines the extension file register (R) to be monitored (for 1 point).	20 points		
	Monitor		SAEM1	Monitors the extension file register specified in monitor data entry (SAEM0).			
Microcomputer program	Read	Main	SAMR	Reads main microcomputer program.	128 bytes	○	○
		Sub		Reads submicrocomputer program.			
	Write	Main	SAMW	Writes main microcomputer program.		○	×
		Sub		Writes submicrocomputer program.			
Comment	Batch read		SACR	Reads comments of PC CPU.	128 bytes	○	○
	Batch write		SACW	Writes comments of PC CPU.			
Special function module buffer memory	Batch read		SATR	Reads data from special function module buffer memory.	128 bytes	○	○
	Batch write		SATW	Writes data to special function module buffer memory.			

Table 1 System Subroutine List

In the PC CPU State column of Table 1, ○ indicates that the system subroutine can be executed and × indicates that it cannot be executed.
When the A1(E), A2(E), A3(E), A1N, A2N or A3NCPU is used, half the number of points marked * is processed for device X (input).
This does not apply to the A0J2 and A3HCPU.

1.1 Retry Time Setting

The AD51-S3 accesses the PC CPU via its buffer memory (OS area). When the PC CPU is accessing the AD51-S3 buffer memory (using the FROM / TO instruction), the AD51-S3 cannot access the PC CPU. Hence, access must be retried until the PC CPU is accessed by the AD51-S3. The period of time required until access is made is referred to as retry time. The retry time defaults to 10ms. It can be changed between 0 and 255ms using system subroutine "SC2." The retry time value is common to all tasks. Retry is not executed if the retry time is set to 0.

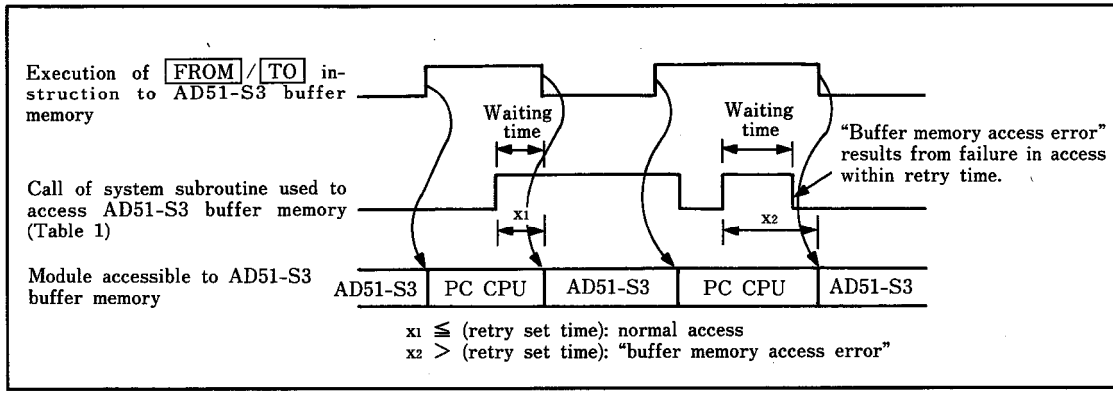


Fig. 1 Retry Time

1.2 Set Data for Calling System Subroutine

(1) PC No. (0 to 64, FF_H)

The PC number specified for any subroutine must be 0 to 64 or FF_H.

(2) Bit/word designation

Specify bit or word for the data processed.

Bit/Word designation	Character Setting
Bit designation	B (42_H)
Word designation	W (57_H)

[Bit designation]

A bit device is accessed in units of 1 point. Any word device cannot be accessed. Processed data has the following bit locations:

Read Data	Write Data
B7 B6 B5 B4 B3 B2 B1 B0 1/0 All change to 0 1: ON 0: OFF	B7 B6 B5 B4 B3 B2 B1 B0 1/0 B1 to B7 data is ignored. 1: ON 0: OFF

[Word Designation]

Both word and bit devices can be specified. Word (W) must be specified to read/write data from/to any word device.
Bit devices are accessed in units of 1 word (16-points). The ON/OFF data of 16 points, from (head device) to (head device + 15), is stored to bit devices, from B0 onward. 1 indicates ON and 0 OFF. The following data configuration assumes that the head device is X10.

B15	B14	B13	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1	B0
X1F	X1E	X1D	X1C	X1B	X1A	X19	X18	X17	X16	X15	X14	X13	X12	X11	X10

(3) Head device

Note the following when setting the head device to be accessed. Table 2 shows the device setting ranges.

1) Bit and word devices are classified as follows:

Bit devices —X, Y, M, L, B, F, T (contact), T (coil), C (contact), C (coil)
Word devices — T (present value), C (present value), D, W, R

2) For word designation, the bit device number must be a multiple of 16.

3) Specify the device number with five characters (ASCII) in the range shown in Table 2. A blank code (20_H) may be used instead of "0" in the upper digits (e.g. marked ~ as in X0070).

4) The range of M specified in Table 2 may be used as that of L and vice versa.

Bit Device				Word Device			
Device		Device number range (character)	Decimal/ hexadecimal	Device		Device number range (character)	Decimal/ hexadecimal
Input	X	X0000 to X07FF	Hexadecimal	Timer (present value)	T	TN000 to TN255	Decimal
Output	Y	Y0000 to Y07FF	Hexadecimal				
Internal relay	M	M0000 to M2047	Decimal	Counter (present value)	C	CN000 to CN255	Decimal
Latch relay	L	L0000 to L2047	Decimal	Data register	D	D0000 to D1023	Decimal
Step relay	S	S0000 to S2047	Decimal	Link register	W	W0000 to W03FF	Hexadecimal
Link relay	B	B0000 to B03FF	Hexadecimal	File register	R	R0000 to R8191	Decimal
Annunciator	F	F0000 to F0255	Decimal	Special register	D	D9000 to D9255	Decimal
Special relay	M	M9000 to M9255					
Timer (constant)	T	TS000 to TS255					
Timer (coil)	T	TC000 to TC255					
Counter (contact)	C	CS000 to CS255					
Counter (coil)	C	CC000 to CC255					

Table 2 Device Setting Ranges

(4) Main/sub designation

Specify main program or subprogram when reading and writing a sequence program and/or T/C set value.
The main program must be specified when the A1(E), A2(E), A1N, A2N or A0J2CPU is accessed.

Program	Character Setting
Main program	M ($4D_H$)
Subprogram	S (53_H)

(5) Head steps for read and write

To read and write T/C set values, specify the following numbers:

Sequence Program	Step
T0 set value T1 set value to T255 set value	$FE00_H$ $FE01_H$ to $FEFF_H$
C0 set value C1 set value to C255 set value	$FF00_H$ $FF01_H$ to $FFFF_H$
Step 0 Step 1 to Step 30719 (30K)	0000_H 0001_H to $77FF_H$

Calculation of step specified

Timer: $Tm = FE00_H + n$
Counter: $Cm = FF00_H + n$

where m = device number
n = device number in hexadecimal

(6) T/C set values

To read and write T/C set values, specify the following numbers:

Constant	Set Value	Data Register	Set Value
K0	0000_H	D0	8000_H
K1	0001_H	D1	8002_H
K2	0001_H	D2	8004_H
to	to	to	to
K32766	$7FFE_H$	D1022	$81FC_H$
K32767	$7FFF_H$	D1023	$81FE_H$

(7) Time check value

When the AD51-S3 accesses the PC CPU, set waiting time (between issuance of a processing request from the AD51-S3 to the PC CPU and a replay from the PC CPU) in increments of 10msec. A "time-out error" occurs if access to the PC CPU is not complete within the time check period. The set value should be 2 to $FFFF_H$ (20 to 655350ms). 0 or 1 is accounted for as 2 (20ms).
Access to the PC CPU by the AD51-S3 is made once when the END, FEND, or COM instruction is executed in the sequence program. Requests for communication transactions with the PC CPU may also come from other sources, these are listed below and are processed in the same way as AD51-S3 transaction requests. Only one transaction may be processed per PC CPU scan so that a delay of 1 to 5 scans is possible before the AD51-S3 transaction is processed if several of these requests overlap.

1. PC CPU OS program
2. Peripheral equipment (e.g. A6GPP)
3. Optical or coaxial data link module incorporated the CPU module
   A1(E)CPUP21/R21, A2(E)CPUP21/R21, A3(E)CPUP21/R21
4. Optical or coaxial data link module in 3 hierarchy system
   AJ71P22, AJ72R22
5. Processing request from AJ71C24-S3 or second AD51-S3

[Example]

If the PC CPU scan time is 100msec and continuous processing requests are received from the A6GPP and AJ71C24-S3, communication between the AD51-S3 and PC CPU is only made once every three scans. Hence, set the time check value to 30 (300ms) or greater.

1.3 Errors Resulting from System Subroutine Execution

The following table lists errors which occur by the execution of system subroutines in Table 1 used by the AD51-S3 to access the PC CPU. When any of the following errors occurs, the corresponding error code is written to registers (H) and (L). These error codes are common to the system subroutines. For other codes, see the corresponding system subroutines.

Code	Error	Remarks
2	PC access error	PC CPU hardware fault.
4	Input data error	Invalid data set for system subroutine execution.
5	Write (or entry) data error	Invalid data set to address specified at (B)(C)+4, +5.
6	No data entry	No device has been entered using system subroutine SADM0.
7	PC running	Access cannot be made during PC CPU RUN.
8	Buffer memory access error	Retry time should be increased using system subroutine "SC2."
9	Time out error	Processing has not been completed within a time check period.
10	PC down error	PC CPU has been reset or is faulty.
−1	PC No. error	The set PC No. is not accessible.
−4	Other data error	● Subprogram has been specified for the A0J2, A1(E) or A2(E)CPU, or the A3(E)CPU which has no subprogram. ● Write has been attempted to ROM area of the PC CPU.
−9	Remote error	Remote RUN/STOP is being executed from another module.
−17	Link error	Fault has occurred in MELSECNET.

2. BASIC COMMANDS

The following BASIC commands have been added or corrected to the AD51-S3. For full information, refer to the relevant pages.

Command	Reference Page
CLOSE	2-2
LOCATE	2-3
OPEN	2-4
ZIDV	2-7
ZODV	2-8

CLOSE

TYPE D

PRG

FUNCTION

Closes the RS-232C or RS-422 channel.

FORM

CLOSE channel number

EXPLANATION

- Closes the RS-232C or RS-422 channel opened by the OPEN command.
- Channel number defined should be the one specified for the OPEN command.

CAUTION

When the CLOSE command is executed, data in the send/receive buffer is made invalid.

EXAMPLE

```
OK
>LIST
   100 REM "EXERCISE"
   110 OPEN $4, $5C, $37, 4 ·····Channel 4 of RS-232C is opened to enable communication.
   120 FOR I= 0 TO 10
   130 A = I * I
   140 ZODV2
   150 PRINT A
   160 NEXT I
   170 ZTIME 300
   180 CLOSE $4 ·····Channel 4 of RS-232C is closed.
   190 END
OK
>
```

LOCATE

TYPE C

PRG

FUNCTION

Specifies the cursor position on the screen.

FORM

LOCATE line position, column position

EXPLANATION

- The line and column positions may be specified by expressions.
- The line and column positions can be specified within the following ranges:

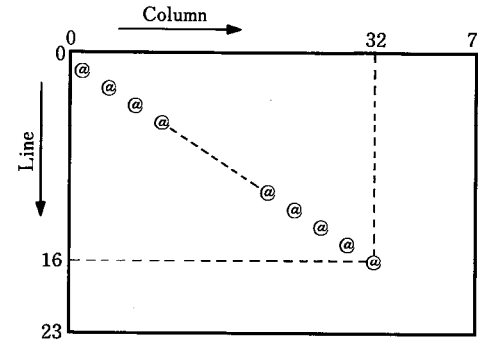
	Screen Mode
Line	0 to 128
Column	0 to 128

EXAMPLE

Indicates that the 640 × 400 mode standard screen has been specified.

```
OK
>LIST REM "EXERCISE"
   110 CLS
   120 FOR I = 0 TO 16
   130 LOCATE I, I * 2
   140 PRINT "@"
   150 NEXT I
   160 END
OK
>RUN
```

@'s are displayed from (0, 0) to (16, 32) as shown on the right.



CAUTION

The line and column position setting ranges are the area that the OS can process. As the setting ranges differ in accordance with the general-purpose terminal connected, the ranges specified should meet the specifications of the general-purpose terminal used.

OPEN

TYPE D

PRG

FUNCTION

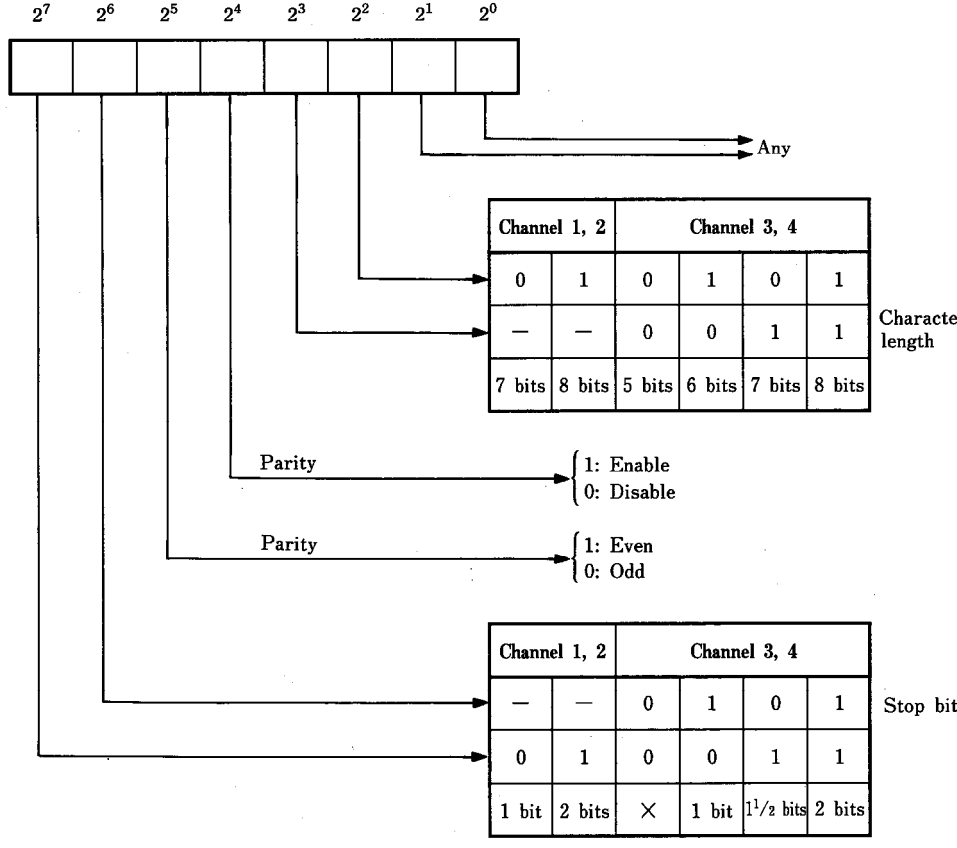
Opens the RS-232C or RS-422 channel to enable communication processing.

FORM

OPEN channel number, variable 1, variable 2, variable 3

EXPLANATION

- Opens the RS-232C or RS-422 channel specified in channel number.
- When the block data receive (SRB) or block data transmission (SWB) system subroutine is used, the channel must have be opened by executing the OPEN statement.
- Specify any of 1 to 4 as channel number.
- Define communication mode in variable 1, which has the following structure in binary:



Channel 1, 2		Channel 3, 4			
0	1	0	1	0	1
—	—	0	0	1	1
7 bits	8 bits	5 bits	6 bits	7 bits	8 bits

Channel 1, 2		Channel 3, 4			
—	—	0	1	0	1
0	1	0	0	1	1
1 bit	2 bits	×	1 bit	1 1/2 bits	2 bits

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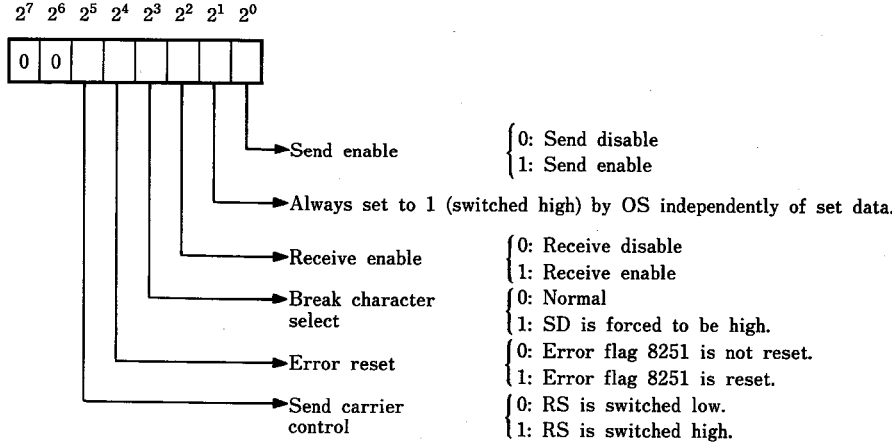
- Define a command in variable 2, each digit of which is 1 in binary and indicates the following:



- Define a baud rate in variable 3 in accordance with the following table:

	1	2	3	4	5	6
Baud rate	300	600	1200	2400	4800	9600

NOTE

1. For full information on communication mode and commands, see the manual attached to the LSI8251.
2. The commands usually execute the following functions:
   36_H: Receive only.
   33_H: Transmission only.
   37_H: Both receive and transmission.
3. The data terminal ready (DTR) signal of channels 1, 3 and 4 must be switched on by the OS.
   The DTR signal is not available for channel 2.
4. Any data may be set for channels 1 and 2 because these channels do not have break character select and send carrier control.
5. When the OPEN command is executed, the I/O buffer is initialized and its data is made invalid.

EXAMPLE 1

```
OK
>LIST
   100 REM "EXERCISE"
   110 OPEN 4, $5C, $37, 4 ····· Given setting is performed on RS-232C channel 4 to enable
   120 A = $E300                 transmission.
   130 A(0) = $6000
   140 A(1) = $4100
   150 A(2) = 10
   160 B=CALL($0, $800C, 2, $E300)···· System subroutine SWB is called.
   170 END
OK
>RUN
OK
```

Data from address $ 6000 on in the common area is sent to the equipment connected to RS-232C channel 4 using the block data send (SWB) command.
After opening the channel, start communication using the SWB or SRB command.

EXAMPLE 2

The following example indicates the data written in BASIC to open the channel connected to the K6PRE, K7PRE or KD51PR.

OPEN X, $ 7F, $ 37, 4 ····· K6PRE
OPEN X, $ CF, $ 37, 4 ····· K7PRE
OPEN X, $ 4F, $ 37, 5 ····· KD51PR

(X depends on the channel connected.)

ZIDV

TYPE D

PRG

FUNCTION

Switches the input console.

FORM

ZIDV channel number

EXPLANATION

- Allows data to be entered from any keyboard using the INPUT or INKEY command.
- When BASIC is started, the keyboard used is automatically set to the one connected to the channel specified by the DIP switch SW16.
- Define the channel number as appropriate in accordance with the following table:

Number	Channel Connected with Input Console
0	Depends on the setting of DIP switch SW16 on the AD51-S3 front. ON: RS-422 channel 1 OFF: RS-232C channel 3
1	RS-422 channel 1
2	RS-422 channel 2
3	RS-232C channel 3
4	RS-232C channel 4

EXAMPLE

```
OK
>LIST
   100 REM "EXERCISE"
   105 OPEN 2, $5E, $37, 4 ····· RS-422 channel 2 is opened.
   110 ZIDV 2 ····· Keyboard connected to RS-422 channel 2 is specified as the
   120 A=INKEY          one used for key input in line 120.
   130 PRINT $A
   140 GOTO 120
   150 END
OK
>RUN
41 ····· "A" has been entered from the keyboard connected to
                RS-422 channel 2.
42 ····· "B" has been entered from the keyboard connected to RS-422
                channel 2.
43 ····· "C" has been entered from the keyboard connected to RS-422
                channel 2.
44 ····· "D" has been entered from the keyboard connected to
                RS-422 channel 2.
```

ZODV

TYPE C

PRG

FUNCTION

Switches the output console.

FORM

ZODV channel number

EXPLANATION

- Allows data to be output to any output console using any of the following command:

Command	Command
CLS	ZCON
LOCATE	ZCRV
PRINT	ZNOR
ZCOFF	

- When BASIC is started, the CRT used is automatically set to the one connected to the channel specified by the DIP switch SW16.

Number	Channel Connected with Output Console
0	Depends on the setting of DIP switch SW16 on the AD51-S3 front. ON: RS-422 channel 1 OFF: RS-232C channel 3
1	RS-422 channel 1
2	RS-422 channel 2
3	RS-232C channel 3
4	RS-232C channel 4

EXAMPLE

```
OK
>LIST
   100 REM "EXERCISE"
   105 OPEN 1, $58, $37, 5 ····· RS-422 channel 1 is opened.
   110 ZODV 1 ····· Output console connected to RS-422 channel 1 is specified.
   120 PRINT "MITSUBISHI"
   130 END
OK
>RUN ····· "MITSUBISHI" is displayed on the output console connected
OK          to RS-422 channel 1.
>
```

3. SYSTEM SUBROUTINES

System subroutines added to the AD51-S3 are largely classified into those which access the PC CPU and those which do not.

3.1 System Subroutines Which Do Not Access the PC CPU

System Subroutine	Refer To
SCB	3-2
SCA	3-3
SHX	3-4
SHD	3-5
STC	3-6
SRP	3-7
SFIXD	3-8
SFLTD	3-9

SCB

TYPE B

FUNCTION

Reads the current time of day from the clock element and stores it to the memory, starting at the address specified at registers (B) and (C).

INPUT

Registers (D), (E)····· Channel for storing the time of day read from the clock element.

Registers (B), (C)····· Head address of memory for storing the time of day read from the clock element.

OUTPUT

Stores the execution result to registers (H), (L).

Registers (H), (L)	Judgement
0	The time of day has been read from the clock element and stored to the memory without fault, beginning with the address specified at registers (B), (C).
1	Channel error (The channel is invalid for the value in registers (D), (E).)
2	Time-out (The time of day cannot be read from the clock element after a given period of time.)

(B)(C)+0	Second
1	Minute
2	Hour
3	Day
4	Month
5	Year

NOTE

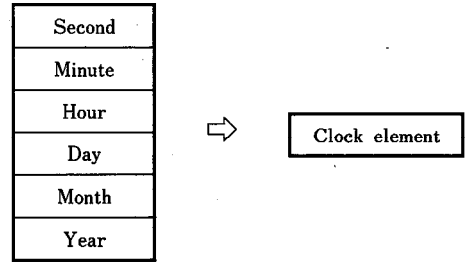
The time of day read is all stored in binary.

SCA

TYPE | B

FUNCTION

Writes the set data (year, month, day, hour, minute and second) to the clock element.



INPUT

Registers (D), (E)·····Define the channel containing the set data.

Registers (B), (C)·····Define the head address of the set data.

Set data·····Define the year, month, day, hour, minute and second to (B), (C) + 0 to 5.

(B)(C)+0	Second
1	Minute
2	Hour
3	Day
4	Month
5	Year

OUTPUT

Stores the execution result to registers (H), (L).

Registers (H), (L)	Judgement
0	Data has been written to the clock element without fault.
1	Channel error (The channel is invalid for the value in registers (D), (E).)
4	Data error (The set data is in error.)

NOTE

All set data should be defined in binary.

SHX

TYPE B

FUNCTION

Controls data communication for the specified RS-232C or RS-422 channel.

Transmission

- **Stops data transmission to the external device on receiving the Xoff code.**
- **Resumes data transmission to the external device on receiving the Xon code.**

Receive

- **Sends the Xoff code when the empty area of the receive buffer becomes 7 bytes or less.**
- **Sends the Xon code when the empty area of the receive buffer becomes 32 bytes or more.**

Xon Code	Xoff Code
11_H	13_H

INPUT

Registers (D), (E)..... Define the required channel of RS-232C or RS422.

OUTPUT

Stores the execution result to registers (H), (L).

Registers (H), (L)	Judgement
0	SHX is complete without fault.
1	Channel error

NOTE

1. Data transmission to the external computer or personal computer can be controlled by the Xon/Xoff codes.
2. After SHX is called, 11_H and 13_H are used as the Xon and Xoff codes respectively.
3. The A6GPP cannot be controlled by the Xon/Xoff codes.
   If SHX is called, the A6GPP regards the Xon/Xoff codes as ordinary data.
4. Calling SHD returns control to SHD.
5. Selecting CH2 results in an error because transmission control is not given to CH2.

SHD

TYPE B

FUNCTION

Controls data communication of the used channel via the Data Set Ready (DSR) terminal.

Trans-mission

DSR State	High	Low
Transmission	Executed	Not executed

INPUT

Registers (D), (E)·····Define the channel used (1 to 4).

OUTPUT

Stores the execution result to registers (H), (L).

Registers (H), (L)	Judgement
0	SHD is complete without fault.
1	Channel error

NOTE

1. During receive
   Off indicates that the empty area of the AD51-S3 receive buffer is 7 bytes or less.
   On indicates that the empty area of the AD51-S3 receive buffer is 32 bytes or more.
2. During transmission
   Switch on DTR when the empty area of the AD51-S3 receive buffer is 5 bytes or more.
3. The Xon/Xoff codes are treated as data.
4. Data communication control defaults to SHD.
   RS422 channel 2 does not have the DSR and DTR terminals and is not under communication control.

STC

FUNCTION

Reads the number of bytes remaining in the AD51-S3 send buffer. Call STC to monitor the number of remaining bytes in the buffer and whether or not data has actually been transmitted from the AD51-S3 to the external device.

INPUT

Registers (D), (E)..... RS232C or RS422 channel (1 to 4)

OUTPUT

Registers (H), (L)..... { Number of remaining bytes under normal condition
$FFFF_H$ (−1)..... Channel error

SRP

FUNCTION

Reads the RS232C and RS422 port status.

INPUT

Registers (D), (E) ····· Port channel (1 to 4)

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Judgement
Other than −1	SRP is complete without fault.
−1	Channel error

When SRP is complete without any fault, 0 is stored to register (H) and the following data to register (L):

Channel Number	Register (L) Contents
Channel 1	B7 RDRF, B6 OVRN, B5 PE, B4 FE, B3 RIF, B2 $\overline{DCD_0}$, B1 TDRE, B0 TIE
Channel 2	B7 RDRF, B6 OVRN, B5 PE, B4 FE, B3 RIF, B2 CTS1E, B1 TDRE, B0 TIE
Channels 3, 4	B7 DSR, B6 SYN DET, B5 FE, B4 OE, B3 PE, B2 TxE, B1 RxRDY, B0 TxRDY

For details of the status, refer to relevant data books.

Channels 1, 2 ····· HD64180
Channels 3, 4 ····· M5L8251

SFIXD

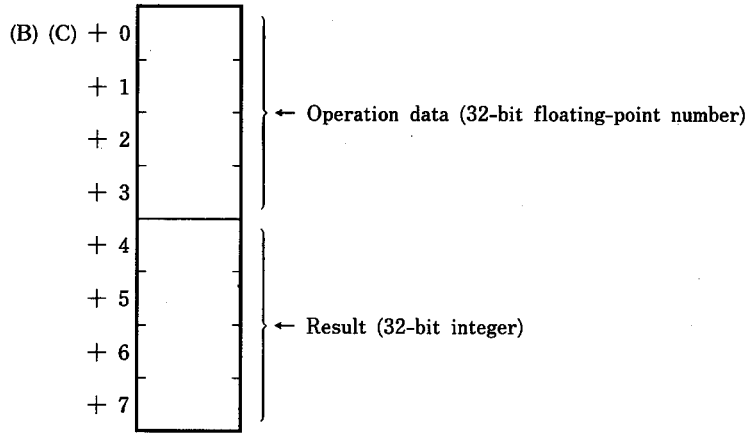
FUNCTION

Converts a 32-bit floating-point number into a 32-bit integer.

INPUT

(D), (E) ····· Channel for storing the following set data.

(B), (C) ····· Head address of the following set data.



OUTPUT

Stores the execution result to registers (H), (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
3	Operation element error
5	Overflow

SFLTD

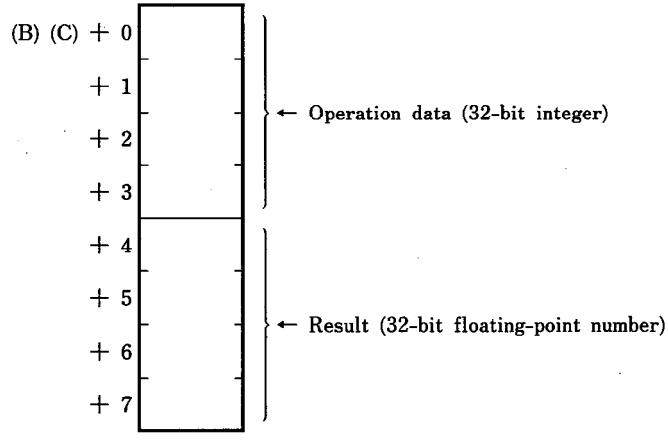
FUNCTION

Converts a 32-bit integer into a 32-bit floating-point number.

INPUT

(D), (E) ····· Channel containing the following set data.

(B), (C) ····· Head address of the following set data.



OUTPUT

Stores the execution result to registers (H), (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
3	Operation element error

3.2 System Subroutines Which Access the PC CPU

Input and output data for use of the following system subroutines is given in Chapter 1.

System Subroutine	Refer To	System Subroutine	Refer To
SPC	3-11	SAPS	3-39
SKC	3-12	SIT	3-40
SKR	3-13	SIR	3-41
SKP	3-14	SC2	3-42
SR2	3-15	SAER	3-43
SW2	3-17	SAEW	3-45
SADR	3-19	SAET	3-47
SADW	3-21	SAEM0	3-50
SADT	3-23	SAEM1	3-52
SADM0	3-26	SAMR	3-54
SADM1	3-29	SAMW	3-56
SAAR	3-31	SACR	3-58
SAAW	3-33	SACW	3-60
SAPR	3-35	SATR	3-62
SAPW	3-37	SATW	3-64

SPC

TYPE B

FUNCTION

Identifies the PC CPU loaded.

INPUT

Registers (D), (E)·····PC No. (0 to 64, FF_H)

Registers (B), (C)·····Time check value (10ms increments)
20 to 655350ms

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
100	A0J2CPU
101	A1CPU, A1ECPU, A1NCPU
102	A2CPU, A2ECPU, A2NCPU
103	A3CPU, A3ECPU, A3NCPU
104	A3HCPU
2	PC access error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

SKC

TYPE B

FUNCTION

Checks the RUN/STOP state of the loaded PC CPU.

INPUT

Registers (D), (E)·····PC No. (0 to 64, FF_H)

Registers (B), (C)·····Time check value (10ms increments)
20 to 655350ms (2 to $FFFF_H$)

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	STOP
1	RUN
2	PC access error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

SKR

TYPE B

FUNCTION

Requests remote run of the PC CPU.

INPUT

Registers (D), (E)·····PC No. (0 to 64, FF_H)

Registers (B), (C)·····Time check value (10ms increments)
20 to 655350ms (2 to $FFFF_H$)

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
2	PC access error
8	Buffer memory access error
9	Time-out
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFF7_H$ (−9)	Remote error
$FFEF_H$ (−17)	Link error

NOTE

The clearing of the data memory on receiving a remote run instruction depends on the states of special relays M9016 and M9017.

Special Relay		Data Memory Status
M9016	M9017	
OFF	OFF	CPU is run without clearing the data memory.
OFF	ON	Data memory is cleared outside the latch range set in the parameters. (Link image X is not cleared.)
ON	ON/OFF	CPU is run after the data memory is cleared.

SKP

TYPE B

FUNCTION

Requests remote stop of the PC CPU.

INPUT

Registers (D), (E)·····PC No. (0 to 64, FF_H)

Registers (B), (C)·····Time check value (10ms increments)
20 to 655350ms (2 to $FFFF_H$)

OUTPUT

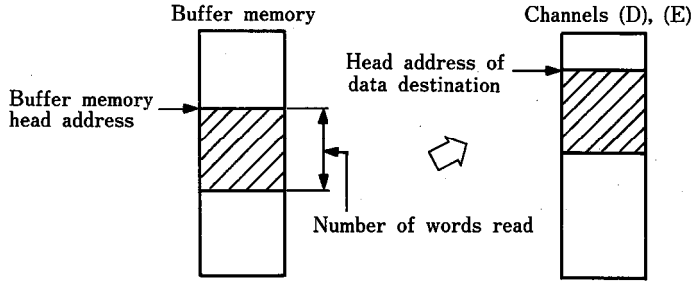
Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
2	PC access error
8	Buffer memory access error
9	Time-out
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFF7_H$ (−9)	Remote error
$FFEF_H$ (−17)	Link error

SR2

FUNCTION

Reads data from the buffer memory.



INPUT

Registers (D), (E)·····Channel containing the following data

Registers (B), (C)·····Head address of the following data

(B) (C) + 0	00H L	← Buffer memory head address (0 to BFFH)
+ 1	02H H	
+ 2	00H L	← Destination head address
+ 3	F0H H	
+ 4	00H L	← Number of words read (1 to C00H)
+ 5	01H H	

The above example is based on the following conditions:

Buffer memory head address	: 200H
Destination head address	: F000H
Number of words read	: 256 words

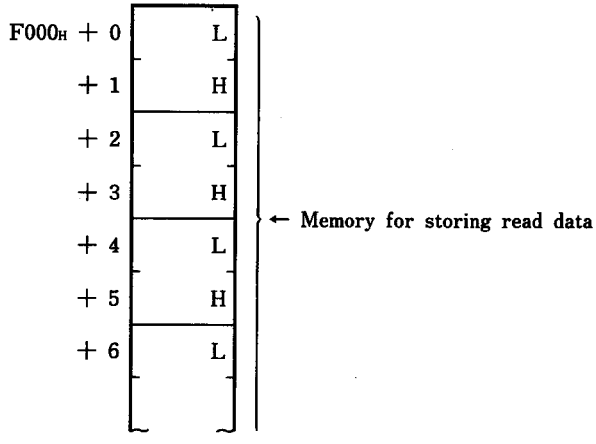
For the programming procedure, see Section 7.2.1 (1) in the AD51-S3 User's Manual.

OUTPUT

Stores the result to registers (H) and (L).

Registers (H), (L)	Judgement
0	Normal completion
1	Channel error
4	Input data error
8	Buffer memory access error

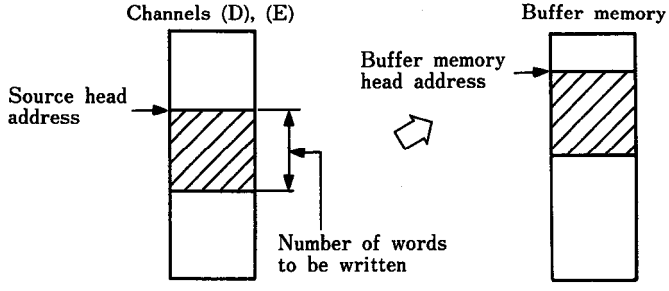
Destination head address



SW2

FUNCTION

Writes data to the buffer memory.



INPUT

Registers (D), (E)·····Channel containing the following data

Registers (B), (C)·····Head address of the following data

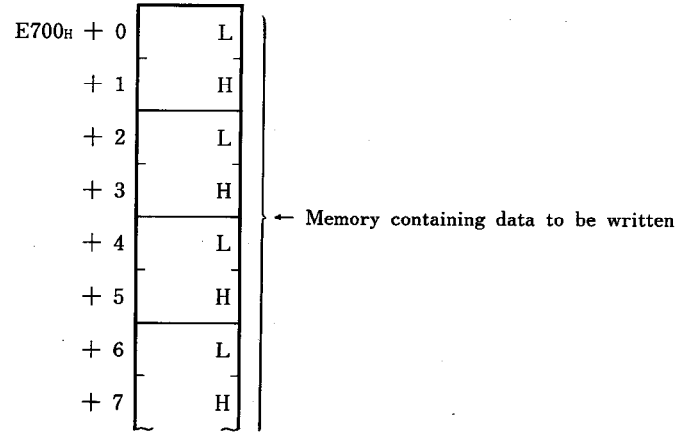
(B) (C) + 0	50_H L	← Buffer memory head address (0 to BFF_H)
+ 1	03_H H	
+ 2	00_H L	← Source head address
+ 3	$E7_H$ H	
+ 4	40_H L	← Number of words to be written (1 to $C00_H$)
+ 5	00_H H	

The above example is based on the following conditions:

Buffer memory head address	: 350_H
Source head address	: $E700_H$
Number of words to be written	: 64 words

For the programming procedure, see the Section 7.2.1 (2) in the AD51-S3 User's Manual.

Source head address



OUTPUT

Stores the result to registers (H) and (L).

Registers (H), (L)	Judgement
0	Normal completion
1	Channel error
4	Input data error
8	Buffer memory access error

SADR

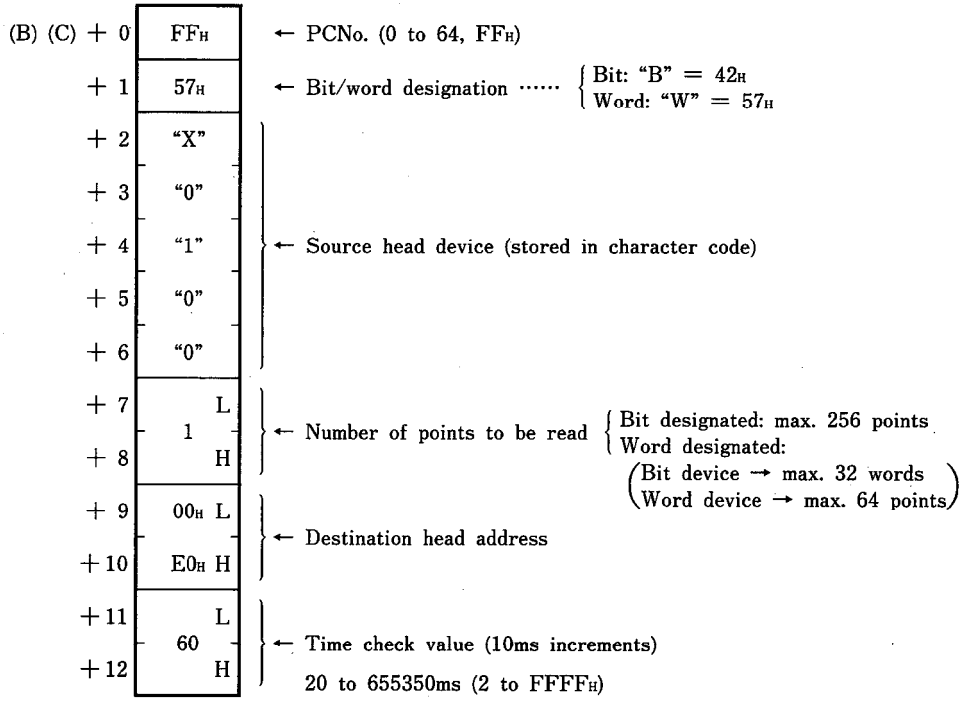
FUNCTION

Reads data from the device memory of the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Bit/word designation	: Word designation = 57_H
Source head device	: X100 = "X0100"
Number of points read	: 16 points (1 word)
Destination head address	: $E000_H$
Time check period	: 600ms

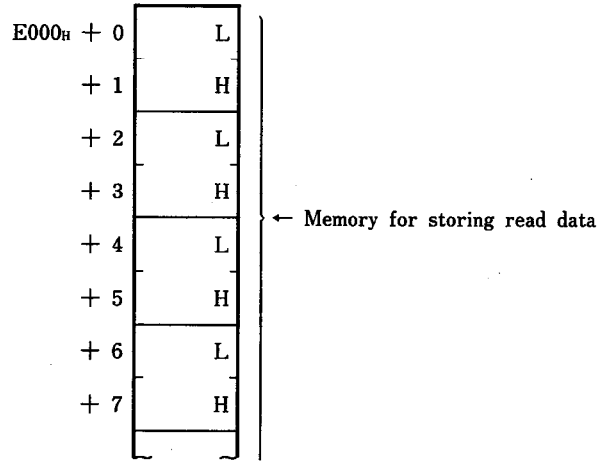
For the programming procedure, see Section 7.3.2 (1) in the AD51-S3 User's Manual.

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Judgement
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
8	Buffer memory access error
9	Time-out error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

Destination head address



SADW

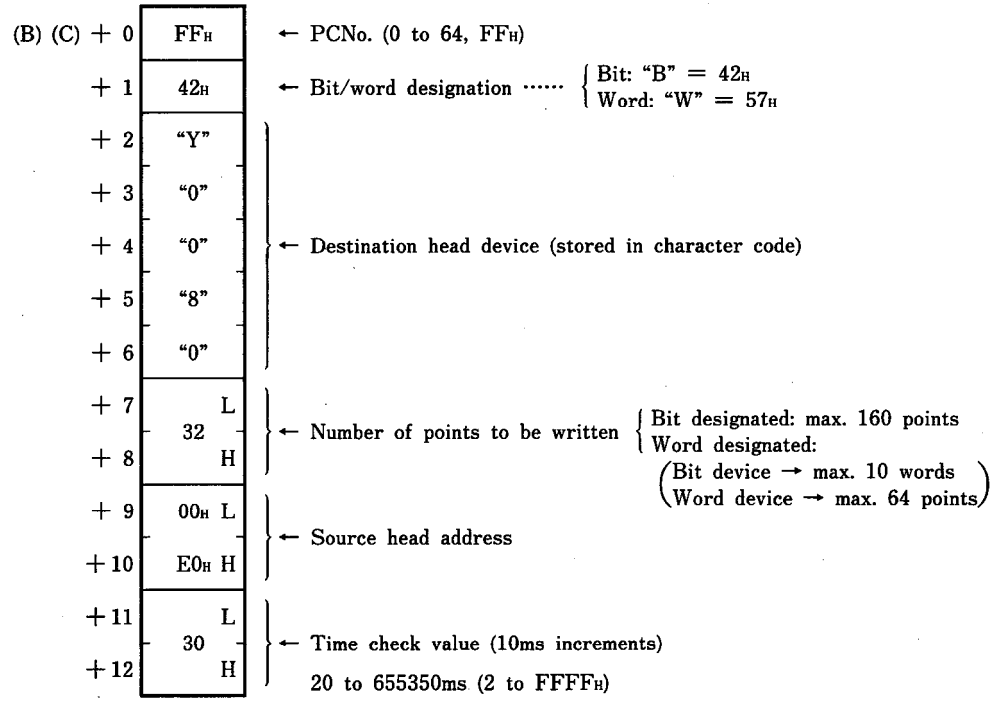
FUNCTION

Writes data to the device memory of the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

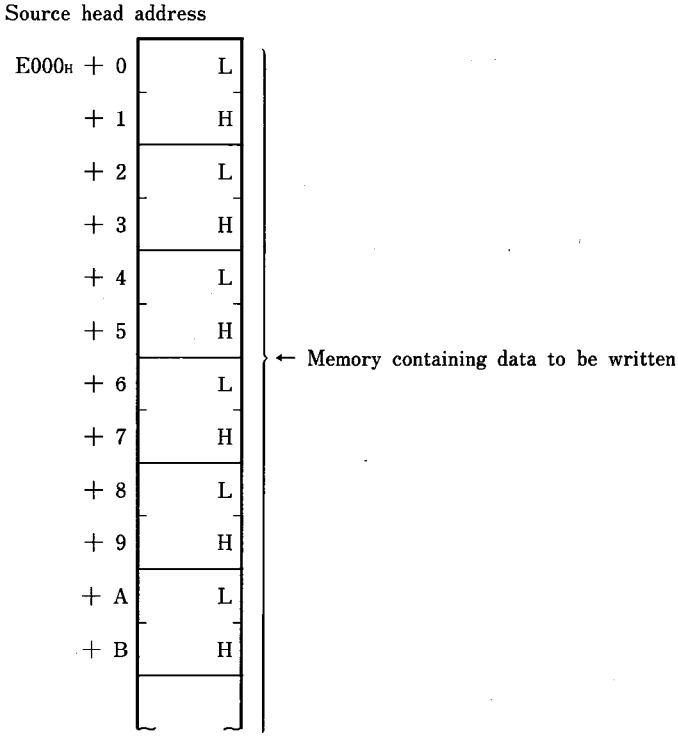
Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Bit/word designation	: Bit designation = 42_H
Destination head device	: Y80 = "Y0080"
Number of points written	: 32 points
Source head address	: $E000_H$
Time check period	: 300ms

For the programming procedure, see Section 7.3.2 (2) in the AD51-S3 User's Manual.



OUTPUT

Stores the execution result to register (H) and (L).

Registers (H), (L)	Judgement
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
8	Buffer memory access error
9	Time-out error
10	PC down error
FFFFH (−1)	PC No. error
FFEFH (−17)	Link error

SADT

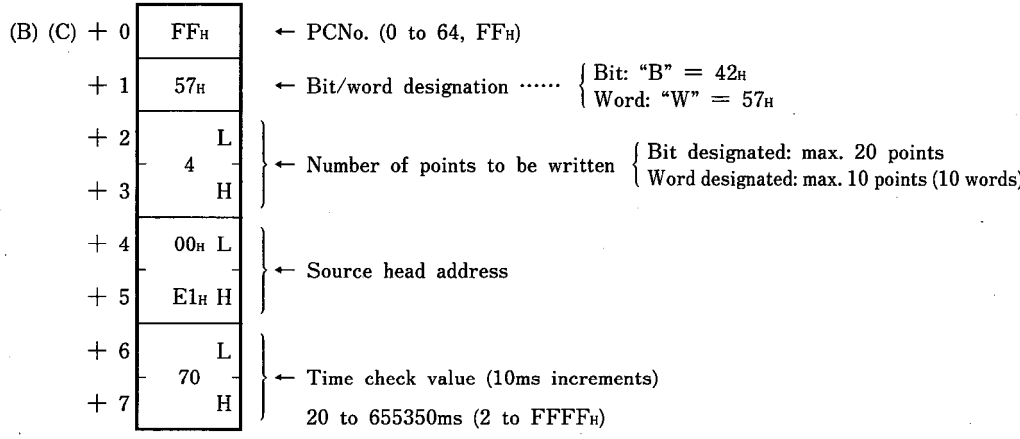
FUNCTION

Writes any specified data to the device memory of the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.

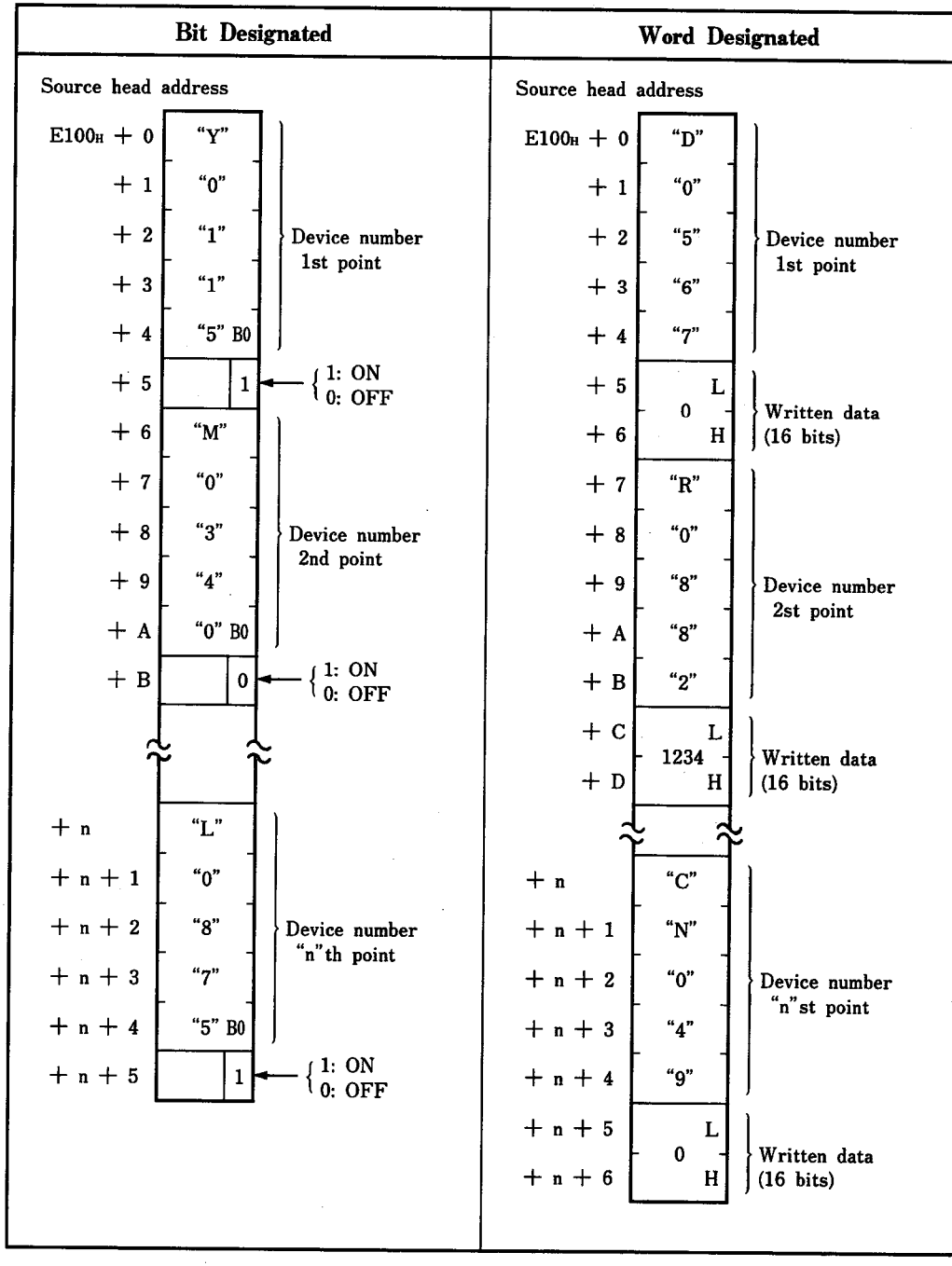


The above example is based on the following conditions:

PC station number	: Host = FF_H
Bit/word designation	: Word designation = 57_H
Number of points written	: 4 points
Source head address	: $E100_H$
Time check period	: 700ms

For the programming procedure, see Section 7.3.2 (3) in the AD51-S3 User's Manual.

Written data format



OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Judgement
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
5	Write data error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

SADM0

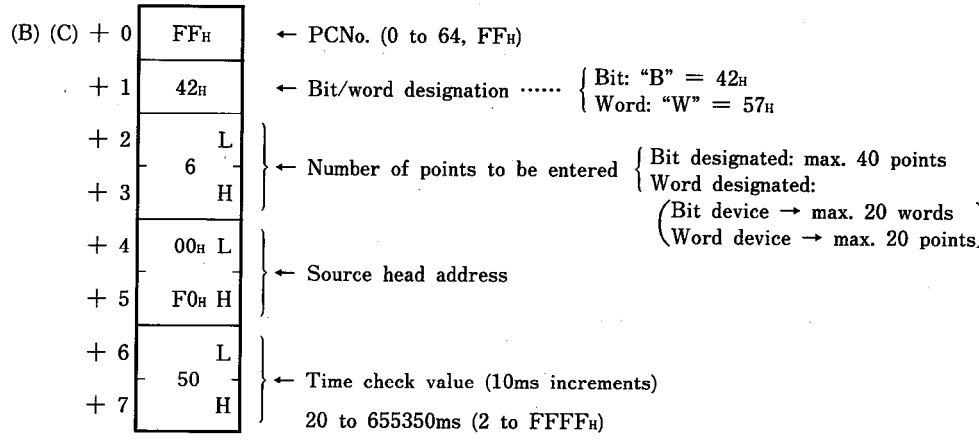
FUNCTION

Enters the device to be monitored into the AD51-S3.

INPUT

Registers (D), (E)·····Channel containing the following set data.

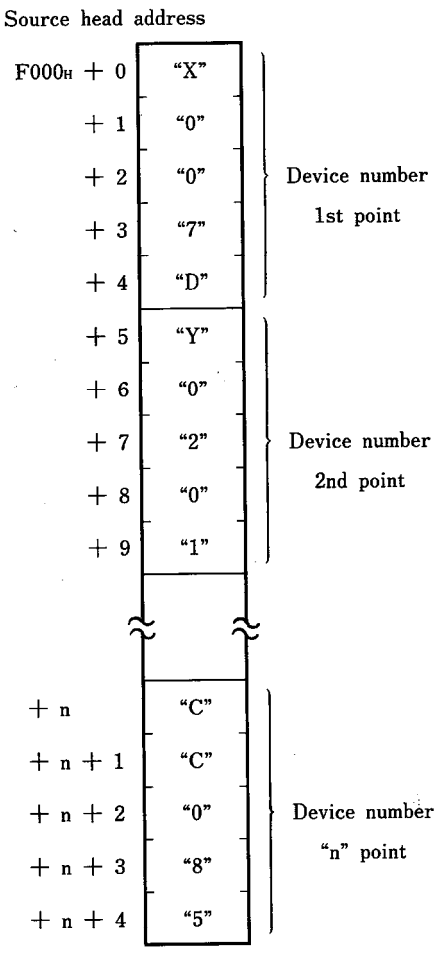
Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Bit/word designation	: Bit designation = 42_H
Number of points entered	: 6 points
Source head address	: $F000_H$
Time check period	: 500ms

For the programming procedure, see Section 7.3.2 (4) in the AD51-S3 User's Manual.


Source head address
F000H + 0
+ 1
+ 2
+ 3
+ 4
+ 5
+ 6
+ 7
+ 8
+ 9
+ n
+ n + 1
+ n + 2
+ n + 3
+ n + 4
"X"
"0"
"0"
"7"
"D"
"Y"
"0"
"2"
"0"
"1"
"C"
"C"
"0"
"8"
"5"
Device number
1st point
Device number
2nd point
Device number
"n" point

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Judgement
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
5	Entry data error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

SADM1

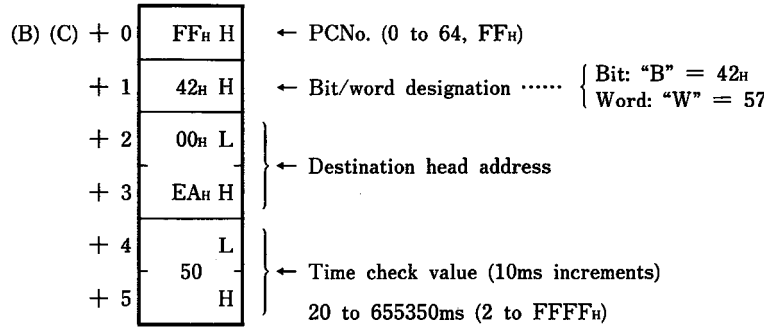
FUNCTION

Monitors the device entered by monitor data entry (SADM0).

INPUT

Registers (D), (E) ←——— Channel containing the following set data.

Registers (B), (C) ←——— Head address of the following set data.



The above example is based on the following conditions:

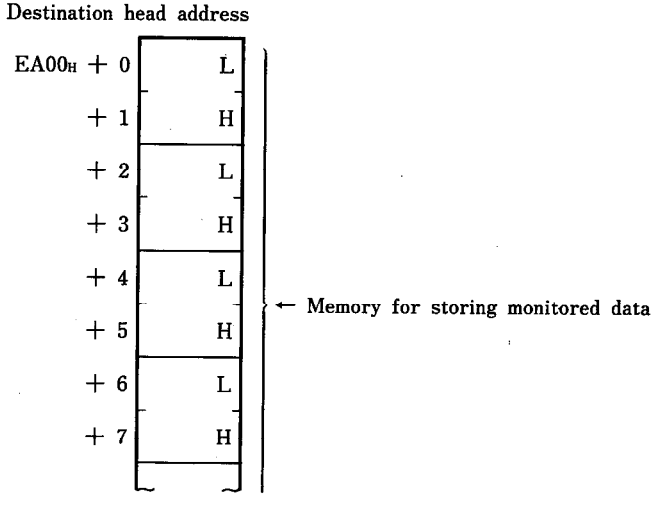
PC station number	: Host = FF_H
Bit/word designation	: Bit designation = 42_H
Destination head address	: $EA00_H$
Time check period	: 500ms

For the programming procedure, see Section 7.3.2 (5) in the AD51-S3 User's Manual.

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Judgement
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
6	No data entered
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error



SAAR

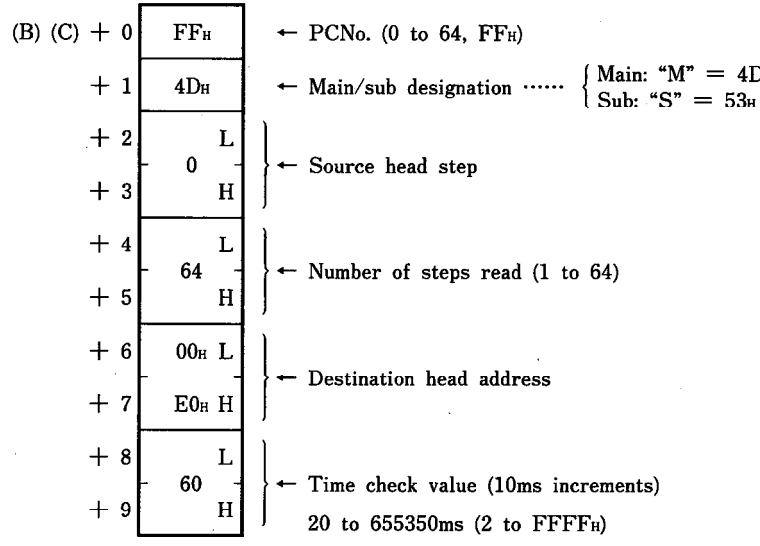
FUNCTION

Reads the sequence program and T/C set values.

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Main/sub designation	: Main program = $4D_H$
Source head step	: Step 0
Number of steps read	: 64 steps
Destination head address	: $E000_H$
Time check period	: 600ms

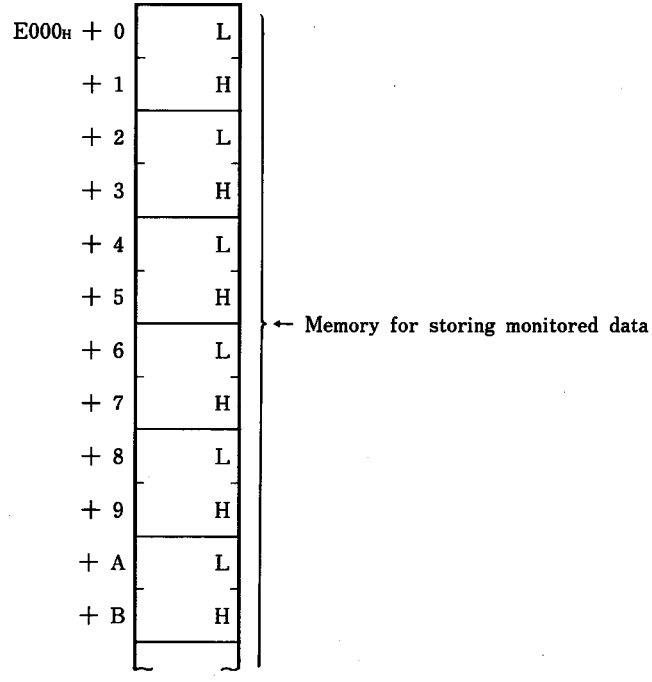
For the programming procedure, see Section 7.6.3 (1) in the AD51-S3 User's Manual.

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Judgement
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error
$FFFC_H$ (−4)	Other data error

Destination head address



SAAW

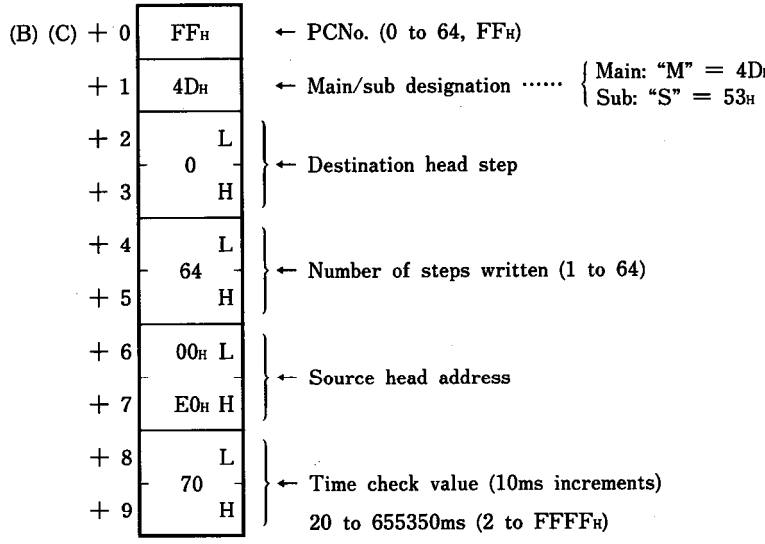
FUNCTION

Writes the sequence program and T/C set values.

INPUT

Registers (D), (E)·····Channel containing the following set data.

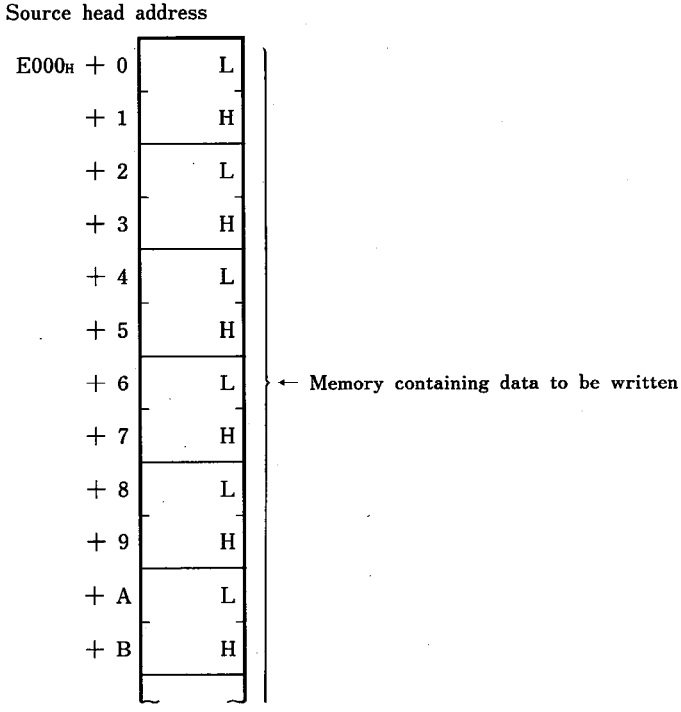
Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FFH
Main/sub designation	: Main program = 4DH
Destination head step	: Step 0
Number of steps written	: 64 steps
Source head address	: E000H
Time check period	: 700ms

For the programming procedure, see Section 7.6.3 (2) in the AD51-S3 User's Manual.



OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Judgement
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
7	Write disable during PC RUN
8	Buffer memory access error
9	Time-out error
10	PC down error
FFFFH (−1)	PC No. error
FFFCH (−4)	Other data error
FFEFH (−17)	Link error

SAPR

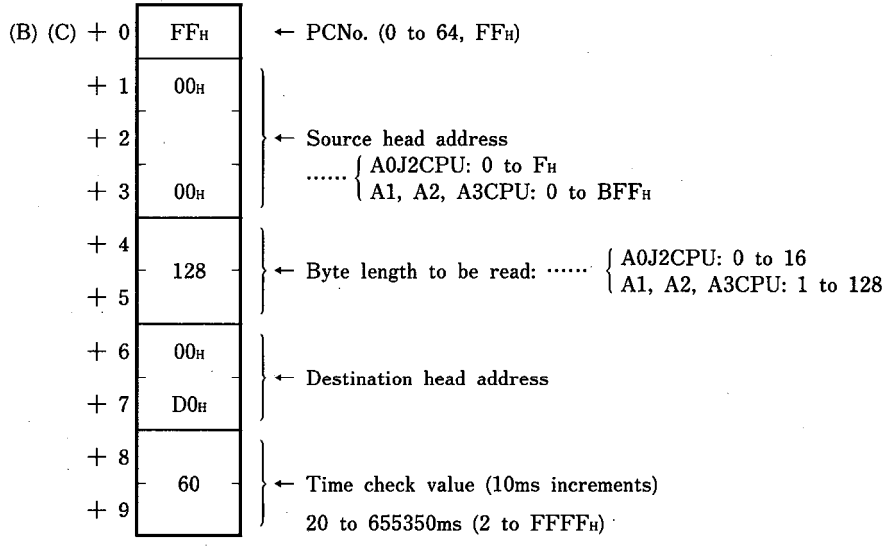
FUNCTION

Reads parameters from the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Source head address	: 0_H
Byte length to be read	: 128 bytes
Destination head address	: $D000_H$
Time check period	: 600ms

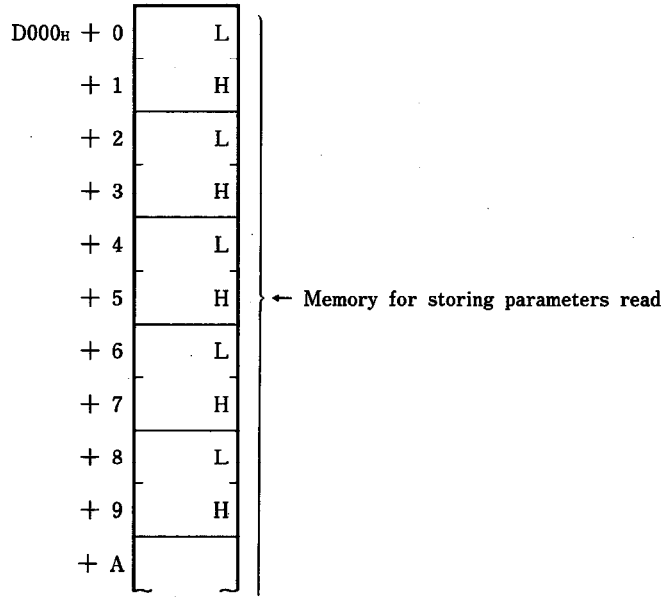
For the programming procedure, see Section 7.6.3 (1) in the AD51-S3 User's Manual.

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

Destination head address



SAPW

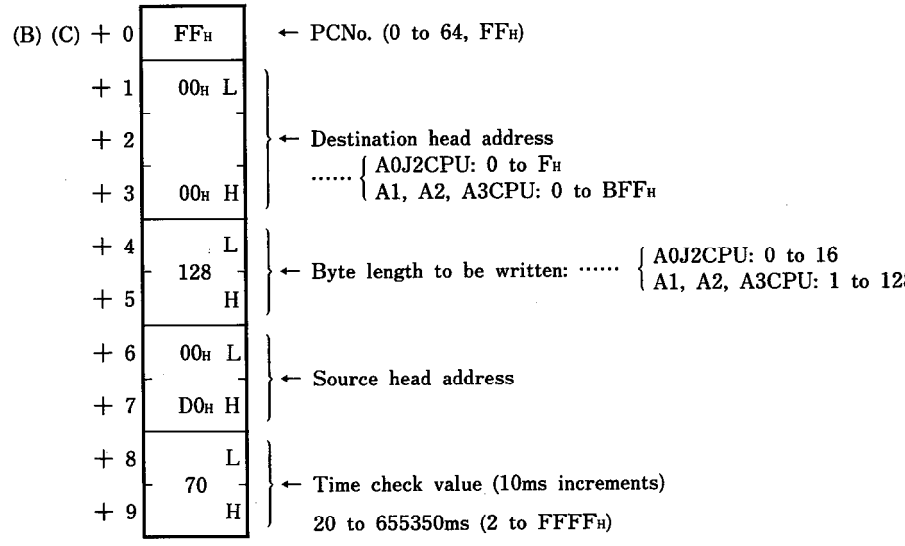
FUNCTION

Writes data to the parameter area of the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

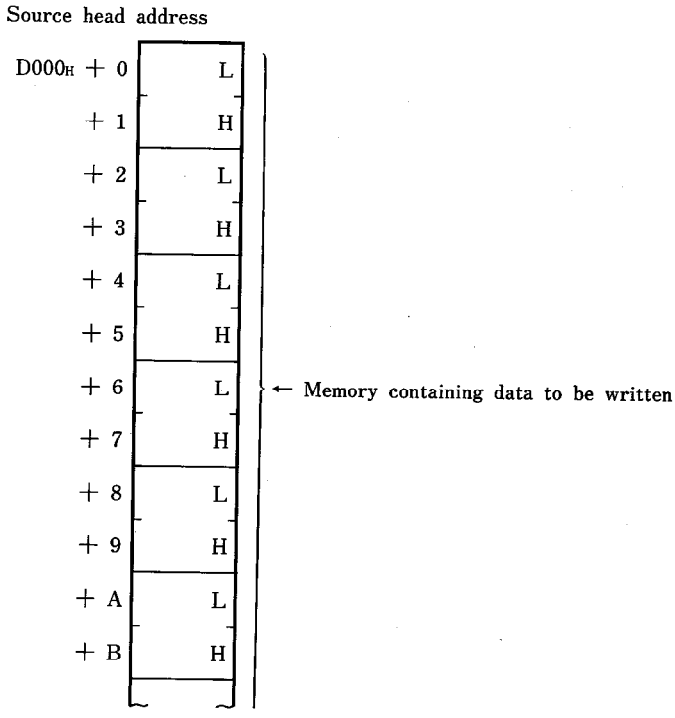
Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FFH
Destination head address	: 0H
Byte length written	: 128 bytes
Source head address	: D000H
Time check period	: 700ms

For the programming procedure, see Section 7.6.3 (2) in the AD51-S3 User's Manual.



OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
7	Write disable during PC RUN
8	Buffer memory access error
9	Time-out
10	PC down error
FFFFH (−1)	PC No. error
FFEFH (−17)	Link error

SAPS

FUNCTION

Gives a PC CPU parameter analysis request.

INPUT

Registers (D), (E)·····PC No. (0 to 64, FF_H)

Registers (B), (C)·····Time check value (10ms increments)
20 to 655350ms (2 to $FFFF_H$)

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
2	PC access error
7	Write disable during PC RUN
8	Buffer memory access error
9	Time-out
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

SIT

FUNCTION

Interrupts the PC CPU and starts an interrupt sequence program.

INPUT

None

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Judgement
0	SIT is complete without fault.

NOTE

SIT interrupts the PC CPU and stores 0 to registers (H) and (L). The execution time of the PC CPU interrupt program is given in the AD51-S3 User's Manual.

SIR

FUNCTION

Reads the error code currently being indicated on the AD51-S3 display.

INPUT

Registers (D), (E) ←——— Channel of the area for storing the error flag

Registers (B), (C) ←——— Head address of the area for storing the error flag

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Judgement
0	SIR is complete without fault.
1	Channel error

The following data is stored when SIR is complete without fault:

When an error exists, the corresponding error code is stored in 2-digit BCD. When an error does not exist, FF_H is stored.

	Channels (D), (E)	
(B) (C) + 0	Error code currently being displayed	Multitask setting error
+ 1		← Stack error
+ 2	PC CPU access error	Duplex wait or BTWF error
+ 3	ORST error task 1	BASIC program error
+ 4	ORST error task 2	STOP error
+ 5	ORST error task 3	BREAK error
+ 6	ORST error task 4	Text end error
+ 7	ORST error task 5	
+ 8	ORST error task 6	
+ 9	ORST error task 7	
+10	ORST error task 8	
+11	Receive buffer full error CH1	
+12	Receive buffer full error CH2	
+13	Receive buffer full error CH3	
+14	Receive buffer full error CH4	
+15	Send buffer full error CH1	
+16	Send buffer full error CH2	
+17	Send buffer full error CH3	
+18	Send buffer full error CH4	
+19	AD51 battery error	

SC2

FUNCTION

Defines the retry time.
After the retry time is defined, access is retried until the AD51-S3 can access the PC CPU, which is currently inaccessible because it is executing the FROM / TO instruction to the AD51-S3.

INPUT

Registers (D), (E) ←——— Define the retry time between 0 and 255 (ms).

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Judgement
0	SC2 is complete without fault.
1	Retry time setting error

NOTE

The retry time defaults to 10ms.

SAER

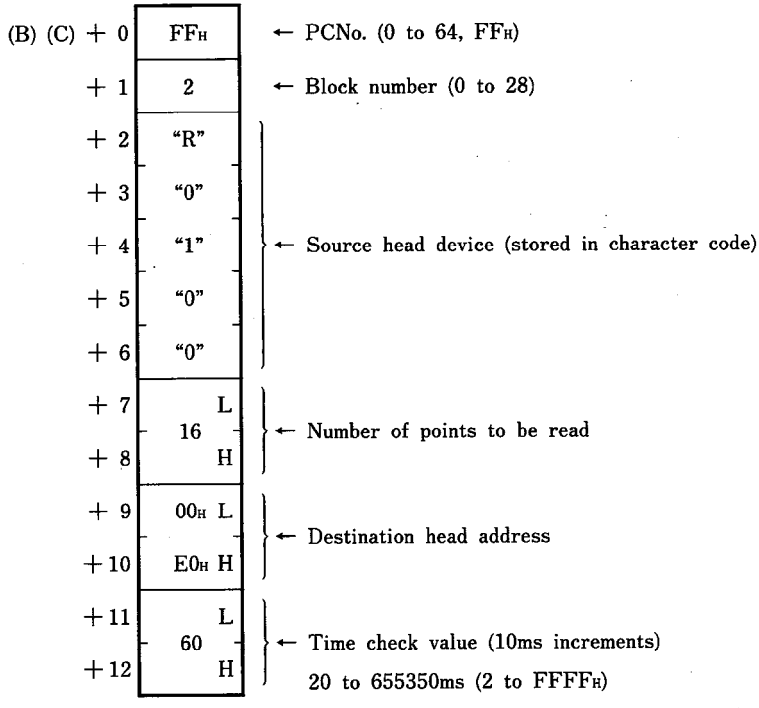
FUNCTION

Reads data from the specified extension file register (R) of the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Block number	: 2
Source head device	: R100 = "R0100"
Number of points read	: 16 points
Destination head address	: $E000_H$
Time check period	: 600ms

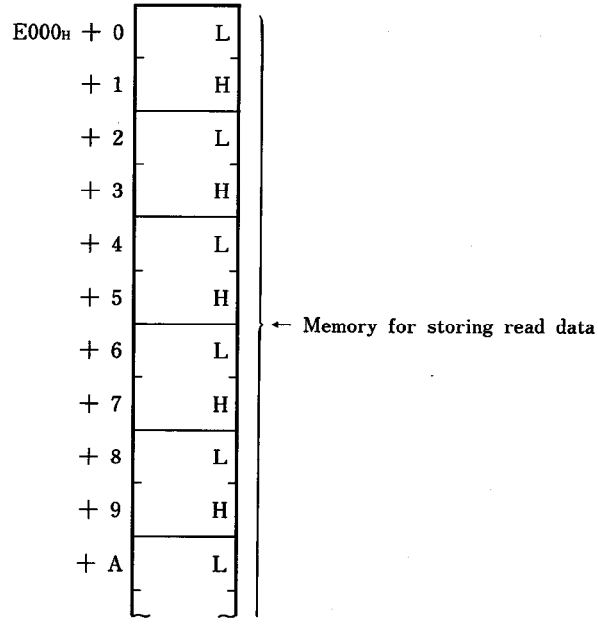
For the programming procedure, see Section 7.4.2 (1) in the AD51-S3 User's Manual.

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

Destination head address



SAEW

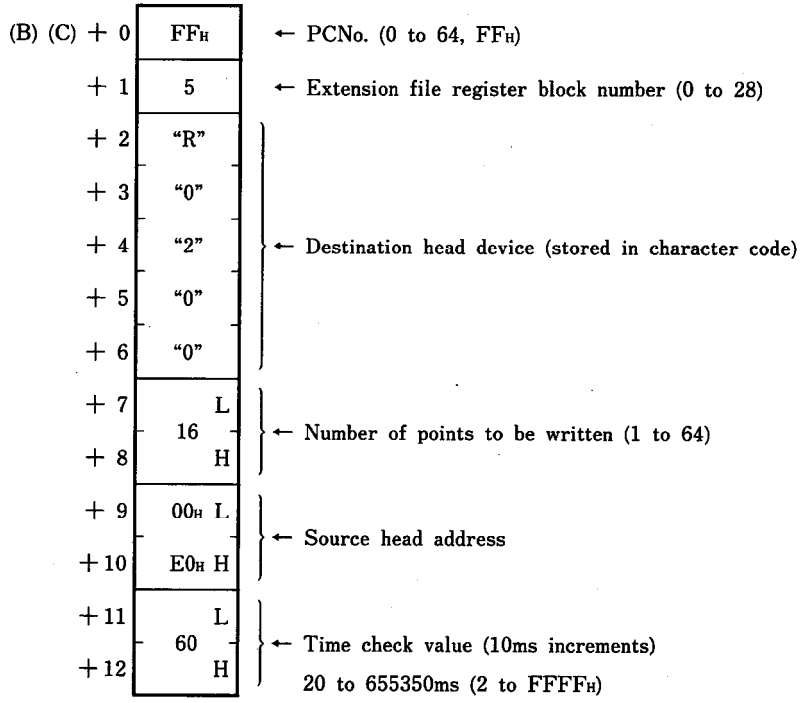
FUNCTION

Writes data to the specified extension file register (R) of the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.

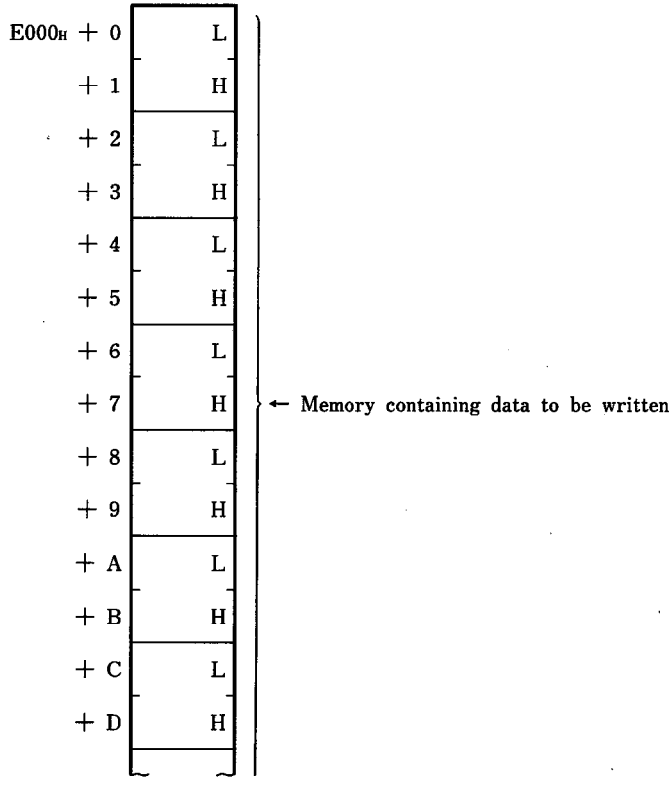


The above example is based on the following conditions:

PC station number	: Host = FF_H
Extension file register block number	: 5
Destination head device	: R200 = "R0200"
Number of points written	: 16 points
Source head address	: $E000_H$
Time check period	: 600ms

For the programming procedure, see Section 7.4.2 (2) in the AD51-S3 User's Manual.

Source head address



OUTPUT

Stores the execution result to register (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
8	Buffer memory access error
9	Time-out error
10	PC down error
FFFFH (−1)	PC No. error
FFEFH (−17)	Link error

SAET

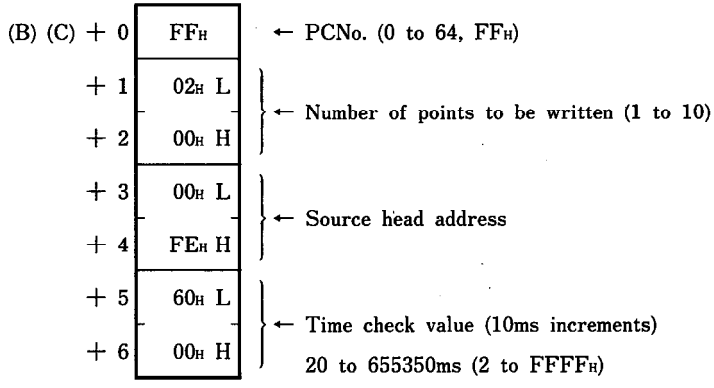
FUNCTION

Writes any specified data to the extension file register (R) of the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.

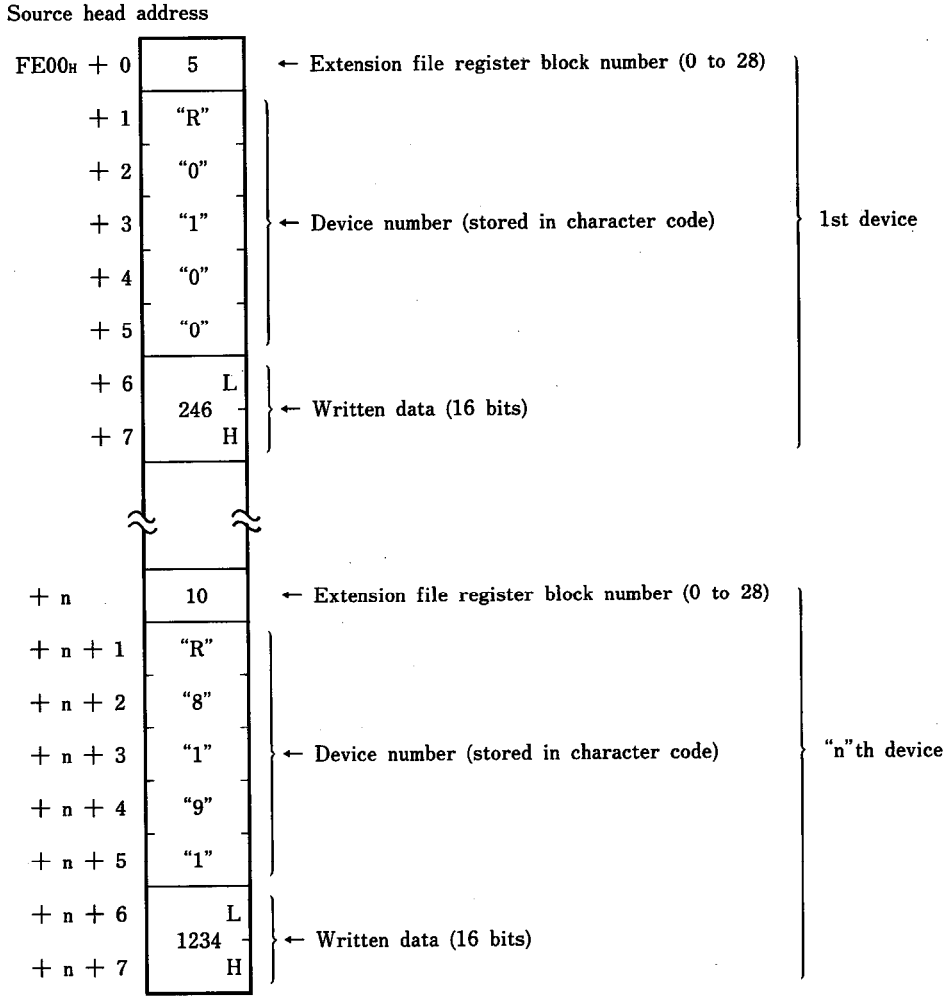


The above example is based on the following conditions:

PC station number	: Host = FF_H
Number of points written to extension file register	: 2 points
Source head address	: $FE00_H$
Time check period	: 600ms

For the programming procedure, see Section 7.4.2 (3) in the AD51-S3 User's Manual.

Written data format



The above example is based on the following conditions:

Extension file register block number	: 5	10
Device number	: R100	R8191
Written data	: 246	1234

For the programming procedure, see Section 7.4.2 (3) in the AD51-S3 User's Manual.

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
5	Write data error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

SAEM0

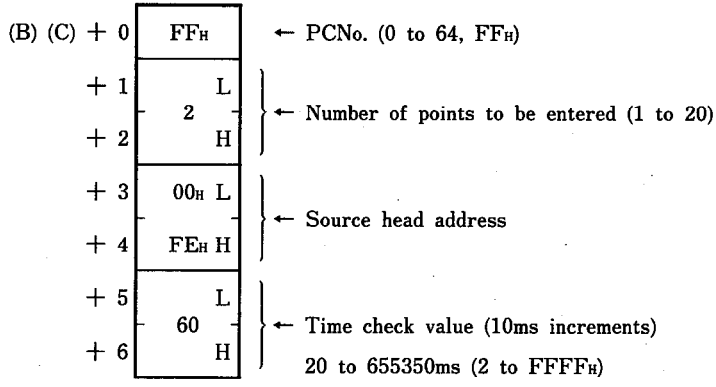
FUNCTION

Enters the extension file register (R) to be monitored.

INPUT

Registers (D), (E)·····Channel containing the following set data.

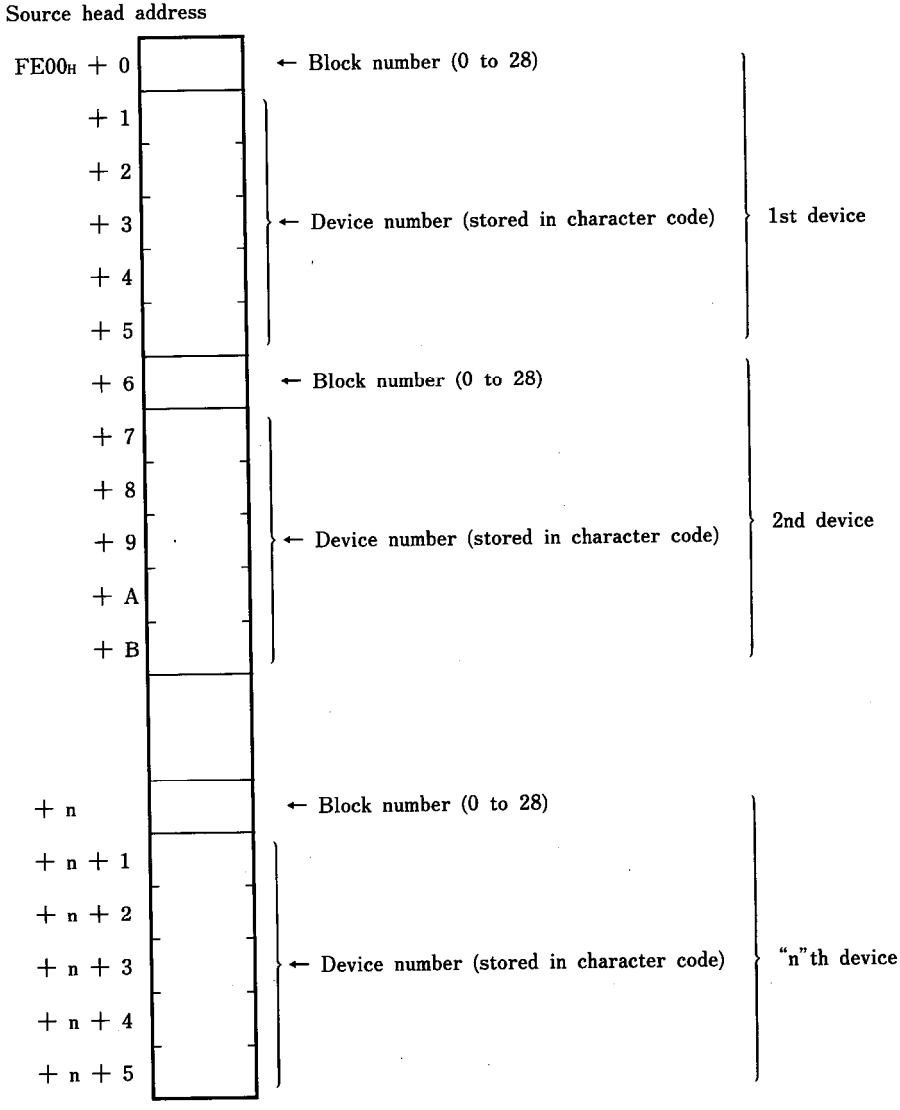
Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Number of points entered	: 2 points
Source head address	: $FE00_H$
Time check period	: 600ms

For the programming procedure, see Section 7.4.2 (4) in the AD51-S3 User's Manual.


Source head address
FE00H + 0
+ 1
+ 2
+ 3
+ 4
+ 5
+ 6
+ 7
+ 8
+ 9
+ A
+ B
+ n
+ n + 1
+ n + 2
+ n + 3
+ n + 4
+ n + 5
← Block number (0 to 28)
← Device number (stored in character code)
1st device
← Block number (0 to 28)
← Device number (stored in character code)
2nd device
← Block number (0 to 28)
← Device number (stored in character code)
"n"th device

SAEM1

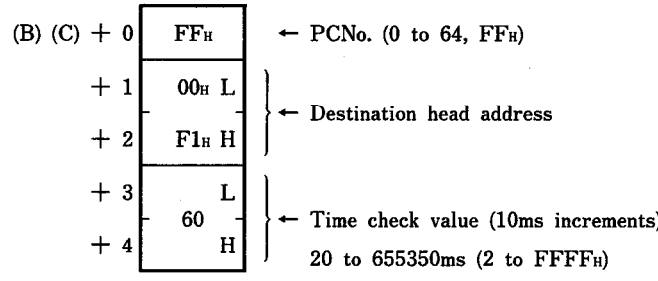
FUNCTION

Monitors the extension file register (R) entered by monitor data entry (SAEM0).

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Destination head address	: 6000_H
Time check period	: 600ms

For the programming procedure, see Section 7.5.2 (5) in the AD51-S3 User's Manual.

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
5	Entry data error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

SAMR

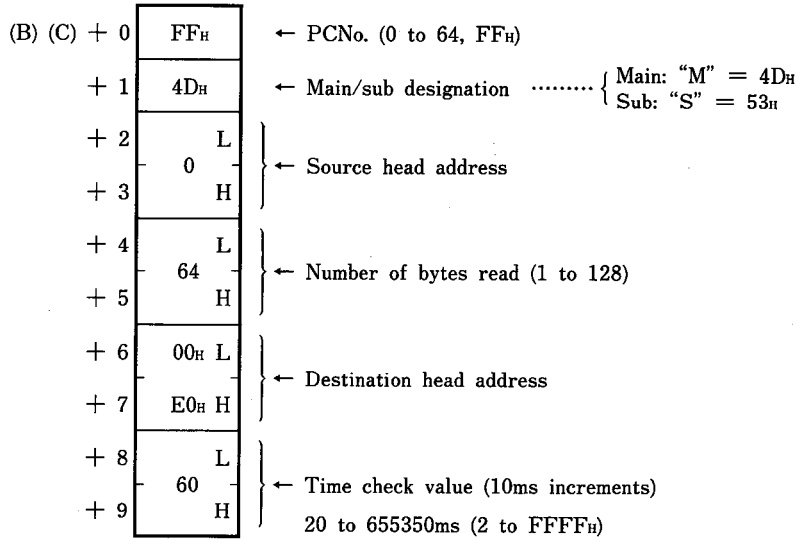
FUNCTION

Reads the microcomputer program from the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Main/sub designation	: Main program = $4D_H$
Source head address	: 0_H
Number of bytes read	: 64 bytes/read
Destination head address	: $E000_H$
Time check period	: 600ms

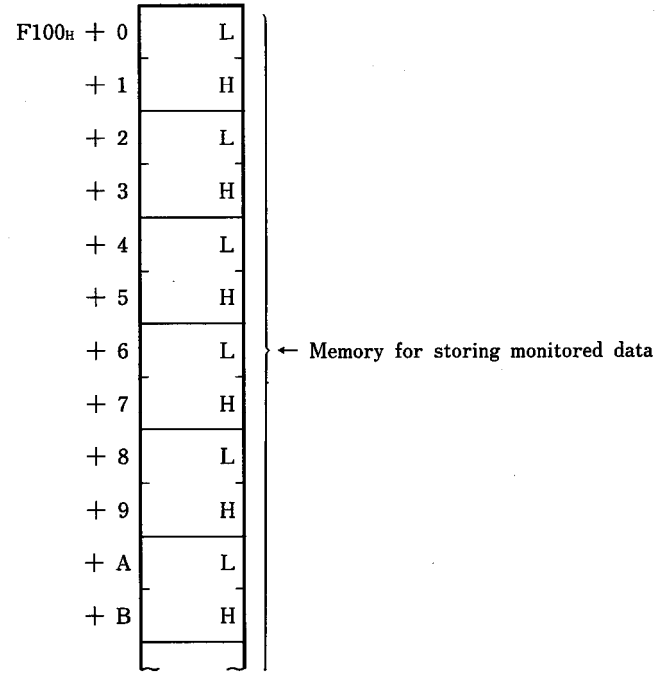
For the programming procedure, see Section 7.7.2 (1) in the AD51-S3 User's Manual.

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
6	Entry data error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

Source head address



SAMW

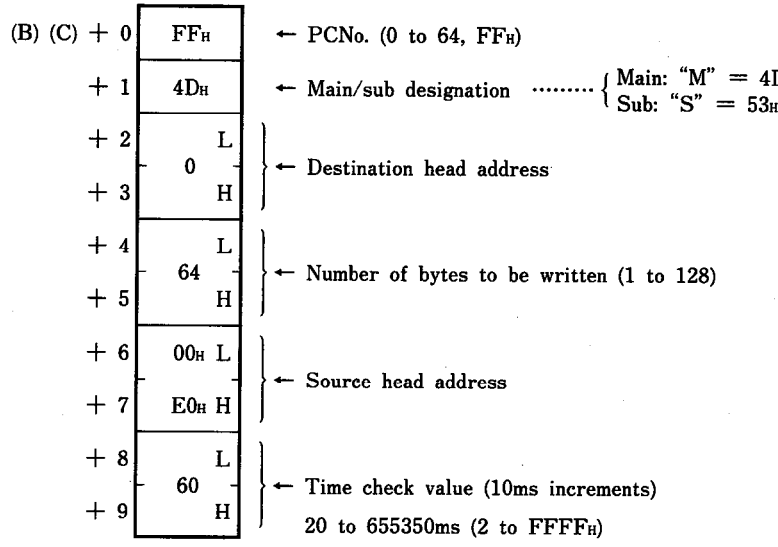
FUNCTION

Writes the microcomputer program to the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

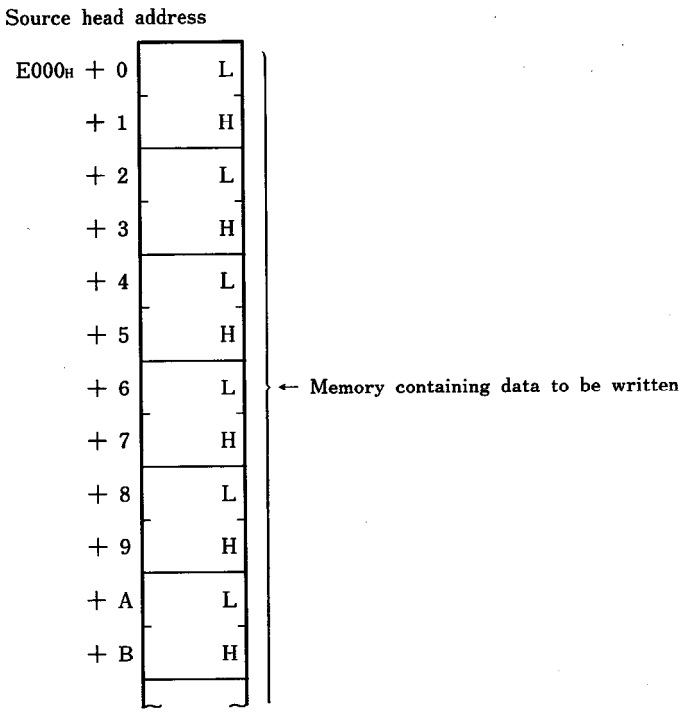
Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Main/sub designation	: Main program = $4D_H$
Destination head address	: 0_H
Number of bytes to be written	: 64 bytes/write
Source head address	: $E000_H$
Time check period	: 600ms

For the programming procedure, see Section 7.7.2 (2) in the AD51-S3 User's Manual.



OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
7	Write disable during PC RUN
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

SACR

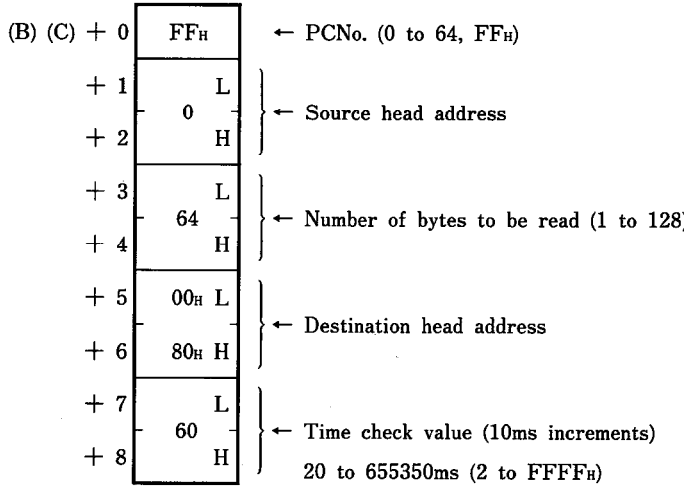
FUNCTION

Reads comments from the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

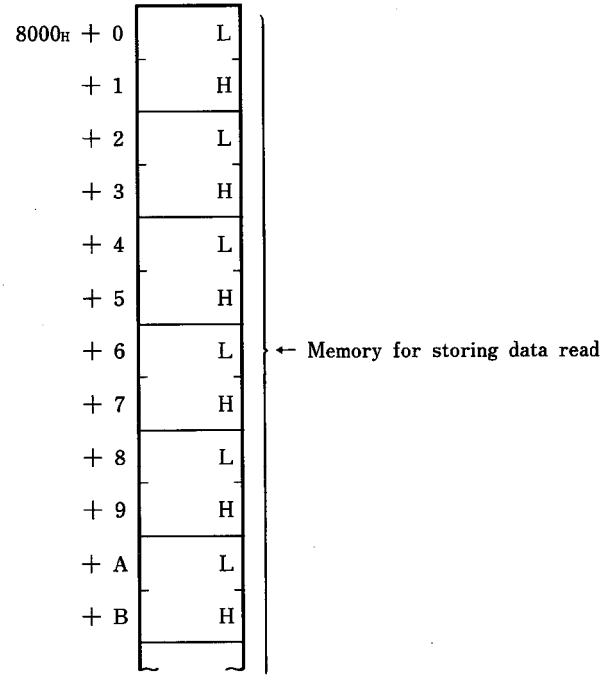
PC station number	: Host = FF_H
Source head address	: 0_H
Number of bytes to be read	: 64 bytes/read
Destination head address	: 8000_H
Time check period	: 600ms

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

Destination head address



SACW

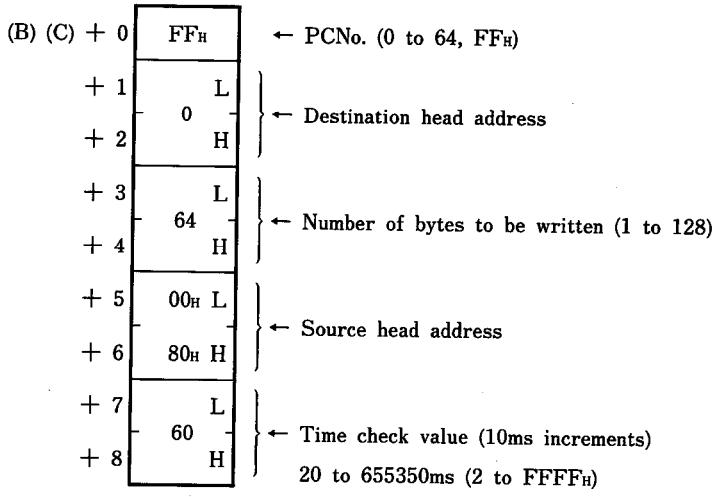
FUNCTION

Writes comment data to the PC CPU.

INPUT

Registers (D), (E)·····Channel containing the following set data.

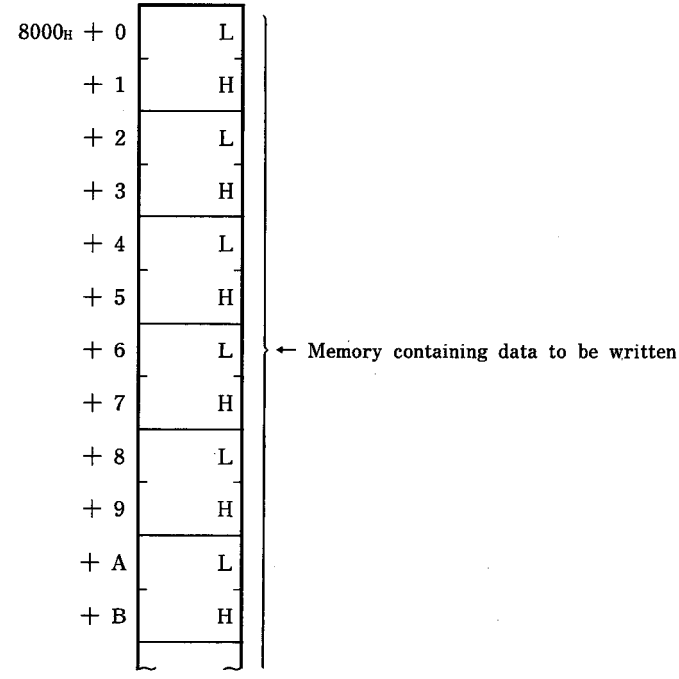
Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Destination head address	: 0_H
Number of bytes to be written	: 64 bytes/write
Source head address	: 8000_H
Time check period	: 600ms

Source head address



OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
8	Buffer memory access error
9	Time-out error
10	PC down error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

SATR

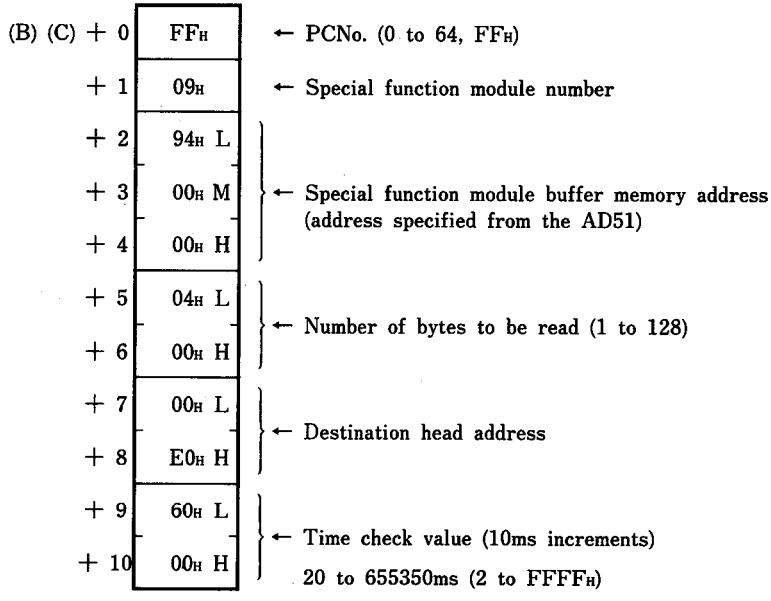
FUNCTION

Reads data from the special function module buffer memory.

INPUT

Registers (D), (E)·····Channel containing the following set data.

Registers (B), (C)·····Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FF_H
Special function module number	: 9 (AD71 at I/O addresses of 70_H to $8F_H$)
Special function module buffer memory address	: 94_H
Number of bytes read from special function module to AD51-S3	: 4 bytes
Destination head address	: $E000_H$
Time check period	: 600ms

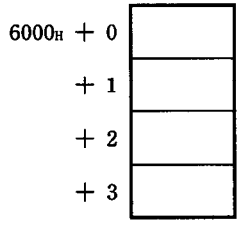
For the programming procedure, see Section 7.4.2 (3) in the AD51-S3 User's Manual.

OUTPUT

Stores the execution result to registers (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
8	Buffer memory access error
9	Time-out error
10	PC down error
12_H (18)	Special function module number error
21_H (33)	Special function module bus error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

Destination head address



The above area has been secured at the time of input setting to store 4-byte data from AD71 buffer memory address 0 (200_H).

SATW

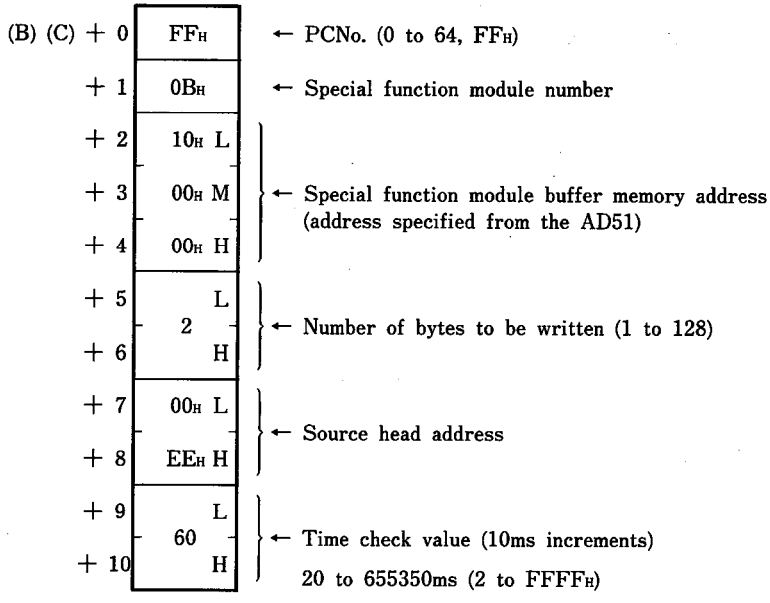
FUNCTION

Writes data to the special function module buffer memory.

INPUT

Registers (D), (E)..... Channel containing the following set data.

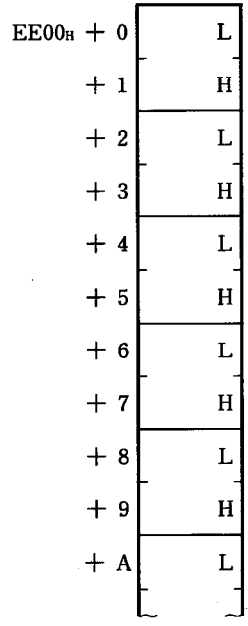
Registers (B), (C)..... Head address of the following set data.



The above example is based on the following conditions:

PC station number	: Host = FFH
Special function module number	: 0BH
Special function module buffer memory address	: 10H
Number of bytes to be written	: 2 bytes
Source head address	: EE00H
Time check period	: 600ms

Source head address



OUTPUT

Stores the execution result to register (H) and (L).

Registers (H), (L)	Contents
0	Normal completion
1	Channel error
2	PC access error
4	Input data error
8	Buffer memory access error
9	Time-out error
10	PC down error
12_H (18)	Special function module number error
21_H (33)	Special function module bus error
$FFFF_H$ (−1)	PC No. error
$FFEF_H$ (−17)	Link error

IMPORTANT

The components on the printed circuit boards will be damaged by static electricity, so avoid handling them directly. If it is necessary to handle them take the following precautions.

(1) Ground human body and work bench.

(2) Do not touch the conductive areas of the printed circuit board and its electrical parts with any non-grounded tools etc.

Under no circumstances will Mitsubishi Electric be liable or responsible for any consequential damage that may arise as a result of the installation or use of this equipment.

All examples and diagrams shown in this manual are intended only as an aid to understanding the text, not to guarantee operation. Mitsubishi Electric will accept no responsibility for actual use of the product based on these illustrative examples.

Owing to the very great variety in possible applications of this equipment, you must satisfy yourself as to its suitability for your specific application.

GPC-BASIC
SUPPLEMENTARY

MODEL	GPC-BASIC-E
MODEL CODE	13J766
IB(NA)-66214-A(8909)MEE	

MITSUBISHI ELECTRIC CORPORATION

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Specifications subject to change without notice.