

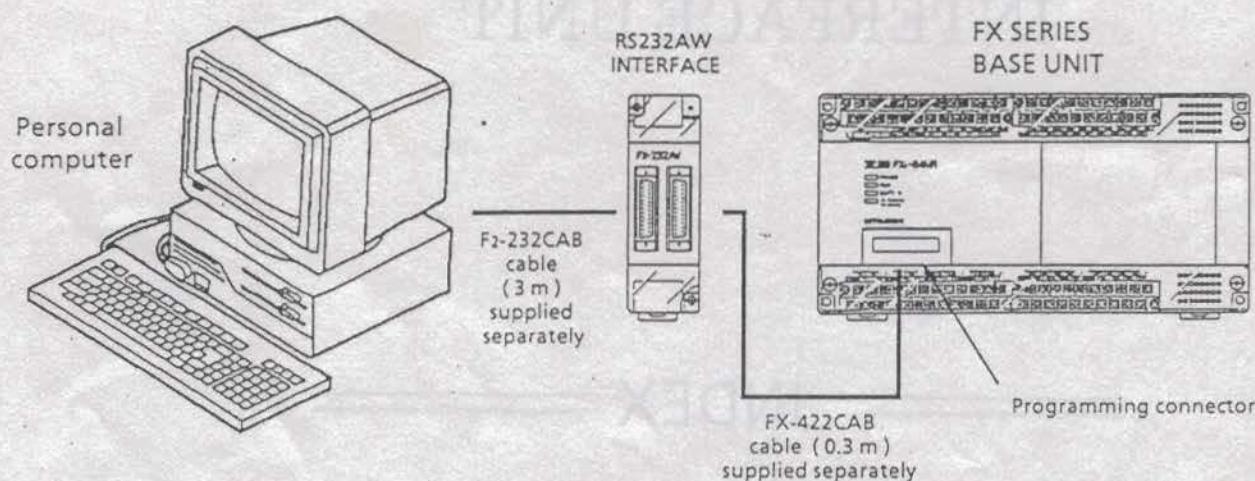
*File # P7 -> 931 5626*

# FX-232 AW RS422 TO RS232C INTERFACE UNIT

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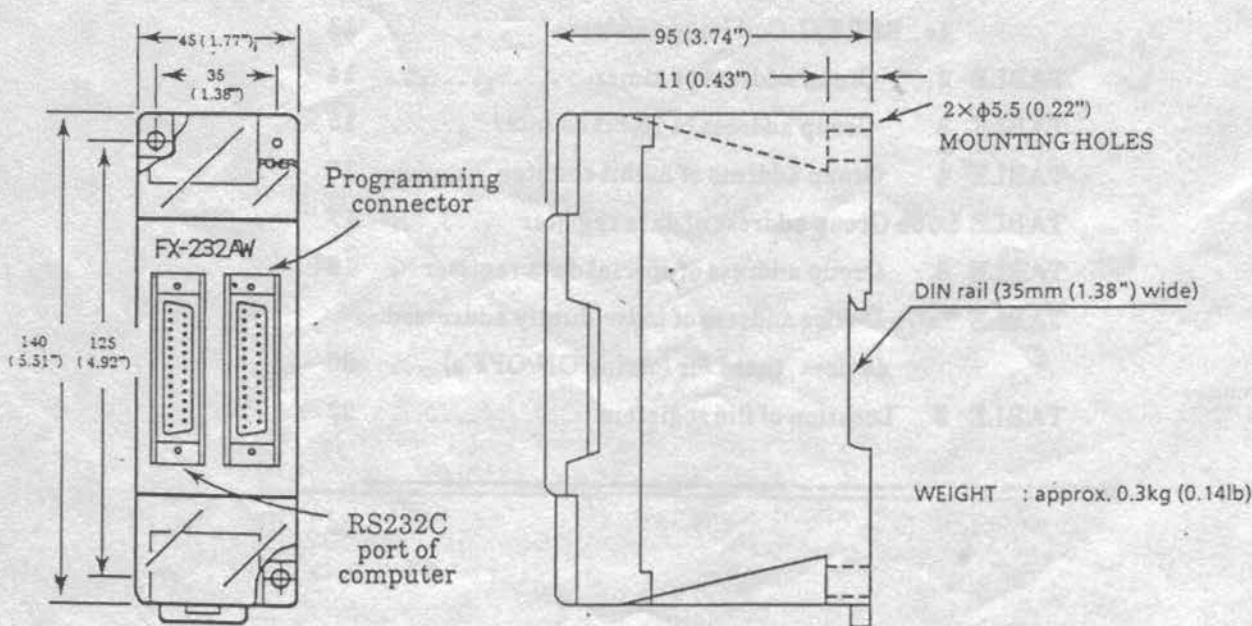
The FX-232AW is an interface for connecting an FX series programmable controller (PC) to an RS232C port of a host unit such as a personal computer. The interface unit provides optical isolation as well as converting signals between the RS232C connection and the RS 422 connection.



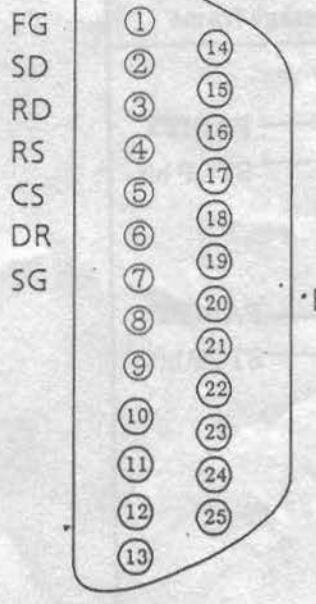
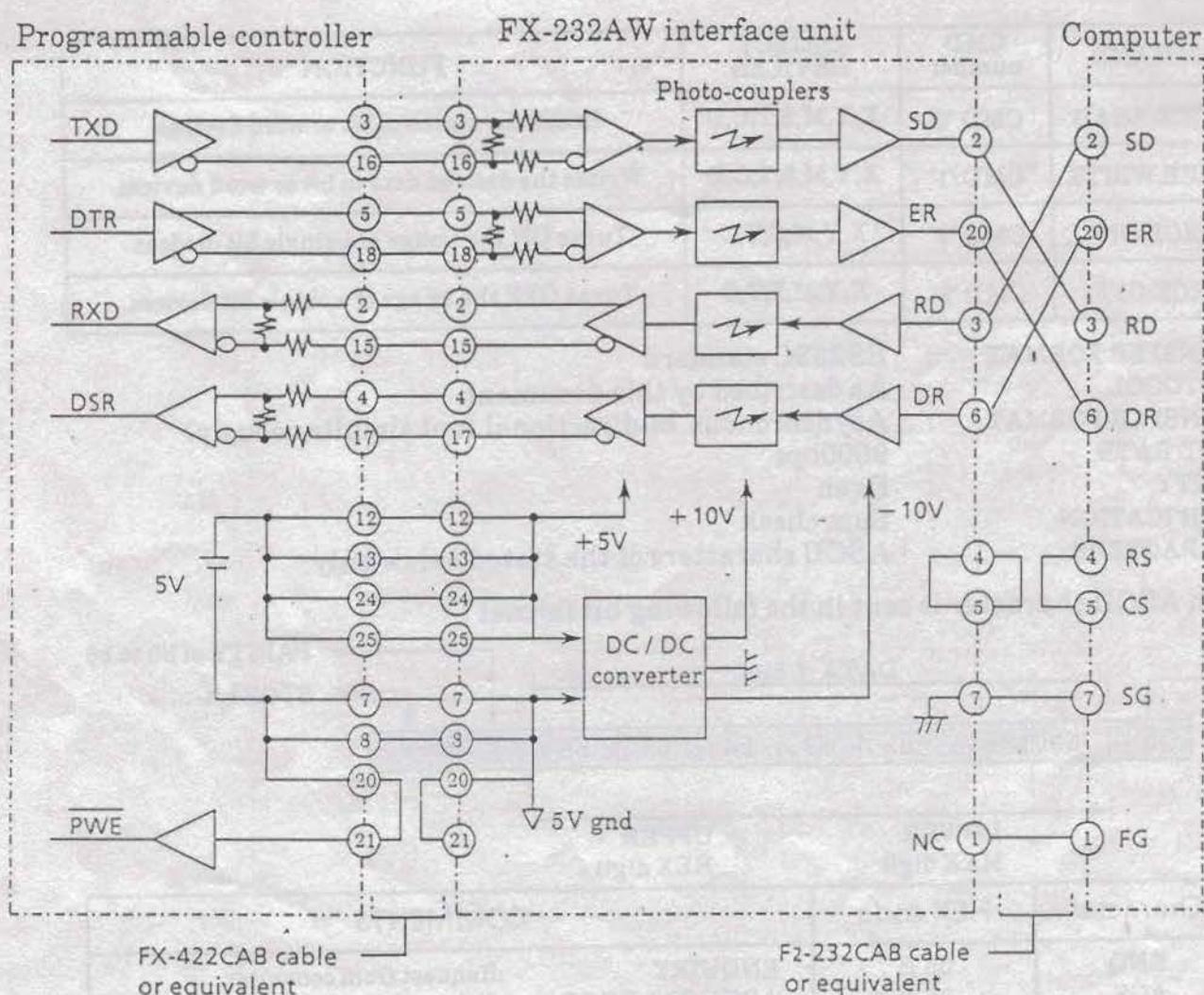
This interface unit does not include any cable nor any software. The cables may be bought separately or made by other means to the specification described on the next page.

Software to be run on the personal computer may be written as desired to monitor the FX PC by using the protocols described by this technical document.

#### DIMENSIONS OF THE FX-232AW



The schematic connections of the inside of the interface unit is shown below along with the cable connections required to connect the interface unit.



25 pin DSUB connector

FG	①	FG : FRAME GROUND (Not connected in the interface unit)
SD	②	
RD	③	
RS	④	
CS	⑤	
DR	⑥	
SG	⑦	
	⑧	SG : SIGNAL GROUND
	⑨	
	⑩	
	⑪	SD : SEND DATA (TXD)
	⑫	
	⑬	RD : RECEIVE DATA (RXD)
	⑭	
	⑮	RS : REQUEST TO SEND (RTS)
	⑯	
	⑰	CS : CLEAR TO SEND (CTS)
	⑱	
	⑲	DR : DATA SET READY (DSR)
	⑳	
	㉑	ER : DATA TERMINAL READY (DTR)

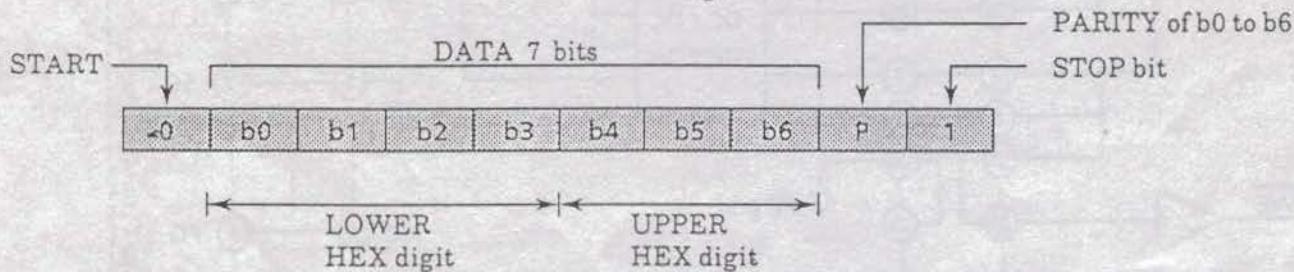
**NOTE :** When the correct cable is connected to the programmable controller, the PWE signal goes low to allow the signal to enter the PC only when the cable is connected.

The following specification allows the status of the internal devices of the FX series programmable controller to be monitored and overwritten by a computer. Commands available are as follows:

COMMAND	CMD number	OBJECT DEVICES	FUNCTION
DEVICE READ	CMD '0'	X,Y,M,S,T,C,D	Reads the status of bit or word devices.
DEVICE WRITE	CMD '1'	X,Y,M,S,T,C,D	Writes the desired data to bit or word devices.
FORCE ON	CMD '7'	X,Y,M,S,T,C	Turns ON the image of a single bit devices.
FORCE OFF	CMD '8'	X,Y,M,S,T,C	Turns OFF the image of a single bit devices.

TRANSFER FORMAT : RS232C standard  
 PROTOCOL : As described by this document  
 TRANSFER FORMAT : Asynchronous bi-directional (not simultaneously)  
 BAUD RATE : 9600bps  
 PARITY : Even  
 VERIFICATION : Sum check  
 CHARACTERS : ASCII characters of the stated below only

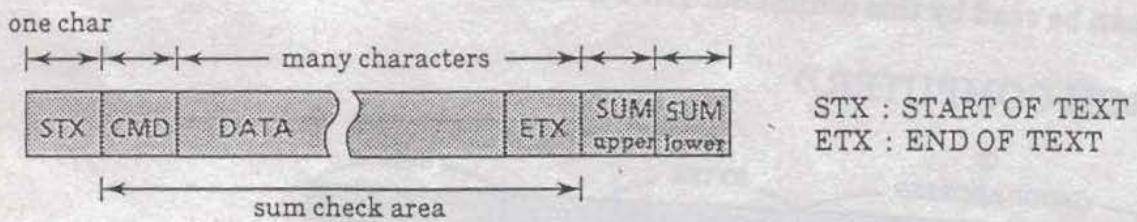
Each ASCII character is sent in the following bit format:



Character	HEX code	COMMENTS
ENQ	05 H	ENQUIRY : Request from computer
ACK	06 H	ACKNOWLEDGE : Acknowledge reply to an ENQ
NAK	15 H	NAGATIVE ACK : Replied when not understood
STX	02 H	START OF TEXT : Start marker of message frame
ETX	03 H	END OF TEXT : End marker of message frame
0	30 H	
1	31 H	
2	32 H	
3	33 H	
4	34 H	
5	35 H	
6	36 H	
7	37 H	Bit format of STX
8	38 H	
9	39 H	
A	41 H	START 2 0 PARITY STOP bit
B	42 H	
C	43 H	
D	44 H	
E	45 H	
F	46 H	

The letter H represents that the number is a hexadecimal number.

**FRAME FORMAT :** ENQ, ACK and NAK are sent as single control characters. STX and ETX are sent with the commands (CMD) and its related data together as one frame.



**SUM CHECK :** The check sum is sent as a two character code after ETX.

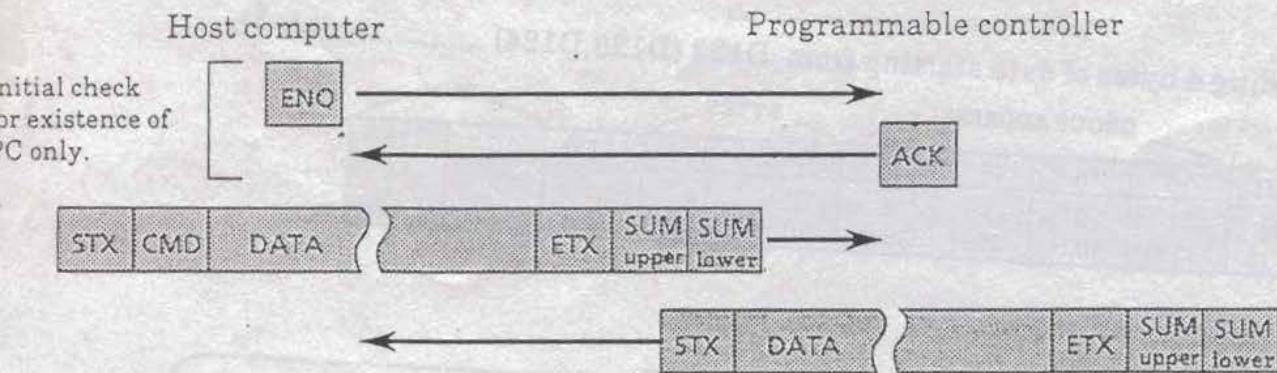
#### EXAMPLE

		GROUP ADDRESS				BYTES		SUM		
STX	CMD	16 <sup>3</sup>	16 <sup>2</sup>	16 <sup>1</sup>	16 <sup>0</sup>	16 <sup>3</sup>	16 <sup>2</sup>	ETX	16 <sup>1</sup>	16 <sup>0</sup>
02 H	30 H	31 H	30 H	46 H	36 H	30 H	34 H	03 H	37 H	34 H

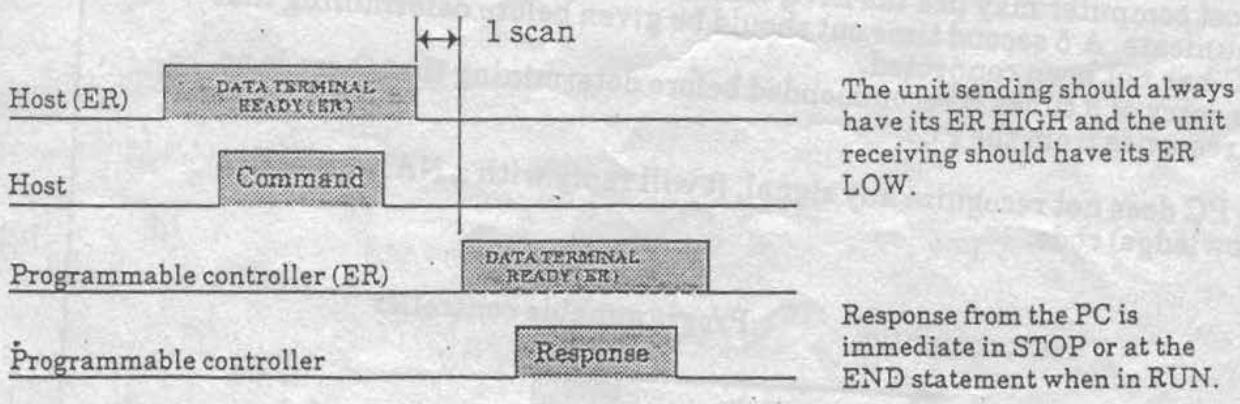
$$30H + 31H + 30H + 46H + 36H + 30H + 34H + 03H = 74H$$

All the HEX values of the ASCII characters from the command to the ETX code are added together. The HEX value of the characters of the sum is then sent after the ETX code.

#### COMMUNICATION PATTERN



#### TIMING OF TRANSFERS



### 3 DEVICE READ

CMD '0'

Multiple bytes of bit images of X,Y,M,S,T,C and current values of T,C,D word devices of the PC can be read by this command. The PC can be in STOP or in RUN

#### «COMMAND FROM COMPUTER»

		GROUP ADDRESS						BYTES		SUM	
STX	CMD	16 <sup>3</sup>	16 <sup>2</sup>	16 <sup>1</sup>	16 <sup>0</sup>	16 <sup>3</sup>	16 <sup>0</sup>	ETX	16 <sup>1</sup>	16 <sup>0</sup>	
02 H	0 30 H							03 H			

- ① Command CMD '0' reads n bytes of data starting from the group address. (1 character)
- ② Group address is the address of the device group in the PC (see tables 1 to 6). (4 characters)
- ③ BYTES is the n number of bytes of data to be read. Range is 01H to 40H (1 to 64 bytes). (2 characters)

EX. 1    Reading 2 bytes of data starting from Y0 (Y0 to Y7, Y10 to Y17).....table 1a

		GROUP ADDRESS						BYTES		SUM	
STX	CMD	16 <sup>3</sup>	16 <sup>2</sup>	16 <sup>1</sup>	16 <sup>0</sup>	16 <sup>3</sup>	16 <sup>0</sup>	ETX	16 <sup>1</sup>	16 <sup>0</sup>	
02 H	0 30 H	0	0	A	0	0	2	03 H	6	6	

EX. 2    Reading 4 bytes of data starting from D123 (D123,D124) .....table 1b

		GROUP ADDRESS						BYTES		SUM	
STX	CMD	16 <sup>3</sup>	16 <sup>2</sup>	16 <sup>1</sup>	16 <sup>0</sup>	16 <sup>3</sup>	16 <sup>0</sup>	ETX	16 <sup>1</sup>	16 <sup>0</sup>	
02 H	0 31 H	1	0	F	6	0	4	03 H	7	4	

#### ERROR RESPONSE

The host computer may use the ENQ command to check if the PC is ready to communicate. A 5 second time out should be given before determining that the PC has not been connected.

Also a retry of 3 times is recommended before determining that there is no ACK response from the PC.

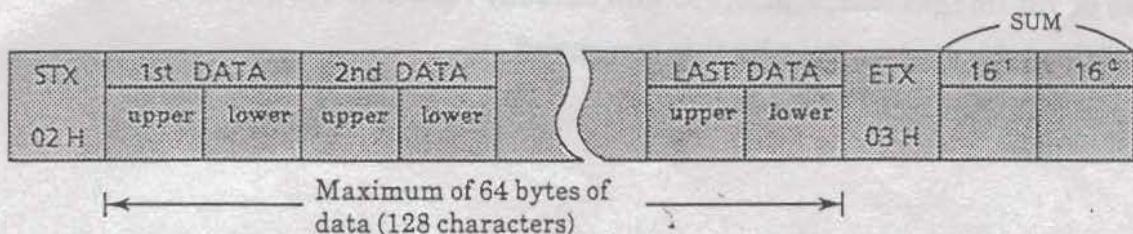
If the PC does not recognize any signal, it will reply with a NAK (negative acknowledge) code.

Host computer

Programmable controller

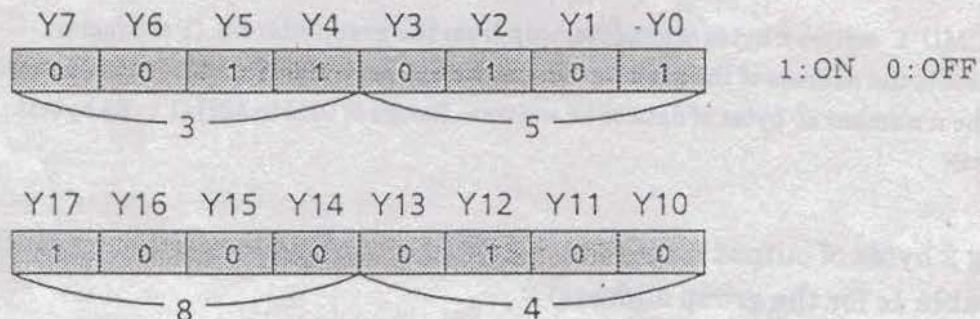


## « RESPONSE FROM PC »



- ① Each byte of device data from the PC is divided into upper 4 bits and lower 4 bits. The hexadecimal value of each 4 bits is taken as an ASCII character and its ASCII HEX value is then sent.
- ② After receiving the command from the computer, the PC makes the response at the next execution of the END statement.
- ③ If the command from the computer is not understood by the PC , contol code NAK is then sent.

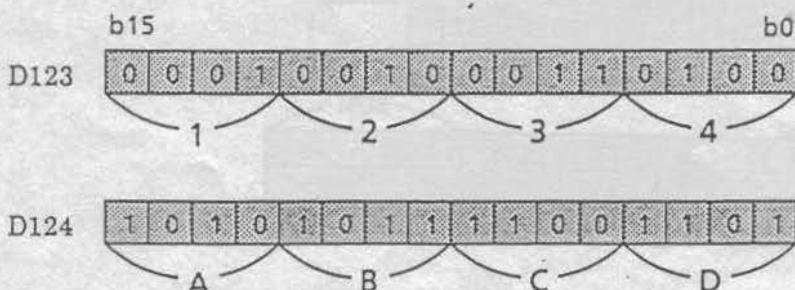
EX. 1



STX	1st DATA		2nd DATA		ETX	16 <sup>1</sup>	16 <sup>0</sup>
02 H	3	5	8	4	03 H	D	7

33 H    35 H    38 H    34 H    44 H    37 H

EX. 2



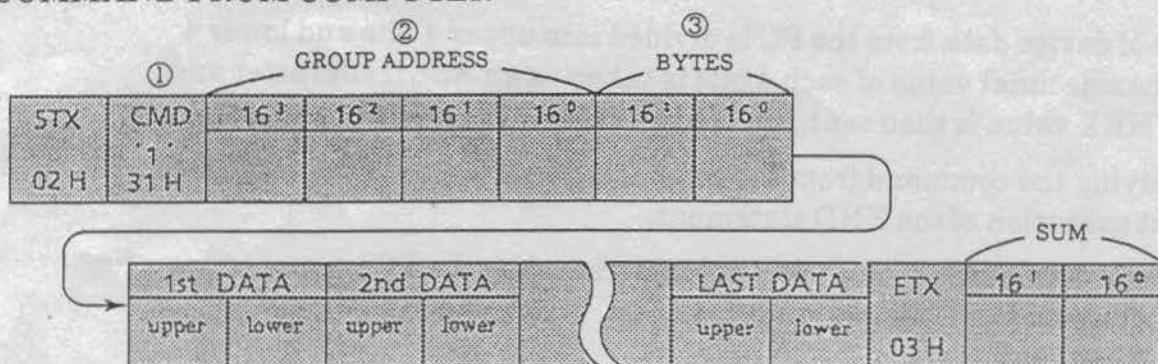
STX	1st DATA		2nd DATA		3rd DATA		4th DATA		ETX	16 <sup>1</sup>	16 <sup>0</sup>
02 H	3	4	1	2	C	D	A	B	03 H	D	7

33 H    34 H    31 H    32 H    43 H    44 H    41 H    42 H    44 H    37 H

Multiple bytes of bit images of X,Y,M,S,T,C and current values of T,C,D word devices of the PC can be over-written by this command.

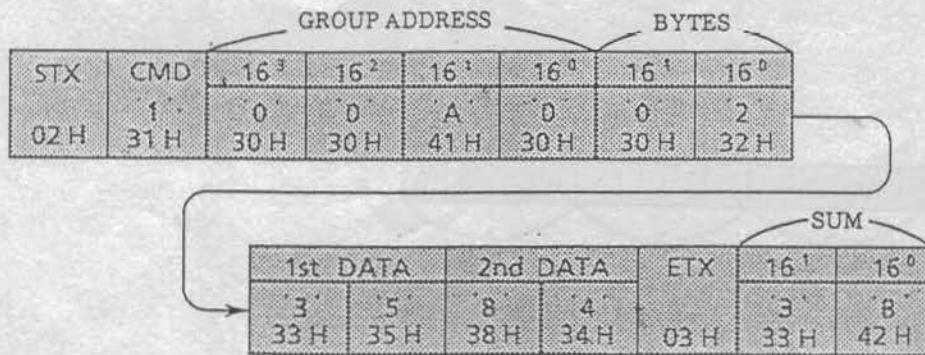
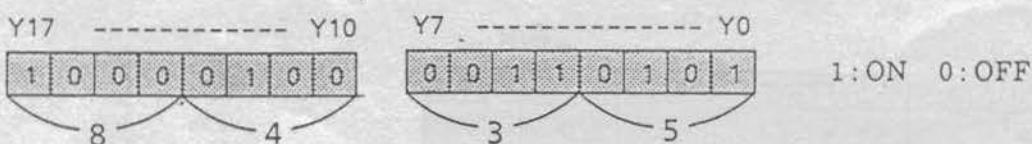
The PC can be in STOP or in RUN mode.

### « COMMAND FROM COMPUTER »



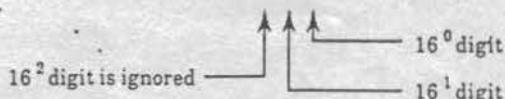
- ① Command CMD 1 writes n bytes of data starting from the group address. (1 character)
- ② Group address is the address of the device group in the PC (see tables 1 to 6). (4 characters)
- ③ BYTES is the n number of bytes of data to be written. Range is 01H to 40H (1 to 64 bytes). (2 characters)

**EX. 1** Forcing 2 bytes of output bits (Y0 to Y7, Y10 to Y17) to the following status :  
(see table 1c for the group address)



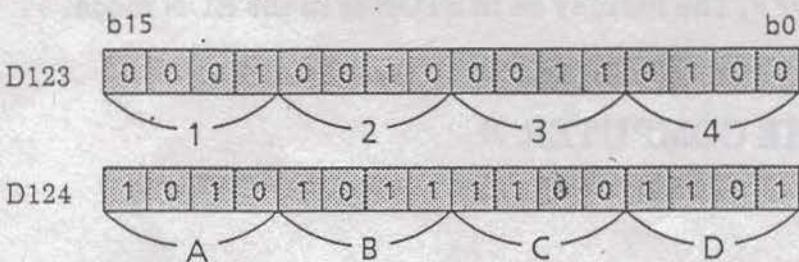
### « NOTE » OVERFLOW OF SUM CHECK DATA

$$\begin{aligned} \text{SUM} = & 31H + 30H + 30H + 41H + 30H + 32H \\ & + 33H + 35H + 38H + 34H + 03H = 23BH \end{aligned}$$



EX. 2

Writing 4 bytes starting at register D123 (D123, D124) to as shown below.  
(see table 5a for group address)



STX	CMD	GROUP ADDRESS				BYTES	
		16 <sup>3</sup>	16 <sup>2</sup>	16 <sup>1</sup>	16 <sup>0</sup>	16 <sup>1</sup>	16 <sup>0</sup>
02 H	31 H	1 H	0 H	F H	6 H	0 H	4 H

SUM							
1st DATA	2nd DATA	3rd DATA	4th DATA	ETX	16 <sup>1</sup>	16 <sup>0</sup>	
3 H 33 H	4 H 34 H	1 H 31 H	2 H 32 H	C H 43 H	D H 44 H	A H 41 H	B H 42 H

### « RESPONSE FROM THE PC »

ACK
06 H

After receiving the command from the computer, data is written at the execution of the next END instruction after which the ACK acknowledge code is replied.

NAK
15 H

When the instruction is not understood or if there is a SUM check error, the negative acknowledge NAK code is replied.

NOTE : The sending of NAK

The ER line of the computer is kept high when codes are being sent from the computer. If this ER line is kept high even after the sending of the commands, the PC will not be able to reply.

This is particularly important when the PC tries to reply with a NAK code due to an error in the previous command for example. If the computer continues to send data, this data will not be read by the PC.

The following two commands allow individual bit images of the X,Y,M,S,T,C bit devices to be forced ON or OFF. The PC may be in STOP or in the RUN mode.

### « COMMANDS FROM THE COMPUTER »

#### FORCE ON

		DEVICE ADDRESS				SUM		
STX	CMD	16 <sup>1</sup>	16 <sup>0</sup>	16 <sup>3</sup>	16 <sup>2</sup>	ETX	16 <sup>1</sup>	16 <sup>0</sup>
02 H	37 H					03 H		

#### FORCE OFF

		DEVICE ADDRESS				SUM		
STX	CMD	16 <sup>1</sup>	16 <sup>0</sup>	16 <sup>3</sup>	16 <sup>2</sup>	ETX	16 <sup>1</sup>	16 <sup>0</sup>
02 H	38 H					03 H		

EX. Forcing output Y23 to ON

Device address is different to that of the group address of multiple read/write commands. These are listed in separate tables such as table 7a, 7b.

		DEVICE ADDRESS				SUM		
STX	CMD	16 <sup>1</sup>	16 <sup>0</sup>	16 <sup>3</sup>	16 <sup>2</sup>	ETX	16 <sup>1</sup>	16 <sup>0</sup>
02 H	37 H	1	3	0	5	03 H	0	3

### « RESPONSE FROM THE PC »

ACK  
06 H

After receiving the command from the computer, the PC executes the forcing at the point when the END instruction is executed. The PC then replies with an ACK code.

NAK  
15 H

When a command is not understood or if there is a SUM check error, the PC replies with a negative acknowledge NAK.

## 6 DEVICE AND GROUP ADDRESSES

The multiple object device commands CMD '0' and CMD '1' uses group addresses which are addresses for 8-bit groups only. They cannot be used for the single device instructions CMD '7' and CMD '8'.

These instructions must use the device address listed in tables 7a and 7b.

### « GROUP ADDRESSES »

Devices	CONTACT XYMS TC	COILS				Current values (T,C) Data registers
		SET YMS RST YMS OUT YMS	OUT T OUT C	PLS Y, M PLF Y, M	RST T RST C	
X	table 1a	—	—	—	—	—
Y	"	as left	—	table 1b	—	—
M	"	as left	—	"	—	—
Special M	"	as left	—	—	—	—
S	"	as left	—	—	—	—
T	"	—	table 1b	—	table 1c	table 2
C 16-bit	"	—	"	—	"	table 3
C 32-bit	"	—	"	—	"	table 4
D	—	—	—	—	—	table 5a, 5b
special D	—	—	—	—	—	table 6
File D	—	—	—	—	—	table 8
Remarks	 The images of these coils are the same images of their contacts.		These coils are different to their contact images.	The image read will show the status of the last scan.	Image of reset coils	

### « DEVICE ADDRESSES »

Table 7a ---- S, X, Y, T devices.

Table 7b ---- M, special M, C devices.

### INACCESSABLE AREAS

#### K VALUE OF TIMERS AND COUNTERS

The constant K setting of timer and counter coils in the program area are not accessible via the interface.

Use data registers to store the setting if this function is desired.

00A1 ← GROUP ADDRESS

TABLE 1a GROUP ADDRESSES OF BIT IMAGES

Example: Y10 — Y17

● X, Y, M, S, T, C CONTACTS

● OUT Y, M, S SET Y, M, S RST Y, M, S COILS

M\*: special M devices

+ \	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0000	0-7	8-15	16-23	24-31	32-39	40-47	48-55	56-63	64-71	72-79	80-87	88-95	96-103	104-111	112-119	120-127
0010	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255
0020	256-263	264-271	272-279	280-287	288-295	296-303	304-311	312-319	320-327	328-335	336-343	344-351	352-359	360-367	368-375	376-383
0030	384-391	392-399	400-407	408-415	416-423	424-431	432-439	440-447	448-455	456-463	464-471	472-479	480-487	488-495	496-503	504-511
0040	512-519	520-527	528-535	536-543	544-551	552-559	560-567	568-575	576-583	584-591	592-599	600-607	608-615	616-623	624-631	632-639
0050	640-647	648-655	656-663	664-671	672-679	680-687	688-695	696-703	704-711	712-719	720-727	728-735	736-743	744-751	752-759	760-767
0060	768-775	776-783	784-791	792-799	800-807	808-815	816-823	824-831	832-839	840-847	848-855	856-863	864-871	872-879	880-887	888-895
0070	896-903	904-911	912-919	920-927	928-935	936-943	944-951	952-959	960-967	968-975	976-983	984-991	992-999			
0080	0-7	10-17	20-27	30-37	40-47	50-57	60-67	70-77	100-107	110-117	120-127	130-137	140-147	150-157	160-167	170-177
0090																
00A0	0-7	10-17	20-27	30-37	40-47	50-57	60-67	70-77	100-107	110-117	120-127	130-137	140-147	150-157	160-167	170-177
00B0																
00C0	0-7	8-15	16-23	24-31	32-39	40-47	48-55	56-63	64-71	72-79	80-87	88-95	96-103	104-111	112-119	120-127
00D0	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255
00E0																
00F0																
0100	0-7	8-15	16-23	24-31	32-39	40-47	48-55	56-63	64-71	72-79	80-87	88-95	96-103	104-111	112-119	120-127
0110	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255
0120	256-263	264-271	272-279	280-287	288-295	296-303	304-311	312-319	320-327	328-335	336-343	344-351	352-359	360-367	368-375	376-383
0130	384-391	392-399	400-407	408-415	416-423	424-431	432-439	440-447	448-455	456-463	464-471	472-479	480-487	488-495	496-503	504-511
0140	512-519	520-527	528-535	536-543	544-551	552-559	560-567	568-575	576-583	584-591	592-599	600-607	608-615	616-623	624-631	632-639
0150	640-647	648-655	656-663	664-671	672-679	680-687	688-695	696-703	704-711	712-719	720-727	728-735	736-743	744-751	752-759	760-767
0160	768-775	776-783	784-791	792-799	800-807	808-815	816-823	824-831	832-839	840-847	848-855	856-863	864-871	872-879	880-887	888-895
0170	896-903	904-911	912-919	920-927	928-935	936-943	944-951	952-959	960-967	968-975	976-983	984-991	992-999	1000-1007	1008-1015	1016-1023
01C0	0-7	8-15	16-23	24-31	32-39	40-47	48-55	56-63	64-71	72-79	80-87	88-95	96-103	104-111	112-119	120-127
01D0	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255
01E0	8000-8007	8008-8015	8016-8023	8024-8031	8032-8039	8040-8047	8048-8055	8056-8063	8064-8071	8072-8079	8080-8087	8088-8095	8096-8103	8104-8111	8112-8119	8120-8127
01F0	8128-8135	8136-8143	8144-8151	8152-8159	8160-8167	8168-8175	8176-8183	8184-8191	8192-8199	8200-8207	8208-8215	8216-8223	8224-8231	8232-8239	8240-8247	8248-8255

S

T

M

C

M\*

J2C0

GROUP ADDRESS

TABLE 1b GROUP ADDRESSES OF BIT IMAGES

Example: T7 — T0

● OUT T, C COIL

● PLS Y, M PLF Y, M COIL (status of previous scan)

+ \	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0200																
02A0	0-7	10-17	20-27	30-37	40-47	50-57	60-67	70-77	100-107	110-117	120-127	130-137	140-147	150-157	160-167	170-177
02B0																
02C0	0-7	8-15	16-23	24-31	32-39	40-47	48-55	56-63	64-71	72-79	80-87	88-95	96-103	104-111	112-119	120-127
02D0	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255
02E0																
02F0																
0300	0-7	8-15	16-23	24-31	32-39	40-47	48-55	56-63	64-71	72-79	80-87	88-95	96-103	104-111	112-119	120-127
0310	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255
0320	256-263	264-271	272-279	280-287	288-295	296-303	304-311	312-319	320-327	328-335	336-343	344-351	352-359	360-367	368-375	376-383
0330	384-391	392-399	400-407	408-415	416-423	424-431	432-439	440-447	448-455	456-463	464-471	472-479	480-487	488-495	496-503	504-511
0340	512-519	520-527	528-535	536-543	544-551	552-559	560-567	568-575	576-583	584-591	592-599	600-607	608-615	616-623	624-631	632-639
0350	640-647	648-655	656-663	664-671	672-679	680-687	688-695	696-703	704-711	712-719	720-727	728-735	736-743	744-751	752-759	760-767
0360	768-775	776-783	784-791	792-799	800-807	808-815	816-823	824-831	832-839	840-847	848-855	856-863	864-871	872-879	880-887	888-895
0370	896-903	904-911	912-919	920-927	928-935	936-943	944-951	952-959	960-967	968-975	976-983	984-991	992-999	1000-1007	1008-1015	1016-1023
03C0	0-7	8-15	16-23	24-31	32-39	40-47	48-55	56-63	64-71	72-79	80-87	88-95	96-103	104-111	112-119	120-127
03D0	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255

TABLE 1C GROUP ADDRESSES OF BIT IMAGES

● RST T, RST C COIL

+ \	0	1	2	3	4	5	6	7	8	9	A	-B	C	D	E	F
0400																
04C0	0-7	8-15	16-23	24-31	32-39	40-47	48-55	56-63	64-71	72-79	80-87	88-95	96-103	104-111	112-119	120-127
04D0	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255
05C0	0-7	8-15	16-23	24-31	32-39	40-47	48-55	56-63	64-71	72-79	80-87	88-95	96-103	104-111	112-119	120-127
05D0	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255

Y  
T  
M

C

T  
C

Example:

08C9

08C8

GROUP  
ADDRESS

TABLE 2 GROUP ADDRESS OF TIMER CURRENT VALUE

	T100								upper 8-bits		lower 8-bits					
+	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0800	0		1		2		3		4		5		6		7	
0810	8		9		10		11		12		13		14		15	
0820	16		17		18		19		20		21		22		23	
0830	24		25		26		27		28		29		30		31	
0840	32		33		34		35		36		37		38		39	
0850	40		41		42		43		44		45		46		47	
0860	48		49		50		51		52		53		54		55	
0870	56		57		58		59		60		61		62		63	
0880	64		65		66		67		68		69		70		71	
0890	72		73		74		75		76		77		78		79	
08A0	80		81		82		83		84		85		86		87	
08B0	88		89		90		91		92		93		94		95	
08C0	96		97		98		99		100		101		102		103	
08D0	104		105		106		107		108		109		110		111	
08E0	112		113		114		115		116		117		118		119	
08F0	120		121		122		123		124		125		126		127	
0900	128		129		130		131		132		133		134		135	
0910	136		137		138		139		140		141		142		143	
0920	144		145		146		147		148		149		150		151	
0930	152		153		154		155		156		157		158		159	
0940	160		161		162		163		164		165		166		167	
0950	168		169		170		171		172		173		174		175	
0960	176		177		178		179		180		181		182		183	
0970	184		185		186		187		188		189		190		191	
0980	192		193		194		195		196		197		198		199	
0990	200		201		202		203		204		205		206		207	
09A0	208		209		210		211		212		213		214		215	
09B0	216		217		218		219		220		221		222		223	
09C0	224		225		226		227		228		229		230		231	
09D0	232		233		234		235		236		237		238		239	
09E0	240		241		242		243		244		245		246		247	
09F0	248		249		250		251		252		253		254		255	

TABLE 3 GROUP ADDRESSES OF 16-BIT COUNTERS

Example : 0A01      0A00 ← GROUP ADDRESS  
 C0      upper 8-bits      lower 8-bits

+ \	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0A00	0		1		2		3		4		5		6		7	
0A10	8		9		10		11		12		13		14		15	
0A20	16		17		18		19		20		21		22		23	
0A30	24		25		26		27		28		29		30		31	
0A40	32		33		34		35		36		37		38		39	
0A50	40		41		42		43		44		45		46		47	
0A60	48		49		50		51		52		53		54		55	
0A70	56		57		58		59		60		61		62		63	
0A80	64		65		66		67		68		69		70		71	
0A90	72		73		74		75		76		77		78		79	
0AA0	80		81		82		83		84		85		86		87	
0AB0	88		89		90		91		92		93		94		95	
0AC0	96		97		98		99		100		101		102		103	
0AD0	104		105		106		107		108		109		110		111	
0AE0	112		113		114		115		116		117		118		119	
0AF0	120		121		122		123		124		125		126		127	
0B00	128		129		130		131		132		133		134		135	
0B10	136		137		138		139		140		141		142		143	
0B20	144		145		146		147		148		149		150		151	
0B30	152		153		154		155		156		157		158		159	
0B40	160		161		162		163		164		165		166		167	
0B50	168		169		170		171		172		173		174		175	
0B60	176		177		178		179		180		181		182		183	
0B70	184		185		186		187		188		189		190		191	
0B80	192		193		194		195		196		197		198		199	
0B90																
0BA0																

TABLE 4 GROUP ADDRESSES OF 32-BIT COUNTERS

Example: C200      0C03      0C02      0C01      0C00 ← GROUP  
b31    b24    b23    b16    b15    b8    b7    b0    ADDRESS

+ /	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0C00	200				201				202				203			
0C10	204				205				206				207			
0C20	208				209				210				211			
0C30	212				213				214				215			
0C40	216				217				218				219			
0C50	220				221				222				223			
0C60	224				225				226				227			
0C70	228				229				230				231			
0C80	232				233				234				235			
0C90	236				237				238				239			
0CA0	240				241				242				243			
0CB0	244				245				246				247			
0CC0	248				249				250				251			
0CD0	252				253				254				255			

TABLE 5a GROUP ADDRESSES OF DATA REGISTERS

	Example: D123								10F7		10F6		GROUP ADDRESS		
									upper 8-bits		lower 8-bits				
+ 0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1000	0		1		2		3		4		5		6		7
1010	8		9		10		11		12		13		14		15
1020	16		17		18		19		20		21		22		23
1030	24		25		26		27		28		29		30		31
1040	32		33		34		35		36		37		38		39
1050	40		41		42		43		44		45		46		47
1060	48		49		50		51		52		53		54		55
1070	56		57		58		59		60		61		62		63
1080	64		65		66		67		68		69		70		71
1090	72		73		74		75		76		77		78		79
10A0	80		81		82		83		84		85		86		87
10B0	88		89		90		91		92		93		94		95
10C0	96		97		98		99		100		101		102		103
10D0	104		105		106		107		108		109		110		111
10E0	112		113		114		115		116		117		118		119
10F0	120		121		122		123		124		125		126		127
1100	128		129		130		131		132		133		134		135
1110	136		137		138		139		140		141		142		143
1120	144		145		146		147		148		149		150		151
1130	152		153		154		155		156		157		158		159
1140	160		161		162		163		164		165		166		167
1150	168		169		170		171		172		173		174		175
1160	176		177		178		179		180		181		182		183
1170	184		185		186		187		188		189		190		191
1180	192		193		194		195		196		197		198		199
1190	200		201		202		203		204		205		206		207
11A0	208		209		210		211		212		213		214		215
11B0	216		217		218		219		220		221		222		223
11C0	224		225		226		227		228		229		230		231
11D0	232		233		234		235		236		237		238		239
11E0	240		241		242		243		244		245		246		247
11F0	248		249		250		251		252		253		254		255

TABLE 5b GROUP ADDRESSES OF DATA REGISTERS

12E1      12E0 ← GROUP  
                  ADDRESS

Example: D368

	upper 8-bits				lower 8-bits			
--	--------------	--	--	--	--------------	--	--	--

+ 0 1 2 3 4 5 6 7 8 9 A B C D E F	1200 256 257 258 259 260 261 262 263	1210 264 265 266 267 268 269 270 271	1220 272 273 274 275 276 277 278 279	1230 280 281 282 283 284 285 286 287	1240 288 289 290 291 292 293 294 295	1250 296 297 298 299 300 301 302 303	1260 304 305 306 307 308 309 310 311	1270 312 313 314 315 316 317 318 319	1280 320 321 322 323 324 325 326 327	1290 328 329 330 331 332 333 334 335	12A0 336 337 338 339 340 341 342 343	12B0 344 345 346 347 348 349 350 351	12C0 352 353 354 355 356 357 358 359	12D0 360 361 362 363 364 365 366 367	12E0 368 369 370 371 372 373 374 375	12F0 376 377 378 379 380 381 382 383	1300 384 385 386 387 388 389 390 391	1310 392 393 394 395 396 397 398 399	1320 400 401 402 403 404 405 406 407	1330 408 409 410 411 412 413 414 415	1340 416 417 418 419 420 421 422 423	1350 424 425 426 427 428 429 430 431	1360 432 433 434 435 436 437 438 439	1370 440 441 442 443 444 445 446 447	1380 448 449 450 451 452 453 454 455	1390 456 457 458 459 460 461 462 463	13A0 464 465 466 467 468 469 470 471	13B0 472 473 474 475 476 477 478 479	13C0 480 481 482 483 484 485 486 487	13D0 488 489 490 491 492 493 494 495	13E0 496 497 498 499 500 501 502 503	13F0 504 505 506 507 508 509 510 511
+ 0 1 2 3 4 5 6 7 8 9 A B C D E F	1200 256 257 258 259 260 261 262 263	1210 264 265 266 267 268 269 270 271	1220 272 273 274 275 276 277 278 279	1230 280 281 282 283 284 285 286 287	1240 288 289 290 291 292 293 294 295	1250 296 297 298 299 300 301 302 303	1260 304 305 306 307 308 309 310 311	1270 312 313 314 315 316 317 318 319	1280 320 321 322 323 324 325 326 327	1290 328 329 330 331 332 333 334 335	12A0 336 337 338 339 340 341 342 343	12B0 344 345 346 347 348 349 350 351	12C0 352 353 354 355 356 357 358 359	12D0 360 361 362 363 364 365 366 367	12E0 368 369 370 371 372 373 374 375	12F0 376 377 378 379 380 381 382 383	1300 384 385 386 387 388 389 390 391	1310 392 393 394 395 396 397 398 399	1320 400 401 402 403 404 405 406 407	1330 408 409 410 411 412 413 414 415	1340 416 417 418 419 420 421 422 423	1350 424 425 426 427 428 429 430 431	1360 432 433 434 435 436 437 438 439	1370 440 441 442 443 444 445 446 447	1380 448 449 450 451 452 453 454 455	1390 456 457 458 459 460 461 462 463	13A0 464 465 466 467 468 469 470 471	13B0 472 473 474 475 476 477 478 479	13C0 480 481 482 483 484 485 486 487	13D0 488 489 490 491 492 493 494 495	13E0 496 497 498 499 500 501 502 503	13F0 504 505 506 507 508 509 510 511

TABLE 6 GROUP ADDRESSES OF SPECIAL REGISTERS

Example:

OE01

OE00

- GROUP  
ADDRESS

+	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
OE00	8000		8001		8002		8003		8004		8005		8006		8007	
OE10	8008		8009		8010		8011		8012		8013		8014		8015	
OE20	8016		8017		8018		8019		8020		8021		8022		8023	
OE30	8024		8025		8026		8027		8028		8029		8030		8031	
OE40	8032		8033		8034		8035		8036		8037		8038		8039	
OE50	8040		8041		8042		8043		8044		8045		8046		8047	
OE60	8048		8049		8050		8051		8052		8053		8054		8055	
OE70	8056		8057		8058		8059		8060		8061		8062		8063	
OE80	8064		8065		8066		8067		8068		8069		8070		8071	
OE90	8072		8073		8074		8075		8076		8077		8078		8079	
0EA0	8080		8081		8082		8083		8084		8085		8086		8087	
0EB0	8088		8089		8090		8091		8092		8093		8094		8095	
0EC0	8096		8097		8098		8099		8100		8101		8102		8103	
0ED0	8104		8105		8106		8107		8108		8109		8110		8111	
0EE0	8112		8113		8114		8115		8116		8117		8118		8119	
0EF0	8120		8121		8122		8123		8124		8125		8126		8127	
0F00	8128		8129		8130		8131		8132		8133		8134		8135	
0F10	8136		8137		8138		8139		8140		8141		8142		8143	
0F20	8144		8145		8146		8147		8148		8149		8150		8151	
0F30	8152		8153		8154		8155		8156		8157		8158		8159	
0F40	8160		8161		8162		8163		8164		8165		8166		8167	
0F50	8168		8169		8170		8171		8172		8173		8174		8175	
0F60	8176		8177		8178		8179		8180		8181		8182		8183	
0F70	8184		8185		8186		8187		8188		8189		8190		8191	
0F80	8192		8193		8194		8195		8196		8197		8198		8199	
0F90	8200		8201		8202		8203		8204		8205		8206		8207	
0FA0	8208		8209		8210		8211		8212		8213		8214		8215	
0FB0	8216		8217		8218		8219		8220		8221		8222		8223	
0FC0	8224		8225		8226		8227		8228		8229		8230		8231	
0FD0	8232		8233		8234		8235		8236		8237		8238		8239	
0FE0	8240		8241		8242		8243		8244		8245		8246		8247	
0FF0	8248		8249		8250		8251		8252		8253		8254		8255	

TABLE 7a DEVICE ADDRESSES OF (S,X,Y,T)

DEVICE ADDRESS	DEVICE NUMBER	DEVICE ADDRESS	DEVICE NUMBER	DEVICE ADDRESS	DEVICE NUMBER
0000 ~ 000F	S 0 ~ S 15	0230 ~ 023F	S 560 ~ S 575	0400 ~ 040F	X 000 ~ X 017
0010 ~ 001F	S 16 ~ S 31	0240 ~ 024F	S 576 ~ S 591	0410 ~ 041F	X 020 ~ X 037
0020 ~ 002F	S 32 ~ S 47	0250 ~ 025F	S 592 ~ S 607	0420 ~ 042F	X 040 ~ X 057
0030 ~ 003F	S 48 ~ S 63	0260 ~ 026F	S 608 ~ S 623	0430 ~ 043F	X 060 ~ X 077
0040 ~ 004F	S 64 ~ S 79	0270 ~ 027F	S 624 ~ S 639	0440 ~ 044F	X 100 ~ X 117
0050 ~ 005F	S 80 ~ S 95	0280 ~ 028F	S 640 ~ S 655	0450 ~ 045F	X 120 ~ X 137
0060 ~ 006F	S 96 ~ S 111	0290 ~ 029F	S 656 ~ S 671	0460 ~ 046F	X 140 ~ X 157
0070 ~ 007F	S 112 ~ S 127	02A0 ~ 02AF	S 672 ~ S 687	0470 ~ 047F	X 160 ~ X 177
0080 ~ 008F	S 128 ~ S 143	02B0 ~ 02BF	S 688 ~ S 703	0500 ~ 050F	Y 000 ~ Y 017
0090 ~ 009F	S 144 ~ S 159	02C0 ~ 02CF	S 704 ~ S 719	0510 ~ 051F	Y 020 ~ Y 037
00A0 ~ 00AF	S 160 ~ S 175	02D0 ~ 02DF	S 720 ~ S 735	0520 ~ 052F	Y 040 ~ Y 057
00B0 ~ 00BF	S 176 ~ S 191	02E0 ~ 02EF	S 736 ~ S 751	0530 ~ 053F	Y 060 ~ Y 077
00C0 ~ 00CF	S 192 ~ S 207	02F0 ~ 02FF	S 752 ~ S 767	0540 ~ 054F	Y 100 ~ Y 117
00D0 ~ 00DF	S 208 ~ S 223	0300 ~ 030F	S 768 ~ S 783	0550 ~ 055F	Y 120 ~ Y 137
00E0 ~ 00EF	S 224 ~ S 239	0300 ~ 031F	S 784 ~ S 799	0560 ~ 056F	Y 140 ~ Y 157
00F0 ~ 00FF	S 240 ~ S 255	0320 ~ 032F	S 800 ~ S 815	0570 ~ 057F	Y 160 ~ Y 177
0100 ~ 000F	S 256 ~ S 271	0330 ~ 033F	S 816 ~ S 831	0600 ~ 060F	T 0 ~ T 15
0110 ~ 011F	S 272 ~ S 287	0340 ~ 034F	S 832 ~ S 847	0610 ~ 061F	T 16 ~ T 31
0120 ~ 012F	S 288 ~ S 303	0350 ~ 035F	S 848 ~ S 863	0620 ~ 062F	T 32 ~ T 47
0130 ~ 013F	S 304 ~ S 319	0360 ~ 036F	S 864 ~ S 879	0630 ~ 063F	T 48 ~ T 63
0140 ~ 014F	S 320 ~ S 335	0370 ~ 037F	S 880 ~ S 895	0640 ~ 064F	T 64 ~ T 79
0150 ~ 015F	S 336 ~ S 351	0380 ~ 038F	S 896 ~ S 911	0650 ~ 065F	T 80 ~ T 95
0160 ~ 016F	S 352 ~ S 367	0390 ~ 039F	S 912 ~ S 927	0660 ~ 066F	T 96 ~ T 111
0170 ~ 017F	S 368 ~ S 383	03A0 ~ 03AF	S 928 ~ S 943	0670 ~ 067F	T 112 ~ T 127
0180 ~ 018F	S 384 ~ S 399	03B0 ~ 03BF	S 944 ~ S 959	0680 ~ 068F	T 128 ~ T 143
0190 ~ 019F	S 400 ~ S 415	03C0 ~ 03CF	S 960 ~ S 975	0690 ~ 069F	T 144 ~ T 159
01A0 ~ 01AF	S 416 ~ S 431	03D0 ~ 03DF	S 976 ~ S 991	06A0 ~ 06AF	T 160 ~ T 175
01B0 ~ 01BF	S 432 ~ S 447	03E0 ~ 03E7	S 992 ~ S 999	06B0 ~ 06BF	T 176 ~ T 191
01C0 ~ 01CF	S 448 ~ S 463			06C0 ~ 06CF	T 192 ~ T 207
01D0 ~ 01DF	S 464 ~ S 479			06D0 ~ 06DF	T 208 ~ T 223
01E0 ~ 01EF	S 480 ~ S 495			06E0 ~ 06EF	T 224 ~ T 239
01F0 ~ 01FF	S 496 ~ S 511			06F0 ~ 06FF	T 240 ~ T 255
0200 ~ 020F	S 512 ~ S 527				
0210 ~ 021F	S 528 ~ S 543				
0220 ~ 022F	S 544 ~ S 559				

Examples : address of S561 is 0231H

address of S574 is 023EH

TABLE 7b DEVICE ADDRESS OF ( M, C, SPECIAL M )

DEVICE ADDRESS	DEVICE NUMBER
0800 ~ 080F	M 0 ~ M 15
0810 ~ 081F	M 16 ~ M 31
0820 ~ 082F	M 32 ~ M 47
0830 ~ 083F	M 48 ~ M 63
0840 ~ 084F	M 64 ~ M 79
0850 ~ 085F	M 80 ~ M 95
0860 ~ 086F	M 96 ~ M 111
0870 ~ 087F	M 112 ~ M 127
0880 ~ 088F	M 128 ~ M 143
0890 ~ 089F	M 144 ~ M 159
08A0 ~ 08AF	M 160 ~ M 175
08B0 ~ 08BF	M 176 ~ M 191
08C0 ~ 08CF	M 192 ~ M 207
08D0 ~ 08DF	M 208 ~ M 223
08E0 ~ 08EF	M 224 ~ M 239
08F0 ~ 08FF	M 240 ~ M 255
0900 ~ 090F	M 256 ~ M 271
0910 ~ 091F	M 272 ~ M 287
0920 ~ 092F	M 288 ~ M 303
0930 ~ 093F	M 304 ~ M 319
0940 ~ 094F	M 320 ~ M 335
0950 ~ 095F	M 336 ~ M 351
0960 ~ 096F	M 352 ~ M 367
0970 ~ 097F	M 368 ~ M 383
0980 ~ 098F	M 384 ~ M 399
0990 ~ 099F	M 400 ~ M 415
09A0 ~ 09AF	M 416 ~ M 431
09B0 ~ 09BF	M 432 ~ M 447
09C0 ~ 09CF	M 448 ~ M 463
09D0 ~ 09DF	M 464 ~ M 479
09E0 ~ 09EF	M 480 ~ M 495
09F0 ~ 09FF	M 496 ~ M 511
0A09 ~ 0A0F	M 512 ~ M 527
0A10 ~ 0A1F	M 528 ~ M 543
0A20 ~ 0A2F	M 544 ~ M 559

DEVICE ADDRESS	DEVICE NUMBER
0A30 ~ 0A3F	M 560 ~ M 575
0A40 ~ 0A4F	M 576 ~ M 591
0A50 ~ 0A5F	M 592 ~ M 607
0A60 ~ 0A6F	M 608 ~ M 623
0A70 ~ 0A7F	M 624 ~ M 639
0A80 ~ 0A8F	M 640 ~ M 655
0A90 ~ 0A9F	M 656 ~ M 671
0AA0 ~ 0AAF	M 672 ~ M 687
0AB0 ~ 0ABF	M 688 ~ M 703
0AC0 ~ 0ACF	M 704 ~ M 719
0AD0 ~ 0ADF	M 720 ~ M 735
0AE0 ~ 0AEF	M 736 ~ M 751
0AF0 ~ 0AFF	M 752 ~ M 767
0B00 ~ 0B0F	M 768 ~ M 783
0B00 ~ 0B1F	M 784 ~ M 799
0B20 ~ 0B2F	M 800 ~ M 815
0B30 ~ 0B3F	M 816 ~ M 831
0B40 ~ 0B4F	M 832 ~ M 847
0B50 ~ 0B5F	M 848 ~ M 863
0B60 ~ 0B6F	M 864 ~ M 879
0B70 ~ 0B7F	M 880 ~ M 895
0B80 ~ 0B8F	M 896 ~ M 911
0B90 ~ 0B9F	M 912 ~ M 927
0BA0 ~ 0BAF	M 928 ~ M 943
0BB0 ~ 0BBF	M 944 ~ M 959
0BC0 ~ 0BCF	M 960 ~ M 975
0BD0 ~ 0BDF	M 976 ~ M 991
0BE0 ~ 0BEF	M 992 ~ M 999
0BF0 ~ 0BFF	M 1008 ~ M 1023

Examples : address of M160 is 08A0H  
address of M161 is 08A1H  
address of M174 is 08AEH  
address of M175 is 08AFH

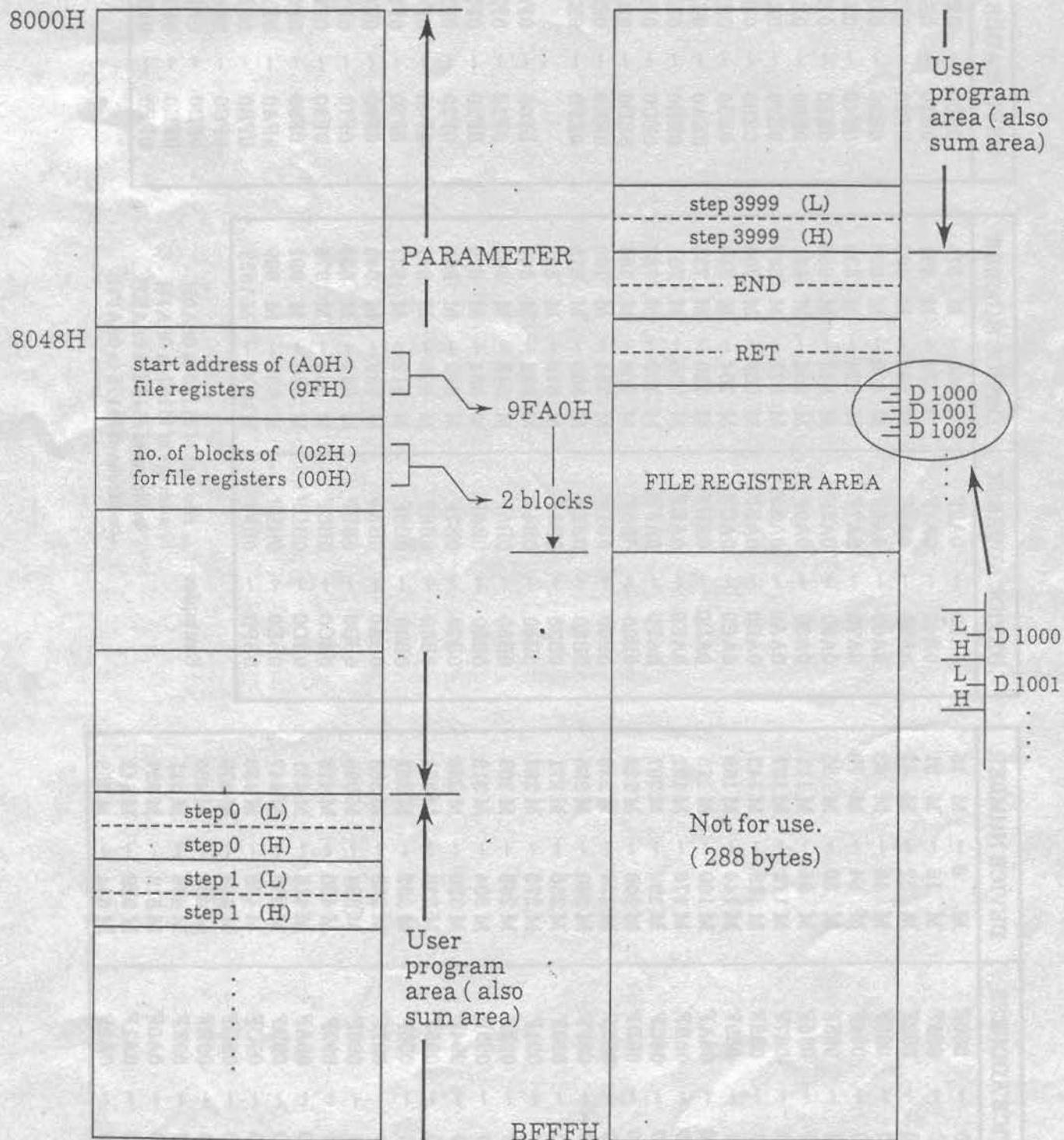
DEVICE ADDRESS	DEVICE NUMBER
0E00 ~ 0EOF	C 0 ~ C 15
0E10 ~ 0E1F	C 16 ~ C 31
0E20 ~ 0E2F	C 32 ~ C 47
0E30 ~ 0E3F	C 48 ~ C 63
0E40 ~ 0E4F	C 64 ~ C 79
0E50 ~ 0E5F	C 80 ~ C 95
0E60 ~ 0E6F	C 96 ~ C 111
0E70 ~ 0E7F	C 112 ~ C 127
0E80 ~ 0E8F	C 128 ~ C 143
0E90 ~ 0E9F	C 144 ~ C 159
0EA0 ~ 0EAF	C 160 ~ C 175
0EB0 ~ 0EBF	C 176 ~ C 191
0EC0 ~ 0ECF	C 192 ~ C 207
0ED0 ~ 0EDF	C 208 ~ C 223
0EE0 ~ 0EEF	C 224 ~ C 239
0EF0 ~ 0EFF	C 240 ~ C 255
OF00 ~ OF0F	M 8000 ~ M 8015
OF10 ~ OF1F	M 8016 ~ M 8031
OF20 ~ OF2F	M 8032 ~ M 8047
OF30 ~ OF3F	M 8048 ~ M 8063
OF40 ~ OF4F	M 8064 ~ M 8079
OF50 ~ OF5F	M 8080 ~ M 8095
OF60 ~ OF6F	M 8968 ~ M 8111
OF70 ~ OF7F	M 8112 ~ M 8127
OF80 ~ OF8F	M 8128 ~ M 8143
OF90 ~ OF9F	M 8144 ~ M 8159
OFA0 ~ OFAF	M 8160 ~ M 8175
OFB0 ~ OFBF	M 8176 ~ M 8191
-OFC0 ~ OFCF	M 8192 ~ M 8207
OFD0 ~ OFDF	M 8208 ~ M 8223
OFE0 ~ OFEF	M 8224 ~ M 8239
OFF0 ~ OFFF	M 8240 ~ M 8255

## Table 8 Location of file registers

From the setting of the parameter data, the position of the file register in the program memory is determined.

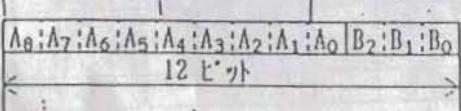
EXAMPLE: 8K step mode  
(1 block = 500 steps)

File registers : 2 blocks ( 2000 bytes)  
Each file Reg : 2 bytes



## FX2C イメージメモリ MAP (ビットデバイス)

$A_8\ A_7$	$A_6\ A_5$	$A_4\ A_3$	$A_2\ A_1\ A_0$	$B_2\ B_1\ B_0$	O	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	デバイス
00	0- 7	8- 15	16- 23	24- 31	32- 39	40- 47	48- 55	56- 63	64- 71	72- 79	80- 87	88- 95	96-103	104-111	112-119	120-127					
01	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255					
02	256-263	264-271	272-279	280-287	288-295	296-303	304-311	312-319	320-327	328-335	336-343	344-351	352-359	360-367	368-375	376-383					
03	384-391	392-399	400-407	408-415	416-423	424-431	432-439	440-447	448-455	456-463	464-471	472-479	480-487	488-495	496-503	504-511	S(DEC)				
04	512-519	520-527	528-535	536-543	544-551	552-559	560-567	568-575	576-583	584-591	592-599	600-607	608-615	616-623	624-631	632-639	1000点				
05	640-647	648-655	656-663	664-671	672-679	680-687	688-695	696-703	704-711	712-719	720-727	728-735	736-743	744-751	752-759	760-767					
06	768-775	776-783	784-791	792-799	800-807	808-815	816-823	824-831	832-839	840-847	848-855	856-863	864-871	872-879	880-887	888-895					
07	896-903	904-911	912-919	920-927	928-935	936-943	944-951	952-959	960-967	968-975	976-983	984-991	992-999	"	"	"	"	"	"		
08	0- 7	10- 17	20- 27	30- 37	40- 47	50- 57	60- 67	70- 77	100-107	110-117	120-127	130-137	140-147	150-157	160-167	170-177	X(OCT)				
09	200-207	210-217	220-227	230-237	240-247	250-257	260-267	270-277	300-307	310-317	320-327	330-337	340-347	350-357	360-367	370-377	256点				
0A	0- 7	10- 17	20- 27	30- 37	40- 47	50- 57	60- 67	70- 77	100-107	110-117	120-127	130-137	140-147	150-157	160-167	170-177	Y(OCT)				
0B	200-207	210-217	220-227	230-237	240-247	250-257	260-267	270-277	300-307	310-317	320-327	330-337	340-347	350-357	360-367	370-377	256点				
0C	0- 7	8- 15	16- 23	24- 31	32- 39	40- 47	48- 55	56- 63	64- 71	72- 79	80- 87	88- 95	96-103	104-111	112-119	120-127	T(DEC)				
0D	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255	256点				
OE																					
OF																					
10	0- 7	8- 15	16- 23	24- 31	32- 39	40- 47	48- 55	56- 63	64- 71	72- 79	80- 87	88- 95	96-103	104-111	112-119	120-127					
11	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255					
12	256-263	264-271	272-279	280-287	288-295	296-303	304-311	312-319	320-327	328-335	336-343	344-351	352-359	360-367	368-375	376-383					
13	384-391	392-399	400-407	408-415	416-423	424-431	432-439	440-447	448-455	456-463	464-471	472-479	480-487	488-495	496-503	504-511					
14	512-519	520-527	528-535	536-543	544-551	552-559	560-567	568-575	576-583	584-591	592-599	600-607	608-615	616-623	624-631	632-639					
15	640-647	648-655	656-663	664-671	672-679	680-687	688-695	696-703	704-711	712-719	720-727	728-735	736-743	744-751	752-759	760-767					
16	768-775	776-783	784-791	792-799	800-807	808-815	816-823	824-831	832-839	840-847	848-855	856-863	864-871	872-879	880-887	888-895	M(DEC)				
17	896-903	904-911	912-919	920-927	928-935	936-943	944-951	952-959	960-967	968-975	976-983	984-991	992-999	1000-007	1008-015	1016-023	1536点				
18	1024-031	1032-039	1040-047	1048-055	1056-063	1064-071	1072-079	1080-087	1088-095	1096-103	1104-111	1112-119	1120-127	1128-135	1136-143	1144-151					
19	1152-159	1160-167	1168-175	1176-183	1184-191	1192-199	1200-207	1208-215	1216-223	1224-231	1232-239	1240-247	1248-255	1256-263	1264-271	1272-279					
1A	1280-287	1288-295	1296-303	1304-311	1312-319	1320-327	1328-335	1336-343	1344-351	1352-359	1360-367	1368-375	1376-383	1384-391	1392-399	1400-407					
1B	1408-415	1416-423	1424-431	1432-439	1440-447	1448-455	1456-463	1464-471	1472-479	1480-487	1488-495	1496-503	1504-511	1512-519	1520-527	1528-535					
1C	0- 7	8- 15	16- 23	24- 31	32- 39	40- 47	48- 55	56- 63	64- 71	72- 79	80- 87	88- 95	96-103	104-111	112-119	120-127	C(DEC)				
1D	128-135	136-143	144-151	152-159	160-167	168-175	176-183	184-191	192-199	200-207	208-215	216-223	224-231	232-239	240-247	248-255	256点				
1E	8000-007	8008-015	8016-023	8024-031	8032-039	8040-047	8048-055	8056-063	8064-071	8072-079	8080-087	8088-095	8096-103	8014-111	8112-119	8120-127	4M				
1F	8128-135	8136-143	8144-151	8152-159	8160-167	8168-175	8176-183	8184-191	8192-199	8200-207	8208-215	8216-223	8224-231	8232-239	8240-247	8248-255	256点				



EX<sub>2c</sub> D データレジスタ MAP (III)

$A_{23\_4}$	$A_{1\_0}$	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
	1 140	D512		D513		D514		D515		D516		D517		D518		D519	
	1 141	D520		D521		D522		D523		D524		D525		D526		D527	
	1 142	D528		D529		D530		D531		D532		D533		D534		D535	
	1 143	D536		D537		D538		D539		D540		D541		D542		D543	
	1 144	D544		D545		D546		D547		D548		D549		D550		D551	
	1 145	D552		D553		D554		D555		D556		D557		D558		D559	
	1 146	D560		D561		D562		D563		D564		D565		D566		D567	
	1 147	D568		D569		D570		D571		D572		D573		D574		D575	
	1 148	D576		D577		D578		D579		D580		D581		D582		D583	
	1 149	D584		D585		D586		D587		D588		D589		D590		D591	
	1 14A	D592		D593		D594		D595		D596		D597		D598		D599	
	1 14B	D600		D601		D602		D603		D604		D605		D606		D607	
	1 14C	D608		D609		D610		D611		D612		D613		D614		D615	
	1 14D	D616		D617		D618		D619		D620		D621		D622		D623	
	1 14E	D624		D625		D626		D627		D628		D629		D630		D631	
	1 14F	D632		D633		D634		D635		D636		D637		D638		D639	
	1 150	D640		D641		D642		D643		D644		D645		D646		D647	
	1 151	D648		D649		D650		D651		D652		D653		D654		D655	
	1 152	D656		D657		D658		D659		D660		D661		D662		D663	
	1 153	D664		D665		D666		D667		D668		D669		D670		D671	
	1 154	D672		D673		D674		D675		D676		D677		D678		D679	
	1 155	D680		D681		D682		D683		D684		D685		D686		D687	
	1 156	D688		D689		D690		D691		D692		D693		D694		D695	
	1 157	D696		D697		D698		D699		D700		D701		D702		D703	
	1 158	D704		D705		D706		D707		D708		D709		D710		D711	
	1 159	D712		D713		D714		D715		D716		D717		D718		D719	
	1 15A	D720		D721		D722		D723		D724		D725		D726		D727	
	1 15B	D728		D729		D730		D731		D732		D733		D734		D735	
	1 15C	D736		D737		D738		D739		D740		D741		D742		D743	
	1 15D	D744		D745		D746		D747		D748		D749		D750		D751	
	1 15E	D752		D753		D754		D755		D756		D757		D758		D759	
	1 15F	D760		D761		D762		D763		D764		D765		D766		D767	

b <sub>15</sub>	II奇	b <sub>8</sub>	b <sub>7</sub>	L偶	b <sub>0</sub>
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