MODEL-1950

PROM PROGRAMMER
OPERATION MANUAL

Preface

For our valued customers

Thank you for purchasing Minato Gang Programmer M1950.

Please read this operation manual before operating M1950.
In order to use it safely and to fully utilize the performance of M1950, we strongly suggest you to read this operation manual.

Revision

M1950-016A-K0 2006/06/15 Rev. 1.00
M1950-016A-K1 2009/07/30 Rev. 2.00

Outline

Outline of the product

M1950 gang programmer is designed to target high-density device with fast speed and large standard 512 Mbyte (4 Gbit) memory. M1950 can program 16 pieces of IC simultaneously.

M1950 supports not only RS232C, but also USB and Compact Flash as interfaces. These interfaces are ideal for FA line where flexibility is required.

In spite of fast speed, it has many features to ensure safe and stable programming.

Key features

Fast operating speed
Standard 4 Gbit buffer memory
Mamory is expandable to 256 Gbit.
Supporting various devices

Specifications

Simultaneous programming

Maximum 16 pieces of IC at once

Display

40characters x 4 lines LCD panel
2 color LED lamp on each socket

Buffer Memory

Standard 4 Gbit (Maximum 256 Gbit)

Interface

USB Interface	USB Rev.2.0 compliant
Serial Interface	RS232C (Standard)

Operating Temp.

5 - 35 ℃

Power Supply

AC100 - 240 V
50 - 60 Hz

Power Consumption

200 VA Max

Fuse

3.15 A

Size

W: 380 mm
D : 410 mm
H : 150 mm

Weight

9 kg

Warranty

Warranty

1. Please check with local distributor for the warranty.
2. Minato cannot provide local warranty for the product that is purchased in Japan and delivered to overseas.
3. We strongly suggest you to keep the original package in case of maintenace service.

Exempt of warranty

The following items are not a part of the warranty of M1950.

1. IC and data to program
2. Direct and indirect cost due to damage of M1950
3. M1950 purchased in Japan and brought to overseas
4. Damage of any direct and indirect cost due to use of third party items (example: adapter, software) on M1950
5. Repair or modification of M1950 by unauthorized party
6. Any damage due to misuse of M1950
7. Version up of M1950

Maintenance of M1950

M1950 Version-up (Device/Software support)

Version-up to add new IC support is not free of charge even within warranty period.

For safe use of M1950

Caution on safety

In this operation part of manual, caution marks are described to use gang programmer M1950 safely.

If any misuse of M1950 can be a cause of the damage of your assets
And harms on you, the following caustion marks are indicated.

Explanation of caution marks

⚠Warning	If you do not follow the instruction of this operation manual, it can cause death or serious injury.
⚠Caution	If you do not follow the instruction of this operation manual, it can harm yourself or cause damage on your assets.

Warning

Compulsion

Please follow the warning and caution instructions of Minato Electronic Inc.

Do not dismantle

Do not dismantle product that can cause a fire or electric shock.

Unplug

If you see any smoke or sense any bad smell, unplug the power cable immidately.

If you do not do so, that can cause a fire or electric shock.

Unplug

If the product is dropped or damaged, unplug the power cable immediately.

If you do not do so, that can cause a fire or electric shock.

Unplug

If any liquid or foreign objects are got into the product, unplug the power cable immediately.

If you do not do so, that can cause a fire or electric shock.

Caution

Compulsion

Operator who had read this operation manual and understand the operation should use M1950.

Wrong operation can cause to damage this product or IC device.

Compulsion

In order to avoid shock of electrostatic, discharge electrostatic before operating M1950.

If you do not so so, that can damage this product or IC device.

Compulsion

Clean up the surface of M1950, socket adapter and air filter.

Assumulated dusts can cause a fire or damage of M1950.

Compulsion

Do not program IC device when Empty Socket (redLED) is indicated.

If you do not do so, IC device is heated up and can cause damage of IC deivce or M1950.

Compulsion

To judge PASS/ FAIL, please check the check-sum.

Bad devices can be mixed with programmed devices.

Compulsion

Caution for accessories.

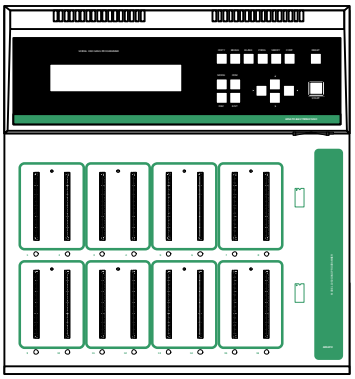
Standard cable complies with Japanese regulation.

If you are going to purchase M1950 in Japan and going to bring it to overseas, please follow the safety standard of the country.

CONTENTS

MODEL-1950 packing list

The following indicates the list of packing in the box of M1950. Please check if you receive all items.



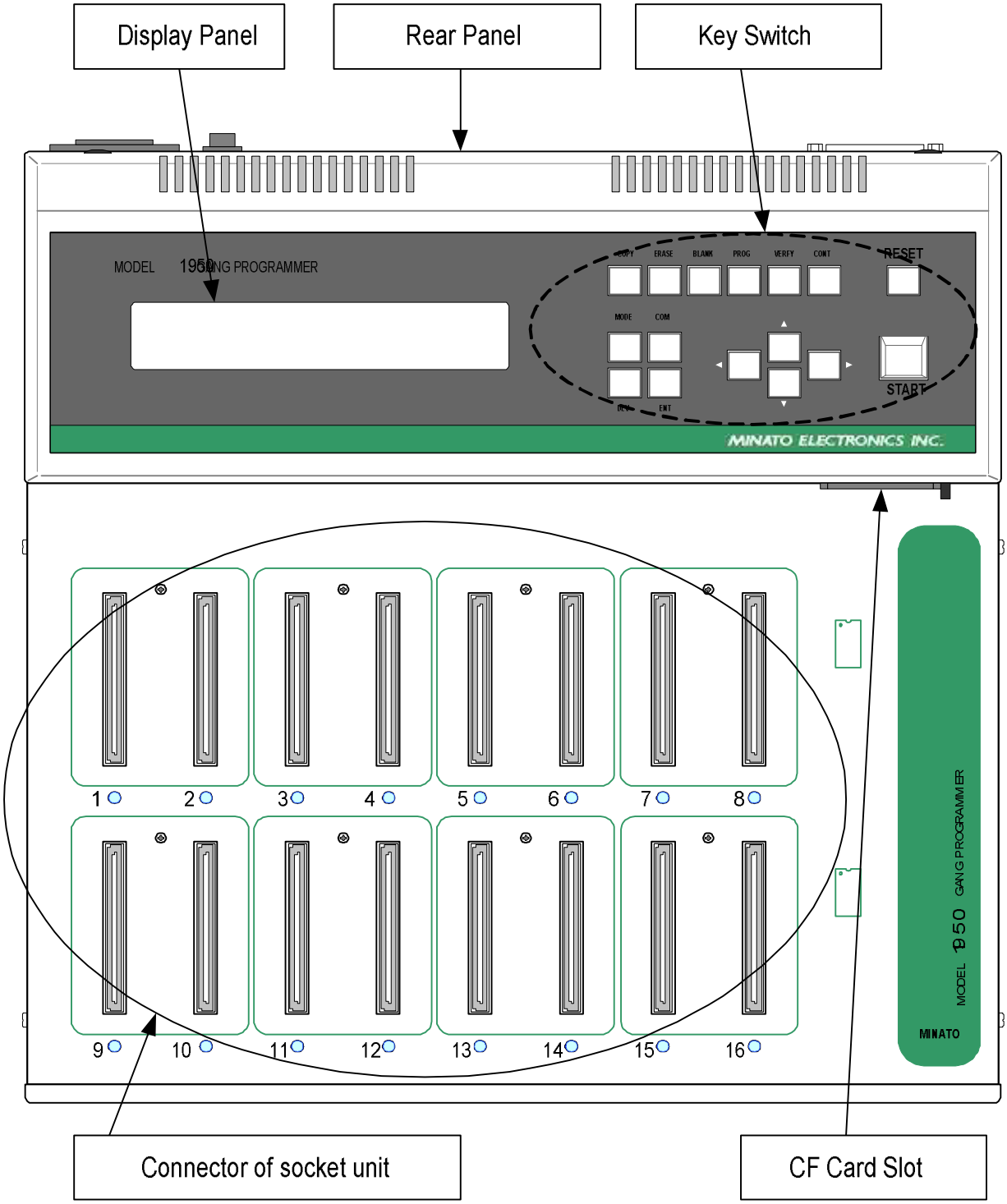
M1950 main unit : 1 set

AC Cable : 1 piece

CD : M1950 Operation manual /USB driver : 1 piece

Name of each part and its function on M1950

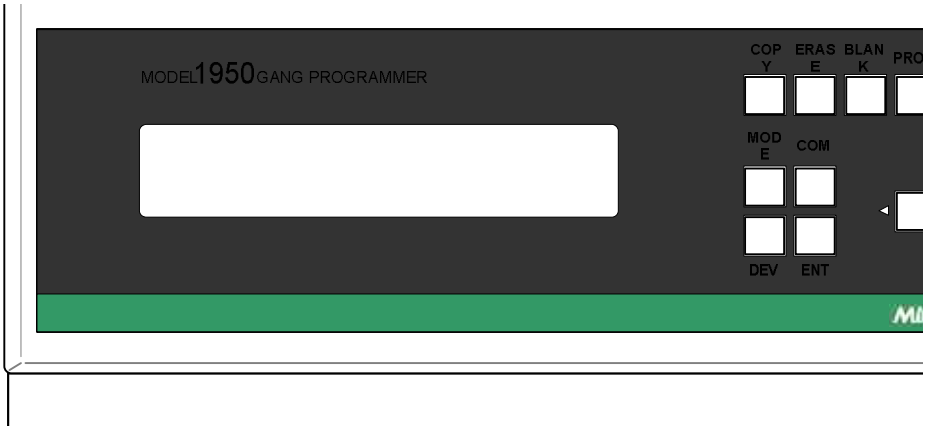
In order to operate M1950 properly, please understand the function of each part and its name. The details are described in following pages.



Display Panel

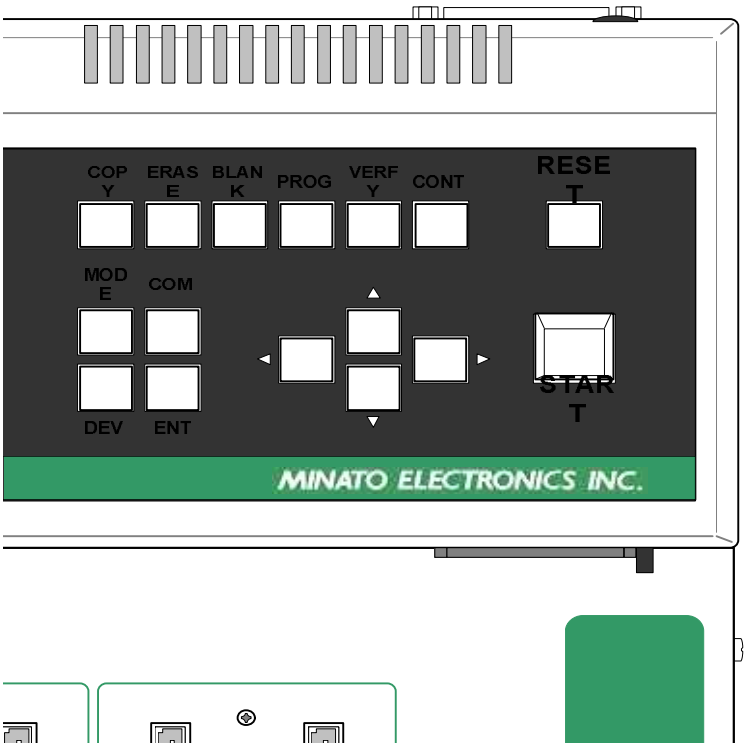
40 Characters x 4 lines LCD

Operation setting, operation mode are displayed on this LCD.

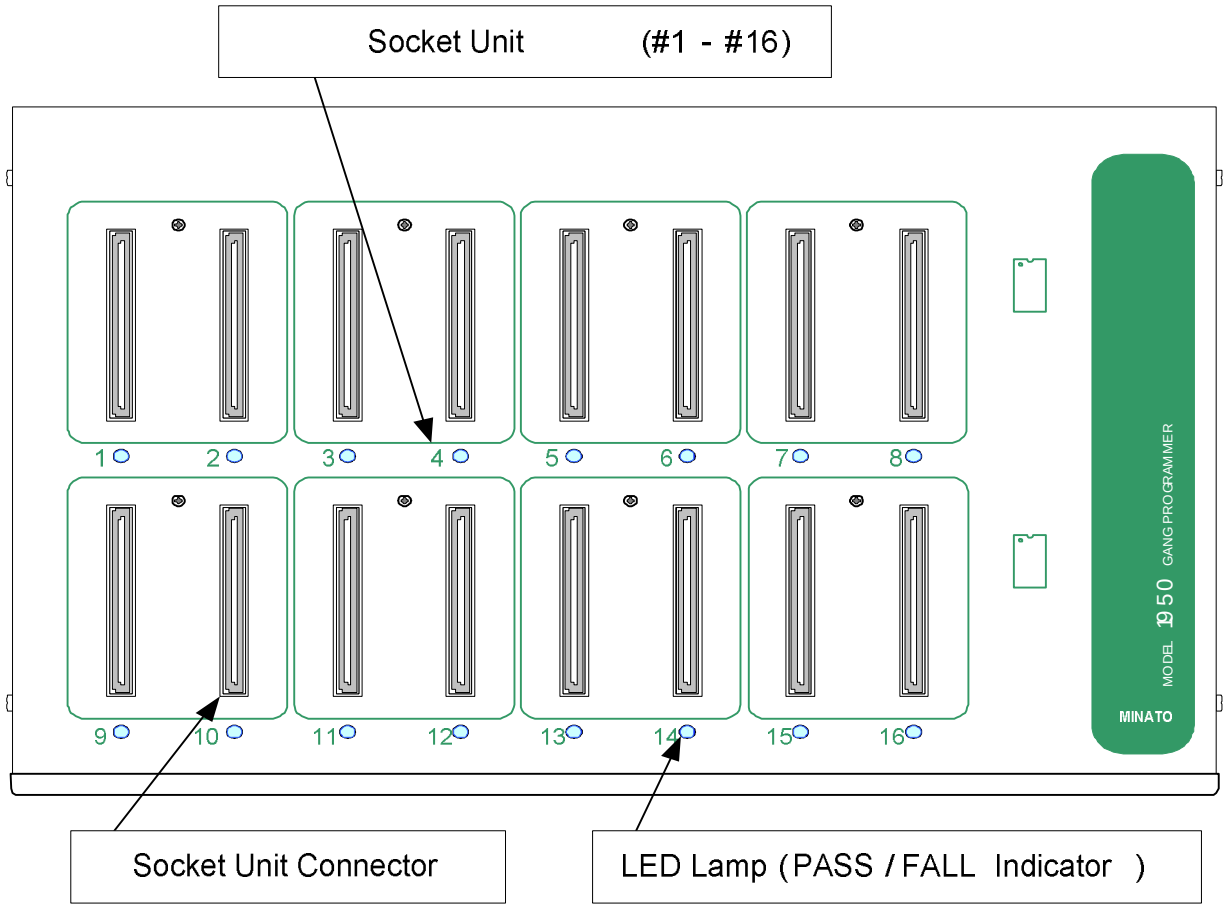


Key Switch

Stand-alone operation of M1950 is carried out by these operation keys. Please refer to The Operation of Each Key of M1950 for detail.



Socket Installation Area



Socket Unit

The number is assigned according to the position of the connector
In this operation manual, # incidated the number of the socket unit.

(Example)
Socket unit 2 is described as #2.

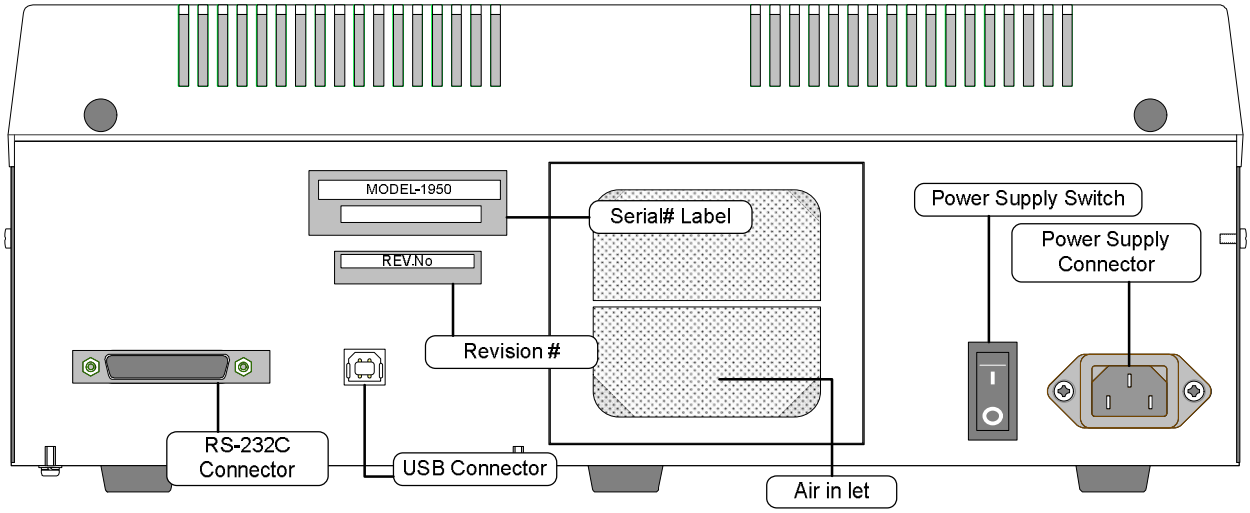
Socket Unit Connector

This is the connector to install optional socket unit.

LED Lamp (PASS/FAILIndicator)

Different color is lit according the the results of the operation.
PASS: Green in color
FAIL: Red in color

Rear Panel



Power Connector

This is an AC power supply connector with (3.15A) fuse.

Power Supply Swith

This is a power supply switch

USB Connector

This is a USB connector.

RS-232C Connector

This is a serial interface connector RS-232C) .

Air Inlet

This is an air inlet for cooling fan of M1950.

Do not cover it up.

Serial Number

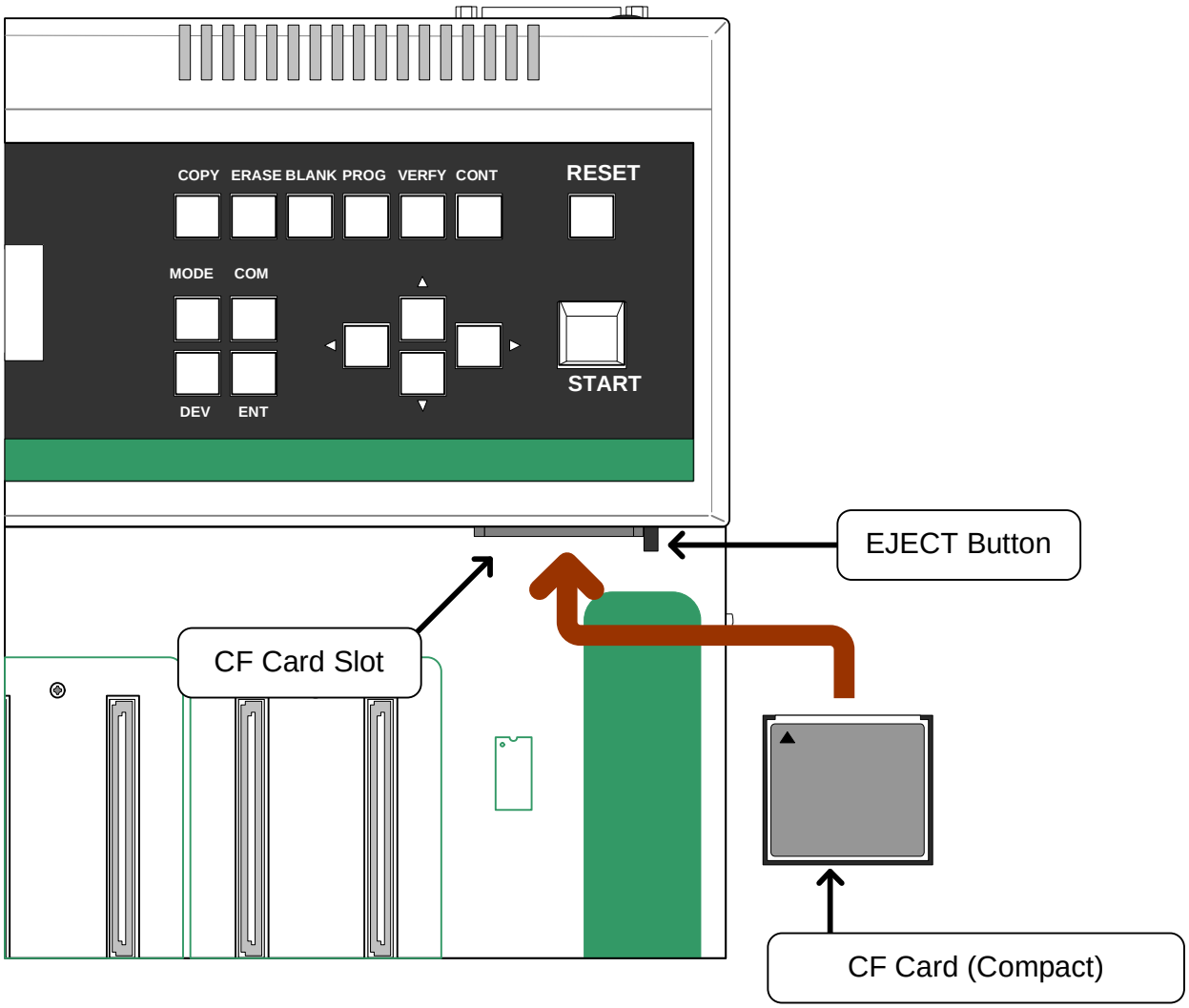
This is a serial number label unique for each M1950. When you make a service call, this number is required.

Revision Number

This is a revsion number label. When you make a service call, this number is required.

Compact Flash Slot

On the right side of M1950, there is a button to eject CF card.

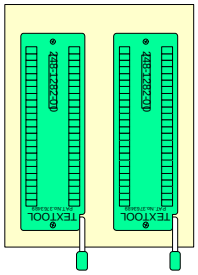


Optional Items

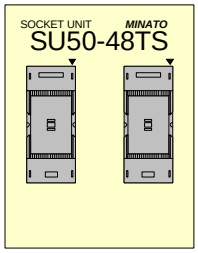
The following items are available as optional accessories for M1950.
Socket unit are required to program IC on M1950.

Socket Unit

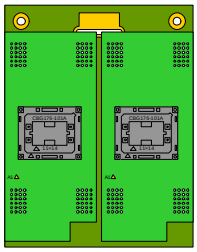
SU50-48DP



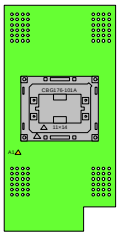
SU50-48TS



SU50-xxxx



Socket Adaptor



Hxx-xxxx

CD

Remote Control Software
XPROM

Minato Electronics Inc also carry Automatic handler for M1950.
Please contact to Minato or our distributor for detail

Socket Unit

We offer various types of socket units. This page describes how to install each socket unit and its direction on M1950.

For installation of other socket, please contact to Minato or our distributor.

Various kinds of socket unit

The followings are four major type of socket unit.

SU50-48DP

This socket unit is targeted for DIP type device.

It is good to install many different types of socket adapters on it.

SU50-48TS

This socket unit is targeted for 48TSOP type IC.

SU50-xxxx

This socket unit is targeted for other type of special package that can not be supported by other standard type of socket unit described in this page.

Various types of Socket Adapters

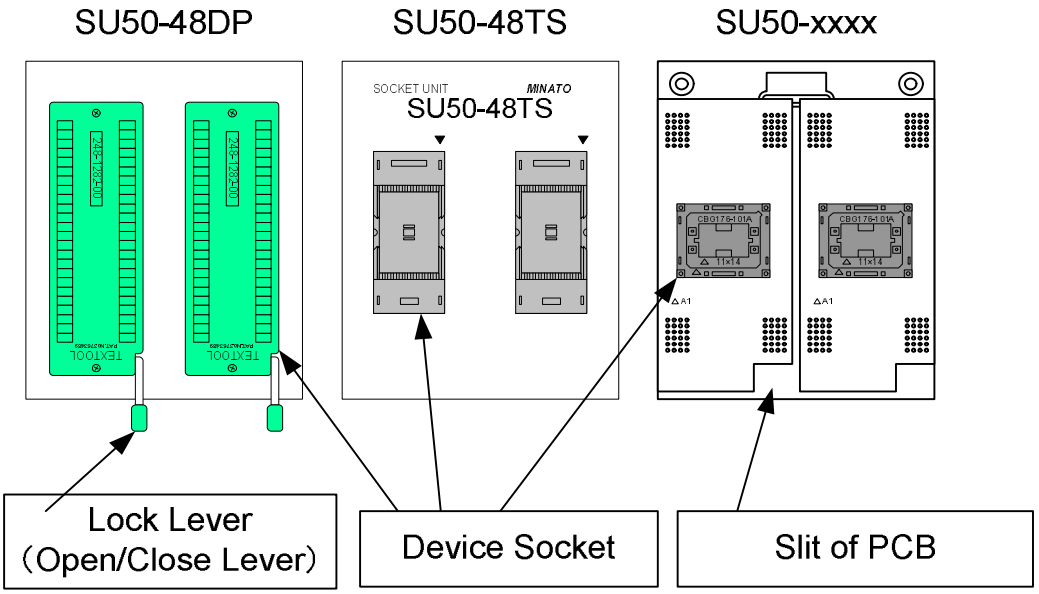
Some adapters of M1940 can be used on M1950.

To use it on M1950, SU50-48DP is required.

Please refer to Socket Adapter for detail.

Direction to install socket unit

This page describes the direction to install socket unit onto M1950.



Lock Lever (Open/Close Lever)

To install device, lever must be up (open). To fix device, lever must be up (close). When lever is up, M1950 is ready with other setting made.

Devcie Socket

By pressing down device socket to open or close, TSOP, BGA type device other than DIP type can be set.

Slit of PCB

Check the slit to find the direction of socket.

Direction to install socket unit

Please follow the direction as described below.

SU50-48DP Socket Unit

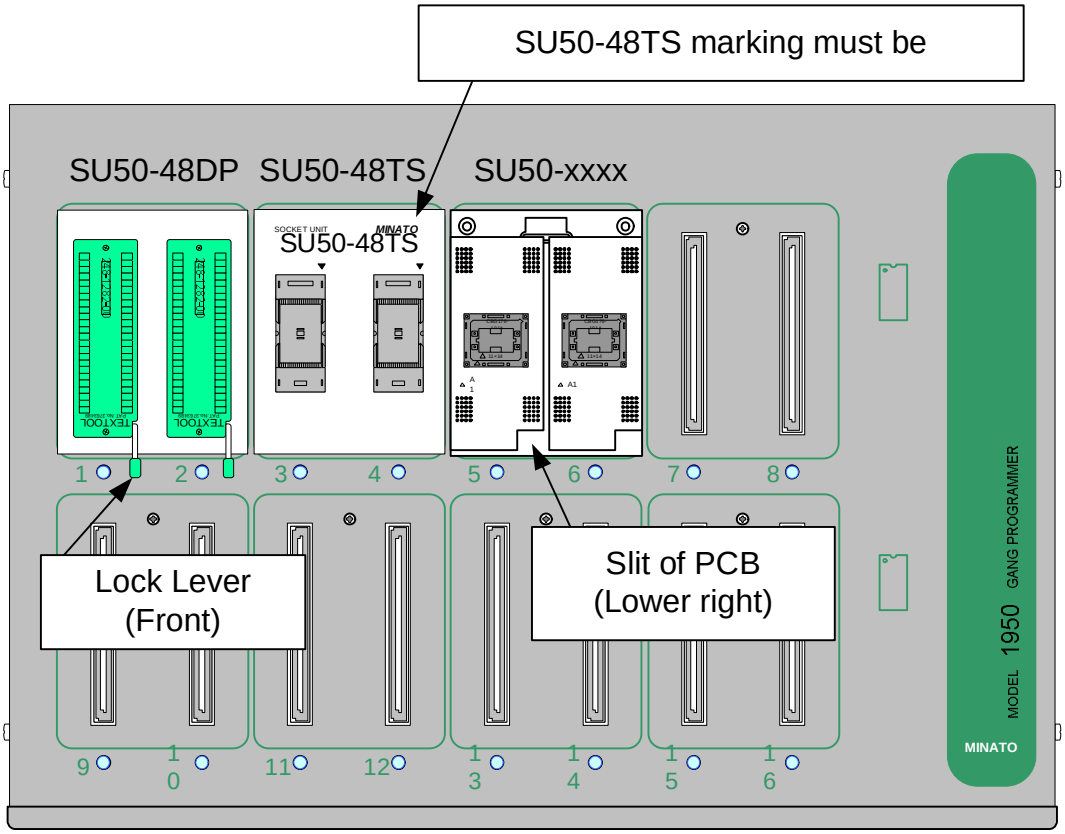
Lock lever must be facing front.

SU50-48TS Socket Unit

SU50-xxxx marking must be correct as indicated
In the following drawing.

SU50-xxxx Socket unit

Slit of PCB must be positioned in lower right.



Socket Adapter

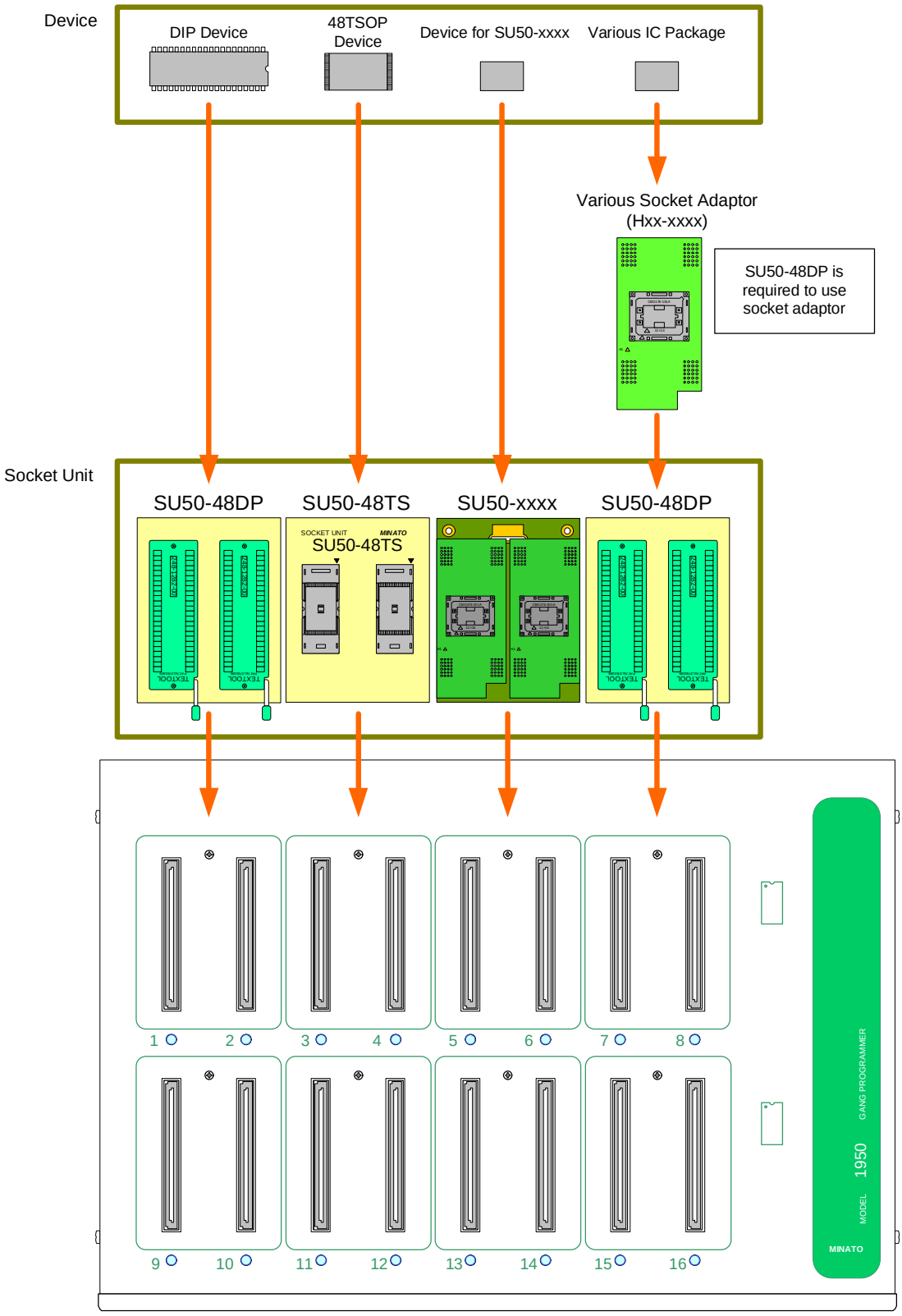
This chapter describes socket adapters that can be used on M1950.

Definition of socket adapter

1. This chapter describes socket adapters targeted for M1950.
2. Some adapter of M1940 can be used on M1950 by version up of firmware.

Caution

To use optional socket adapter, optional socket unit SU50-48DP is required.
SU50-48DP enables to cover from DIP to various types of adapters.


Device
DIP Device
48TSOP Device
Device for SU50-xxxx
Various IC Package
Various Socket Adaptor (Hxx-xxxx)
SU50-48DP is required to use socket adaptor
Socket Unit
SU50-48DP
SU50-48TS
SU50-xxxx
SU50-48DP
SOCKET UNIT
MINATO
SU50-48TS
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
GANG PROGRAMMER
MODEL 1950
MINATO

Explanation of each key switch

This page describes each key switch of M1950.

START

START Key
To execute set funciton

RESET

RESET Key
This key is to stop current function running. This key is also good to cancel a function set.

COPY

COPY Key
This key is to transfer data from set device on socket #1 to the buffer memory of M1950.

ERASE

ERASE Key
This is to erase data of electrically erasable ROM (such as EE-PROM, Flash) which is placed on socket #1 to #16.

BLANK

BLANK Key
This is to carry out Blank Check of ROM that is placed on socket #1 to#16.

PROG

PROGRAM Key
This is to program data of the buffer memory to ROM that is placed on socket #1 to #16.

VERIFY

VERIFY Key
This is to verify the data of the buffer memory and data of ROM that is placed on socket #1 to #16.

The difference of four verify function is as follows:

	Vcc	Data line
VERIFY1	VccL(Verify_L)	Pull-up to Vcc
VERIFY2	VccL(Verify_L)	Pull-down to GND
VERIFY3	VccH(Verify_H)	Pull-up to Vcc
VERIFY4	VccH(Verify_H)	Pull-down to GND

VccH: Voltage for device (High setting value)
VccL: Voltage for device (Low setting value)

Depending on the types of device, there are two patterns.

Type	VERIFY Pattern			
FLASH		VERIFY2	VERIFY3	
EP-ROM/ EE-PROM	VERIFY1	VERIFY2	VERIFY3	VERIFY4

Targeted device is 3.3v to 1.4v

CONT

CONTINUOUS Key
This is to start continuous function on ROM places on socket #1 to #16.

MODE

MODE Key
The menu is open up when this key is pressed.
If this key is pressed in Read VCC menu, set values are initialized.

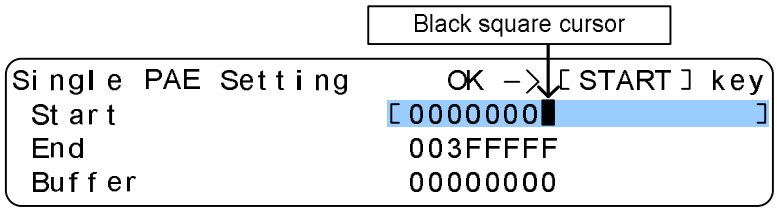
COM

COMMAND Key
This is to change voltage, address. It is good only for changes these values.

How to use

When COM key is pressed under the menu of changing address, black square cursor is indicated. Then you can change the value by up and down key. Left and right keys enables to move the cursor to the left and the right.
When you finished to change address, please COM or START once again to get out of this function. Then black square cusor is disappered. By up or down key, you can move to other function.

(Example) Single PAE Setting



DEV
DEVICE Key
This is to select a device.
By pressing this key, device selection menu is open up. Then you can select a device.
During other operation, by pressing this key enables you to go back to former menu.

ENT
ENT Key
This is to confirm the selction.

▲▼▲▼
Arrow key
This is to change the address, voltage or to move cursor in the menu.

Basic Operation

This chapter describes the operation of the following.

Installation and to turn on power
To select proper adapter
To COPY in the device
To ERASE programmed data in the device
To carry out BLANK CHECK
To carry out VERIFY
To PROGRAM data into a device
To carry out CONTINUOUS mode

M1950 has designated function allowing you to execute each function with a push of key switch. 、

Installation and to turn on the power

This chapter desbribes required environment of working area and the procedure to turn on the power.

Please make sure that there is not NC machine with motors or electric welding mahicne which generates noise.

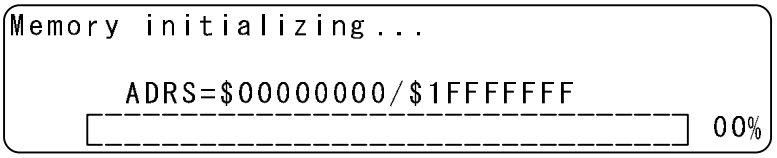
Caution prior to operation

1. M1950 should be leveled and should be installed in an area where there is no vibration.
2. Designated power inlet for AC power cable is strongly recommended.
3. 3P connector with grand is recommended.
4. After making sure that the power of M1950 is OFF, connect the AC cable to the power inlet of M1950 which is located on the backside of the M1950.
5. Do not set devices or socket adapters when you turn on the power of M1950.

Operation Procedure

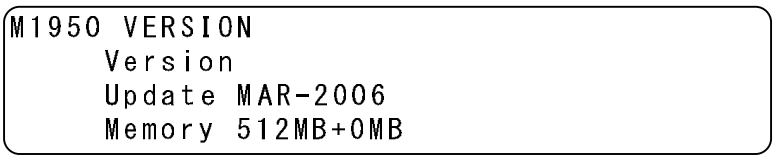
Making sure nothing is installed on the socket, turn on the power switch of M1950 that is located on the backside of M1950.

Self diagnostic test is automatically executed.



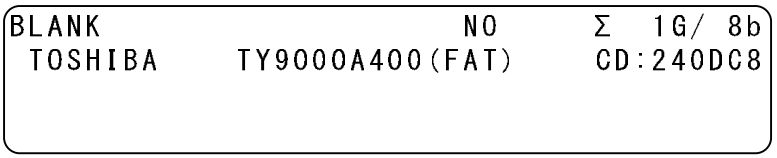
Wait for one minute to have version displayed.

The following indicates M1950 is working correctly.



After recalling the device code formally set, initial display appears

Initial display



Select a device

Use **DEV** key to select a device.

Operation procedure

When **DEV** key is pressed,
Manufacture Select is displayed.

```
Manufacture select                CD:01----
[ALLIANCE     ]AMD           AMIC
 Asahikasei    ATMEL         BRIGHT
 Casio         Catalyst      CYPRESS
```

Select a device supplier by arrow key and press **ENT** key to confirm.

```
Manufacture select                CD:0E----
 FUJITSU       Renesas(H)    HOLEK
 HYNIX         ict           [intel        ]
 ISSI          LETech         MACRONIX
```

Then density selection is displayed.
Select a density and press **ENT** key to confirm.

```
Capacity select                   CD:0E0B--
 1M       2M       4M       8M       16M
 32M      64M      128M    [256M   ] 512M
 1G       2G       4M       8G       OTHER
```

Then device selection is displayed.
Select a device and press **ENT** key to confirm.

```
Device Select                     CD:0E0BA4
[RD38F3352LLZD      ] PF38F4050L0YBQ2
```

Then setting is displayed.
Make sure that correct device is selected.

```
Select Device                     CD:0E0BA4
     intel                       256M/16bit
     RD38F3352LLZD
          OK-> [START] key
```

If it is correct, press **START** key. Then buzzer sounds and goes back to initial display.
In the LCD, selected device is displayed.

```
BLANK                      NO     Σ256G/16b
 intel       RD38F3352LLZD       CD:0E0BA4
```

COPY data in the device into the buffer memory

To copy data in a device into the buffer of M1950. Use **COPY** Key.

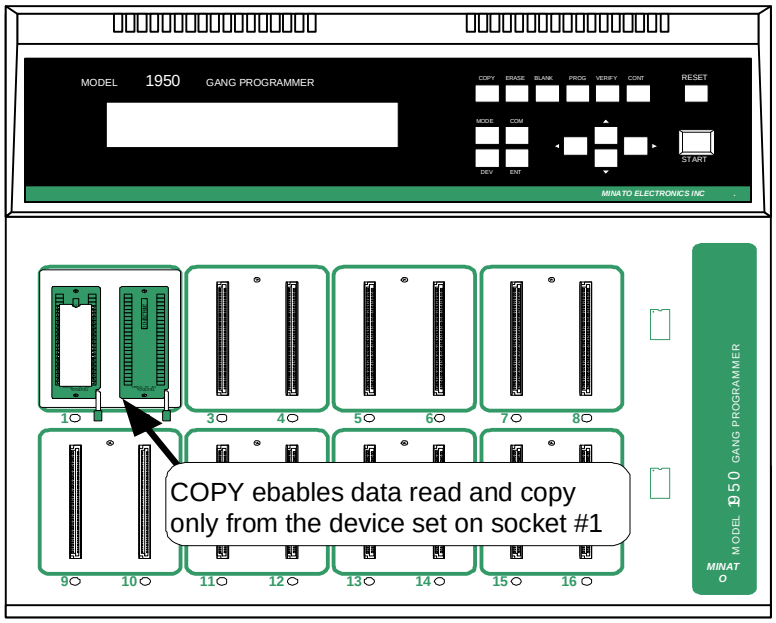
Caution prior to operation

1. Check if the check-sum is correct to verify if **COPY** is completed correctly.
2. Do not set a master device on other socket # than #1.
3. If the direction device is not correct, that could damage the device.
4. COPY enables data read and copy only from the device set on socket #1.

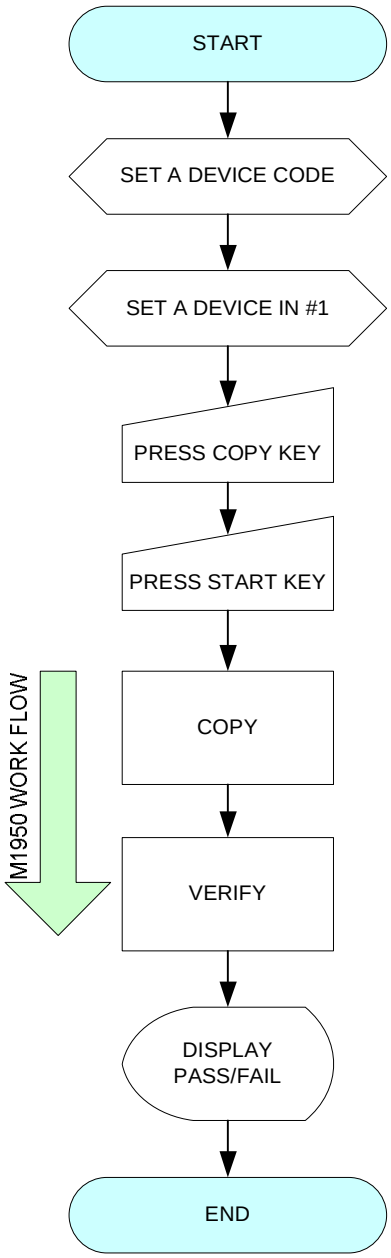
Operation procedure of COPY mode

1. Set device code.
2. Set a device on socket ＃1.
3. Press **COPY** key.
4. Press **START** key.

When **START** key is pressed, COPY is executed. If COPY is successfully completed, green LED is lit. If it is failed, red LED is lit. When LED is green, check-sum is displayed on LCD.



COPY MODE WORK FLOW CHART



ERASE data in a device

Use **ERASE** key to erase data stored in electrically erasable ROM (such as EE-PROM, Flash)

Caution prior to operatoin

If Erase is executed on the device for which CONTACT is displayed on the socket unit, that may damage the device. Please remove the device of such a socket before executing Erase.

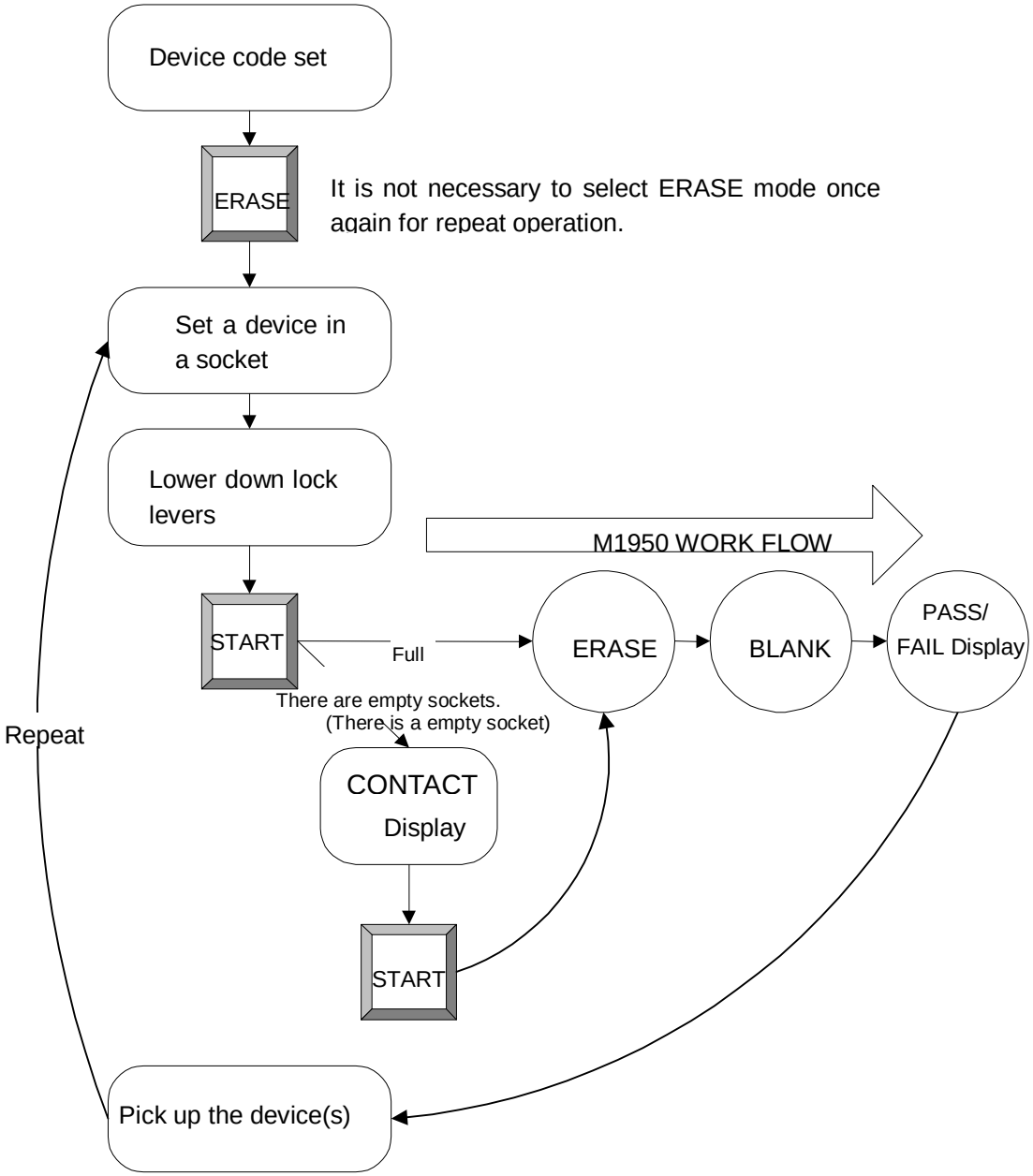
Operation procedure of ERASE mode

1. Set a device code
2. Press **ERASE** key
3. Set devices for erase on socket #1 to #16
4. Press **START** key
   When all devices are set on socket #1 to #16, ERASE is automatically execute. If there is the socket without a device, CONTACT is dispalyed on LCD. Then red LED lit on the socket without a device. Then operation is fault.

5. Press **START** key once again to execute Erase operation.
6. At the end of Erase, PASS/FAIL is indicated by LCD and the color of LED.

ERASE MODE WORK FLOW

This page describes Erase mode work flow of M1950.



To execute Blank Check of a device

To execute Blank Check of a device, use **BLANK** key.

Caution prior to operation

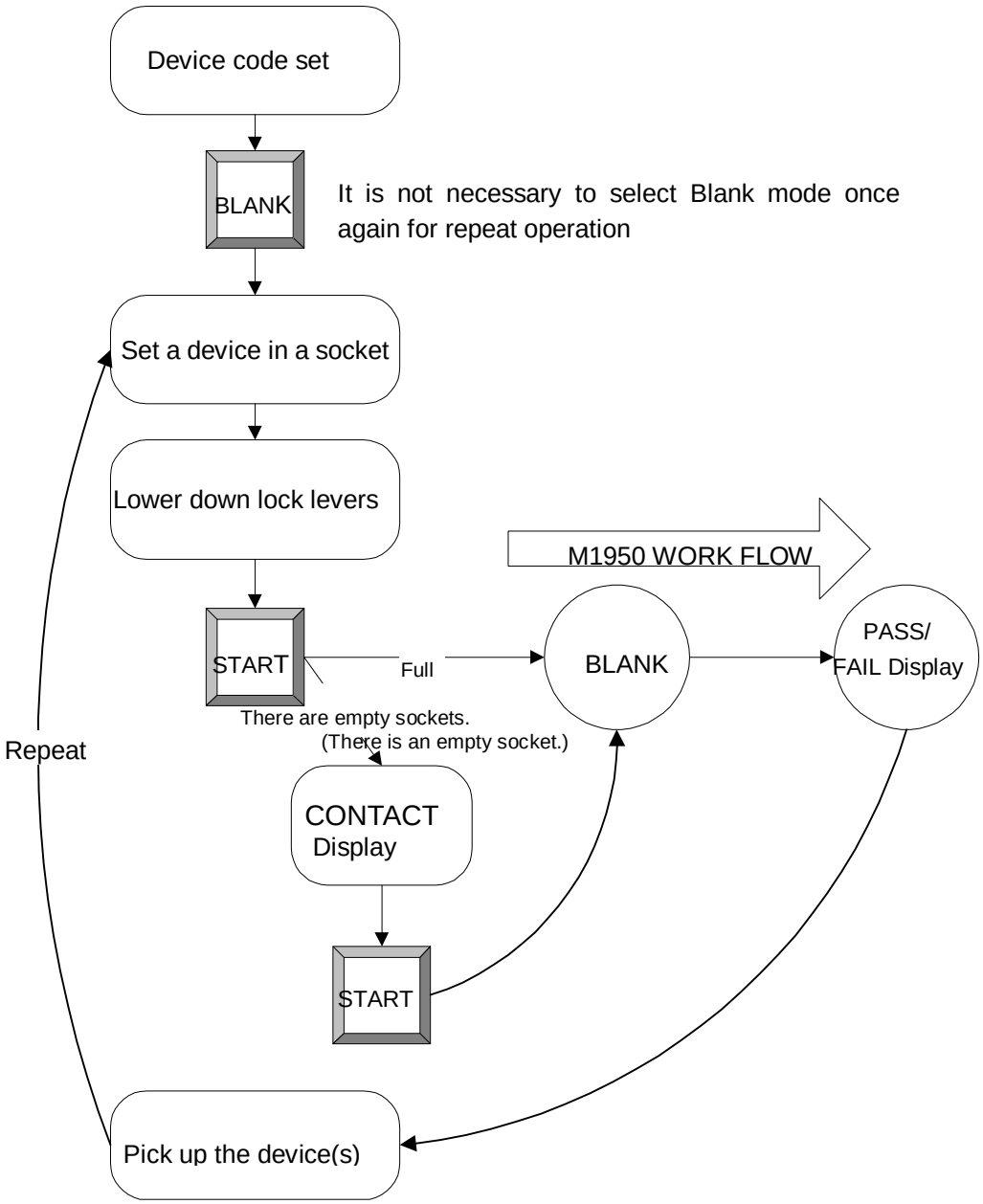
If Blank Check is executed on the device for which CONTACT is displayed on the socket unit, that may damage the device. Please remove the device of such a socket before executing Blank Check.

Operation procedure of BLANK mode

1. Set a device code
2. Set devices for blank check from socket #1 to #16.
3. Press **BLANK** key.
4. Press **START** key.
   If there is the socket without a device, CONTACT is dispalyed on LCD. Then red LED lit on the socket without a device. Then operation is fault.
5. Press **START** key to continue Blank Check Operation.
6. At the end of Blank Check, PASS/FAIL is indicated by LCD and the color of LED.

BLANK MODE WORK FLOW

The following describes Blank Mode Wrok FLOW



Verify Data

This function is to verify data between the master ROM and the buffer memory of M1950. It is recommended to use several different read setting to verify data.

Caution prior to operation

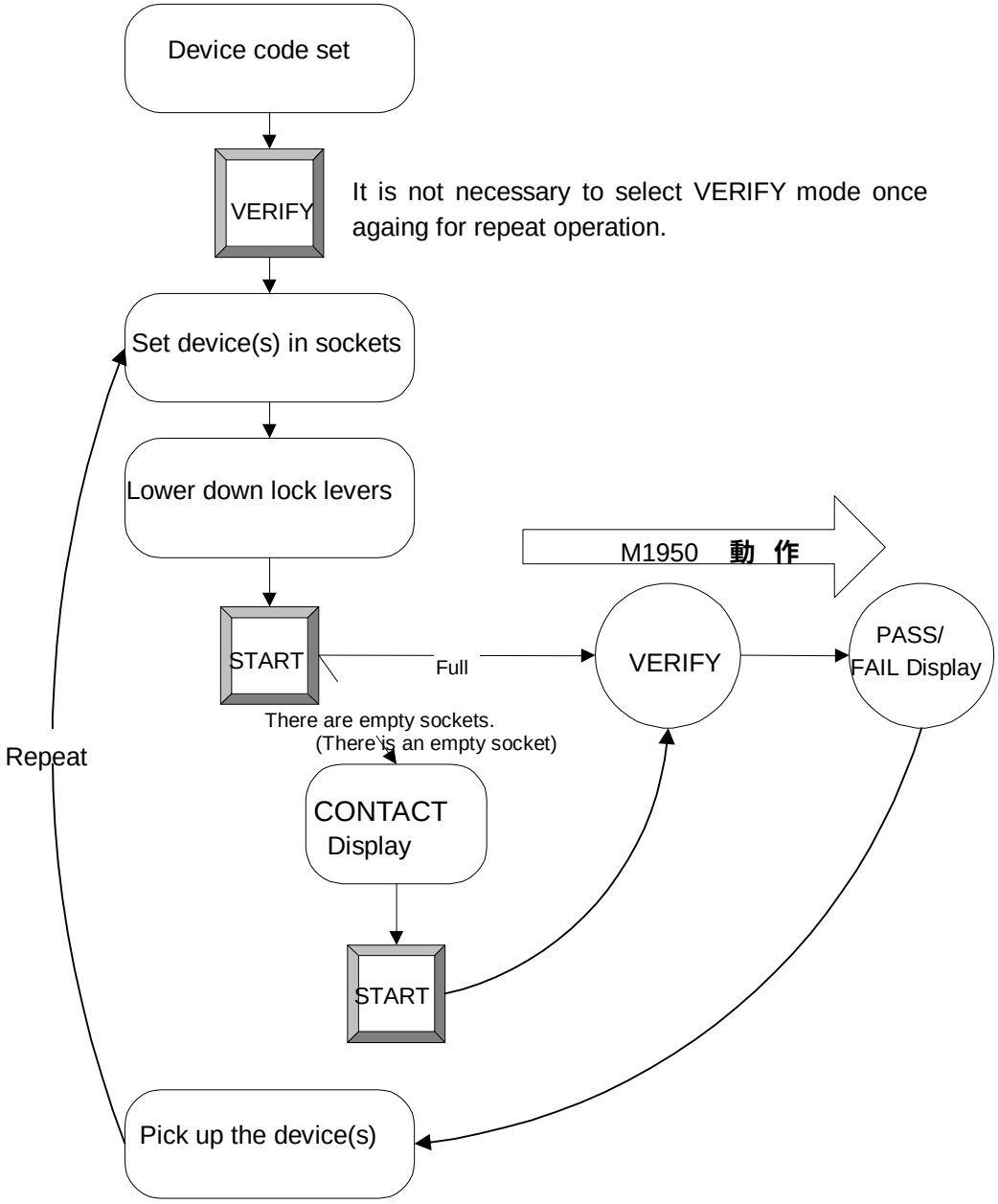
If Verify is executed on the device for which CONTACT is displayed on the socket unit, that may damage the device. Please remove the device of such a socket before executing Verify.

Operation procedure of Verify mode

1. Set a device code.
2. Press **VERIFY** key.
3. Set devices for verify from scoket #1 to #16.
4. Press **START** key.
   If there is the socket without a device, CONTACT is displayed on LCD. Then red LED lit on the socket without a device. Then operation is fault.
5. Press **START** key to continue Verify Operation.
6. At the end of Verify, PASS/FAIL is indicated by LCD and the color of LED.

VERIFY MODE WORK FLOW

The following is the work flow of verify mode of M1950.



Program Data

This function is to program data from the buffer memory of M1950 to devices.

Caution prior to operation

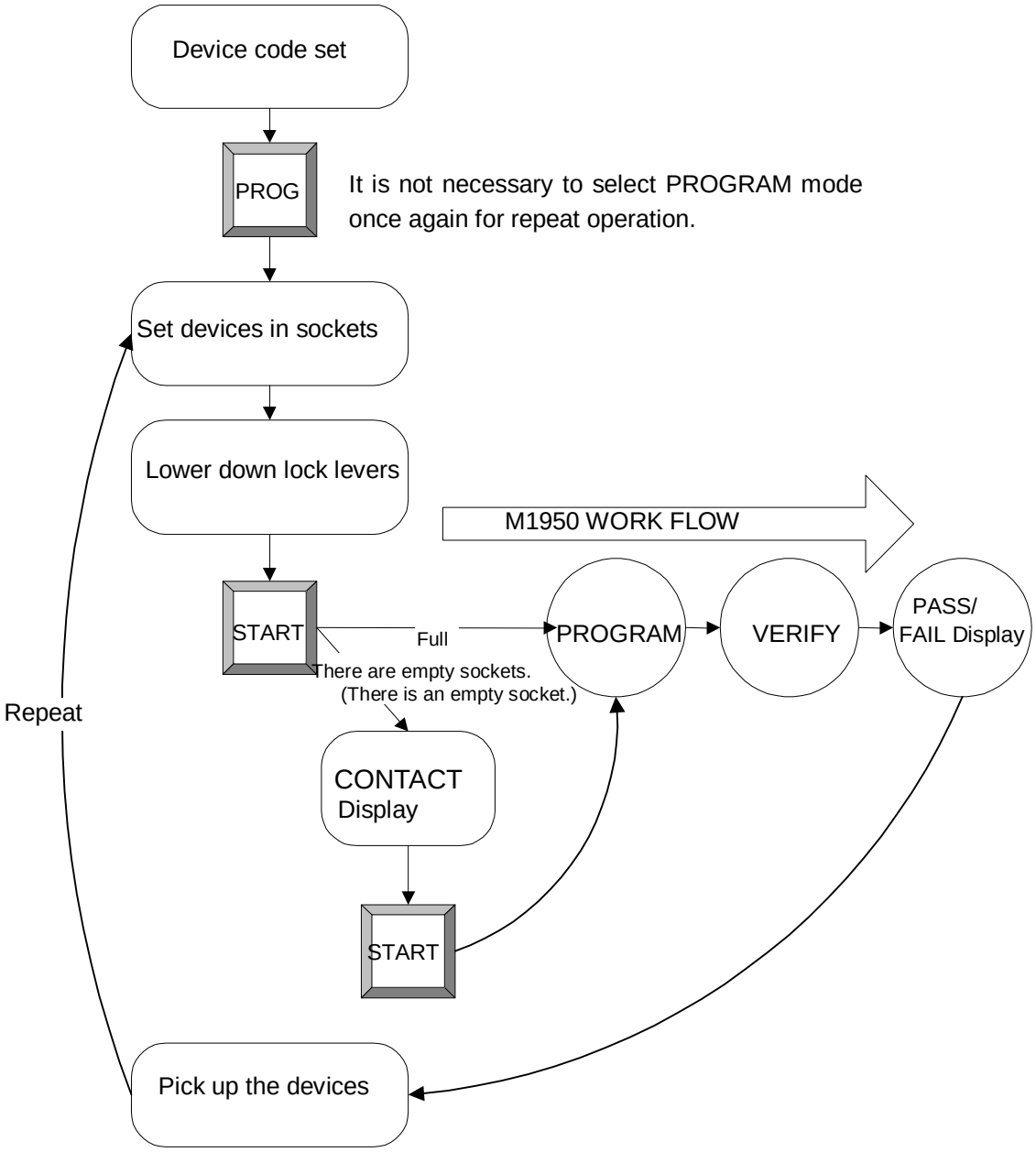
If Program is executed on the device for which CONTACT is displayed on the socket unit, that may damage the device. Please remove the device of such a socket before executing Program.

Operation procedure of Program mode

1. Set a device code.
2. Press **PROG** key.
3. Set devices for Program from socket #1 to #16.
4. Press **START** key
   If there is the socket without a device, CONTACT is dispalyed on LCD. Then red LED lit on the socket without a device. Then operation is fault.
5. Press **START** key to continue Program operation.
6. At the end of Program, PASS/FAIL is indicated by LCD and the color of LED.

PROGRAM MODE WORK FLOW

The following is the wrok flow of program mode of M1950.



Continuous Operatoin

CONT key execute sequential operatoin of ERASE, BLANK, PROGRAM and VERIFY. M1950 automatically execute these functions sequentially.

The function work flow is different between electrically erasable ROM such as Flash/EE-Prom (by Erase mode of M1950) and EP-ROM which can not be erased electrically.

Caution prior to operation

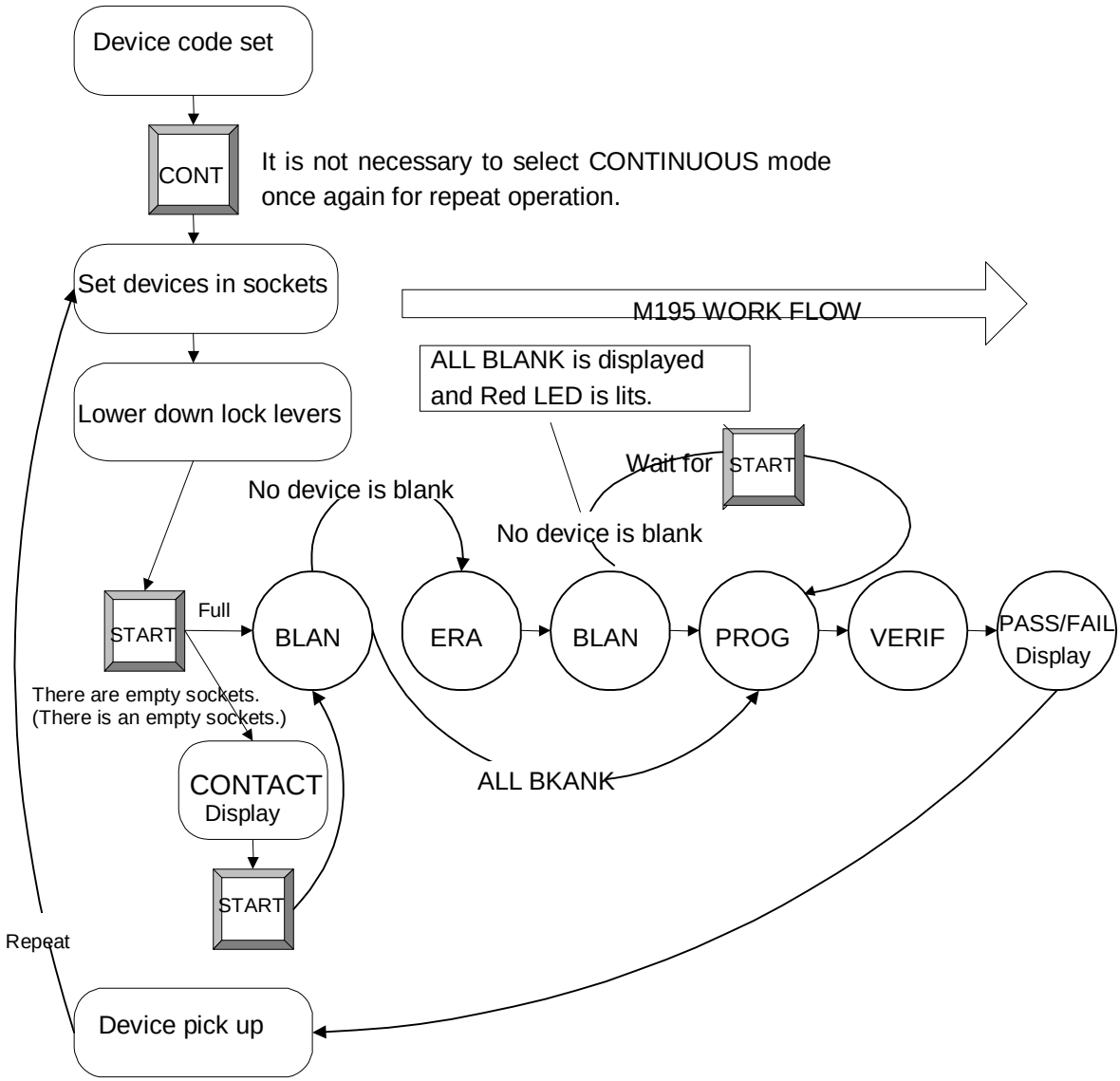
If Continuous is executed on the device for which CONTACT is displayed on the socket unit, that may damage the device. Please remove the device of such a socket before executing Continuous.

Operation procedure of CONTINUOUS mode

1. Set a device code.
2. Press **CONT** key.
3. Set devices for Continuous operation from socket #1 to #16.
4. Press **START** key.
   If there is the socket without a device, CONTACT is dispalyed on LCD. Then red LED lit on the socket without a device. Then operation is fault.
5. Press **START** key to continue Continuous operation.
6. At the end of Continuous operaotin, PASS/FAIL is indicated by LCD and the color of LED.

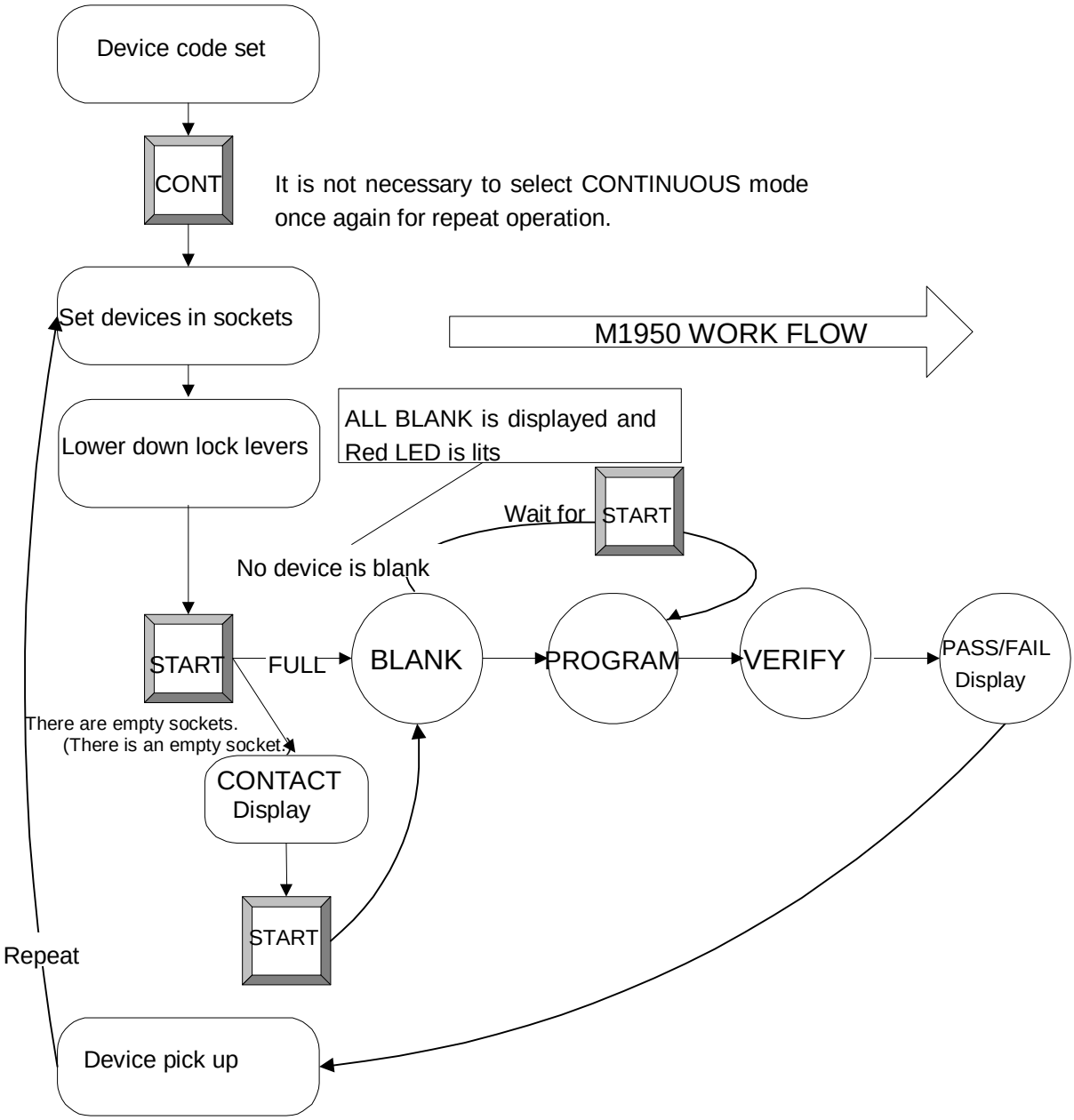
CONTINUOUS mode work flow 1(when a device is a FLASH/EE-PROM)

M1950The following is the work flow of Continuous mode of M1950.



CONTINUOUS mode work follows 2(when a device is an EP-ROM)

The following is the work flow of continuous mode of M1950.



Use MODE menu of M1950

Most of operations as a PROM programmer can be covered by basic function. M1950 is utilizing additional functions under the **MODE** key menu.

Device func

Device func menu includes the following functions.

PAE mode
Verify mode
Protect mode
Monitor mode
Read VCC
Function mode
Repeat mode
Module Parameter

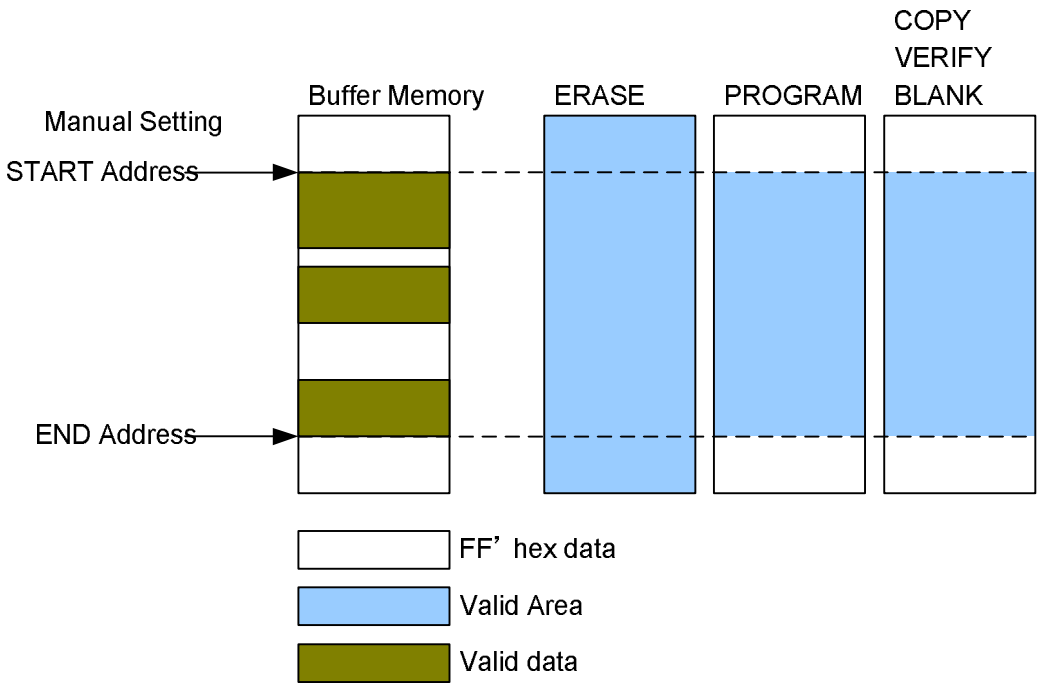
PAE mode

Under the normal mode, M1950 access to all data address of a device. By using this mode, M1950 access to only targeted area.

Clear PAE mode

This is to set or cancel the set value of Single PAE and Multi PAE.

Single PAE mode



You can manually set one start address and one end address.
Set address is different depending on the programming mode of a device. Although there are three different types of programming mode, M1950 automatically detects the mode.

	Device start Address	Device end Address	Buffer start Address
Byte programming	Every 16 bye	Every 16 Address	Every 16Address
Word programming	Every 8 word	Every 8 Address	Every Even Address
Multi-byte/multi-Word programming	Every256 byte/128 word	Every 256 byte /128 word	Every 256 byte /128 word

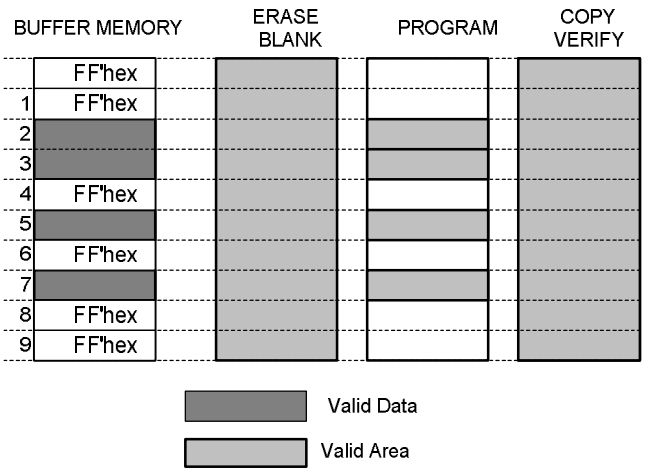
Remarks: Every 16 byte change on M1950

Multi PAE mode

Most of Flash memory takes care of memory area by sectors.
When Multi PAE mode is used, M1950 automatically targets the programming address by using the sector inf. of the device and data in the buffer. (Multiple start and end address is automatically set).

M1950 automatically detect FF'hex data in the buffer memory. When there is any data other than FF'hex in the buffer memory of the set sector, targeted sector of the device is programmed. When there is only FF'hex data in the buffer memory of the set sector, all address of the set sector is skipped.

Skip is valid only for PROGRAM. In case of COPY, ERASE, BLANK and VERIFY, all address area is targeted.



Verify mode

You can set execution pattern of Verify mode.

Verify count

There are three patterns of Verify count. You can choose either one of them.
(The detail of Verify is described in Verify)
Please see the detail of each selection.

Default

Executing in sequence of Verify1, Verify2, Verify3 and Verify4.
However, it also depends on the specification of the device selected.

2Times

Executing in sequence of Verify2 and Verify3.
However, it also depends on the specification of the device selected.

1Time

Executing only verfy 3
It does not depend on the specification of the device selected.

Remarks

Default execution pattern is different between EE-ROM/EP-ROM and FLASH.

Verify count		Executon pattern	default
Default	EP-ROM	Verify1→Verify2→Verify3→Verify4 Depends on the device	default
	EE-PROM	Verify1→Verify2→Verify3→Verify4 Depends on the device	
	FLASH	Verify2→Verify3 Does not depend on the device	
2Times		Verify2→Verify3 Depends on the device	
1Time		Verify3	

Protect mode

Some FLASH type device features protect function to protect data. Protect inf. is stored in special area other than data area. M1950 has three functions on the operation of protect mode.

No Operation

This is the standard mode under normal operation. Under this mode, M1950 does not access to protect area by the fundamental operation such as (COPY, BLANK, PROGRAM, VERIFY)
When this mode is selected, NO is displayed on the center of the first line of LCD.

Protect only

Under this mode, M1950 access to only to protect area. Please make a note that it does not access to data area.
When this mode is selected, PO is displayed on the center of the first line of LCD.

Unprotect/Protect

Under this mode, M1950 erase proect inf. before executing PROGRM mode. Then M1950 program protect inf.
When this mode is selected, UP is displayed on the center of the first line of LCD.

Monitor mode

This is a menu to set ON/OFF for the output of certain device to the external device.
Remark: Only NAND device is supported as certain device.

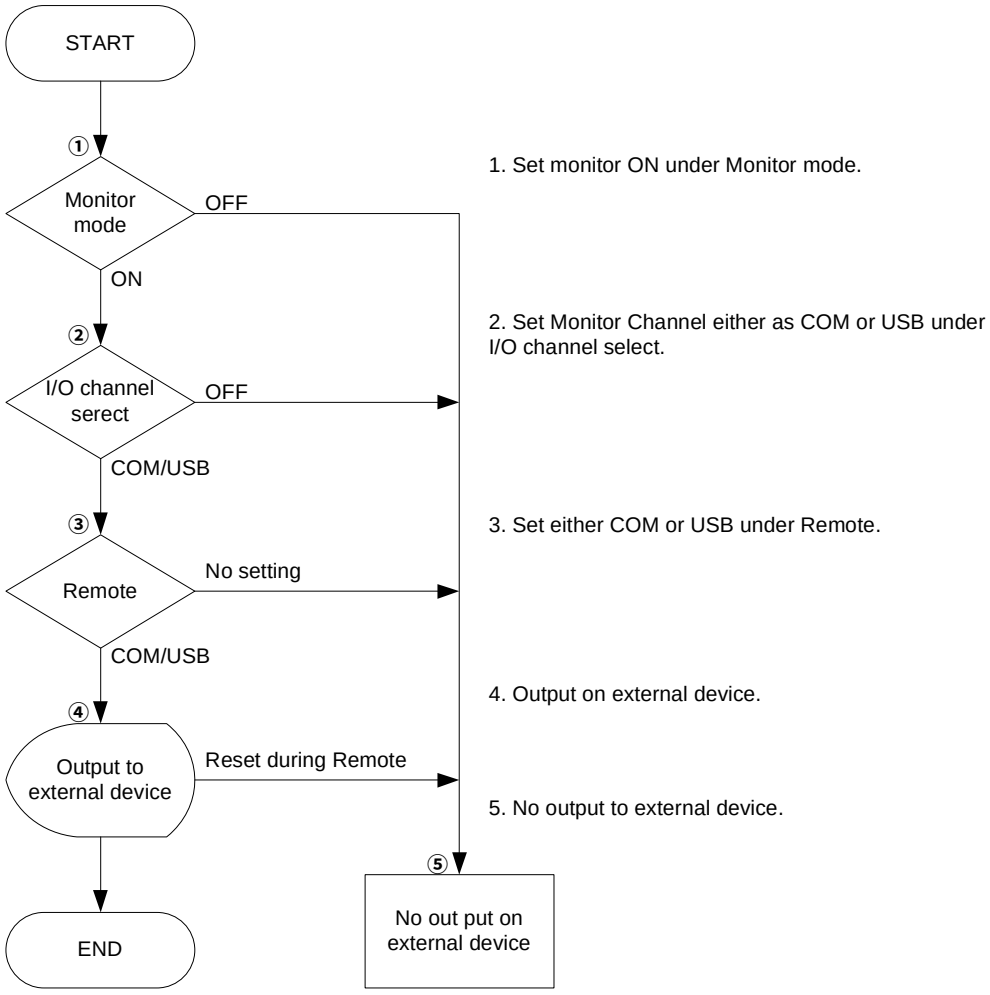
Caution

Setting only Monitor mode does not enable to output to external device.
The following setting is required to enable output to external device.

1. Set ouptput port for external device (select either COM or USB under I/O channel select)
2. Select remote mode on M1950. On the Remote Select item of Remote menu, set either COM or USB as an output port to external device (it must be same port as the selection of I/O channel select).

Remarks: Selection of 1 and 2 must be the same.

Work flow chart

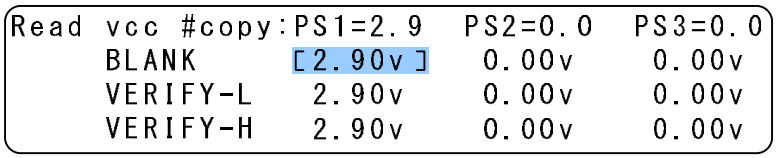


Read VCC

Voltage applied to the device during read operation can be changed. Voltage for READ operation means supply voltage during BLANK and VERIFY operation. It does not apply to read voltage of COPY.
For VERIFY, maximum and minimum voltage must be set. Verify_H is the maximum voltage applied the device. Verify_L is the minimum. When Verify_H, Verify_L are not set by this operaotin, default value is applied.

Verify_H = Maximum value
Verify_L = Minimum value

Read vcc operation display



PS1/PS2/PS3 displayed on Read VCC LCD is internal supply voltage of the programmer.

Function mode

Under function mode, contact and ID check are carried out during COPY, BLANK, PROGRAM, VERIFY, ERASE and CONT execution. Contact check, ID check can set as ON/OFF.

Contact check

Contact device check is to detect if the position of device is correct or the direction is correct or the device is not damaged. Since there are various specification of devices, some devices including microcontroller does not allow to carry out a contact check. For such device, contact mode setting must be OFF.

ID Check

ID check function is to judge whether selected device of the device select operation of M1950 and the actual device matches or not.

To use a compatible code (different part number of device, but same code or algorithm can be applied by the instruction of Minato Electronics Inc.), this function must be OFF.

When device code is set or changed, ID check function changed to default (For standard device, default of ID check function is ON).

Repeat mode

This function executes a set function such as Verify in repeat.
It is used to check continous running test of devices.

Explanation of Repeat mode

OFF

Repeat function is not valid.

One Fail STOP

If one device is Fail, operation is stopped.

All Fail STOP

If one of device is pass, operation continues.
(When all devices are fail, operation stops)

Module Parameter

This function is not supported at this moment.

I/O command

I/O command is a menu for setting input/output data.

For data transfer, USB/RS-232C must be used. For detail of the setting, please refer to input/output port setting.

Data Transfer Mode

Transfer [IN]

Data Serial In (Data SR In)

This is a data input mode

Make serial I/F of M1950 ready and enable sending data to the buffer memory in the set data format.

Transfer [OUT]

Data Serial Out (Data SR Out)

This is a data ouptput mode.

Output data in the buffer memory of M1950 through serial I/F in set format.

CF card

M1950 is equipped with CF card for data DOWN LOAD and UPLOAD.

Caution

Do not remove CF card from the slot during data transfer. It may damage M1950.

Buffer operation

Buffer operation menu describes the following functions.

Buffer init
Buffer swap
Protect setting
Buffer DUMP/EDIT
Check sum
Fast sum

Buffer init

This function is to fill the buffer memory of M1950 by a certain data. After turning on the power of M1950, buffer memory of M1950 is initialized by filling up FF(hex).

M1950 offer four initialize pattern.

All FFH

Initialize with FF(hex)

All 00H

Initialize with 00(hex)

Test Pattern A

Initialize by 03, 06, 0C, 18, 30, 60, C0”(hex) in repeat

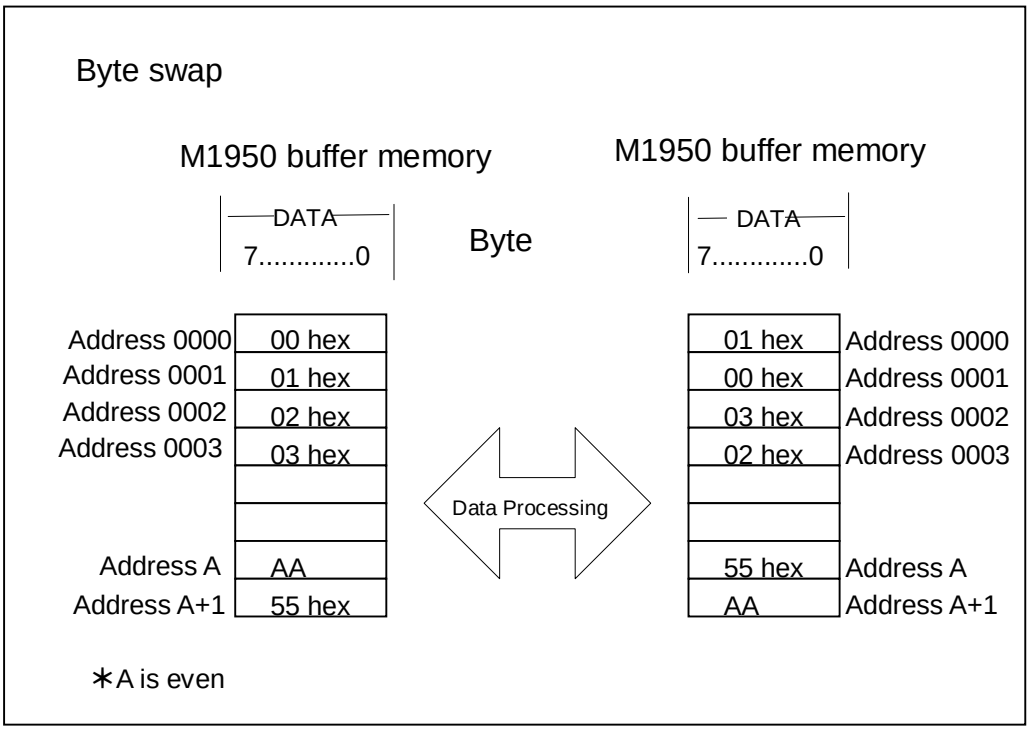
Test Pattern B

Initialize by 00, 00, FF, FF, 00, 00, FF”(hex) in repeat

Buffer swap

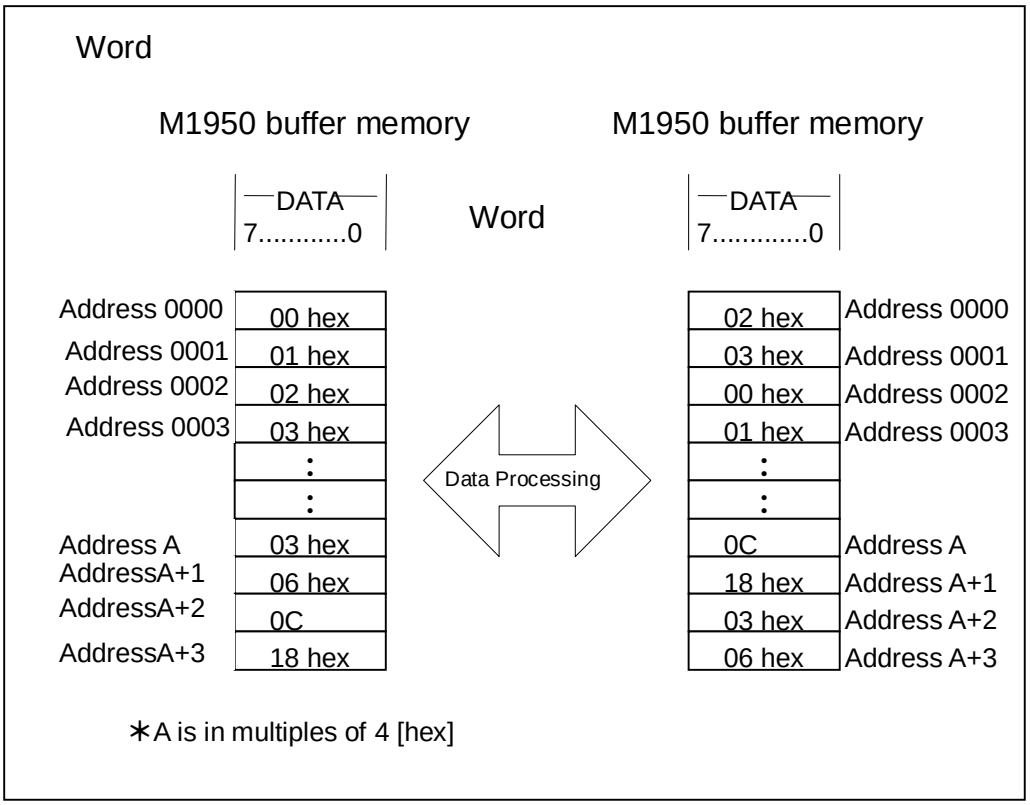
Swap [BYTE]

This function is to swap the data in the buffer memory of M1950 in each byte.



Swap [WORD]

This function is to swap the data of the buffer memory of M1950 in each word.



Protect setting

Protect setting is valid only when sector protect of the device is supported on M1950.
If [.] is diplayed on LCD, protect is OFF. When[*] is displayed, protect is ON.
Use **ENT** key to turn ON/OFF the protection.
Protect data in this operation is applied when protect mode is set.

Buffer DUMP/EDIT

M1950 allow you to display, edit the data in the buffer on LCD.
Edit mode directly access to the data of the buffer memory. Please be cautious to use this function.

Check sum

This function is to caluculate sum, Exclusive OR and CRC (in 16 bits or 32 bits) of the data stored in the buffer memory of M1950.

In M1950, most reliable CRC check method is added.

During the standard operation, Check sum (4 digits) and EXOR are displayed. It is used when Buffer data is changed or data is loaded.

The caluculation method is as follows.

Check Sum:

Bit width 8Bit fixed
Over flow round down at 9^{th} digits
Digits 8 digits in Hex

EXOR (Exclusive OR):

Bit width 8Bit fixed
Digits 2 digits in Hex

CRC:

Caluculation method CRC16:$X^{16}+X^{15}+X^2+1$
CRC32: $X^{32}+ X^{26}+ X^{23}+ X^{22}+ X^{16}+ X^{12}+ X^{11}+ X^{10}+ X^8+ X^7+ X^5+ X^4+ X^2+ X+ 1$
Digits 8 ditis in Hex

Example of caluculation

Data [Hex]	Check Sum [Hex]	EXOR[Hex]
AA	0000AA	AA
55	0000FF	FF
AA	0001A9	55
55	0001FE	00
AA	0002A8	AA
55	0002FD	FF
AA	0003A7	55

Check sum of other Minato gang programmer is rounded down at 5^{th} digits as it only displays up to 4th digits.

Fast sum

This function is to caluculate sum of the buffer area in fast speed by hardware.
Address Fast sum menu allow you to change in 16 byte (1st digit is fixed).

System config

System config menu describes the following functions.

COM setting
Format select
I/O channel select
M1950 Version
USB setting
Remote setting
Others mode
System update

COM setting

In this menu, you can select and set the condition of RS-232C data transfer.
The condition must be matched between M1950 and external device for RS-232C interface.

Please use straight cable between M1950 and PC that is commonly available in the market.

BAUD RATE

Select and setting baud rate

DATA BIT

Select and setting character bit

PARITY

Select and setting parity bit

STOP BIT

Select and setting stop bit

FLOW CONTROL

Select and setting flow control

Vaild communication setting of M1950

Item	Selection	Deault
BAUD RATE	[9600bps] ,[19200bps] ,[38400bps] ,[57600bps] ,[115200bps]	[115200bps]
DATA BIT	[7bit],[8bit]	[8bit]
PARITY	[NON] ,[EVEN] ,[ODD] ,	[NON]
STOP BIT	[1bit],[2bit]	[2bit]
FLOW CONTROL	[XON/OFF] ,[NO CTRL]	[XON/OFF]

Format select

By format select, data format to make interface with eternal device can be set.

FORMAT

Before sending data, set the format for the transfer. Set the format according to the fomat set on M1950.

Format that can be set on M1950

Item	Selection	Default
FORMAT	[NO-FORMAT(BIN)] ,[MINATO(MIN)] ,[INTEL-HEX(HEX)] [MOTOROLA-S(MOT)]	[MOTOROLA-S(MOT)]

I/O channel select

By I/O channel select, the port to interface making interface between M1950 and an external device can be set. Choose one from the followin three selections.

COM

It allows data transfer through RS-232C port.

USB

It allows data transfer throught USB port.

OFF

When neither port is used
(When M1950 is operated with no interface)

Monitor channel

It is to make a selection of output port where devices inf. are displayed externally.

Data I/O channel

It is to make a setion of port for data transfer.

Item	Selection	Default
Monitor channel	[OFF] ,[COM] ,[USB]	[OFF]
Data I/O channel	[OFF] ,[COM] ,[USB]	[OFF]

M1950 Version

It is to check and display the firmware version of M1950

USB setting

ID CODE

It is a menu to input USB recognition code.
When more than 2 units of M1950 are connected to one PC through USB hub, different ID code should be set on each M1950.

Remote setting

It is to set the condition of remote mode for interface between external device and M1950. There are two way to make a setting. One wan can be accomplished by the operation panel of M1950. The other way can be accomplished by remote mode. There are following setting.

ECHO

It is to set whether M1950 return the code sent from external device or not. If the following special Characters are includes in the code sent from external device, M1950 will not simply make a echo Echo back. In such a case, specified commned according to the chracters are carried out.
ON
OFF
Select either ON or OFF.

PROMPT

When the command is completed, M1950 output Prompt to external device which is to inform that M1950 is ready to receive another input.
Select one prompt character out of the following three selections.
---- (No display of "#")
#
#CRLF (_cursor is displayed under "#")

ACK/NCK

It is to inform to external device whether receive command of M1950 is valid or not
It is to set ON/OFF of the reply (after # , A is displayed) .

BUZZER

When M1950 is changed to remote mode, you can select either to sound a buzzer according to the results of remote command. M1950 or not.
However, PASS/FAIL buzzer of the result of the fundamental functions such as COPY, PROGRAM, etc sounds regardless of this setting.
ON
OFF
Select either ON or OFF.
(Operation method is described in how to set remote mode condition)

Others mode

Selfcheck

Skip / No skip of self-check
When power is turned on, M1950 executes self diagnostic check.
Self-check can not be accomplished correctly if socket adapter (and IC) are mounted on M1950. It It can damage the IC. If adapters and IC can not be removed from M1950 due to working environment (example auto handler), self-check function can be turned OFF.
Please do not leave M1950 with self-test OFF condition for a long period of time. Please turn on self-check function periodically to check M1950 is running properly.

No skip : all self-check function is ON(default settin prior to shipment)
Skip : self-check function related to socket adapter is OFF.

CRC mode

CRC MODE can display either 16 bit or 32 bit check.
The following is the calculation method of CRC.

16bit calculation mehtod
CRC16: $X^{16}+ X^{15}+ X^{2}+ 1$

32bit calculation method
CRC32: $X^{32}+ X^{26}+ X^{23}+ X^{22}+ X^{16}+ X^{12}+ X^{11}+ X^{10}+ X^{8}+ X^{7}+ X^{5}+ X^{4}+ X^{2}+ X+ 1$

BUZZER

It is to enable a buzzer during operation or not.

KEY+FUNCTION
A buzzer sounds for a key operation and at the end of a function.

FUNCTION

A buzzer sounds only at the end of a function.

KEY

A buzzer sounds only for a key operation.

OFF

A buzzer sounds for OFF.

REMOTE EMULATION

It is a mode to specify whether ID check is valid or not during device operation command such as OP,VF,PG…

Since REMOTE EMULATION setting affects remote mode pre-check command and device operation command, it is recommended to check prior to getting into remote mode.

Selection

M1940 mode: ID check is in valid during COPY, BLANK, etc operation.
When operation commnd is completed, the result of PASS/FAIL is output.
ID check is carried out when CK command is executed.

M1895 mode: Device ID check is carried out during COPY、BLANK…etc operation.
The output inf. varies depending on the results of ID check (same as panel operation)

In case of ID check pass: Pass/FAIL is output at the end of an operation
(same as M1940 mode)

In case of ID check fail: It outputs the result of ID check and stop operation of M1950.
COPY、BLANK, ect operation is not executed.

Remarks: In M1895 mode status error is output and M1950 stops its operation when ID check error is detected.

SET START COUNT

It is to set a time to automatically start programming after all devices are mounted onto socket of M1950.

List of Others mode

Item	Selection	Default value
SELF CHECK	[NO_SKIP] [SKIP]	[NO_SKIP]
CRC MODE	[CRC32] [CRC16]	[CRC32]
BUZZER	[KEY+FUNCTION] [FUNCTION] [KEY] [OFF]	[KEY+FUNCTION]
REMOTE EMULATION	[M1940] [M1895]	[M1940]
SET START COUNT	[OFF] [0.1S]…[10.S]	[OFF]

System update

Version up of M1950

In order to add new device algorithm, version-up of firmware is required.

For versoin up, please contact to Minato or our distributor.

Remote

Remote menu is to switch between operation panel mode and remote mode for interface with external device. Remote Select allows the following two selections.
COM (RS232C)
USB
Select either one of them and press **START** key. Then M1950 changed to REMOTE mode.
For reset, press **RESET** key on M1950.

Each Operation Procedure

To set programming address <Single PAE mode>

MODE → Device func → PAE mode → Single PAE Setting

Press mode key **MODE** key
Selet Device func

```
Mode menu
[Device func          ] Buffer operation
 I/O command            System config
 CF card                Remote
```

Device function operation menu is displayed
Select PAE mode menu

```
Device function menu
[PAE mode             ] Read vcc
 Verify mode            Function mode
 Protect mode           Repeat mode
```

PAE mode operation menu is displayed
Select Single PAE mode

```
PAE mode menu
 Clear PAE mode      [Single PAE mode    ]
 Multi PAE mode
```

Single PAE Setting is displayed.

```
Single PAE Setting      OK -> [START] key
 Start                [00000000          ]
 End                    003FFFFF
 Buffer                 00000000
```

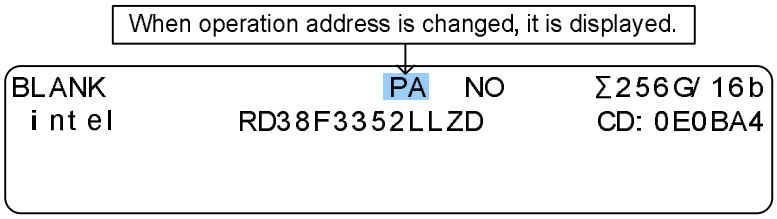
Address can be edited by **COM** key

Cursor (blinking)

```
Single PAE Setting      OK -> [START] key
 Start                [0000000           ]
 End                    003FFFFF
 Buffer                 00000000
```

To process the setting, press **START** key

Confirmation buzzer sounds and initial operation menu is displayed.
When address is specified, PA is displayed on LCD.



In case of M1950, address can be changed in every 16 byte.

To set auto programming address serach <Multi PAE mode>

MODE → Device func → PAE mode → Multi PAE mode

Press **MODE** key.
Select Device func

```
Mode menu
[Device func          ] Buffer operation
 I/O command            System config
 CF card                Remote
```

Device function operation menu is displayed.
Select PAE mode

```
Device function menu
[PAE mode             ] Read vcc
 Verify mode            Function mode
 Protect mode           Repeat mode
```

Select Multi PAE mode

```
PAE mode menu
 Clear PAE mode         Single PAE mode
[Multi PAE mode       ]
```

Press **ENT** key. Then M1950 automatically scan valid data and the number of those sectors in the buffer.

```
Buffer scan  xxx/262
```

When buffer scan is completed, the number of targeted block is displayed.

```
                          OK -> [START] key
        Mullti PAE mode set
        valid block     xxx/262
```

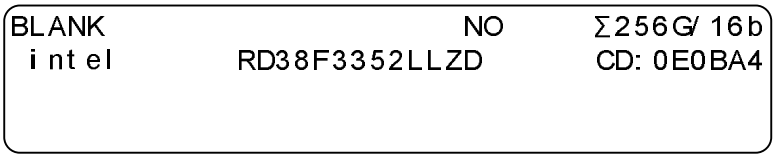
The number of targeted block

This display shows the example of no targeted block.

```
                          OK -> [START] key
        Mullti PAE mode clear
        no valid block
```

Press **START** key to send the setting.

A buzzer sounds and initial menu is displayed on LCD.



To trun OFF PAE mode <Clear PAE mode>

MODE → Device func → PAE mode → Clear PAE mode

Press **MODE** key
Select Device func

```
Mode menu
[Device func          ] Buffer operation
 I/O command            System config
 CF card                Remote
```

Device function operation menu is displayed.
Select PAE mode

```
Device function menu
[PAE mode             ] Read vcc
 Verify mode            Function mode
 Protect mode           Repeat mode
```

PAE mode operatoin menu is displayed.
Select Clear PAE mode

```
PAE mode menu
[Clear PAE mode       ] Single PAE mode
 Multi PAE mode
```

A buzzer sounds when Clear PAE mode is selected. Then formally set address is cleared.
After automatic resetting, initial menu is displayed on LCD.
(PA is disappeared from the operation menu on LCD)

```
BLANK                          NO       Σ256G/16b
 intel          RD38F3352LLZD           CD:0E0BA4
```

To set protect setting <Protect mode>

MODE → Device func → Protect mode

Press**MODE** key

Select Device func

```
Mode menu
[Device func       ] Buffer operation
 I/O command        System config
 CF card            Remote
```

Device function operation menu is displayed on LCD.

Select Protect mode.

```
Device function menu
 PAE mode           Read vcc
 Verify mode        Function mode
[Protect mode     ] Repeat mode
```

Protect operation mode is displayed.

```
Protect mode              OK -> [START] key
 Protect mode    [ NO PROTECT              ]
```

Select mode by left and right key

Press **START** key to execute the setting.

Confirmation buzzer sounds. Initial menu is displayed. It means that the setting is successfully completed.

Depending on the contents of the setting, different characters are displayed on LCD.

Each Protect Operation mode
NO: No operation
PO: Protect only
UP: Unprotect/Protect

```
BLANK                        NO      Σ256M/16b
 intel          xxxxxxxxxxxxx        CD: xxxxxx
```

Enable protection per each sector <Protect setting>

MODE → Buffer operation → Protect setting

Protect setting per each sector can be edited.
Default setting is Unprotect for all sectors.

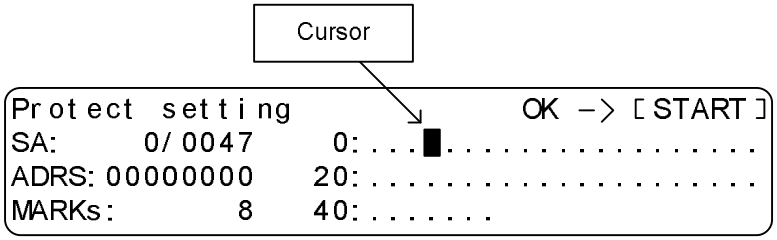
Press **MODE** key.
Select Buffer operation

```
Mode menu
 Device func          [Buffer operation   ]
 I/O command           System config
 CF card               Remote
```

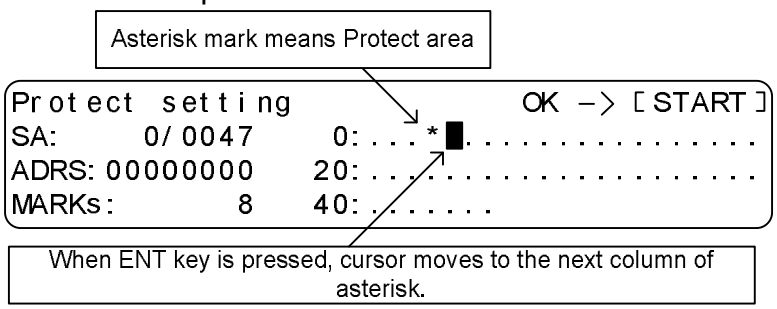
Buffer operation operation menu is displayed.
Select Protect setting

```
Buffer operation menu
 Buffer init           Buffer DUMP/EDIT
 Buffer swap           Check sum
[Protect setting  ]    Fast sum
```

Protect setting menu is displayed.
After moving blinking cusor to targeted protect # by arrow key, press **ENT** key



When **ENT** key is pressed, asterisk mark is displayed.
Asterisk means Protect
Dot means Unprotect



To process the setting, press **START** key

Confirmation buzzer sounds. Initial menu is displayed. It means that the setting is successfully completed.

To set Verify voltage <Read vcc>

MODE → Device func → Read VCC

Press **MODE** key.

Select Device func

```
Mode menu
[Device func          ] Buffer operation
 I/O command            System config
 CF card                Remote
```

Device function operation menu is displayed.

Select Read VCC

```
Device function menu
 PAE mode              [Read vcc             ]
 Verify mode            Function mode
 Protect mode           Repeat mode
```

Read VCC menu is displayed.

In this operation display, each voltage can be changed.

PS1/PS2/PS3 of Read VCC is internal the source voltage of M1950. (Voltage during COPY)

```
Read vcc #copy: PS1=2.9   PS2=0.0   PS3=0.0
      BLANK     [2.90v]     0.00v     0.00v
      VERIFY-L    2.90v     0.00v     0.00v
      VERIFY-H    2.90v     0.00v     0.00v
```

By arrow key, cursor can be move to other item.

COM key to edit voltage

MODE key to set default value

When **START** key is pressed, a buzzer sounds. Then new value is set.

After a buzzer sounds, initial menu is displayed on LCD.

Only when voltage is changed, VC is displayed on LCD.

When read VCC is changed, VC is displayed.

```
BLANK                        VCNO      Σ256M/16b
 intel          RD38F3352LLZD          CD: 0E0BA4
```

To set verify pattern <Verify mode>

MODE → Device func → Verify mode

Press **MODE** key
Select Device func

```
Mode menu
[Device func          ] Buffer operation
 I/O command            System config
 CF card                Remote
```

Device function operatoin menu is displayed.
Select Verify mode

```
Device function menu
 PAE mode               Read vcc
[Verify mode          ] Function mode
 Protect mode           Repeat mode
```

Verify mode operation is displayed.
In this mode, the number of verify can be set.
Left and right key for default ⇔ 2 Times ⇔ 1 Time

```
Verify mode                OK -> [START] key
 Verify count            [ default          ]
```

Press **START** key to process the setting.

Confirmation buzzer sounds. Initial menu is displayed. It means that the setting is successfully completed.

```
BLANK                    VF   NO      Σ256G/16b
 intel          RD38F3352LLZD         CD: 0E0BA4
```

To enable contact /IC check <Function mode>

MODE → Device func → Function mode

Press **MODE** key

Select Device func

```
Mode menu
[Device func        ] Buffer operation
 I/O command          System config
 CF card              Remote
```

Device function operation menu is displayed.

Select Function mode

```
Device function menu
 PAE mode             Read vcc
 Verify mode         [Function mode      ]
 Protect mode         Repeat mode
```

Function operation mode is displayed.

```
Function mode            OK -> [START] key
 contact check       [ ON                 ]
 id      check         ON
```

Left and right key to select ON/OFF.

Up and down key to select each item.

To set the selection, press **START** key.

Confirmation buzzer sounds. Initial menu is displayed.

Set repeat operation <Repeat mode>

MODE → Device func → Repeat mode

Press **MODE** key.
Select Device function

```
Mode menu
[ Device func          ]  Buffer operation
  I/O command             System config
  CF card                 Remote
```

Device function operation menu is displayed.
Select Repeat mode

```
Device function menu
  PAE mode                  Read vcc
  Verify mode               Function mode
  Protect mode            [ Repeat mode          ]
```

Repeat mode operation is displayed.

```
Repat mode                    OK -> [ START] key
  Repat mode              [  OFF                 ]
```

Left and right key for One Fail STOP ⇔ all Fail STOP
Press **START** key to process the setting

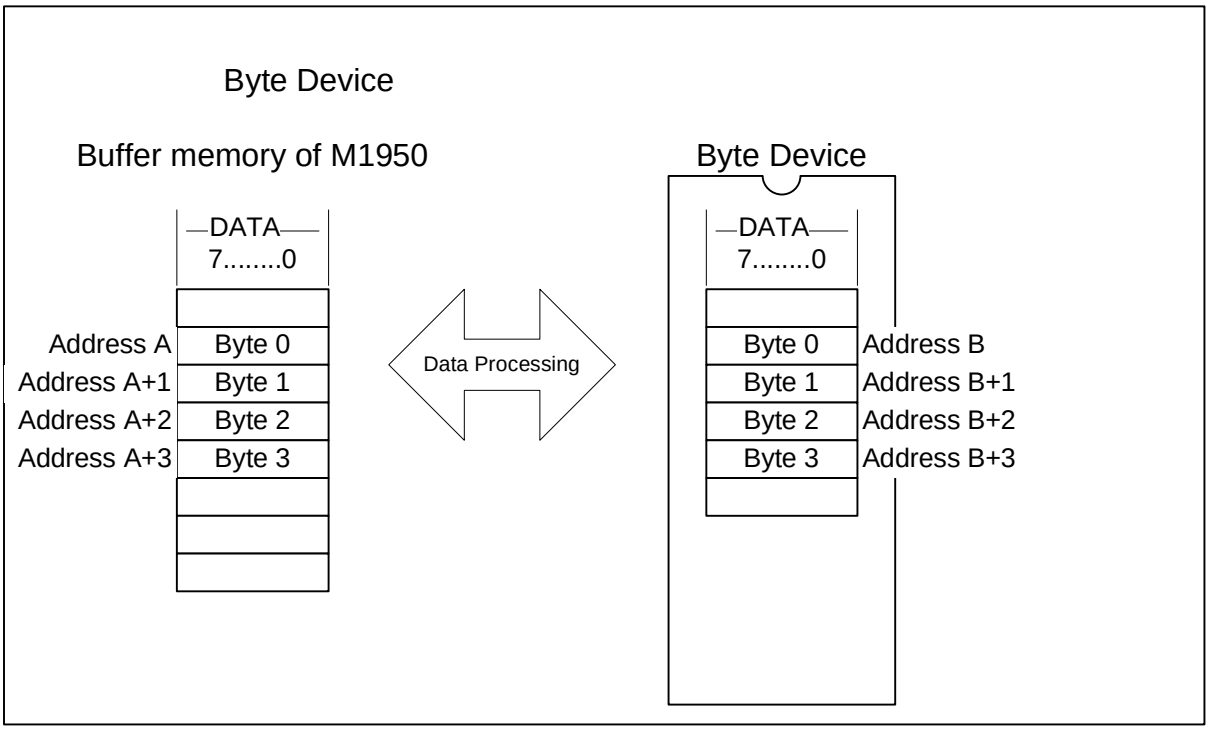
Confirmation buzzer sounds. Initial menu is displayed. It means that the setting is successfully completed.
When other setting than OFF is set in Repeat mode, R is displayed on LCD.

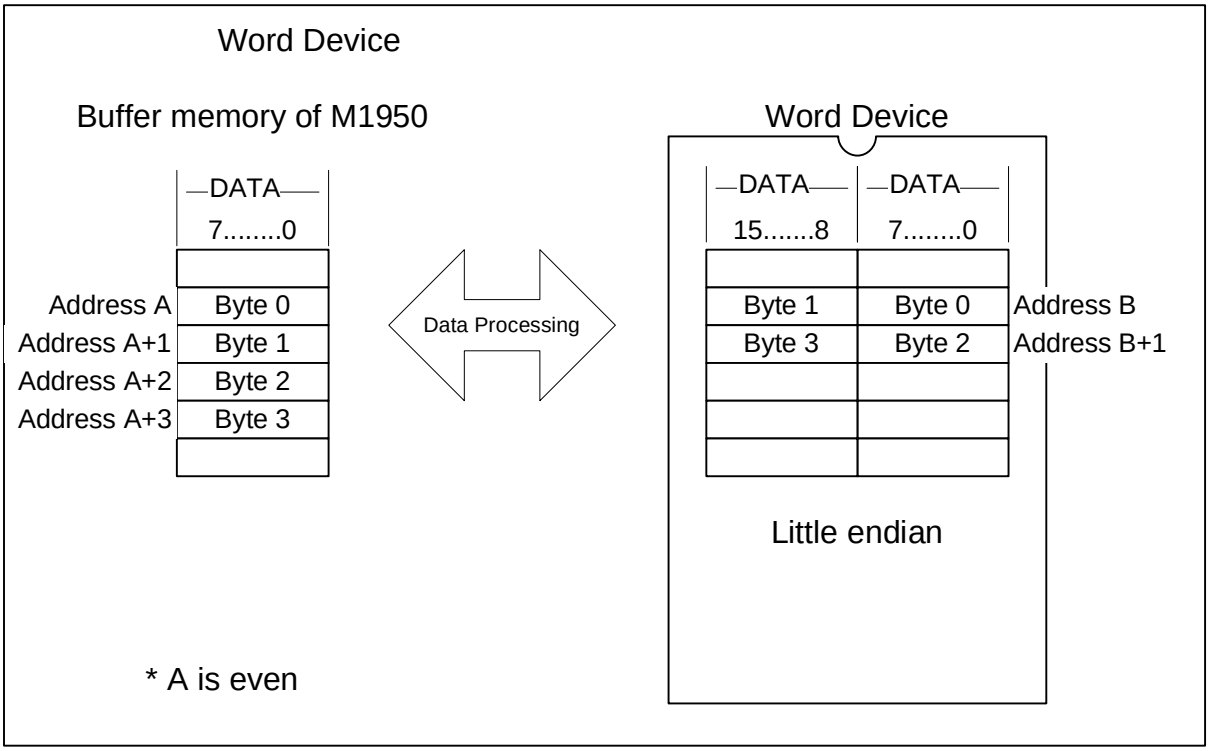
When other setting than OFF is set, R is displayed on LED

```
BLANK                  PA  NO  R Σ256M/16b
  intel        RD38F3352LLZD      CD:0E0BA4
```

Buffer memory

M1950 handles buffer data in 8 bit (byte method). When 8 bit (byte method) in the buffer memory is converted to 16 bit (word method), little endian method is applied. Editing of data in the buffer is required in some case.





To initialize buffer memory <Buffer init>

MODE → Buffer operation → Buffer init

Press **MODE** key.
Select Buffer operation

```
Mode menu
 Device func          [Buffer operation   ]
 I/O command           System config
 CF card               Remote
```

Buffer operation menu is displayed.
Select Buffer init

```
Buffer operation menu
[Buffer init        ] Buffer DUMP/EDIT
 Buffer swap          Check sum
 Protect setting      Fast sum
```

Buffer initialize operation is displayed.

```
Buffer initialize        OK -> [START] key
 Start                 [ 00000000         ]
 End                     00FFFFFF
 Pattern                 ALL FFH
```

By **COM** key, address can be edited.
In Pattern, data pattern can be edited.
Press left/right key for a selection.

```
Buffer initialize        OK -> [START] key
 Start                   00000000
 End                     00FFFFFF
 Pattern               [ ALL FFH          ]
```

Press **START** key to process the setting.
Press **START** key to execute the initialize of the buffer memory.
When this display is appeared, initialization is successfully completed.

```
Buffer initialize
xxxxxxxx-xxxxxxxx : ALL FFH

    ■■■■■■■■■■ COMPLETE ■■■■■■■■■■100%
```

To edit buffer data <Buffer DUMP/EDIT>

MODE → Buffer operation → Buffer DUMP/EDIT

Caution prior to setting

Data editing in EDIT mode directly changes the data in the buffer memory in real time.
(No key operation such as **ENT**, **START** is required since the data is directly edited. **RESET** key does not allow you to recall the former data and reset key is good for reset.)

Press **MODE** key.

Select Buffer operation

```
Mode menu
 Device func          [Buffer operation    ]
 I/O command           System config
 CF card               Remote
```

Buffer operation menu is displayed.

Select Buffer DUMP/EDIT

```
Buffer operation menu
 Buffer init          [Buffer DUMP/EDIT    ]
 Buffer swap           Check sum
 Protect setting       Fast sum
```

Buffer DUMP/EDI T operation is displayed.

When cursor is located in ADRS area, that maens M1950 is under DUMP mode.

Up/down key allows to change ADRS and left and right Key allows to change the position of cursor.

When cursor is located in ADRS area, that means M1950 is under DUMP mode

```
Buffer DUMP/EDIT     ADRS: 00000000
00000000: FF FF FF FF FF FF FF FF
00000008: FF FF FF FF FF FF FF FF
00000010: FF FF FF FF FF FF FF FF
```

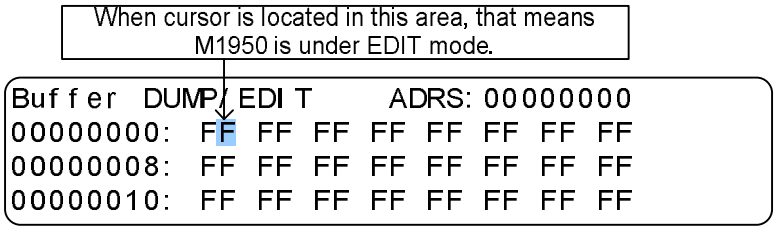
If you wish to change the data in the buffer memory,

You need to move to EDIT mode.

Press **COM** key to move to EDIT mode.

DUMP/EDIT mode can be changed by **COM** key.

Buffer memory



To change data under EDIT mode, use up and down key. Left and right key allows you to change the positon of the cursor.
Buffer DUMP/EDIT display consist of three interchangable different displays.
Press **MODE** key to interchange among, byte display, 16 bit word display and 32 bit double word display.

Byte display (initial operatoin display of byte method)
16bit word display (initial operation display of 16 bit word method)
32bit double word display (initial operation display of 32 bit double word method)
Each operation is the same.

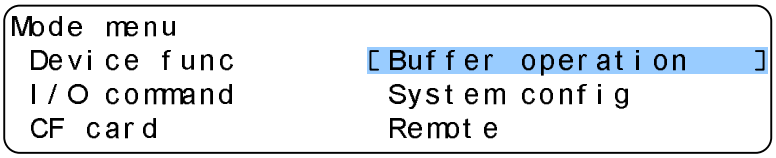
Remarks: Little endian is applied on 16 bit word display and 32 bit double word display.

Swap data in the buffer in each byte <Buffer swap>

MODE → Buffer operation → Byte swap

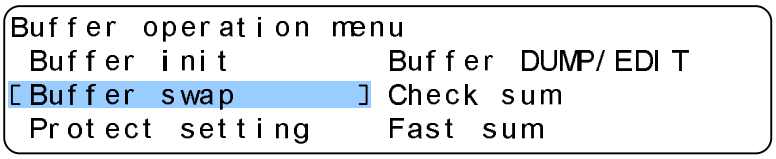
Press **MODE** key

Select Buffer operation

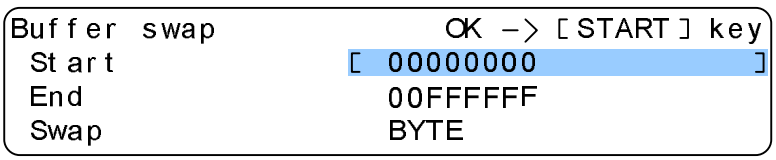


Buffer operation menu is displayed.

Select Byte swap



Buffer swap operation is displayed.



Up/down key to move to each item.

Left/right key to change address

At targeted time to be change, press **COM** to have blinking cursor to be displayed. Press up/down key to change the value and to left/right key to move to other item.

To confirm the change of the value, press **COM** key or **START** key.

By pressing either key, blinking cursor disappears. By left/right key, you can move to other item.

In Swap, byte can be set by left/right key.

When blinking cursor is gone, press **START** key to set new value.

To swap data in the buffer in each word <Buffer swap>

MODE → Buffer operation → Word swap

Press **MODE** key.
Select Buffer operation

```
Mode menu
 Device func          [Buffer operation    ]
 I/O command           System config
 CF card               Remote
```

Buffer operation menu is displayed.
Select Buffer swap.

```
Buffer operation menu
 Buffer init           Buffer DUMP/EDIT
[Buffer swap         ] Check sum
 Protect setting       Fast sum
```

Buffer swap operation is displayed.

```
Buffer swap                OK -> [START] key
 Start                [ 00000000           ]
 End                   00FFFFFF
 Swap                  BYTE
```

Up/down key allows you to move to each item.
In Swap, set WORD by left/right key.

```
Buffer swap                OK -> [START] key
 Start                 00000000
 End                   00FFFFFF
 Swap                 [ WORD               ]
```

In Start/End, **COM** key to process the new setting.
Press **START** key to execute.
After the execution, setting complete is displayed.

```
Buffer swap
xxxxxxxx-xxxxxxxx : WORD swap

    ■■■■■■■■■■ COMPLETE ■■■■■■■■■■100%
```

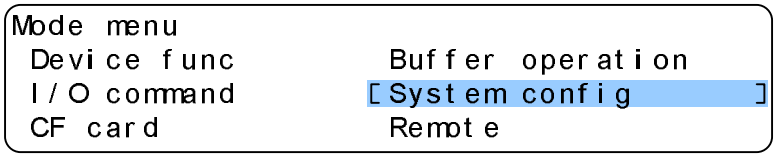
Other Operations.

To check the version of M1950 <M1950 Version>

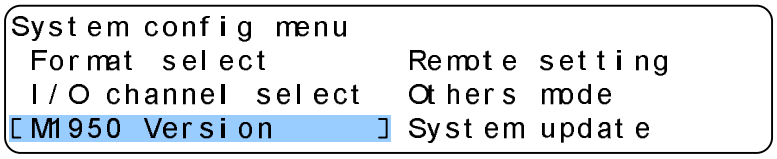
MODE → System config → M1950 Version

To have current version of M1940 displayed on LCD

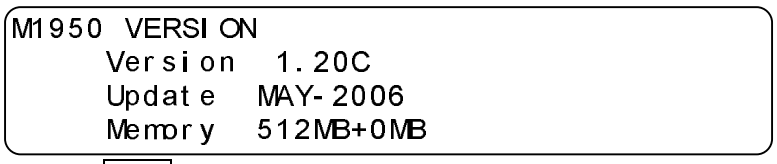
Press **MODE** key
Select System config



System config operation menu is displayed
Select M1950 Version



Currently installed version of M1950 is displayed on LCD.



Even if **DEV** kye is pressed at this stage, the display will not go back to the former menu.
Press any other function key to go back to the former menu.

To have Check sum displayed <Check sum>

MODE → Buffer operation → Check sum

This function is to calculate the check sum of the buffer by software and have it displayed on LCD.
The address in the Check sum menu can be edited per one byte.

Press **MODE** key
Select Buffer operation.

```
Mode menu
 Device func          [Buffer operation    ]
 I/O command           System config
 CF card               Remote
```

Buffer operation menu is displayed.
Select Check sum

```
Buffer operation menu
 Buffer init           Buffer DUMP/EDIT
 Buffer swap          [Check sum           ]
 Protect setting       Fast sum
```

Start and end address are displayed.
The displayed address is the buffer memory address of M1950 that is targeted to the selected device.
If PAE mode is valid, PAE setting is applied.

```
SUM calculation          OK -> [START] key
 Star                   [ 00000000          ]
 End                      003FFFFF
```

Press **START** key to calculate the check sum.

```
SUM calculating...

PROGRESS ADRS=$xxxxxxxx
    [________________________________]xxx%
```

```
SUM calculation

    SUM=xxxxxxxx XOR=xx CRC=xxxxxxxx
    ■■■■■■■■■■ COMPLETE ■■■■■■■■■■100%
```

To have Fast sum displayed <Fast sum>

MODE → Buffer operation → Fast sum

This function is to calculate the check sum of the buffer by software and have it displayed on LCD.
The address in the Check sum menu can be edited per 16 byte (the first digit can not be changed).

Press **MODE** key.
Select Buffer operation

```
Mode menu
 Device func          [Buffer operation    ]
 I/O command           System config
 CF card               Remote
```

Select Fast sum

```
Buffer operation menu
 Buffer init           Buffer DUMP/EDIT
 Buffer swap           Check sum
 Protect setting      [Fast sum            ]
```

Start and end address are displayed.
The displayed address is the buffer memory address of M1950 that is targeted to the selected device. If PAE mode is valid, PAE setting is applied.

```
SUM calculation          OK -> [START] key
 Start                [ 00000000          ]
 End                    003FFFFF
```

Press **START** key to have check sum displayed.

```
SUM calculating...

PROGRESS ADRS=$xxxxxxxx
    [________________________________]xxx%
```

```
SUM calculation

    SUM=xxxxxxxx XOR=xx CRC=xxxxxxxx
    ■■■■■■■■■■ COMPLETE ■■■■■■■■■■100%
```

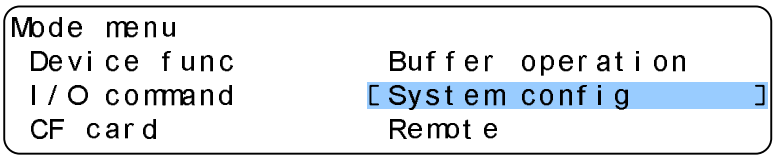
To skip Self Check <SELF CHECK>

MODE → System config → Others mode

Self check during booting the system can be set on/off.

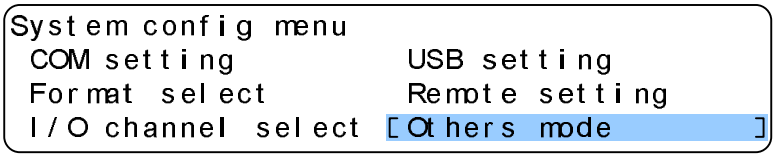
Press **MODE** key.

Select System config



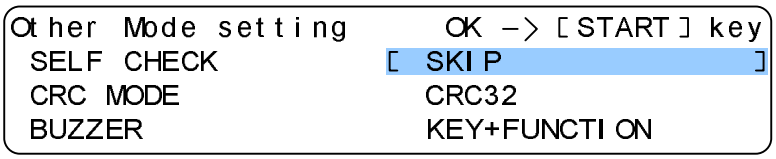
System config operation menu is displayed.

Select Others mode



Other Mode setting is displayed.

Move to SELF CHECK by up/down cursor

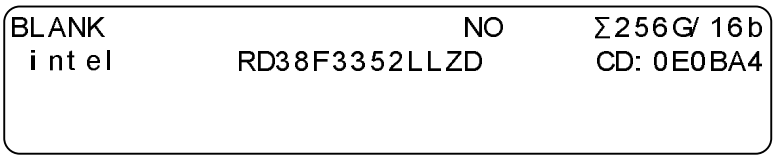


Setting of SELF CHECK can be changed by left/right cursor.

To confirm the new setting, press **START** key.

When a buzzer sounds, the setting is completed.

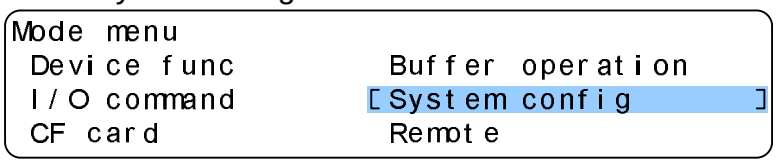
After the setting is completed, initial menu is displayed.



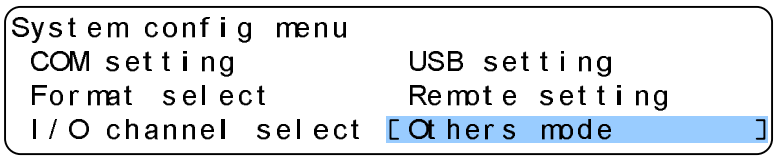
To change the setting of CRC check <CRC MODE>

MODE → System config → Others mode

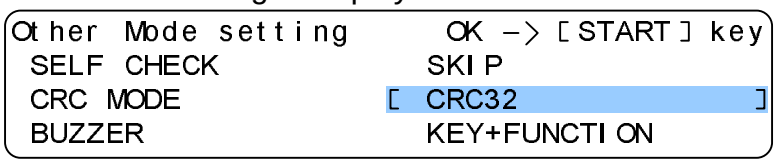
Press **MODE** key
Select System config



System config operation menu is displayed.
Select Others mode

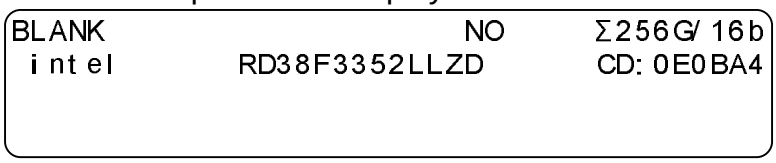


Other mode setting is displayed.



Move cursor to CRC MODE by up/down key.
To confirm the setting, press **START** key.
Confirmation buzzer sounds. The initial menu is dispalyed. That means the setting is completed.

There is no alphabetical display in intial menu.



To set a buzzer setting <BUZZER>

MODE → System config → Others mode

M1950 can sound a buzzer after each function is completed. The buzzer is ON as a default setting. If you wish to have buzzer turned off, you can make the setting as OFF.

Press **MODE** key

Select System config

```
Mode menu
 Device func          Buffer operation
 I/O command         [System config     ]
 CF card              Remote
```

System config operation menu is displayed.

Select others mode

```
System config menu
 COM setting          USB setting
 Format select        Remote setting
 I/O channel select  [Others mode       ]
```

Other mode setting is displayed.

Move to BUZZER by an up/down cursor.

```
Other Mode setting      OK -> [START] key
 SELF CHECK             SKIP
 CRC MODE               CRC32
 BUZZER                [ KEY+FUNCTION   ]
```

Setting of BUZZER can be changed by left/right cursor.
To confirm the new setting, press **START** key

When the setting is completed, initial menu is displayed.

```
BLANK                        NO      Σ256G/16b
 intel        RD38F3352LLZD          CD: 0E0BA4
```

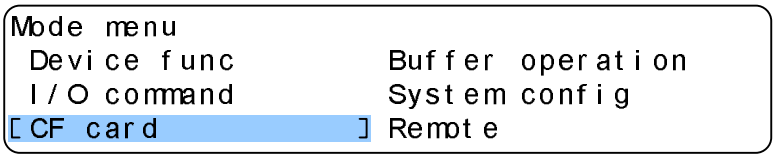
Operation of CF Card

To send data from CF Card to M1950

MODE → CF card

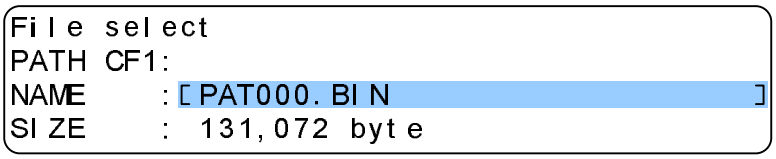
Press **MODE** key

Select CF card



File selet is displayed.

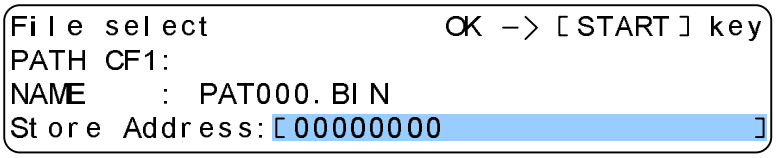
The file name in the CF card is displayed on LCD.



By Right ▶ key, stored file can be checked.

After selecting a targeted device, Press **ENT** or **START**

Then Store Address is displayed.



Set the start address of the file memory.

It can be edited by **COM** key.

When **START** key is pressed, data transfer is started.

When data transfer is completed, COMPLETE is displayed.

That means data transfer is successfully completed.

Press any key to go back to initial display.

To send data from the buffer of M1950 to CF Card

MODE → CF card

Press **MODE** key.
Select CF card

```
Mode menu
 Device func          Buffer operation
 I/O command          System config
[CF card            ] Remote
```

File select is displayed.
The cursor shows the file name stored in CF card

```
File select
PATH CF1:
NAME     :[PAT000.BIN                    ]
SIZE     :  131,072 byte
```

By Righ ▶ key a file name can be checked.

By keep pressing Right ▶ key, Create File is displayed in the cursor.

```
File select
PATH CF1:
NAME     :[ Create File                  ]
```

Press **ENT** or **START** key.
Then Save File is displayed. File name is automatically assigned in NAME.

```
Save File                 OK -> [START] key
PATH CF1:
NAME     :[   PAT00x.BIN                 ]
ADDRESS  :  00000000-007FFFFF
```

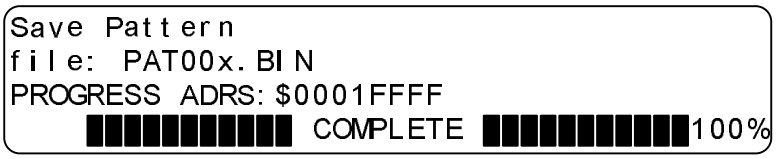
If you wish to change the file name and/or the extention, press **COM** key to edit.
Press **COM** key to have cursor displayed.

Cursor (under bar)

```
Save File                 OK -> [START] key
PATH CF1:
NAME     :[   PAT00x.BIN                 ]
ADDRESS  :  00000000-007FFFFF
```

Left and right key is good for horizontal move.
Up/down key is good for changing numbers and characters.
Press **START** key to confirm the new setting.

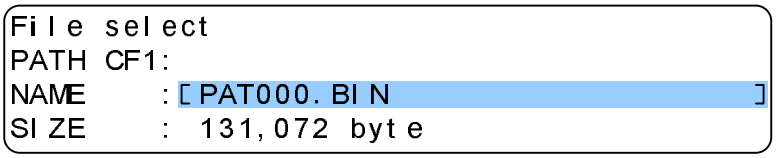
When the operation is completed, COMPLETE is displayed.



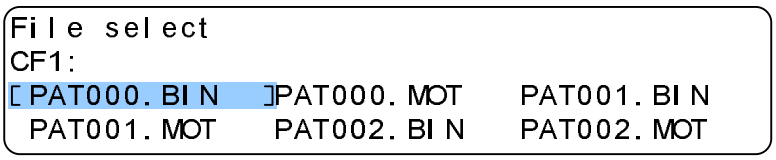
This means data transfer is completed.

Press any key to go back to initial menu.

In NAME of file select, press **COM** key



The file name listing of CF card is displayed.



Selection can be made by ENT or **START** key.

Remarks

In Name of File select display, pressing **COM** key displays the list of files in the CF card. You can select one file from the list. However, Create File can not be selected.

To access to Creae File, go back to File select display and press ▼ key.

Before connecting to external device

M1950 is equipped with serial interface (RS-232C) and USB as standard interface to external device.
The following features of M1950 are available for data transfer to external device.

Data in/out through RS-232C
Data in/out through USB

* Original USB driver is required to use USB
* USB driver is included in the CD. (Please refer to USB set-up guide)
* Standard USB available in the market can be used.

For data transfer between M1950 and external device, transfer condition must be set. The setting procedure that enables data transfer to the external device is described in this chapter.

USB Set Up Guide

This is the procedure of setting USB for the communication between M1950 and external device.
To install USB driver, please do not connect USB cable in USB port.

①To install M1950 Installer

USB dirver software can be executed from M1950usb_setup.exe in CD.
Execute M1950usb_setup.exe and click **Next(N) >** button in the menu. Then USB set-up is automatically start.
When menu is closed, that is the end of set-up.

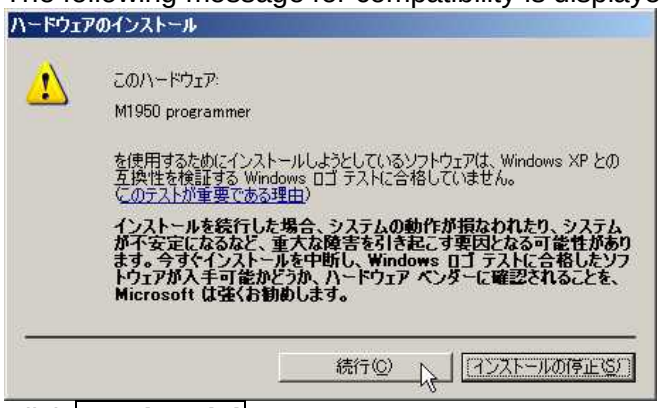
②Setting of programmer and USB

Connect USB cable to PC.
Then device is automatically detected.

Select **automatic software installation (recommended)**

Software installation is started.

The following message for compatibility is displayed.



Click **Continue(C)**

The display indicates installaiotn of driver software is successfully completed.

Press **Complete** to end the task.

Display message may vary.

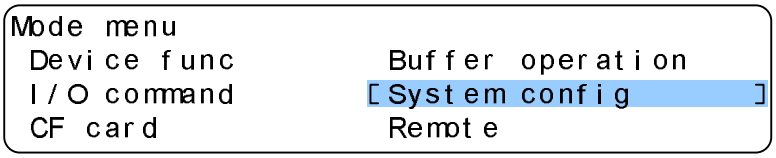
To Set RS-232C Interface <COM setting>

MODE → System config → COM setting

Set interface condition of RS-232C inferface between M1950 and external device.

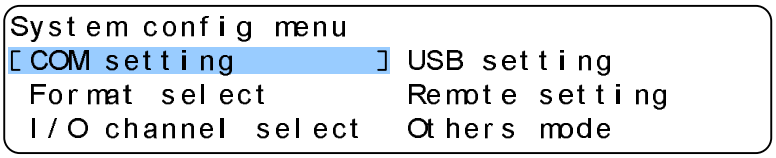
Press **MODE** key.

Select System config

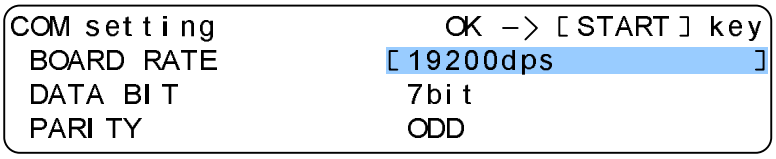


System config operation menu is displayed.

Select COM setting



COM setting is displayed



Up/down key to move cursor.

Left/right key to change the setting of each item.

To confirm the new setting, press **START** key.

By pressing START key, new interface condition is set and memorized.

The setting is valid even if the power is shut down.

Caution during remote operation

In M1950, ID check is executed during fundamental operation such as COPY、BLANK, etc.
During panel operation, error is displayed when ID check error is detected on a device. Then the operation is stopped. According to LED lamp, operator can remove IC from the socket where error occurred. For remote operation, you can choose one of following setting. One is to output ID check error when a function is under process. The other is to output PASS/FAIL result of a device. (Remote emulation setting).

Remote Emulation Setting Mode

For remote operation of an auto handler, we recommend to use both M1940 mode and CK commad for COPY, BLANK.

CK command: execute both contact check and ID check. Then output the result
Remove IC of which error is detected.

Fundamental function: execute COPY,BLANK, etc. Then output the result
Depending on the result, PASS IC sould be placed on good tray and FAIL IC should be placed in NG tray.

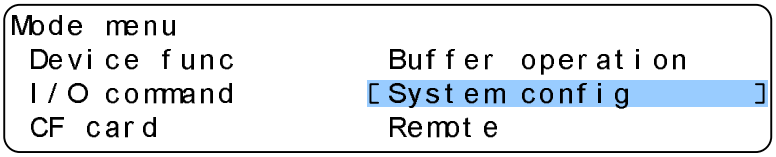
ID Check setting during fundamental operation <REMOTE EMULATION>

MODE → System config → Others mode

To set ID check (Yes/No) during fundamental operation such as (OP,VF,PG,etc)

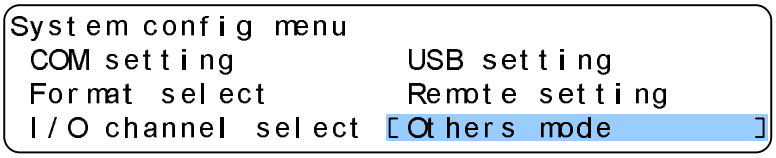
Press **MODE** key.

Select System config.



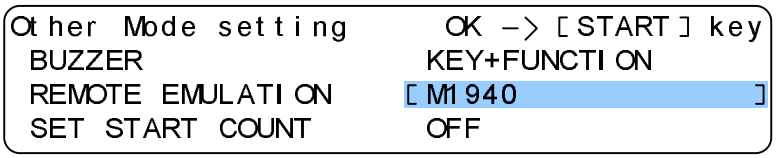
System config menu is displayed.

Select Others mode



By up/down key, move cursor to REMOTE EMULATION

Make a selection by left/right key.

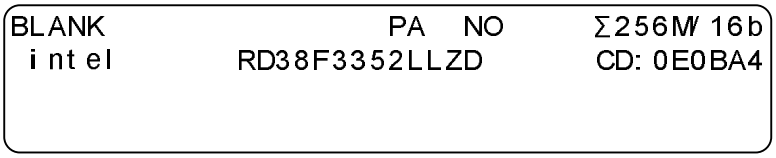


M1940 mode: Without ID check, fundamental operation is executed.

M1895 mode: After ID check is completed, fundamental operation is executed.

To confirm the new setting press **START** key.

Confirmation buzzer sounds. Then initial menu is displayed. The setting is completed.

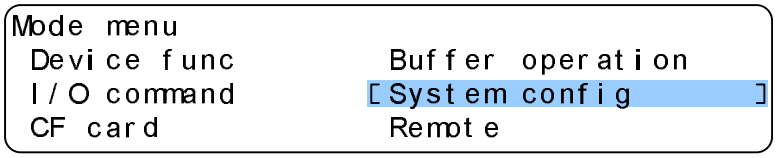


Set format pattern <Format select>

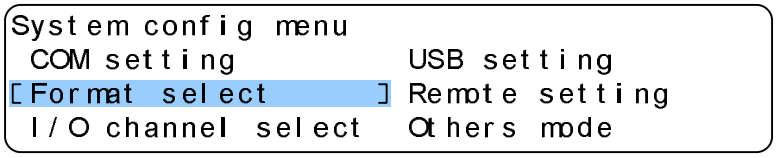
MODE → System config → Format select

Select and set data format for data transfer between M1950 and external device by operation panel

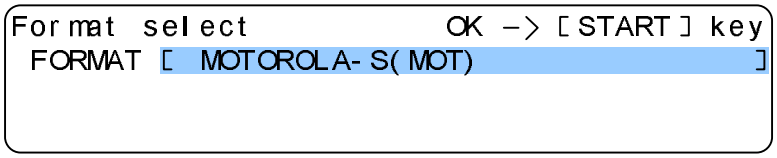
Press **MODE** key.
Select System config



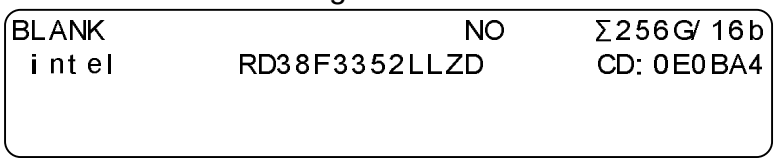
System config operation menu is displayed.
Select Format select.



Format select is displayed.
Format pattern can be selected by left/rigt key.



To confirm the new setting, press **START** key.
When a buzzer sounds, initial menu is displayed.
That is the end of setting.



When START key is pressed, the format is set and memorized. It will not be erased even if the power is turned off.

To set input / oputput port <I/O channel select>

MODE → System config → I/O channel select

This is to set the interface between M1950 and external device for data command by I/O commands

Press **MODE** key.

Select System config

```
Mode menu
 Device func          Buffer operation
 I/O command         [System config         ]
 CF card              Remote
```

System config operation menu is displayed.

Select I/O channel select.

```
System config menu
 COM setting           USB setting
 Format select         Remote setting
[I/O channel select]   Others mode
```

I/O channel select is displayed.

```
I/O channel select     OK -> [START] key
 Monitor channel        COM
 Data I/O channel      [ USB                ]
```

To confirm the new setting, press **START** key.

When a buzzer sounds, initial menu is displayed.

```
BLANK                    NO        Σ256G/16b
 intel       RD38F3352LLZD         CD: 0E0BA4
```

For data transfer <I/O command>

MODE → I/O command

Before carring out this operation, connect a cable between the set port of M1950 and external device.

Read data through external device (“Transfer IN”)

Press **MODE** key.
Select an I/O command.

```
Mode menu
 Device func          Buffer operation
[I/O command        ] System config
 CF card              Remote
```

I/O command operation menu is displayed.
By left/right key, set Transfer ”IN”
Then set buffer data start address (From File read ADRS),and
Buffer start address (To Buffer store ADRS),
And data end address (File read end ADRS).

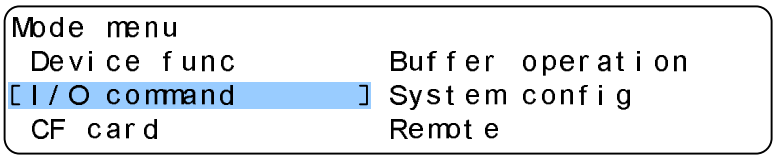
```
I/O command                OK -> [START] key
 Transfer                   [IN              ]
 From File read ADRS         00000000
 To Buffer store ADRS        00000000
```

To confirm the new setting, press **START** key.
When **START** key is pressed, data transfer is executed.
When the transfer is completed, a buzzer sounds.
Then initial menu is displayed.
That is the end of data transfer.

```
BLANK                        NO      Σ256G/16b
 intel        RD38F3352LLZD          CD:0E0BA4
```

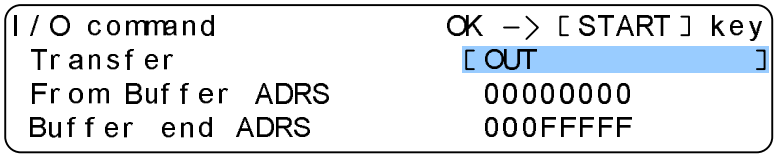
To output data to an external device (“Transfer OUT”)

Press MODE key.
Select I/O command

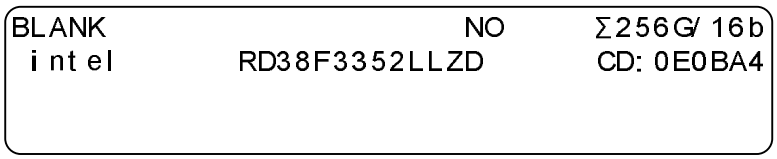


I/O command operation menu is displayed.
By left/right key, set OUT for Transfer.
Then set buffer start address (From Buffer ADRS),
And buffer end address(To Buffer end ADRS),

The address of one device is set as Default.



To confirm the new setting, press **START** key.
When **START** is pressed, data transfer is executed. When transfer is completed, a buzzer sounds. Then initial menu is displayed.
That is the end of transfer.



Remote Operation of M1950

In this chapter, this chapter explains the operation how to control M1950 in remote through external USB or RS-232C cable is required for remote control.

When conncection is completed, please make the following operation.

For the explanation, PC and key board are used as examples (PC: external terminal, Key board: input).

In this chapter, the following operaiotn is explained.

Execution by operation panel
Execution by external terminal
Example of remote command
Symbols used in this manual (remote mode)
Displaying results of execution

Setting condition of remote mode <Remote setting>

MODE → System config → Remote setting

Press **MODE**

Select System config

```
Mode menu
 Device func          Buffer operation
 I/O command         [System config      ]
 CF card              Remote
```

System config operation menu is displayed.

Select Remote setting.

```
System config menu
 COM setting           USB setting
 Format select        [Remote setting     ]
 I/O channel select    Others mode
```

Remote setting operation menu is displayed.

```
Remote setting          OK -> [START] key
 ECHO                  [ OFF               ]
 PROMPT                 ----
 ACK/NCK                OFF
```

Each item can be accessed by up/down key.

You can select

One by left/right key.

To confirm the new setting, press **START** key.

A buzzer sounds. Initial menu is displayed.

```
BLANK                        NO      Σ256G/16b
 intel        RD38F3352LLZD          CD: 0E0BA4
```

Please refer to remote mode setting command for the data of the setting (RMD).

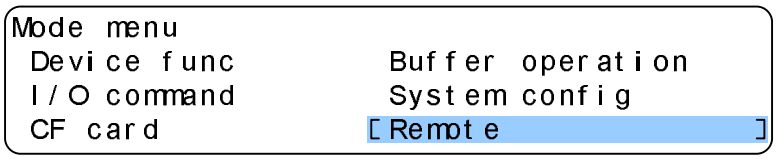
To make M1950 in REMOTE<Remote>

MODE → Remote

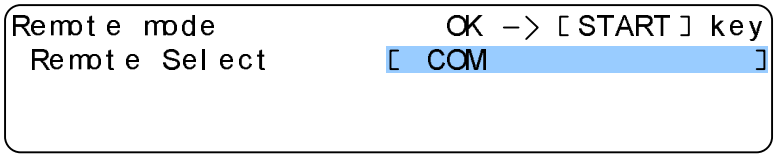
Execution by operation panel

In order to operate M1950 in remote, the mode of M1950 must be set as REMOTE.
In this page, the operation how to change M1950 in remote by operation panel is described.

Press **MODE** key
Select Remote.

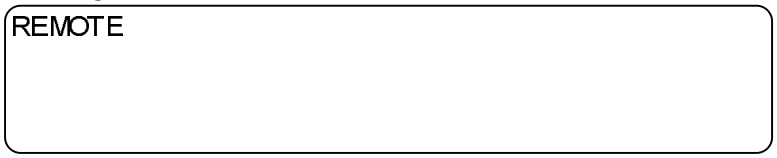


Remote mode is displayed.



By left/right key
COM (RS-232C)
USB (USB)
Either one of them from above selection can be set.
Slect the port for the communication.

When **START** key is pressed, M1950 becomes remote mode. The following is the display message.



In the display of PC # (Prompt) is displayed.
By the setting of prompt display setting varies. (Refer to Remote setting)

Press **RESET** to go back to panel (local) operation.

Execution of remote mode by a command

It can be executed by keyboard operation.

Key operation	**Ctrl**+**E** **Ctrl**+**E**
ASCII CODE(HEX)	**ENQ(05h) ENQ(05h)**

By keyboard, input **Ctrl**+**E** **Ctrl**+**E**

When M1950 received this code, REMOTE is displayed on M1950. In the PC, # (prompt) is displayed.

This is the end of execution of remote mode.

Regarding targeted channel of remote:

When remote is executed by commands through external terminal, I/O channel that received **Ctrl** +**E** **Ctrl** +**E** becomes valid I/O channel.

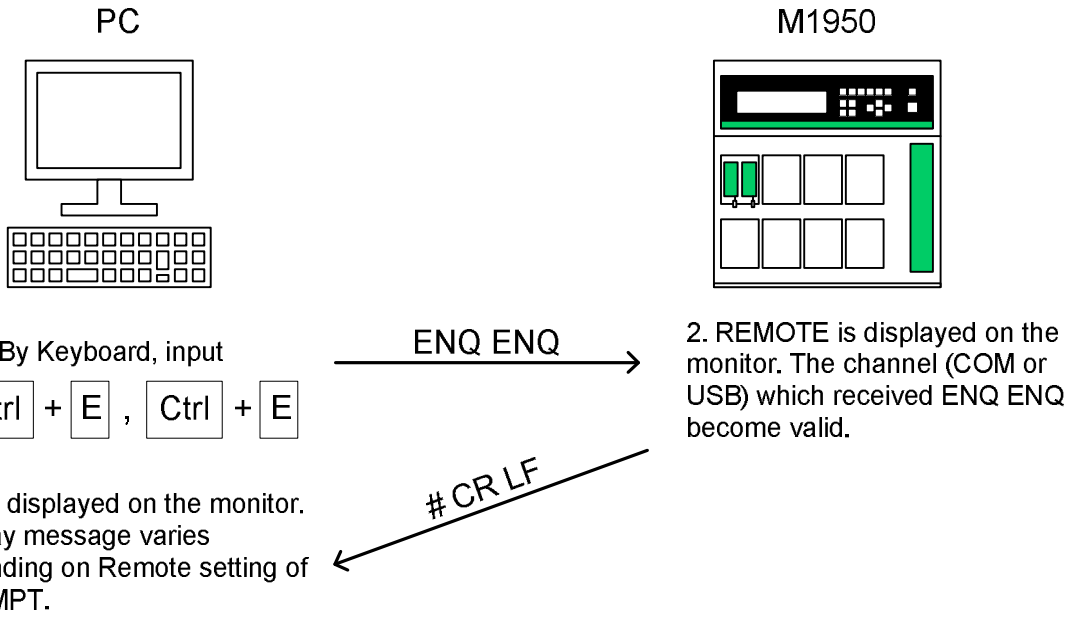
When wrong input a made by a mistake, press Back Space on the keyboard to go back to the last area of input.

Before executing remoe mode, initial menu should be displayed on M1950. When any other menu is displayed, M1950 does not change to remote mode.

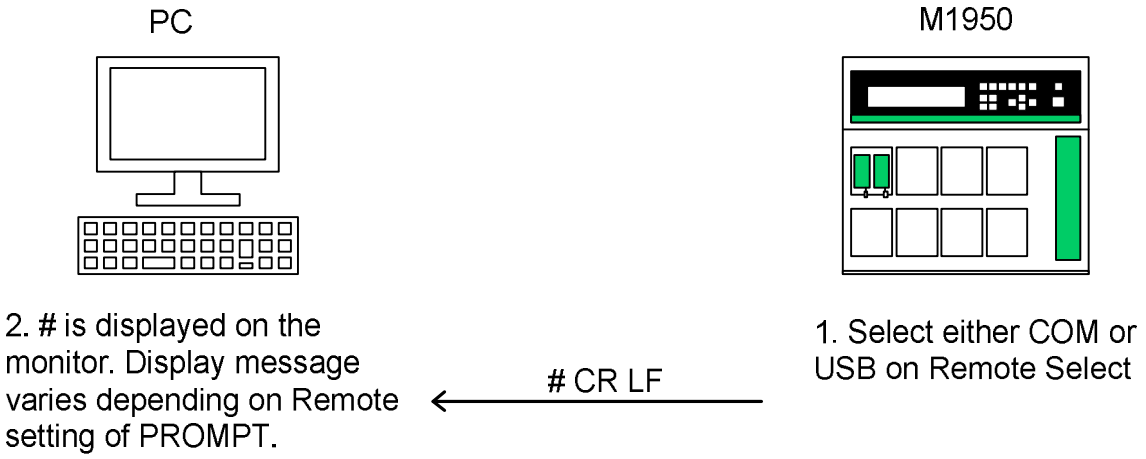
The display message varies depending on the setting of command prompt. (Please refer toRemote setting)

If there is any problem the operation up to now, please check the interface setting and setting of cables, etc.

Remote operation from external terminal

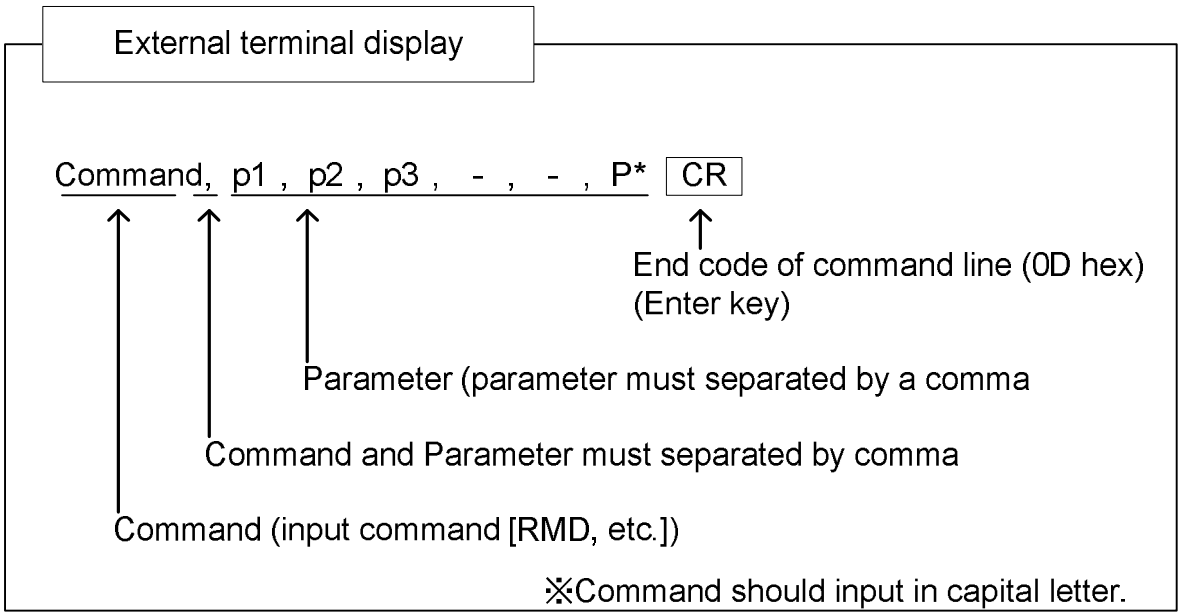


Remote operation from M1950



Format of remote command

Format of remote command



How to abbreviate the parameter

Parameter can be abbreviated. Action of a command can be different with parameter and without. Please refer to detail of the command in this manual.

In this page, the way how to abbreviate a part of commands with multiple parameters is discribed.

Basic format	Command,p1,p2,p3	CR
When only p1 should be changed	Command,p1	CR
When only p3 should be changed	Command , , ,p3	CR

Symbols used in this chapter (Remote mode)

This page defines the symbols as commad input.

[n]	Output from external device without echo back from programmer
n	Output from external device with echo back from programmer (Echo back can be set as ON/OFF)
(LF)	Output from programmer (Echo back ON to output and OFF for no output)
n	Output from progammer
SP	Space code
CR	Carridge return (Enter key)
LF	Line feed
D1	XON
D3	XOFF

Display the result of command

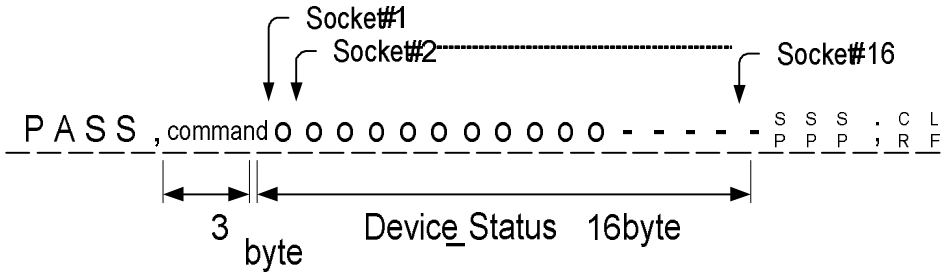
In remote mode, in addition to the response of a command, the result of command can be output to external device.
There are two types of output format depending on the command.

(1) Commnd output for device execution

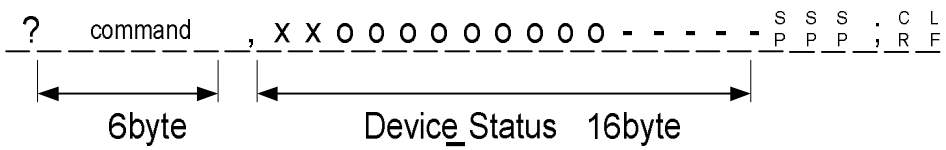
Device execution commnd	
Command	Contents of action
OP	COPY mode execution
CP	”
Z	ERASE mode execution
ER	”
B	BLANK mode execution
BL	”
V	VERIFY mode execution
VF	”
W	PROGRAM mode executoin
PG	”
OT	CONT command execution
CT	”
CK	Pre-check command

Device Status per each socket of M1950 as the results of device action is output to external device.

○ Output format of normal ending



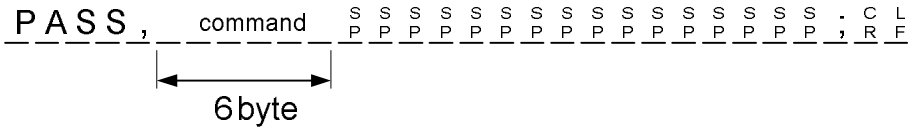
○ Output format of abnormal ending



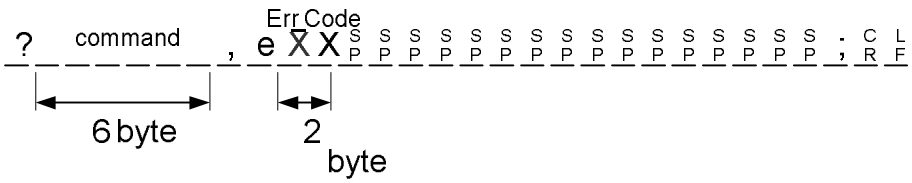
(2)Other command output format

Other command output format other than device execution command such as PAE, INI.

○ Output format of normal ending



○ Output format of abnormal ending



Setting of remode mode condition <RMD>

This operation is to confirm the condition of remote mode setting.
Some parameters are fixed valued as those are not supported by M1950.
To set it in remote, please refer to remote control of M1950.

Command format

RMD, p1, p2, p3, p4, p5, p6, p7

Parameter : Input value in px(within the parameter)
(Please refer to the following table)

Parameter	Action	Input Value	Setting	Input Value	Setting	Input Value	Setting	Fixed Value
p1	Echo Back	0	ON	1	OFF			
p2	Prompt	0	#	1	#CR LF	2	None	
p3	Time Out	0	OFF	1	TMO 1			0
p4	ACK/NCK	0	OFF	1	ON			
p5	Command Type	0	ON	1	m1900			1
p6	Buzzer	0	ON	1	OFF			
p7	Dammy Read	0	----	1	ON			1

p3: time out
p5: command type
p7: Dummy read can not be changed for M1950

To confirm the condtion setting of remote control

Please carry out the following operation to check the condition setting.

To confirm the condition

RMD CR (LF)

SP 0 SP SP SP ECHO SP ON SP SP SP SP CR LF

SP 0 SP SP SP # SP SP SP SP SP SP SP SP SP SP CR LF

SP 0 SP SP SP TMO SP OFF SP SP SP SP CR LF

SP 0 SP SP SP ACK/NAK SP OFF CR LF

SP 1 SP SP SP M1900 SP mode SP CR LF

SP 1 SP SP SP BUZZER SP OFF SP CR LF

SP 1 SP SP SP PDM SP ON SP SP SP SP SP CR LF

PASS,RMD SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

To change the setting

RMD , p1 , p2 , p3 p3 , p4 , p5 , p6 , p7 CR (LF)

PASS,RMD SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

End of remote mode <E> <BY>

The following is the remote command operation to end remote mode.
To end remote mode by operation panel key of M1950, press **RESET** key.

Command format

E

or

BY

Parameter: No

E CR (LF)

B Y CR (LF)

Termination command <Ctrl+D>

When this command is received during buffer memory data output, output is stopped. Then M1950 became ready to receive the next command.

Command format

Ctrl+D

Parameter: No

Help to output the list of commands <H>p

It is to output the list of commands

Command format

H

Parameter: No

H CR (LF)

<<< Example of output >>>

```
****************************************
*  m1950 remote command                *
****************************************
 *** remote mode control  ***
 E,BY     : remote mode end          RMD      : remote config.
 REV      : prom version display     H        : help message display
 BS       : buffer size display      ^D       : cancel command
 ^E^E     : remote start
 *** data in/out command  ***
 S,DF     : transfer format set       F,INI    : buffer mem initialize
 P,PL,WD  : serial output             RL,RD    : serial input
 RH       : parallel input
 WP       : protect serial output     RP       : protect serial input
 RPP      : protect parallel input
 *** unit execute command  ***
 OP,CP    : copy command             OT,CT    : cont command
 B,BL     : blank command            V,VF     : verify command
 W,PG     : program command          Z,ER     : EEPROM erase command
 CK       : contact check command
 *** other command ***
 BO,CS    : check sum (4 figures)    BO8,CS8  : check sum (8 figures)
 N,DV     : device select            PCH      : protect mode change
 L,LS     : buffer mem display       T        : buffer mem transfer
 SCH      : buffer mem search        UNS      : buffer mem un_search
```

PASS, H SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Device selection command <N> <DV>

This is a command to select or confirm the targeted device.
It is sent by a device code of device code list.
Please refer to basic operation of M1950 to set it by operation panel key of M1950.
Current set Device Code will be output without a parameter.
In P1, there should be characters/numbers in 6 digit.

Command format

N, p1

DV, p1

Parameter p1:Device Code (hex)

To confirm device code

N CR (LF)

0 9 0 2 0 1 CR LF

P A S S , N SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

D V CR (LF)

0 2 0 1 0 1 CR LF

P A S S , D V SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

To set device code

N , p1 CR (LF)

P A S S , N SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

D V , p1 CR (LF)

P A S S , D V SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

To execute COPY mode <OP> <CP>

To copy data from the IC set on socket #1 to the buffer memory of M1950.

Command format

OP

CP

Parameter: No

Status:

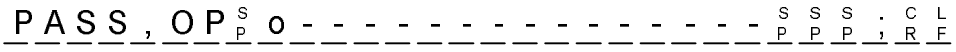
o(6Fh)	Normal ending
x(78h)	Abnormal ending
-(2Dh)	No connection

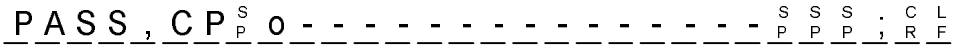
The following two statuses are output when Remote Emulaotin is set as M1895 mode and ID error is detected.

. (2Eh): ID check PASS

? (3Fh): ID check FAILL

When this error occurred, programmer will stop before executing COPY.





To execute ERASE mode <Z> <ER>

This mode is to Erase data in the IC (EE-RPOM an Flash) set on socket #1 to #16

Command format

Z

ER

Parameter: No

Status:
o(6Fh) Normal ending
x(78h) Abnormal ending
-(2Dh) No device is detected

The following two statuses are output when Remote Emulaotin is set as M1895 mode and ID error is detected.
. (2Eh): ID check PASS
? (3Fh): ID check FAILL
When this error occurred, programmer will stop before executing ERASE.

Z CR (LF)

PASS, Z SP SP o o o o o o o o o o - - - - - SP SP SP ; CR LF

ER CR (LF)

PASS, ER SP o o o o o o o o o o - - - - - SP SP SP ; CR LF

To execute BLANK mode <B> <BL>

This mode is to make blank check (whether there is a data in IC set on socket #1 to #16 or not).

Command format

B

BL

Parameter: No

Status:

o(6Fh)	Normal ending
x(78h)	Abnormal ending
-(2Dh)	No device is detected.

The following two statuses are output when Remote Emulaotin is set as M1895 mode and ID error is detected.

. (2Eh): ID check PASS

? (3Fh): ID check FAILL

When this error occurred, programmer will stop before executing BLANK.

B CR (LF)

PASS, B SP SP o o o o o o o o o o o - - - - - SP SP SP ; CR LF

B L CR (LF)

PASS, BL SP o o o o o o o o o o o - - - - - SP SP SP ; CR LF

To execute PROGRAM mode <W> <PG>

This mode is to program data from the buffer memory to M1950 to IC set on socket #1 to #16.

Command format

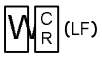
W

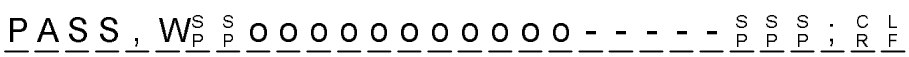
PG

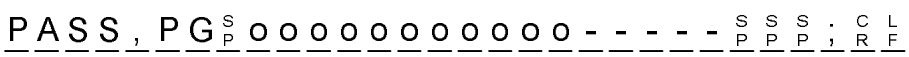
Parameter: No

Status:
o(6Fh) Normal ending
x(78h) Abnormal ending
-(2Dh) No device is detected.

The following two statuses are output when Remote Emulaotin is set as M1895 mode and ID error is detected.
. (2Eh): ID check PASS
? (3Fh): ID check FAILL
When this error occurred, programmer will stop before executing PROGRAM.







To execute VERIFY mode <V> <VF>

This mode is to verify the data in the buffer memory and IC set on socket #1 to #16.

Command format

V

VF

Parameter: No

Status:

o(6Fh)	Normal ending
x(78h)	Abnormal ending
-(2Dh)	No device is detected

The following two status are output when Remote Emulaotin is set as M1895 mode and ID error is detected.

. (2Eh): ID check PASS

? (3Fh): ID check FAILL

When this error occurred, programmer will stop before executing VERIFY.

V CR (LF)

PASS, V SP SP o o o o o o o o o o o - - - - - SP SP SP ; CR LF

VF CR (LF)

PASS, VF SP o o o o o o o o o o o - - - - - SP SP SP ; CR LF

To execute CONTINUOUS mode <OT> <CT>

This is a recommended mode to program data from the buffer memory to IC.

Depending on the type of the device (whether electrically erasable device such as Flash/EE-PROM on which Erase is valid or not), internal operation flow varies.
For the detail, please refer to CONTINUOUS in the basic operation.

Command format

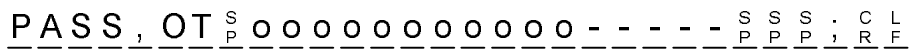
OT

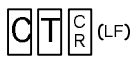
CT

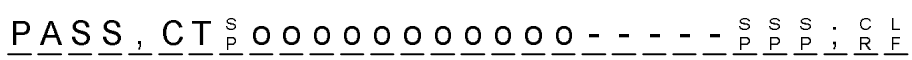
Parameter: No

Status
o(6Fh) Normal ending
x(78h) Abnormal ending
-(2Dh) No device is detected

The following two statuses are output when Remote Emulaotin is
set as M1895 mode and ID error is detected.
. (2Eh): ID check PASS
? (3Fh): ID check FAILL
When this error occurred, programmer will stop before executing CONTINUOUS.







Setting ID check <SIG>

To make ID check and set it ON/OFF

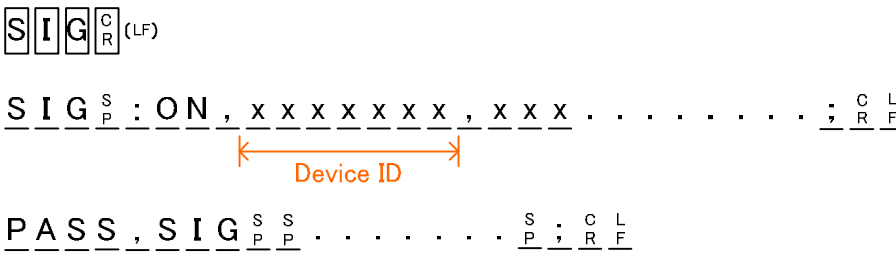
Command format

SIG,P1

Parameter
p1: to set ID check ON/OFF

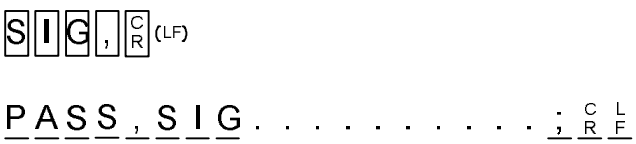
Status
0: ID check OFF
1: ID check ON (When device is changed, it is changed to ON)

To make ID check



Device ID of the set device code is continuously output (the output number of byte is not fixed)

To set ID check



Pre-check command <CK>

MODE → System config → Others mode → REMOTE EMULATION

This mode is to check the connection between device and socket.

Before executing COPY、BLANK, etc in remote mode, use this command to check the contact of IC and remove bad devices. The status is the same even if check function is changed by “REMOTE EMULATION” setting.

REMOTE EMULASION	Check function	
M1940	Contact check	ID check
M1895	Contact check	

Command format

CK

Parameter: None

Status:

o(6Fh) Normal connction

x(78h) Abnormal connection

-(2Dh) No connection

CK CR (LF)

PASS,CK SP oooooooooooo----SP SP SP ; CR LF

CK CR (LF)

?CK SP SP SP SP ,oxxx----------SP SP SP ; CR LF

Address Area Setting Command <MD> <PAE>

This command is to set the address area of basic operation.

By parameter, device start address, end adress and buffer memory start address can be specified.

Selectable address varies by the the method of programming. For detail, please refer to the PAE mode of advance operation.

With no paramter, current setting is output.

By using expanded format, setting (ON/OFF) of Multi PAE mode can be set and checked.

Command format

MD, p1, p2, p3

PAE, p1, p2, p3

Parameter

p1: Start address of IC(hex)

“ - “ Default value:00

p2：Device end address(hex)

“ - “ Default value: device end address

p3：Buffer start address(hex)

“ - “ Default value:00

Check and Confirm

M D CR (LF)

0 0 0 0 0 0 0 SP 0 0 0 F F F F SP 0 0 3 0 0 0 0 CR LF

p1: Device Start Address | p2: Device Start Address | p2: Buffer Start Address

P A S S , M D SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

P A E CR (LF)

0 0 0 0 0 0 0 SP 0 0 0 F F F F SP 0 0 3 0 0 0 0 CR LF

P A S S , P A E SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Set

M D , p1 ---- p1 , p2 ---- p2 , p3 ---- p3 CR (LF)

P A S S , M D SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

P A E , p1 ---- p1 , p2 ---- p2 , p3 ---- p3 CR (LF)

P A S S , P A E SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Address Area Setting Command <MD> <PAE>

MD, PAE commands has expanded format. By using expanded format, setting (ON/OFF) of Multi PAE mode can be set and checked.

Expanded Command

*Expanded Command

DIS To clear address area

MLT To set Multi PAE mode

MOD To have PAE mode status displayed

To clear address area (default setting)

MD,DIS

PAE,DIS

To set Multi PAE mode

MD,MLT

MD,MLT

To have PAE mode status displayed

MD,MOD

PAE,MOD

Response

DIS ： Standard mode (operation is valid for all data address of the device)

ENB ： Single PAE mode

(Single PAE)

MLT 2 ： Multi PAE mode

(Multi PAE)

Clear 【 DIS 】

MD,DIS CR (LF)

PASS,MD SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

PAE,DIS CR (LF)

PASS,PAE SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Multi PAE Setting 【 MLT 】

MD,MLT CR (LF)

PASS,MD SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

PAE,MLT CR (LF)

PASS,PAE SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

To have PAE mode status displayed 【 MOD 】

MD,MOD CR (LF)

DIS CR LF

PASS,MD SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

PAE,MOD CR (LF)

MLT SP 2 CR LF

PASS,PAE SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Setting data format for transfer <S> <DF>

This mode enables to set and check the data format for transfer

Command format

S, p1

DF, p1

Parameter
p1:Data format #
0:MINATO HEX
1:————
2:INTEL HEX
3:————
4:————
5:MOTOROLA S
6:————
7:————
9:————
10:————
11:————
12:————
13:————
14:No Format

Check

S CR (LF)

SP 0 2 SP SP SP I N T E L SP SP H e x CR LF

P A S S , S SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

D F CR (LF)

SP 0 5 SP SP SP M O T O R O L A SP S CR LF

P A S S , D F SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Set

S , p1 p1 CR (LF)

P A S S , S SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

D F , p1 p1 CR (LF)

P A S S , D F SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Buffer memory size output <BS>

This mode is to have memory size of M1950 output.

Command format

BS

Parameter : None

BS CR (LF)

4096M SP bit SP buffer CR LF

PASS,BS SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Firmware Version Output <REV>

This mode is to have firmware version of M1950 displayed.

Command format

REV

Parameter ： None

SP V SP 1 . 3 0 SP SP SP SP SP SP SP SP SP CR LF

PASS, REV SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Buffer memory data dispay <L> <LS>

This mode is to have data of buffer memory displayed.
By parameter, buffer memory start address and end address of the target can be specified.

Command format

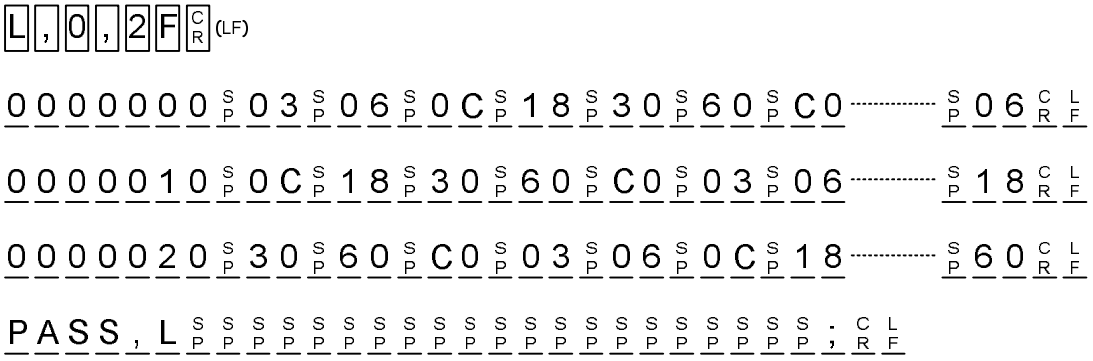
L, p1, p2

LS, p1, p2

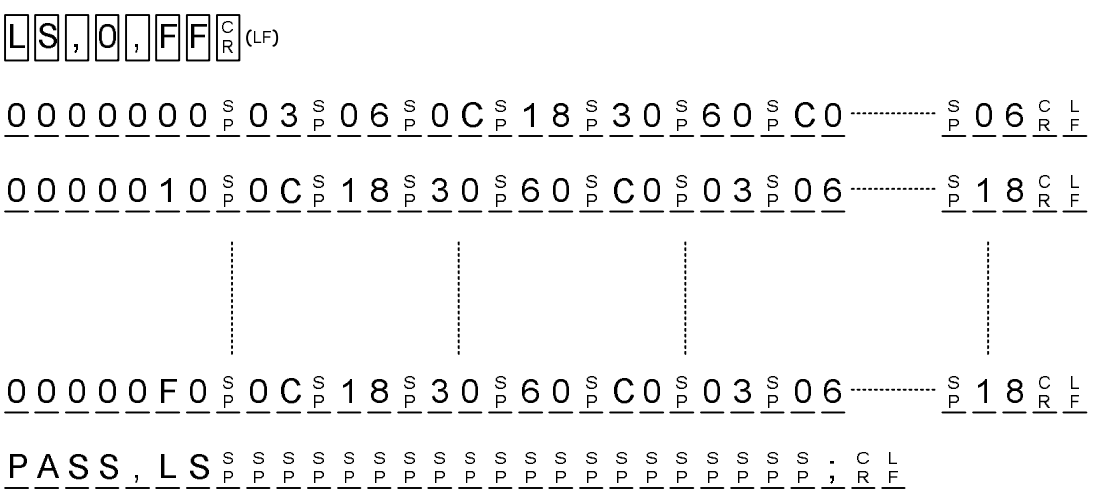
Parameter:
p1: Start address(hex)
Default value : 00

p2: End address(hex)
Default value: Buffer end address

In case of p1:0000;p2:002F (example of output)



In case of p1:0000;p2:00FF (example of output)



Check sum display (four digits) <BO> <CS>

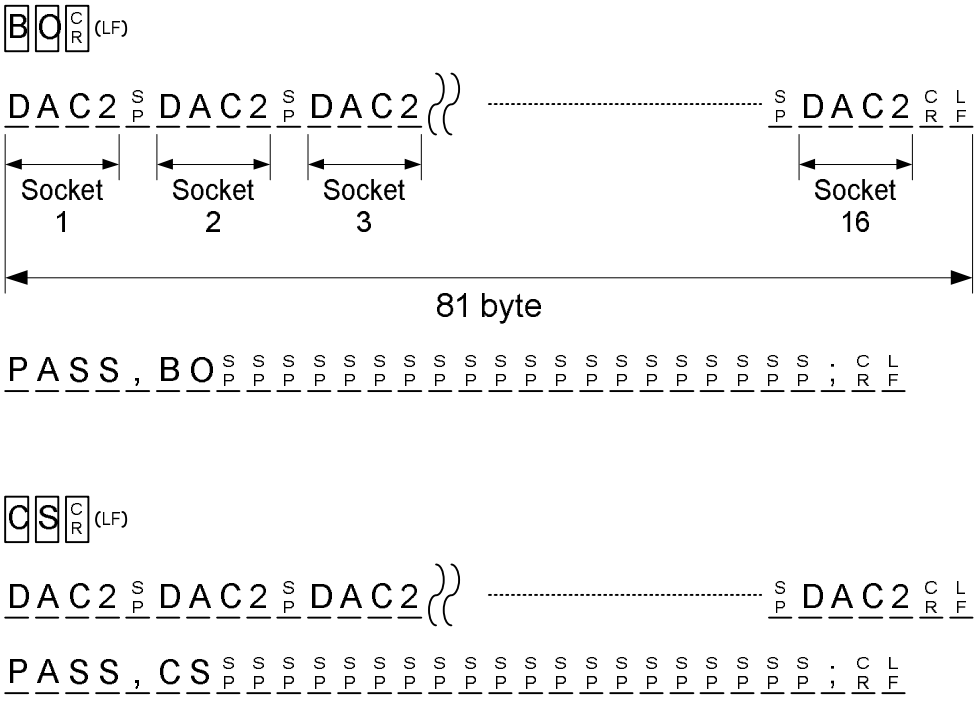
This mode is to output sum of data in the buffer memory of targeted address (or PAE area). The Check sum is four digits.

Command format

BO

CS

Parameter ： None



Check sum dispayed (8 digits) <BO8> <CS8>

This mode is to output sum of data in the buffer memory of targeted address (or PAE area). The Check sum is four digits.

Command format

BO8

CS8

Parameter: None

BO8 CR (LF)

366DB6A8 CR LF

PASS,BO8 SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

CS8 CR (LF)

366DB6A8 CR LF

PASS,CS8 SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

To initialize buffer memory <F> <INI>

This mode is to initialize the buffer memory of M1950 with certain data.

By parameter, the memory from targeted start address to end address is initialized by 8 byte data.

Command format

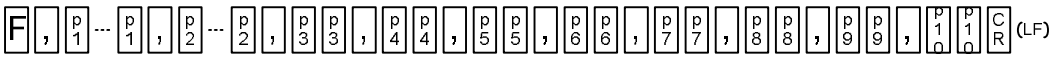
F, p1, p2, p3, p4, p5, p6, p7, p8, p9, p10

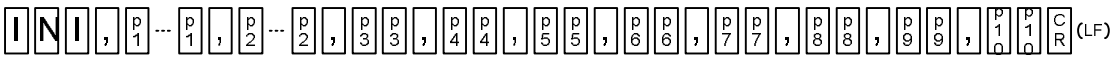
INI, p1, p2, p3, p4, p5, p6, p7, p8, p9, p10

Parameter
p1: Start address (hex)
Default value: 00

p2: End address (hex)
Default value Buffer end address

p3 to p10: default data (hex)
Default value: FF





Data Search (Match) Command <SCH>

This mode is to search and match data (Max: 8 bit) in the buffer memory.

When specified data and buffer data is matched, the last address of the match is displayed. If there is no match, the next address of the end address is displayed.

By parameter, start address, end address and search data (max: 8 byte) can be specified.

Command format

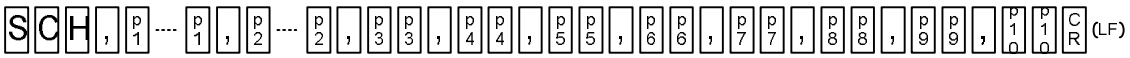
SCH, p1, p2, p3, p4, p5, p6, p7, p8, p9, p10

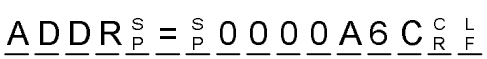
Parameter:

p1: Search start address(hex)
Default value:00

p2: Search end address(hex)
Default value: buffer end address

p3-p10: Search data(hex)
Default value: FF





Data Search (No Match) Command <UNS>

This command is to search unmatched data (one byte) in the buffer memory.

If there is any discrepancy between specified data and buffer data, the last address of the discrepancy is displayed. If there is no discrepancy, the next address of the end address is displayed. Then the mode ends.

By parameter, start address, end address and search data (one byte) can be specified.

Command format

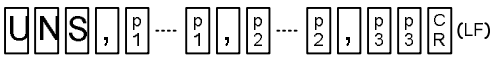
UNS, p1, p2, p3

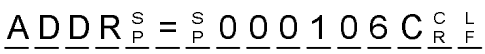
Parameter:

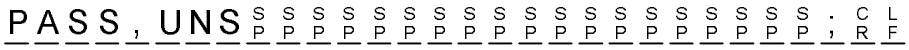
p1: Search start address (hex)
Default value: 00

p2: Search end address (hex)
Default value: buffer end address

p3: Search data (hex)
Default value: FF







Data Transfer Command <T>

Data can be moved (copied) in the buffer memory

By parameter, start/end address of moving data and the first address of moing data (destination address) can be specified

Command format

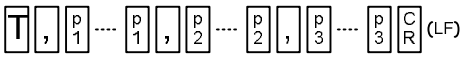
T, p1, p2, p3

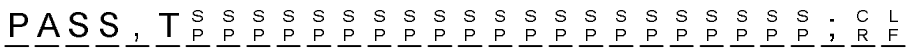
Parameter:

p1: start address(hex)
Default value: 00

p2: end address (hex)
Default value: buffer end address

p3: Destination address(hex)
Default value:00





Serial I/F Data Output <P> <PL> <WD>

This is a command to output data through serial I/F in remote mode.

Buffer memory data of M1950 is output through Serial I/F according to Data Format set by S, DF command.

By parameter, buffer start/end address of output can be specified.

Command format

P, p1, p2

PL, p1, p2

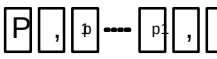
WD, p1, p2

Parameter

p1: buffer memory start address (hex)
Default value: 00

p2: buffer memory output end address (hex)
Default value: buffer end address

When Format = INTEL hex , p1=0 , p2=F

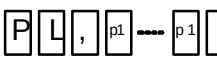


: 1 0 0 0 0 0 0 0 0 3 0 6 0 C 1 8 3 0 6 0 C 0 0 3---------- 0 3 0 6 E D CR LF

: 0 0 0 0 0 0 0 1 F F CR LF

P A S S , P SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

When Format = MOTOROLA S , p1=0 , p2=F



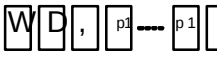
S 0 0 9 0 0 0 0 4 D 4 9 4 E 4 1 5 4 4 F 2 E CR LF

S 1 1 3 0 0 0 0 0 3 0 6 0 C 1 8 3 0 6 0 C 0 0 3---------- 0 3 0 6 E 9 CR LF

S 9 0 3 0 0 0 0 F C CR LF

P A S S , P L SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP . CR LF

When Format = MINATO HEX , p1=0 , p2=F



[CR LF

0 0 0 0 SP 0 3 SP 0 6 SP 0 C SP 1 8 SP 3 0 SP 6 0---------- 0 3 SP 0 6 CR LF

] CR LF

P A S S , W D SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP . CR LF

Serial I/F Data Input <RL>

This is a command to input data through serial I/F in remote mode. This command makes M1895 to be ready for serial I/F input. The data sent through serial I/F is stored in buffer memory according to set data format.
By parameter, input data format, start/end address and buffer start address to store data can be specificed.

Command format

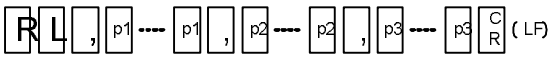
RL, p1, p2, p3

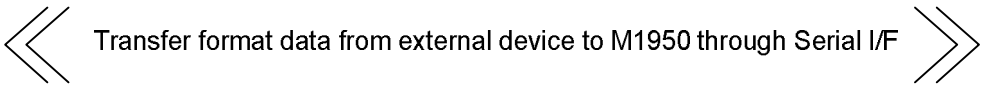
Parameter:

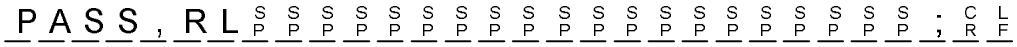
p1: start address of the format (hex)
Default value: 00

p2: end address of the format (hex)
Default value: buffer end address

p3: buffer memory address (hex)
Default value: 00







Serial I/F Data Input <RD>

This is a command to input data through serial I/F in remote mode. This command makes M1895 To be ready for serial I/F input. The data sent through serial I/F is stored in buffer memory according to set data format.
By parameter, input data format, start/end address and buffer start address to store data can be specificed.

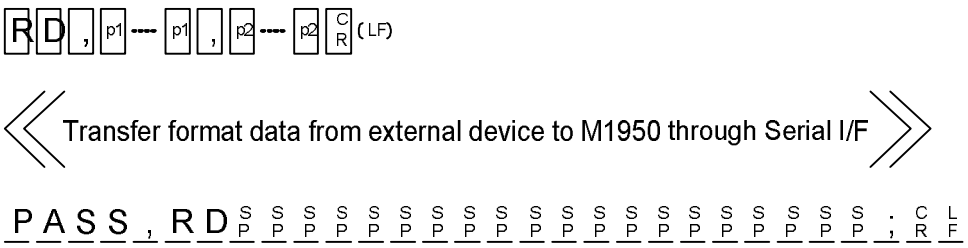
Command format

RD, p1, p2

Parameter:

p1: start address of the format data(hex)
Default value: 00

p2: buffer memory address(hex)
Default value:00



To change Protect Mode Setting <PCH>

M1950 has three modes as operation related to data protection. According to parameter, protection mode can be changed. Please refer to Protect Mode in advance operatoin.

With no parameter, currently set protect mode is output.

Command format

PCH, p1

Parameter:

p1: Protect mode
0: No Operation
1: Unprotect/protect
2: Protect Only

Check

P C H CR (LF)

SP 0 SP SP SP N o SP O p e r a t i o n CR LF

P A S S , P C H SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Set

P C H , p1 CR (LF)

P A S S , P C H SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP ; CR LF

Protect Data Serial I/F Output <WP>

This command is to output protect data in remote mode. It is output to remote I/F.

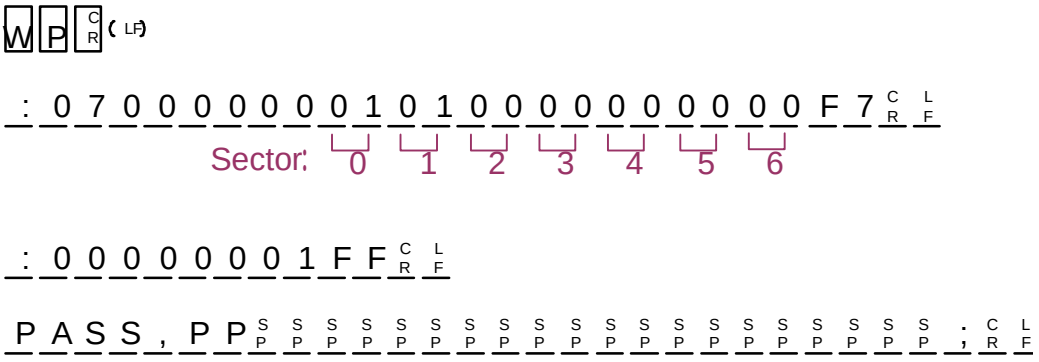
When protect inf. of M1950 is converted to set Data Format such as (S, DF command), it is output through Serial I/F. It takes some minutes to out put protect data of the device through Serail I/F.

Command format

WP

Parameter: None

Example of output: To output 1st and 2nd protect data (intel format) of an IC which has 7 protect area



Protect Data Serial I/F Input <RP>

This command is to input protect data in remote mode. It is read through remote I/F.

This command makes M1950 ready to receive data through Serial I/F. Then M1950 receives protect data according to set Data format through Serial I/F.

By parameter, start address and end address of input data format can be specified.

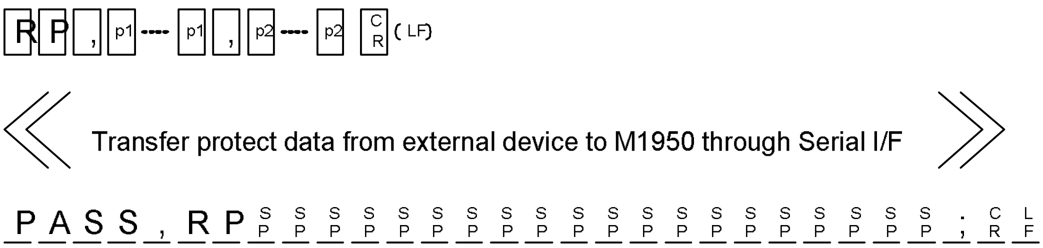
Command format

RP, p1, p2

Parameter:

p1: start address of the format (hex)
Default value: 00

p2: end address of the format (hex)
Default value: Protect end address



List

List of Remote Command

Command	Action	Parameter
Ctrl+E Ctrl+E	To make M1950 in remote	
RMD	Setting of remote mode condition	p1, p2, p3, p4, p5, p6, p7, p8
E, BY	End of remote mode	
Ctrl+D	Termination command	
H	Help to output the list of command	
N, DV	Device selection command	p1
OP, CP	To execute Copy mode	
Z, ER	To execute Erase mode	
B, BL	To execute Blank mode	
W, PG	To execute Program mode	
V, VF	To execute Verify mode	
OT, CT	To execute Continuous mode	
SIG	Setting ID check	p1
CK	Pre-check command	p1
MD, PAE	Address area setting command	p1, p2, p3
S, DF	Setting data format for transfer	p1
BS	Buffer memory size output	
REV	Firmware version output	
L, LS	Buffer memory data dispay	p1, p2
BO, CS	Check sum display (4 digits)	
BO8,CS8	Check sum display (8 digits)	
F, INI	To initialize buffer memory	p1,p2,p3,p4,p5,p6 p7,p8,p9,p10
SCH	Data search (match) command	p1,p2,p3,p4,p5,p6,p7,p8,p9,p10
UNS	Data search (unmatch) command	p1, p2, p3
T	Data transfer command	p1, p2, p3
P, PL, WD	Serial I/F Data Output	p1, p2
RL	Serial I/F Data Input	p1, p2, p3
RD	Serial I/F Data Input	p1, p2
PCH	To change protect mode setting	p1
WP	Serial I/F protect data output	
RD	Serial I/F protect data input	p1,p2

List of special characters

The following input command is treated as special code. Even if echo back is ON, echo back wil not occur.

ASCII code	Hex code	Process of M1950	ASCII code	Hex code	Process of M1950
NUL	00	Ignore	DLE	10	Ignore
SOH	01	Ignore	DC1	11	Process XON
STX	02	Ignore	DC2	12	Ignore
ETX	03	Ignore	DC3	13	Process XOFF
EOT	04	Termination command	DC4	14	Ignore
ENQ	05	Ignore	NAK	15	Ignore
ACK	06	Ignore	SYN	16	Ignore
BEL	07	Ignore	ETB	17	Ignore
BS	08	Backspace	CAN	18	Ignore
HT	09	Ignore	EM	19	Ignore
LF	0A	Ignore	SUB	1A	Ignore
VT	0B	Ignore	ESC	1B	Ignore
FF	0C	Ignore	FS	1C	Ignore
CR	0D	Command terminator	GS	1D	Ignore
SO	0E	Ignore	RS	1E	Ignore
SI	0F	Ignore	US	1F	Ignore
			DEL	7F	Backspace

List of error message

The following is the list of error message related to device process when an error occurred on 1950.

Error message	Contents of error	Remedy
Vcc over current	Over current Vcc is applied to IC.	Remove IC from socket adapter where red LED lits.
Illegal ID	Some socket adapters do not have IC or a socket adapter does not have an IC.	Set IC correctly onto socket adapter where red LED lits and start operation once again.
Empty Socket	Some socket adapters do not have IC or a socket adapter does not have an IC.	Check the socket where red LED lits.

List of error message of remote mode

The following is the list of error message of remote mode.

○ Error message during selfcheck

Error message	Cause	Remedy
M1950 SELF-CHECK !! FAIL DETECT!!	Self check error during boot –up.	Please reboot the programmer after making sure the power source is good. If it failed again, maintenance may be required.
!! FPGA INITIALIZING ... MISS !!		
SYSTEM ERROR : xx	System error	
ALPG INTERRUPT DETECT MEMORY ERR : xxxxxxxx	Memory check error is occurred	
ALPG INTERRUPT DETECT REASON:????????????	Programming timing circuit error	
OVER CURRENT DETECT REASON : A:xxxx B:xxxx	Programming timing circuit error	

○ Abnormal action

Cause	Remedy
Nothing is displayed.	Please reboot the programmer after making sure the power source is good. If it failed again, maintenance may be required.
No LED lits.	
No buzzer sounds.	Please check the buzzer by the panel operation

○ Error message during Read/Write device

Error message	Cause	Remedy
! CONTACT CHECK FAILED !	Bad contact between the socket and IC or no IC on socket Red LED of the socket lits.	Check the socket
! OVER-CURRENT DETECT !	Over current on IC is detected. Red LED of the socket lits.	Remove the device
ID CHECK FAILED !	Different device other than device code set is detected. Red LED of the socket lits.	Remove the device
Multi PAE mode clear no valid block	No data is found after buffer scan for PAE mode.	Load data to program

○ Error message of CF card and data transfer

Error message	Cause	Remedy
NO DRIVE	CF is not installed.	Check CF card.
UNKNOWN FORMAT	There is no file which can not be read by M1950.	Check the file format of CF card Applicable format are 1. Intel. Hex 2. Motorola. mot 3. Binary. bin
FILE FULL	There is no space to save data in CF card	Change CF card
MISSING	Since there was not enough memory space left in CF card, all data was not saved.	
FORMAT READ ERROR	Read error occurred during data transfer	Check the data
FORMAT SUM CHECK ERROR	Check sum error occurred during data transfer.	Check the sum of the error record
FORMAT AREA OVER ERROR	Transferred data is larger than buffer memory of M1950	Add offset on the read start address.

○ Error message of device code set

Error message	Cause	Remedy
Device not Select!!	Device code is not set	Select a device code
Device Table not found!!	Device code is not available	Make version up of M1950
Device module not found	No module for the device is not avaialbe.	Make version up of M1950

○ Error message of remote

Error code	Contents of error	Cause
90	Check Sum Error	Check sum error occurred during data transfer
91	Format Error	Read error occurred during data transfer.
F0	Illegal Command	Illegal command is input.
F1	Parameter Error	Wrong parameter is input.
F2	Invalid Function	Invalid command is executed. (Executing Erase on EPROM)
F3	Multi PAE mode Error	Multi PAE Setting error (No data was found during bad block scan for Multi PAE.

Explanation of Quick Reference Manual

The following is the outline of the quick reference manual.

[VAL] and [SEL] in the menu

■ **[VAL]**
Value that can be numerically changed such as address, Vcc.
COM key to change it.

[SEL]
Selection that can be choosen.
◀ ▶ key to select it.

Explanation of each function

1. Item
Menu item in each mode

2. Selection
Selecton in each menu

3. Defalt value
Defalut value prior to shipment

4. Contents
Brief explanation of each item

5. Influence of the setting to the other operatoin

It relates to the following operation
Setting is not changed=○
Setting is changed =×

1. Update
It related to the version up of M1950

2. Re-boot of M1950
It related to turn off/ on of M1950 to re-boot.

3. Device selection
It related to the device selection

4. Reset
It related to open the same menu once again

5. Function
Function that is not supported by certain devices

Depending on device=★
All device is supporting the function=☆
Function is either ★ or ☆

Quick Reference

Update
Return on
Device selection
Resetting
Function

☆ × × × ×

Item	Selection	Default	Contents of item
SETTING PAE			
Clear PAE mode (MODE → Device func → PAE mode → Clear PAE mode)			
None	None	None	Setting of PAE is cleared
Single PAE mode (MODE → Device func → PAE mode → Single PAE mode) **Operation is decided by START button**			
Start [VAL]	Setting as optional	Depend on device	Start address is indicated
End [VAL]	Setting as optional	Depend on device	End address is indicated
Buffer [VAL]	Setting as optional	Depend on device	Start Buffer address is indicated
Multi PAE mode (MODE → Device func → PAE mode → Multi PAE mode) **Operation is decided by START button**			
None	None	No effect	Load area is set scanning memory
Setting Verify VCC			
Read VCC (MODE → Device func → Rerd VCC) **Operation is decided by START button** **Initialized by Mode button**			
BLANK [VAL]	Setting as optional	Depend on device	VCC is changed when blank is operated
VERIFYL [VAL]	Setting as optional	Depend on device	VCC is changed when Verity 1 , 2 is operated
VERIFYH [VAL]	Setting as optional	Depend on device	VCC is changed when Verity 3 , 4 is operated
Setting of Verify VCC			
Verify Mode (MODE → Device func → Verify Mode) **Operation is decided by START button**			
Verify Count [SEL]	[default] [1 Time [2 Time]	[default]	Number of verify is changed
Setting of Contact/ID check			
Function Mode (MODE → Device func → Function mode) **Operation is decided by START button**			
contact check [SEL]	[ON [OFF]	[ON]	Contact check is effective or not
id check [SEL]	[ON] [OFF]	[ON]	ID check is effective or not
Setting of Repeat Mode			
Repeat Mode (MODE → Device func → Repeat mode) **Operation is decided by START button**			
Repeat mode [SEL]	[OFF] [One Fail STOP] [all Fail STOP]	[OFF]	Repeat Mode is set
Output of device information			
Monitor Mode (MODE → Device func → Monitor mode) **Operation is decided by START button**			
monitor [SEL]	[ON] [OFF]	[OFF]	Device information of Nand is output for external terminal
Transfer of data			
I/ O command for xxx			
(Incase that setting of Transfser is IN) (MODE → I/ O command) **Operation is decided by START button**			
Transfer	[IN] [OUT]	[IN]	Direction of data transfer
From File read ADRS [VAL]	Setting as optional	[00000000]	Start address of data
To Buffer store ADRS [VAL]	Setting as optional	Depend on device	Start address of buffer
File read end ADRS [VAL]	Setting as optional	Depend on dimension of mdmory	End address of buffer
(Incase that setting of transfer is out) (MODE → I/ O command) **Operation is decided by START button**			
Transfer	[IN] [OUT]	[OUT]	Direction of data transfer
From Buffer ADRS [VAL]	Setting as optional	Depend on device	Start address of buffer
Buffer end ADRS [VAL]	Setting as optional	Depend on device	End address of buffer
------	None		

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Item	Selection	Default	Contents of item

Buffer initialize

Buffer initialize: MODE → Buffer operation → Buffer init — **Operation is decided by start button** — ☆ × × × ×

Start	[VAL]	Setting as optional	Depend on device	Start address of Initialize is specified.
End	[VAL]	Setting as optional	Depend on device	End address of Initialize is specified.
Pattern	[SEL]	[ALL FFH] [ALL00H] [03,06,0C,18…] [00,00,FF,FF…]	[ALL FFH]	Pattern of Initialize is selected.

Buffer DUMP/EDIT

Buffer DUMP/EDIT: MODE → Buffer operation → Buffer DUMP / EDIT — Real time change — ☆ ○ ○ × ×

ADRS	[VAL]	Setting as optional	[00000000]	
Data	[VAL]	Setting as optional	FFH	

BYTE/WORD Swap

Buffer swap: MODE → Buffer operation → Buffer swap — **Operation is decided by start button** — ☆ × × × ×

Start	[VAL]	Setting as optional	Depend on device	Start address is specified.
End	[VAL]	Setting as optional	Depend on device	End address is specified.
Swap	[SEL]	[BYTE] [WORD]	[BYTE]	BYTE/WORD mode is changed.

Check sum

Check sum: MODE → Buffer operation → Check sum — **Operation is decided by start button** — ☆ × × × ×

Start	[VAL]	Setting as optional	Depend on device	Start address of check sum is specified.
End	[VAL]	Setting as optional	Depend on device	End address of check sum is specified.

Fast sum: MODE → Buffer operation → Fast sum — **Operation is decided by start button** — ☆ × × × ×

Start	[VAL]	Setting as optional	Depend on device	Start address of check sum is specified.
End	[VAL]	Setting as optional	Depend on device	End address of check sum is specified.

Protect setting

Protect setting: MODE → Buffer operation → Protect setting — **Operation is decided by start button** **ON/OFF by ENT** — ★ ○ × × ×

SA	[SEL]		Depend on device	Sector protect number is displayed.
ADRS	[SEL]	[*] [.]	Depend on device	Sector protect address is displayed.
MARK	[SEL]	[*] [.]	[.] Protect OFF	Protect ON or OFF is specified.

Setting Protect Mode

Protect Mode: MODE → Device func → Protect mode — **Operation is decided by start button** — ★ ○ × × ×

Protect mode	[SEL]	[NO PROTECT] [UNPROTECT / PROTECT] [PROTECT ONLY]	[NO PROTECT]	Protect function is specified.

Access Remote Mode

Remote mode: MODE → Remote — **Operation is decided by start button** — ○ × × × ×

Remote Select	[SEL]	[COM] [USB]	[COM]	Remote access point is specified.

M1950 Version-up

Update menu: MODE → System config → System update — **Operation is decided by start button** — ☆ × × × ×

Load from	[SEL]	[CF card] [COM] [USB] [ROM] [INITIALZE]	[CF card]	System version-up
M 1950 update	[SEL]	[AUTO] [BOOT] [MONITOR] [SYSTEM] [FPGA] [DEVICE TABLE] [DEVICE PROGRAM] [MODULE] [not support] [BACKUP DATA]	[AUTO]	

Item	Selection	Default	Contents of item

Setting of alata transfer

COM setting — MODE → System config → COM setting — **Operation is start button**

BORAD RATE [SEL]	[115200 bps] [57600 bps] [38400 bps] [19200 bps] [9600 bps]	[115200 bps]	Selection of Baud Rate
DATA BIT [SEL]	[8bit] [7bit]	[8bit]	Selection of data bit
PARITY [SEL]	[NON] [EVEN] [ODD]	[NON]	Parity bit
STOP BIT [SEL]	[2bit] [1bit]	[2bit]	Stop bit
FLOW CONTROL [SEL]	[XON/ OFF] [NO CTRL]	[XON/ OFF]	Flow control

USB code setting

USB setting — MODE → System config → USB setting — **Operation is start button**

ID CODE [VAL]	Setting as optional	[00000]	USB code is indicated.

Data Format

Format select — MODE → System config → Format select — **Operation is start button**

FORMAT [SEL]	[NO- FORMAT(BIN)] [MINATO (MIN)] [INTEL-HEX (HEX)] [MOTOROLA-S (MOT)]	[MOTOROLA -S (MOT)]	Transfer format is selected.

Remote setting

Remote setting — MODE → System config → Remote setting — **Operation is start button**

ECHO [SEL]	[ON] [OFF]	[ON]	Echo back is executed or not..
PROMPT [SEL]	[#] [#CRLF] [----]	[#]	Prompt is expressed..
ACK / NCK [SEL]	[ON] [OFF]	[OFF]	Respondence
BUZZER [SEL]	[ON] [OFF]	[ON]	Remote buzzer

I/O channel select

I/ O channel select — MODE → System config → I/O channel select — **Operation is start button**

Monitor channel [SEL]	[OFF] [COM] [USB]	[OFF]	Selection of device information output channel.
Data I /O channel [SEL]	[OFF] [COM] [USB]	[OFF]	Selection of data input/output channel.

Other Mode setting

Other Mode setting — MODE → System config → Others mode — **Operation is start button**

SELF CHECK [SEL]	[NO SKIP] [SKIP]	[NO SKIP]	Execution of self check when power supply is started.
CRC MODE [SEL]	[CRC 32] [CRC 16]	[CRC 32]	CRC32 or CRC16 is switched when sum is calculated.
BUZZER [SEL]	[KEY +FUNCTION] [FUNCTION] [KEY] [OFF]	[KEY +FUNCTION]	Setting of system buzzer.
REMOTE EMULATION [SEL]	[M1940] [M1895]	[M1940]	Setting of Pre-check operation when remote is operated.
SET START COUNT [SEL]	[OFF] [0.1S] ···[100S]	[OFF]	Setting of waiting time when device operation is started.

VERSION information

M 1950VERSION — MODE → System config → M1950 VERSION — **Operation is start button**

M 1950VERSION	None	Depends on system version	Version information is displayed.

CF card

File select — MODE → CF card — **Operation is start button**

NAME [SEL]	Depend on CF card	Depend on CF card	Display of file select
Store Address [VAL]	Setting as optional	[00000000]	Address of buffer start address.

Item of NAME when Create File is selected.

Save File — MODE → CF card — **Operation is start button**

NAME [SEL]	Create File	Depend on CF card	Display of file select
Store Address [VAL]	Setting as optional	[00000000]	Buffer start address