

e · MICRO-PROFILER™

MANUAL (V4.0)

SMP-308RF



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DANG JUNG DONG 9-3 SANBON-RO 101
GUNPO-SI, GYUNGKI-DO KOREA.

– Table of Contents –

1. Product Specification	.....	P1
2. How to install	.....	P2 ~ P4
2-1. How to install software		
2-2. Program Icon Name		
2-3. How to install peripherals		
2-4. How to attach sensor		
3. How to measure Micro Profiler	.....	P4 ~ P5
3-1. How to measure R/F Type in real time		
3-2. How to measure memory of R/S Type		
4. How to run program	.....	P5 ~ P7
(Recall and save data measured.)		
4-1. R/F Type		
4-2. R/S Type		
5. Function of other programs	.....	P8 ~ P11
5-1. Program setting and record		
5-2. Auxiliary Function assist to program		
6. How to care and charge battery	.....	P12
6-1. Battery Specification		
6-2. Battery charging		
7. Micro-profiler components	.....	P13
8. Test report and sample		
9. Application for A/S Service		
※ Complete an A/S services application form correctly. Use reproduced application form.		

1. Product Specification

- 1.1 Dimension : - Memory Unit : 264×min56(max69)×min11(max18) (L×W×H/mm)
- Product Case : 323×min76(max105)×27 (L×W×H/mm)
- Fixture Guide : 105~279mm
- Bag : 430×335×86 (L×W×H/mm)
- 1.2 Measurement range : 0~400℃
※ When sampling at high temperature, only heat-resistance case should be used.
※ Maximum staying time while heating is in progress : 200℃ → max 5minutes,
250℃ → max 3minutes.
- 1.3 Accuracy : ±1℃
- 1.4 Channel : 8ch by K-type sensor
- 1.5 Battery : 3.6V Ni-Mh Rechargeable Battery(LG Rechargeable battery or equivalent).
-Battery Guarantee :About 6 months
(varying according to the condition on which it is used)
- 1.6 Resolution
a. Sampling Time : 0.1s, 0.2s, 0.5s, 1s, 2s, 5s, 10s.(0.1s, 0.2s memory)
b. Total Samples : 8000, 4000, 2000, 1000, 500
ex) Sampling Time : 1s selected
Total Samples : Select 1000s → Capable of measurement for about 16min.
- 1.7 Internal protect temperature : 5min at max70℃
- 1.8 P.C Spec
- IBM compatible or equivalent.
- Windows XP.
- 256M byte memory or more.
- SVGA graphic card(256 color) or more.
- Resolution in more than 1024*768 pixel
- 1.9 Weight : - Memory unit : 173g
- Product case : 825g
- Full Package : 998g
- 1.10 antennae communication distance : About 12M
※ Communication distance may be limited by obstacles in its vicinity.
- 1.11 Structure of Micro-Profiler(SMP-308)
a. Memory unit M-001
b. Battery M-002(Consumption)
c. RF Module & Antenna M-003
d. Antenna power cable(USB) M-004
e. product case M-005
f. Wire communication cable M-006(Consumption)
g. K-type sensor M-007(Consumption)
h. Kapton tape M-008(Consumption)
i. USB cable(Recharge cable) M-009
j. High temperature solder wire M-010(Consumption)
k. software disk M-011
l. Manual & Test sheet M-012
m. Parking case M-013
n. Antenna extension cable M-014(Option)
o. Patch antenna M-015(Option)

2. How to install the product

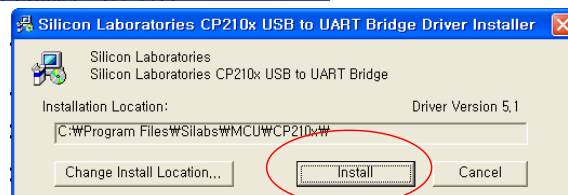
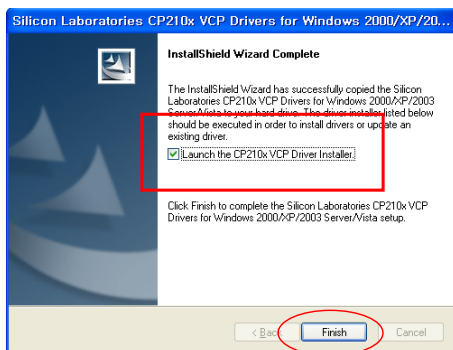
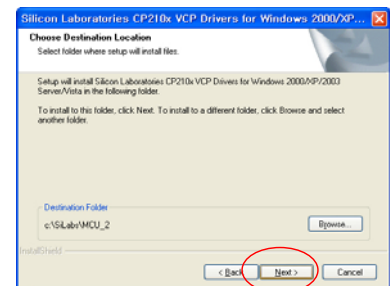
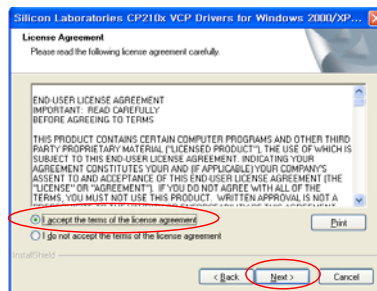
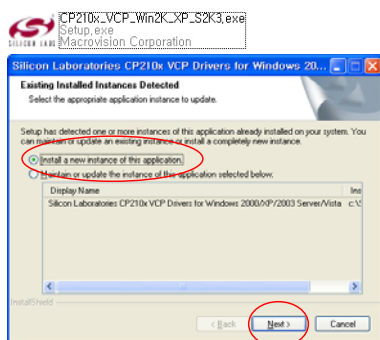
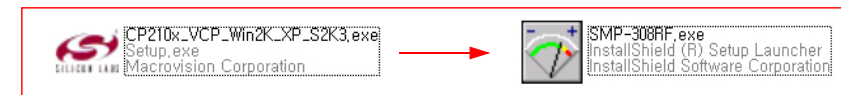
2.1 How to install software

1) PC system requirements for the use of Micro-profiler

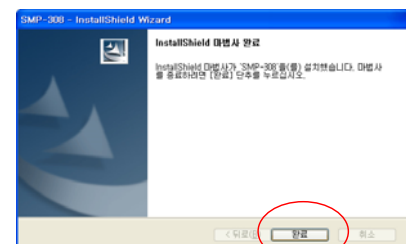
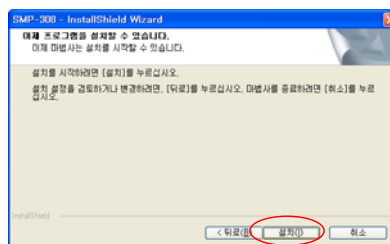
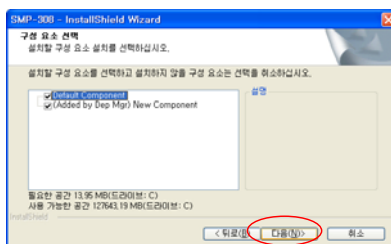
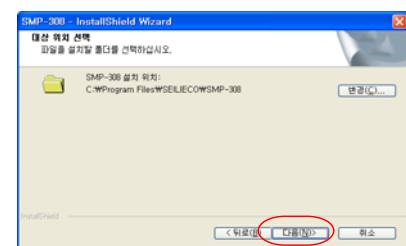
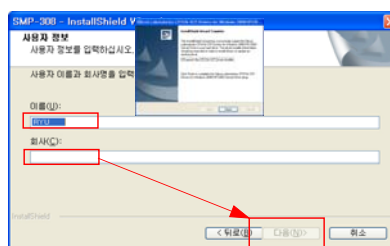
- PC : WINDOWS XP, VISTA, 7.

2) Installation of software

a. After executing CD, execute in an order of "CP210x_VCP_Win2k_XP_S2K3.exe & "SMP-308RF.exe" for installation



* Reboot PC After Install

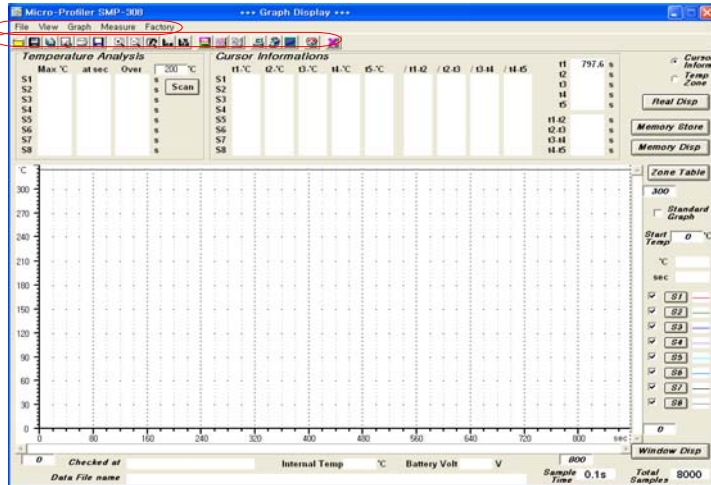


"S-1"

4) Removing software

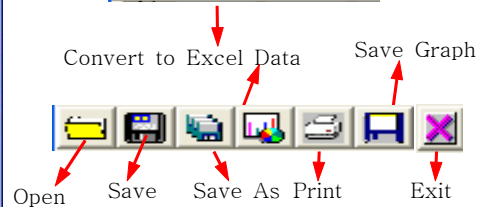
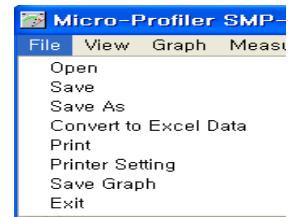
a. Execute "Add/Delete program in Control Panel " to remove.

2.2 Program Icon names

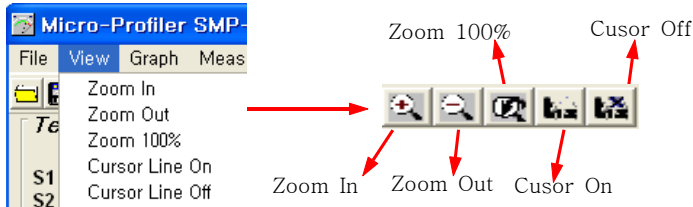


"S-2"

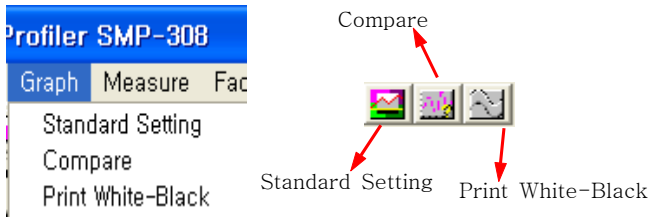
1) File



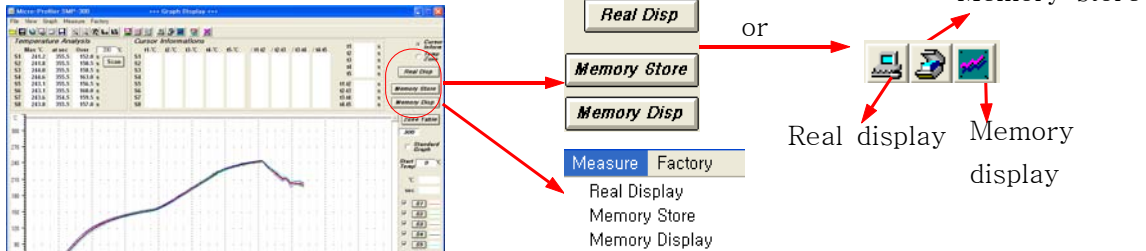
2) View



2) Graph

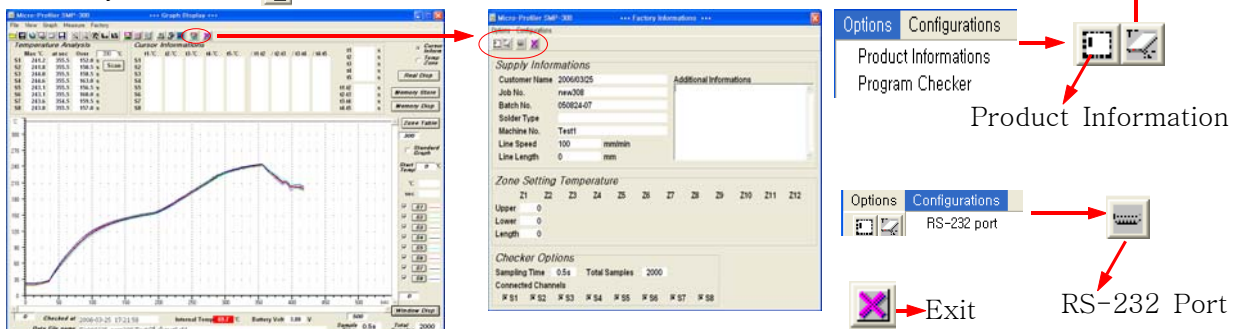


3) Measure



"S-3"

4) Factory Information



2.3 How to install peripheral parts.(cable and antenna))

1) Installation for wireless communication

- 'As in 'S-3', make measurement in real time by connecting mini USB to RF Module and connecting USB connector on the opposite side to USB port in PC.



"S-3"

2) Installation for wired data transmission or charging

- As in "S-4", it is capable of receiving temperature data recorded by connecting USB cable to mini USB on the side of Memory Unit and by connecting it to USB port in PC or charging.

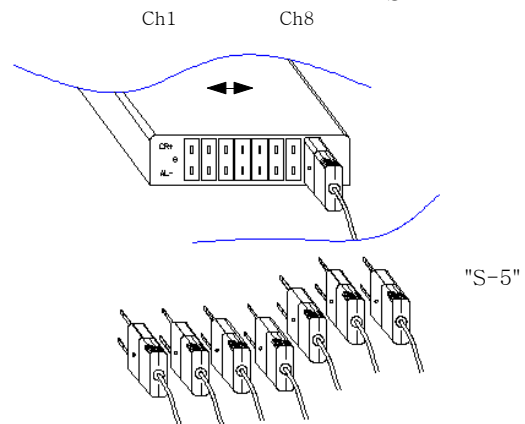
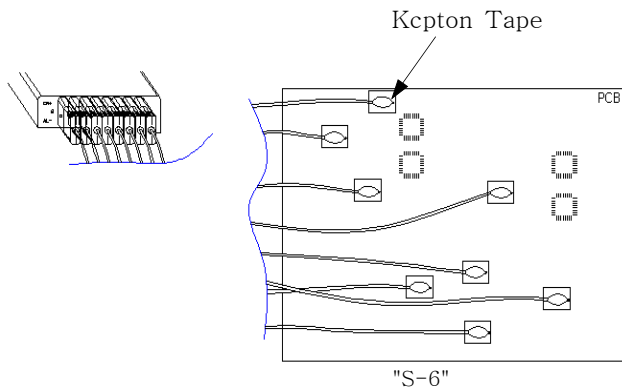


"S-4"

2.4 How to attach sensor

1) Inserting K-type Sensor (8CH)....."S-5"

- Attach an end of K-type Sensor to an area in PCB where temperature needs to be sensed using 'Kapton Tape' or high temperature Solder Wire."S-6"



3. How to measure Micro Profiler (SMP-308RF)

※There are two methods of measuring data : measuring in real time and measure by memory

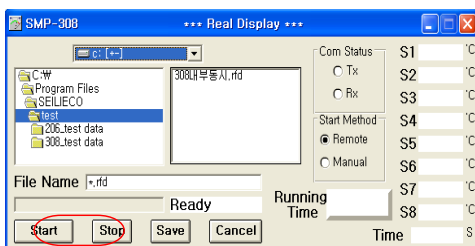
3-1. How to measure RF Type in real time

- Select 'R' switch ('R' & 'M') in 'S-8'
- Check if RF Module in 'S-3' is connected to PC via USB cable. .
- Turn power switch 'ON'. At this time, check if LED is in green.('R/W' (Red/OFF) : Climbing internal temperature/ battery discharging)
- Operate by wireless by clicking on "Start & Stop" on "Real Display" in PC Program....."S-7"

3-2. How to measure memory of RS Type

- Select 'M' switch ('R' & 'M') in 'S-8'
- After switching power 'ON', check if LED is turned on in green, then press "start" switch in "S-8".
- Press the switch "Start"again to stop measuring.

※For details such as data storage and operation, refer to "4. How to run program"



"S-7"




"S-8"

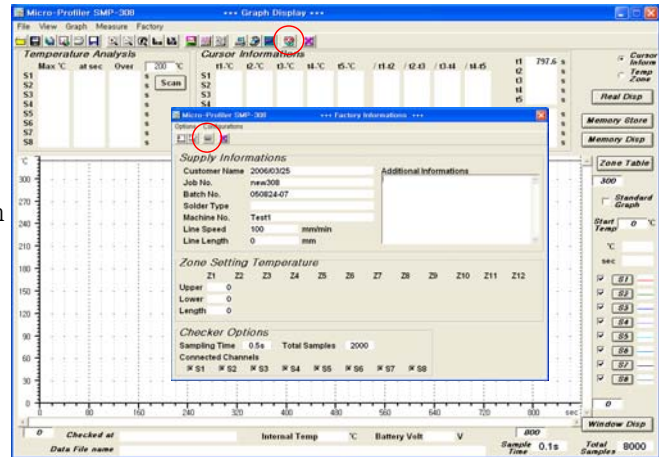
USB Power 'R'/'M' Selecting Switch 'Start/Stop' 'R/W' LED

- # Warning**
- ① After measurement, if power switch is OFF, measurement data recorded are erased.
 - ② When measuring, put end of sensor closest to PCB.
 - ③ **Avoid interference** with an end of other Sensor.
 - ④ After checking and saving data, turn “OFF “ power switch in 'Micro profiler'


4. How to run program (Recall and save data)

4-1. RS type (memory measurement)

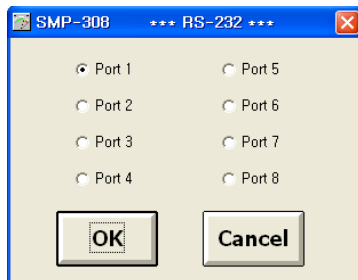
- a. Executing program "S-10"
- b. Connect USB Cable to 'UBS terminal ' in "Micro Profiler"..... "S-11"
- c. Designating PORT
 - ① In main screen, click on "S-10"  icon in Factory Information.




"S-10"

- ② Click on "RS-232C PORT" of 'Configurations' in Information Menu or  icon. "S-10"

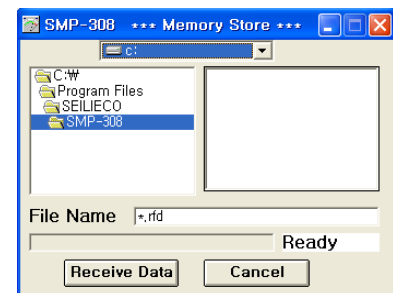
- ③ Designating port




"S-11"

- d. In 'MAIN' screen, click on "Memory Store" or  icon.

- e. Select folder to be saved and enter 'File Name'..... "S-12"




"S-12"

- ※ 'Click on “Open” in ‘Windows explorer' or Main' screen to create a new folder 

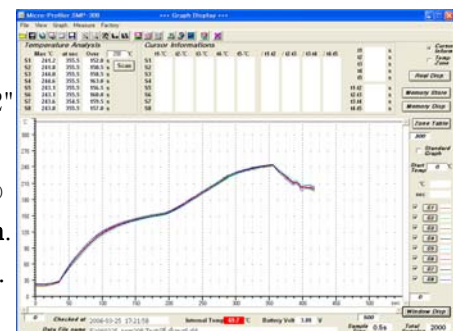
- f. Click on "Receive Data"-Transmit memorized file "S-12"

- g. Record each requirements in 'Main' screen (initial Program screen)

- Regarding ‘ how to record’, refer to 5. Optional function.


- h. Click on "Memory Display" or  icon in 'Main menu'.

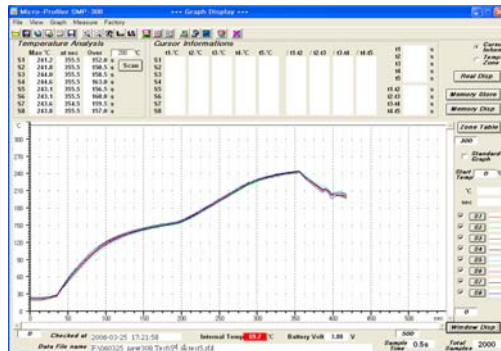
- i. Measured data is displayed in graph. "S-13"



"S-13"

j. PRINT

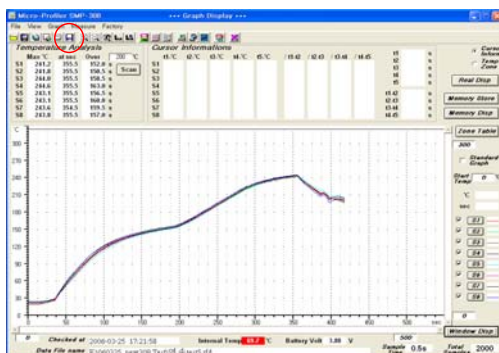
- After selecting **"Print"** in 'File' menu or clicking on  select "YES" "S-14"




"S-14"

- Select 'CONFIRM' in message confirming transmission completion.

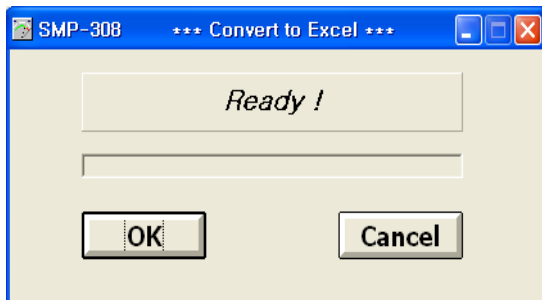
k. Save in graph picture file.




"S-15"

- Click on "Save graph" or click on  icon..... "S-15"



l. Convert measurement data in excel

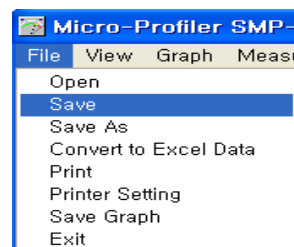


"S-16"

- After "Converting to excel data" or clicking on  icon select "OK" "S16"
- (provided, however, you can check data subject to availability of Excel program)

m. Save and Finish....."S-13"

- Click on **"Exit"** or  click
- When it is saved in other name, click on **"Save as"** or  click



4-2. RF type(measurement in real time)


a. Run Program "S-15"

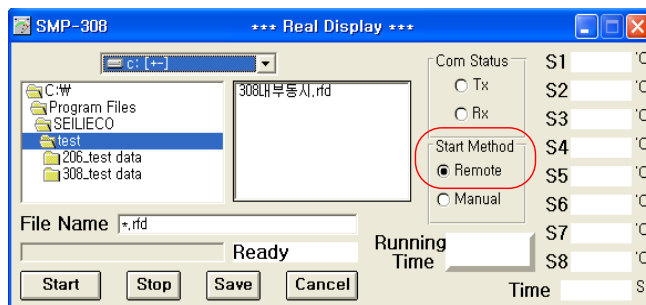
b. 'Connect 'RF Module Antenna to USB port in
PC via USB cable "S-18"



"S-17"

c. Designating PORT (in the same way as in for RS type)

d. Click on **"Real Display"** or  icon in 'MAIN' screen.



"S-18"

e-1(Measurement starts in PC). After a window **"Real Display"** appears, click on **"Start"** to start measurement with an appearance of message 'Display'.(You can check Display in real time).....("S18")

e-2(Measurement starts in Memory unit)

- Change Start Method menu in "S18" to **"Manual"**.
- After clicking on 'Start' as in e-1 above, press 'Start' switch in Memory unit to start measurement (You can check Display in real time.)
- After measurement is over, click on **"Stop"** or press 'Start' again in Memory unit to finish the measurement

f. After measurement is over, click on **"Stop"** then, measurement is completed with an appearance of message "Display end". (At this time, though "Sampling time" designated by a user ends, the message "Display end" appears automatically.)

g. After entering designated folder and File name, click on "Save", then, saving is complete with an appearance of the message "Save end".

h. Record each requirements of 'Main' screen (initial Program screen)

- Regarding 'how to record', refer to 5. Optional function.



i. Regarding Print, saving graph picture file , Finish etc,, same as in RS type.

5. Function of other program

5-1. Program setting and record

1). Product Informations

- Records and changes each requirements of sampled data in 'MAIN' screen

a. After clicking on icon , click on **"Product Informations"** or  click....."S-19"

b. After recording and changing each requirements click on "OK"....."S-22"

※ After turning program off, when starting the program again, last recorded 'Information' will be displayed.

2). Program Checker

- Micro profiler의 'Sampling Time' and 'Total Sampling'의 Setting.

- Basic Setting of -Micro profiler (Power switch is set to ON).

Sampling Time : 0.5 s


Total Sampling : 2000

∴ max 1000sec (About 16 min)

a. Execute Program "S-10"

b. Select either '**RS or RF type**' to connect Micro Profiler to PC....."S-11" "S-17"

c. Turn power switch in Micro profiler ON....."S-8"

d. By clicking on icon  click on  in "**Program Checker**" in 'Options'

e. After selecting "**Sampling Time**" and "**Total Sampling**"

you want, click on "OK" "S-22" "S-23"

예) 'Sampling Time : 0.5s'

'Total Sampling : when set to 2000

∴ It means measurement 2000 times on an interval of 0.5sec (about 16min)

- Measurement time according to condition of your choice.

0.1s and 1000 = 100 sec (≒2min)

0.2s and 1000 = 200 sec (≒3min)

0.5s and 1000 = 500 sec (≒8min)

1s and 2000 = 2000 sec (≒33min)

2s and 2000 = 4000 sec (≒60min)

5s and 2000 = 10000 sec (≒160min)

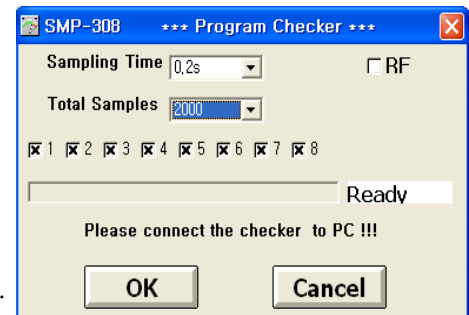
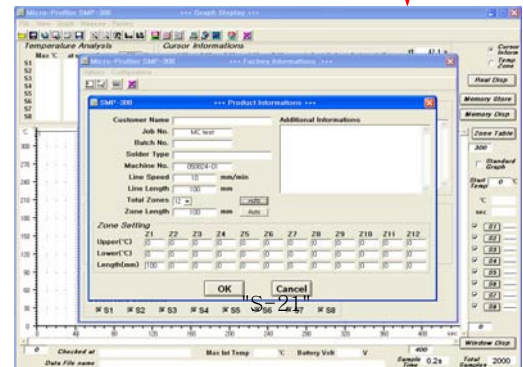
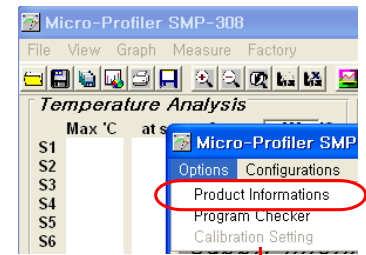
10s and 2000 = 20000 sec (≒330min)

※ 0.1s, 0.2s wired communication

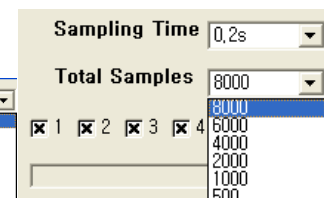
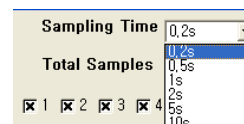
g. When transmission is complete, 'Ready' converts to 'Tx End', closing a window.

※ Even though power switch in Micro profiler is "**OFF**", memorized 'Sampling time data' are not erased.

h. Proceed with REFLOW M/C 'Temperature Sampling' .





"S-22"

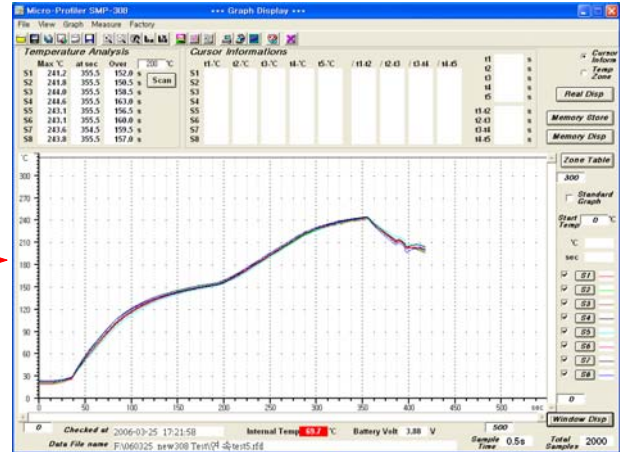
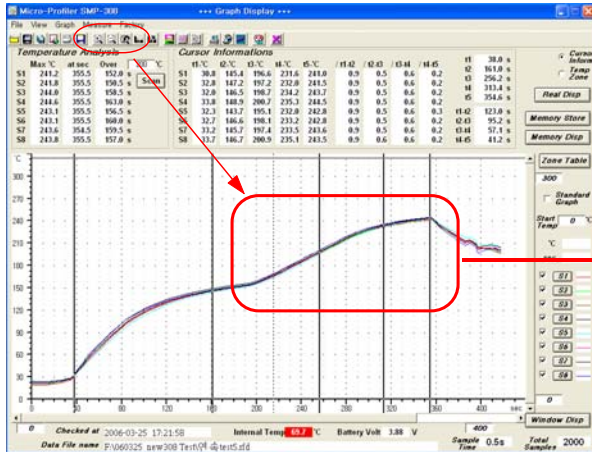


"S-23"

5-2. Auxiliary Function to assist program (Data analysis)

1)Zoom and Graphic Display


- In 'Graphic Display' screen, after clicking on "View" in Menu, select  (Zoom in) or  (Zoom out) to create a mouse point.
- Move the mouse point onto where 'Zoom in or Zoom out' is required and click on mouse button."S-24"

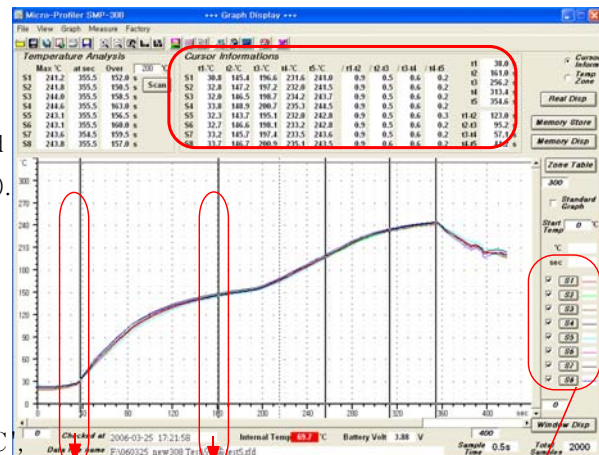


"S-24"

- When you want an initial Graph to be displayed, click on "Zoom 100%" in 'view'Menu or click on .

2)Checking temperature and time by moving Cursor (t1~t5)

- Click on  (They are automatically selected in main screen when converted in graphic display).
- Move a cursor bar onto a targeted area in graph and click (t1))....."S-25"
- Select other position(t2) in the same way
- 'Selected temperatures , 't1-°C' and 't2-°C' are displayed in 'Cursor information, You can check five temperatures, times and inclinations in t1~t5 . t1~t5



t1-°C



t2-°C

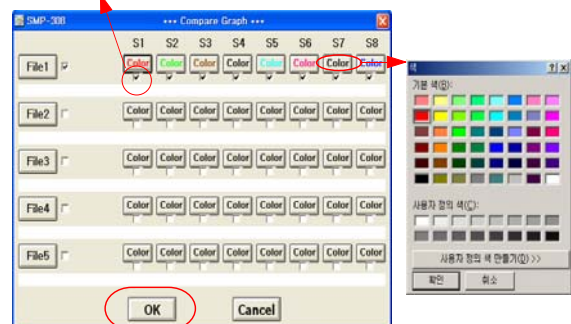
"S-25"

or

line setting

3)When you want to change Graph Color or to have wanted graphic line alone to be displayed on screen

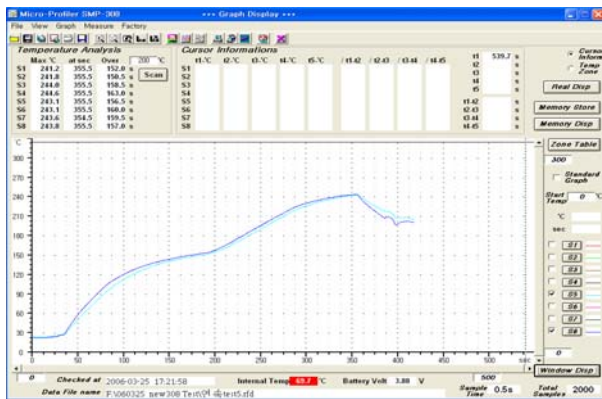
- Color of 'line setting' in menu "color" or or Click on  After selecting color or wanted line in 'S1~S8', click on "OK"....."S-26"
- "Zoom 100%"  "S-24"



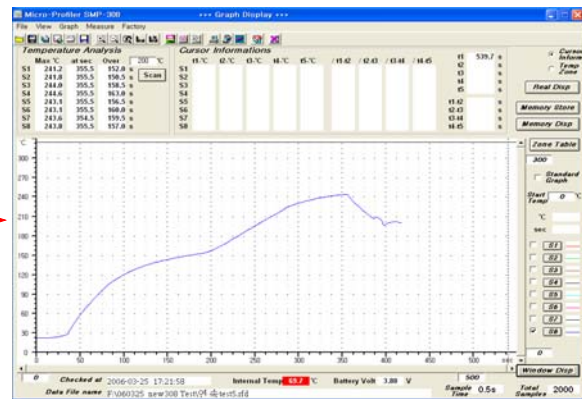
Note . Data are output as displayed in screen

"S-26"

c. Selected color or line is displayed....."S-27, S-28"




"S-27"

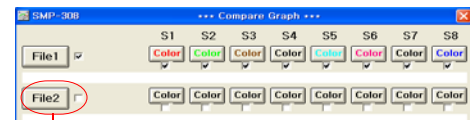


"S-28"

4) Comparative analysis of Other profile data

a. Click on , in menu of 'Graph Display' screen

b. Click on "File 2"....."S-29"

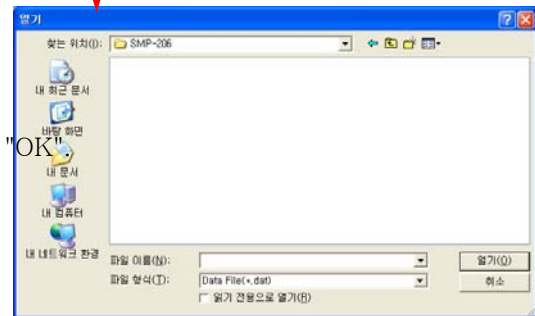


c. Select wanted 'DATA' and click on "Open"

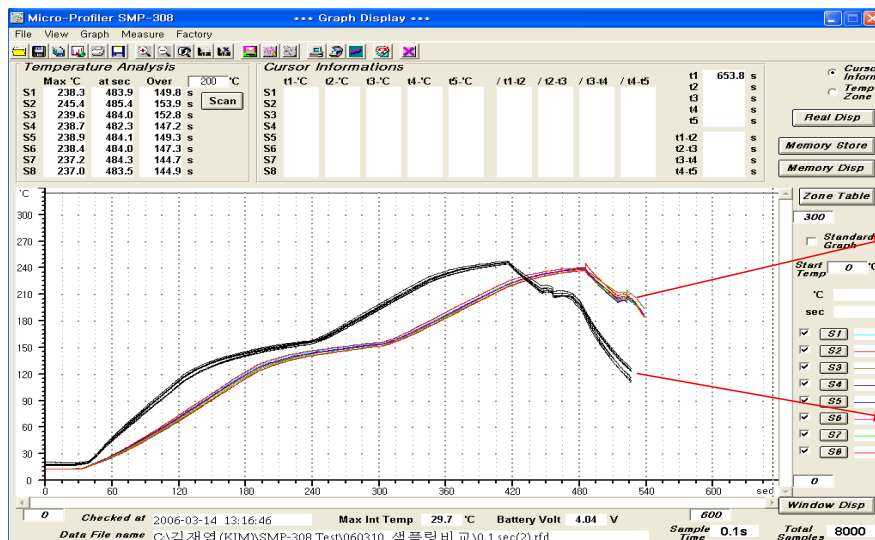
d. Designate 'color' or 'line' of 'S1~S8' and click on "OK"

e. Click on "Zoom 100%" to Display

....."S-30"



"S-29"



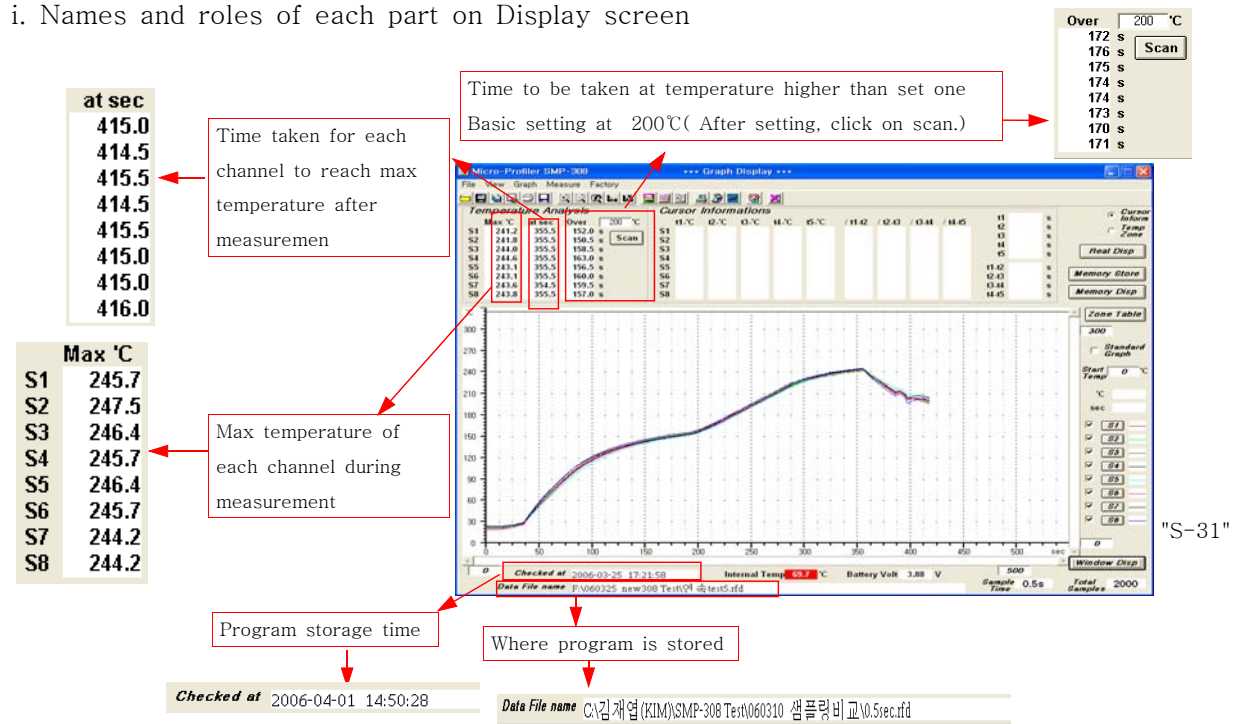
"S-30"

f. When you want to use 't1, t2' in 'File 2', designate the present "File 1" as "File 2"....."S-29"

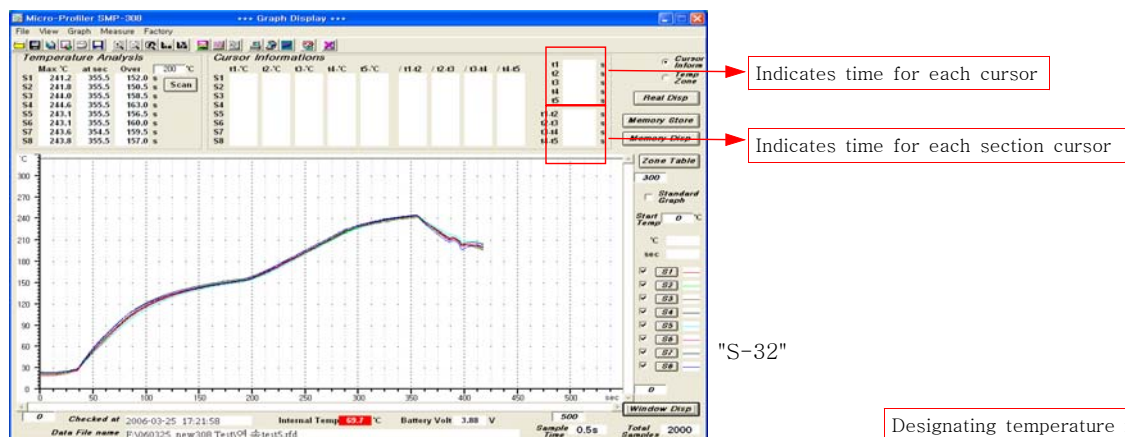
g. Set mouse point to where wanted and click

h. 'Temperatures,interval times and inclinations for 't1'-t5' are displayed in 'Cursor information'

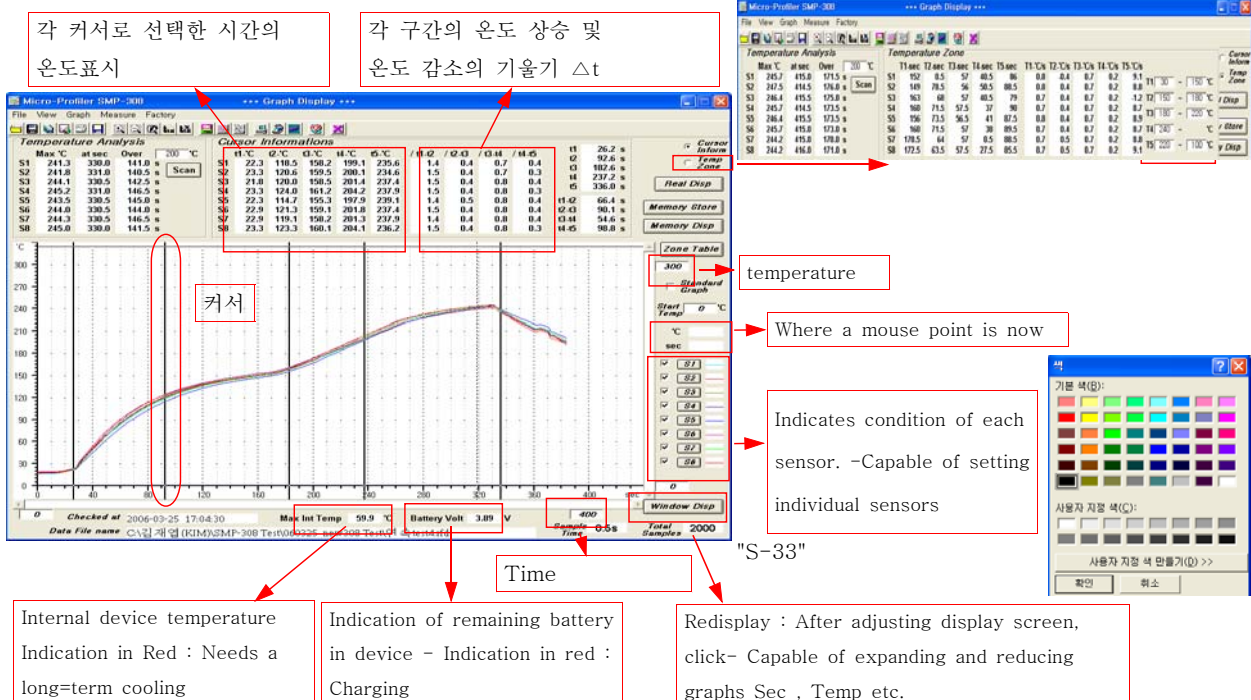
i. Names and roles of each part on Display screen



"S-31"



"S-32"



"S-33"

6. How to care and maintain BATTERY

6-1. Battery Spec.

- a. Use 3.6V Rechargeable Battery (LG Rechargeable battery or its equivalent)
MODEL : B-1522(Ni-MN. 3.6V 550mAh)
- b. Battery Life
 - It lasts more or less 6 months (in case it is measured three times for eight minutes per day) varying according to the situation where it is used.
 - Capable of measuring 8-10 times per charging and battery performance deteriorates with repeated use. (Measurement times vary according to natural discharging and battery deterioration and have nothing to do with product performance.)
 - To ensure a long-lasting battery, have it fully discharged before recharging
- c. Warning when using battery
 - Before use, be sure to have it fully charged.
 - Do not disassemble a battery in part
 - Do not use non-genuine battery. (product performance may deteriorate)

6-2. Battery charging.

- a. Have it charged via PC by connecting Mini USB to the side of unit as shown in the photo "S-34"

b. Charging

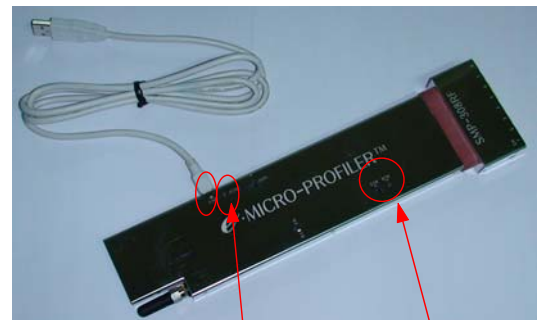
i) charging is completed: A front LED in battery turns green.

ii) charging is required: Memory Unit body LED blinks

quickly in red when power is turned ON.

iii) When it is discharged: LED in Memory Unit body is not

turned on nor LED where light is on does not blink nor work.



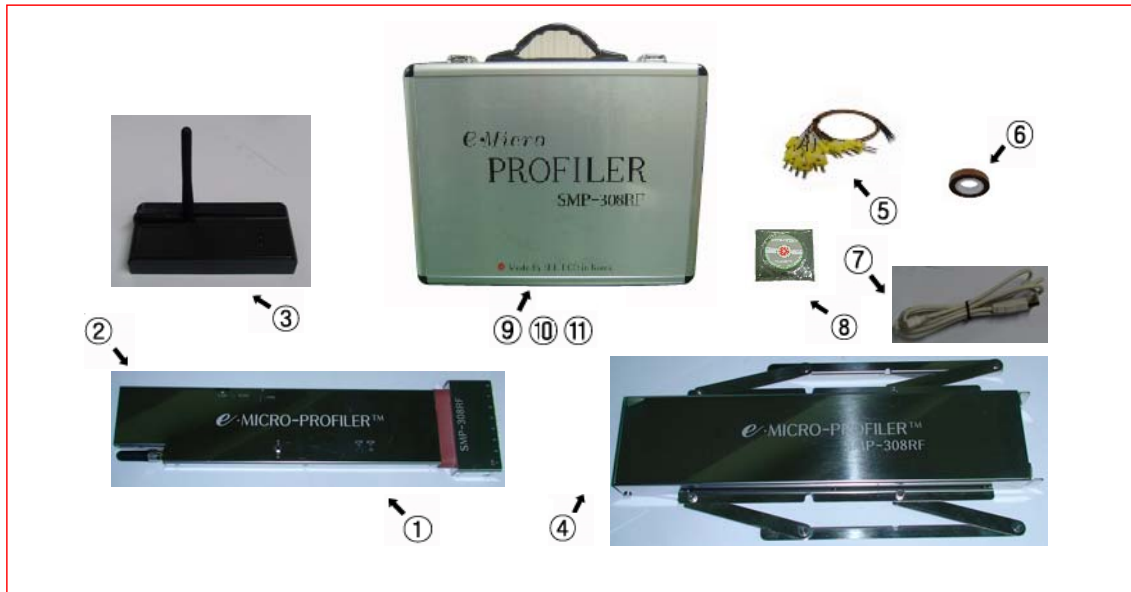
Charging indication LED

Warning LED

※ Warning

1. Unauthorized disassembly of SMP-308 Memory unit and battery are prohibited as battery connection terminal, LED and power switch may be damaged
2. When measuring profile with USB jack for battery charging plugged, it may generate a noise.

7. Micro-Profiler™ component(SMP-308RF)



°Part list.

No.	Description	No.	Contents	Etc.
①	Memory unit	M-001	Main memory equipment for temperature profile	
②	Battery(inside of memory unit)	M-002	3.6(Ni-Mn) Rechargeable Battery	CSP
③	RF Moduie & Antenna	M-003	Serial Port	
④	Product case	M-005	For Product to memory unit from high temperature of reflow M/C	
⑤	K-type sensor	M-007	Made connector Ass'y (about 40cm)	CSP
⑥	Kapton tape	M-008	W10mm X 15m	CSP
⑦	USB cable(Recharge cable)	M-009	USB Port	
⑧	High temperature solder wire	M-010	Samples	CSP
⑨	software disk	M-011	Micresoft Window 98,2000,ME,XP	
⑩	manual & Test sheet	M-012	User's manual	
⑪	Parking case	M-013	Quality assurance of memory unit	

We are supply to above items when you purchase of SMP-XXX. but if you need a more above items. we are prepare to all of above items anytime, also M-XXX is order No for you.

※ CSP : Consumption goods, OPT : Option