Mainboard of GB-1000 command interface

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GB-1000 with 3.00U firmware can be operate and access the external CF card by remote connection.
To do that, it is necessary to communicate with Mainboard which control the CF card slot.
The daisy chain function of GPS board is used to communicate between Mainboard and PC(remote).

1. Daisy chain command script

1.1. Daisy chain ON command script.

```
set,dev/ser/d/rate,115200
set,dev/ser/d/imode,echo
set,cur/term/eoff,QUIT
set,dev/ser/d/eoff,QUIT
set,dev/ser/d/echo,/cur/term
set,cur/term/imode,echo
set,cur/term/echo,/dev/ser/d
```

1.2. Daisy chain OFF command script.

```
QUIT
set,cur/term/imode,cmd
set,dev/ser/d/echo,/dev/null
set,dev/ser/d/imode,cmd
```

2. Mainboard command

2.1. Start Data logging to external CF card with timer.

GB,SET/START,"GB-1000,Site,AntHi,Int,AntType,AntMea,Elev,Inittime,Form, Timer, ExtCF, St_HH,St_MM,ST_SS,END_HH,END_MM,END_SS"

The Mainboard of GB-1000 starts the data logging or set the timer for data logging after getting this command.

Field	Description	Value
Site	Site name	Up to 10 character
AntHi	Antenna Hight	0.000 to 9.999
Int	Interval	0 : 1 second 1 : 5 second 2 : 10 second 3 : 15 second 4 : 30 second 5 : 60 second
AntType	Antenna Type	0 : PG-A1 1 : LEGANT 2 : LEGANT-G 3 : PG-A5 4 : PG-A1w/GP 5 : Unknown
AntMea	Antenna Measure method	0 : ARP 1 : SLANT
Elev	Elevation Mask	0 to 90
InitTime This field does not work. However, please fill this field any value.	Kinematic Initialize Time	0 to 999
Form	Data logging format	0 : TPS 1 : BINEX
Timer	Timer ON or OFF	0 : ON 1 : OFF
ExtCF	Internal and External CF card logging	0 : ON (Internal and External) 1 : OFF(Internal memory only)
St_HH,St_MM,St_SS	Start time HH:MM:SS	HH : 0-23 MM : 0-59 SS : 0-59

End_HH,End_MM,End_SS	End time HH:MM:SS	HH : 0-23 MM : 0-59 SS : 0-59

Notice,

If the Start time parameter and End time parameter are set to all “0” (Start 00:00:00 End 00:00:00) , the GB-1000 will starts data logging in spite of the Timer ON.

Notice,

You have to make a 30 seconds or more time space between End time and Start time.

If a close time is input, the command is not accepted.

Ex. Start : 00:00:00 End 23:59:45. This is not accepted.

Start : 00:00:00 End 23:59:30. This is accepted

Example,

Site name: ABC, Hight:1.560, 30 sec interval, PG-A1wGP antenna, ARP

GB,SET/START,”GB-1000,ABC,1.560,4,4,0,15,300”

2.2. End data logging / Cancel the timer

GB,SET/END

If the GB-1000 is data logging , the Mainboard of GB-1000 stops data logging.

If the GB-1000 is waiting next session of timer, the Mainboard of GB-1000 cancel the timer.

2.3. Set Remote mode

GB,SET/REMOTE

The Mainboard of GB-1000 switch to the Remote mode after this command.

2.4. Exit remote mode

GB,SET/EXIT

The Mainboard of GB-1000 cancel the remote mode

2.5. Show File list

GB, GET/FILES

The Mainboard of GB-1000 output the File list of external CF card.

This command is available on only remote mode.

2.6. NVRAM clear

GB,SET/RESET

The Mainboard of GB-1000 carries out the NVRAM clear for GPS board.

The GB-1000 restarts automatically after finish the NVRAM clear.

This command is available on only remote mode.

3. Response from Mainboard of GB-1000

3.1. Ack

The Ack message is showed a combination binary(0x06) and ASCII(006).

0x06+006

3.2. Nack

The Ack message is showed a combination binary(0x15) and ASCII(015).

0x15+015

3.3. File list

The Mainboard of GB-1000 output file list after the GB,GET/FILES command.

GB,RE/FILES{{Filename1,Filesize1,Filedate1,Filetime1},\r\n

{Filename2,Filesize2,Filedate2,Filetime2},\r\n

{Filename3,Filesize3,Filedate4,Filetime4},\r\n

…….

{FilenameN,FilesizeN,FiledateN,FiletimeN}},\r\n

Filename: File name(12 character)

Filesize: File size (Kbyte) (10 character)

Filedate: Date of creation file YY/MM/DD (Ex.05/02/28)

Filetime: Time of creation file HH:MM (Ex. 5:55)

4. Refer the status of Mainboard during logging to CF card.

The Mainboard of GB-1000 writes the current status to the Note of GPS board of GB-1000.

Command (to GPS board) : print,/par/note/str/5

Response : REXXX"File,Ext,Batt1,B1volt,Batt2,B2volt,CFsize,Remain,GPS,GLO"

Field	Description	Value
File	CF card logging status	0 : Not logging 1 : Logging to External CF and internal memory 2 : The logging was canceled(Memory full) 3 : The logging was canceled(Write fail) 4 : The logging was canceled(No CF card) 5 : System error 6 : Logging to the internal memory only 7 : Waiting next session(timer)
Ext	External power port voltage	0.0 ~ 16.0 (Resolution is 0.5V)
Batt1	Battery 1 status	0 : Full charged 1 : 70% remain 2 : 30% remain 3 : Empty 4 : No battery 5 : Charging battery
Batt2	Battery 2 status	
B1volt	Battery 1 voltage	0.0 : no battery 3.3 ~ 8.7 : battery voltage
B2volt	Battery 2 voltage	
CFsize	CF card size	Kbyte
Remain	Remaining CF size	Kbyte
GPS	Number of GPS satellites	
GLO	Number of GLONASS satellites	

The CF card size and The Remaining CF size are updated during data logging or when the File list was referenced.

After install the CF card to slot, these size are showed "0". If you want to get these value, it is necessary to access the File list or data logging.

If there is no connection to the external power input port, the Ext value show "0.5".

Output example;

RE028"1,12.0,4, 8.3,0, 8.3,997968,965328,9,4"

5. Start data logging / Set timer.

The example of script for data logging to external CF card and internal memory..

```
set,dev/ser/d/rate,115200
set,dev/ser/d/imode,echo
set,cur/term/eoff,QUIT
set,dev/ser/d/echo,/cur/term
set,cur/term/imode,echo
set,cur/term/echo,/dev/ser/d
@sleep 500
GB,SET/START,"GB-1000,ABC,1.0,0,0,0,15,300,0,0,0,00,00,00,23,59,30"
@sleep 1000
QUIT
set,cur/term/imode,cmd
set,dev/ser/d/echo,/dev/null
set,dev/ser/d/imode,cmd
```

Daisy Chain setting

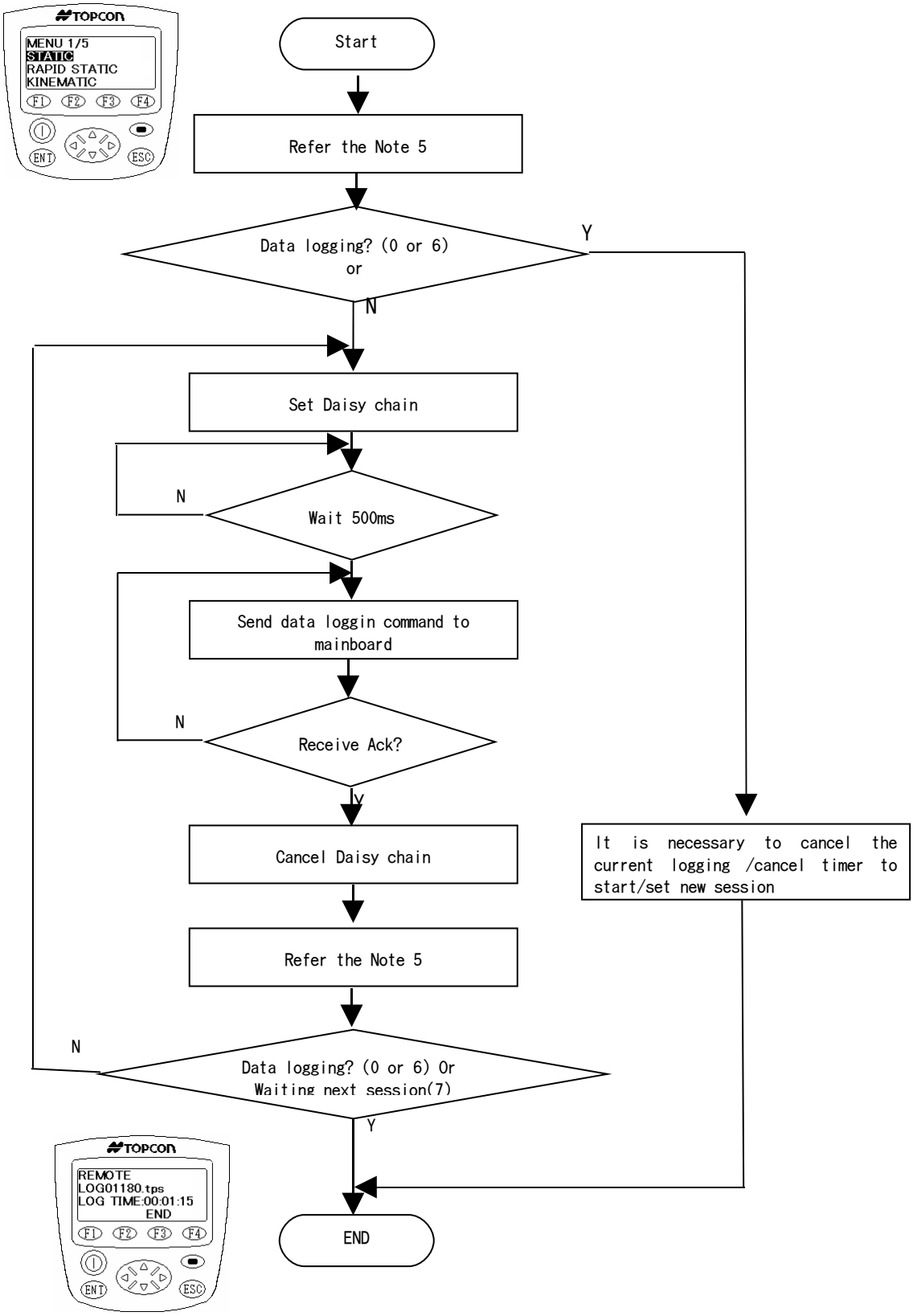
Wait 500ms
Start data logging
/ Set timer command
Wait 1000ms

Cancel Daisy Chain

To operate perfectly, The PC(Remote) should use the followings operation.

POINT : Check the Ack from Mainboard.

Check the data logging status of Note5 after all process was done.



6. End data logging

The example of script for End data logging.

If the GB-1000 has timer setting, the status goes to the waiting status for next session.

```
dm,/dev/ser/d
set,dev/ser/d/rate,115200
set,dev/ser/d/imode,echo
set,cur/term/eoff,QUIT
set,dev/ser/d/echo,/cur/term
set,cur/term/imode,echo
set,cur/term/echo,/dev/ser/d
@sleep 500
GB,SET/END
@sleep 1000
QUIT
set,cur/term/imode,cmd
set,dev/ser/d/echo,/dev/null
set,dev/ser/d/imode,cmd
```

Stop output raw data to Mainboard

Daisy Chain setting

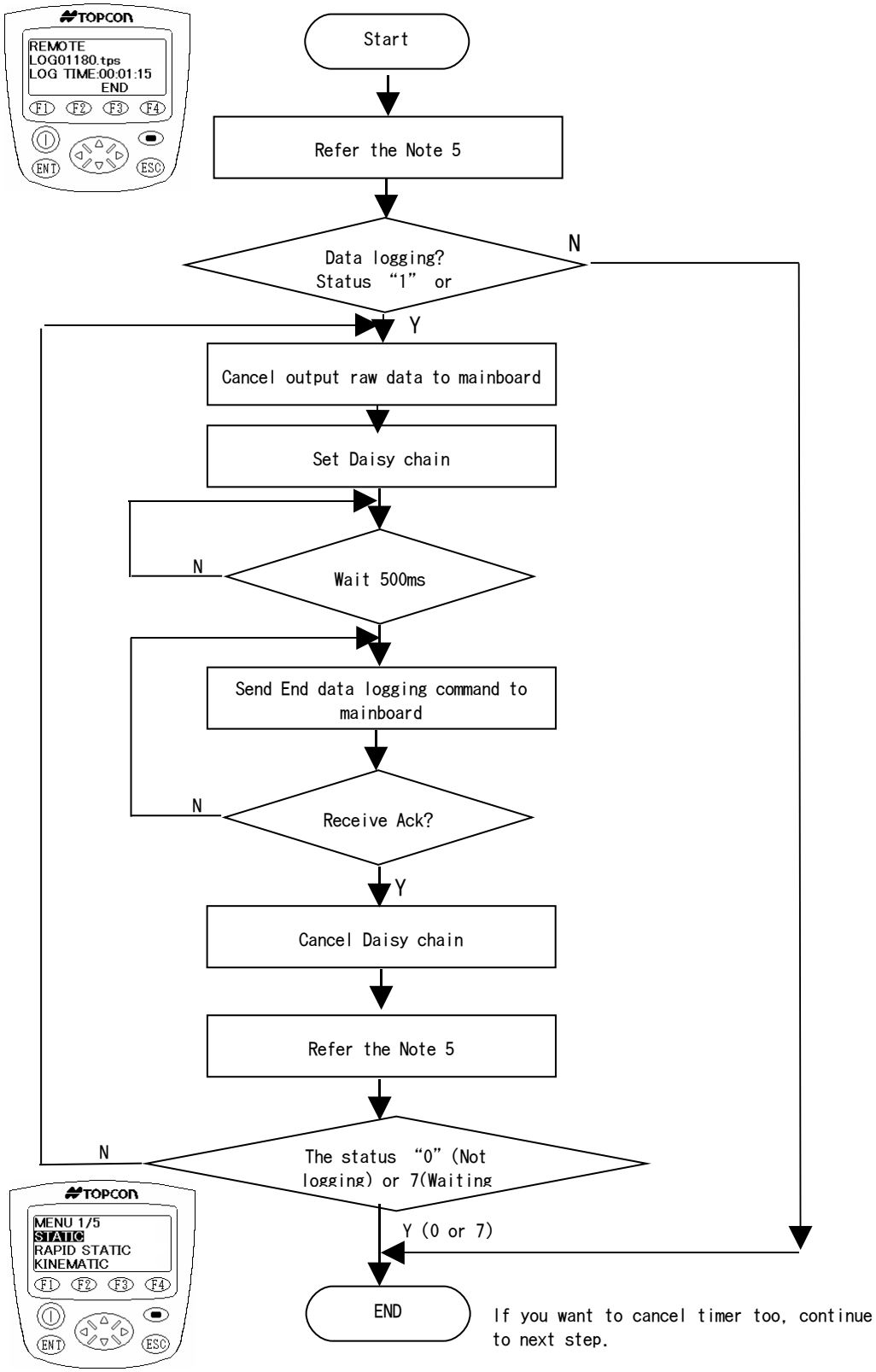
Wait 500ms
End data logging command
Wait 1000ms

Cancel Daisy Chain

To operate perfectly, The PC(Remote) should use the followings operation.

POINT : Check the Ack from Mainboard.

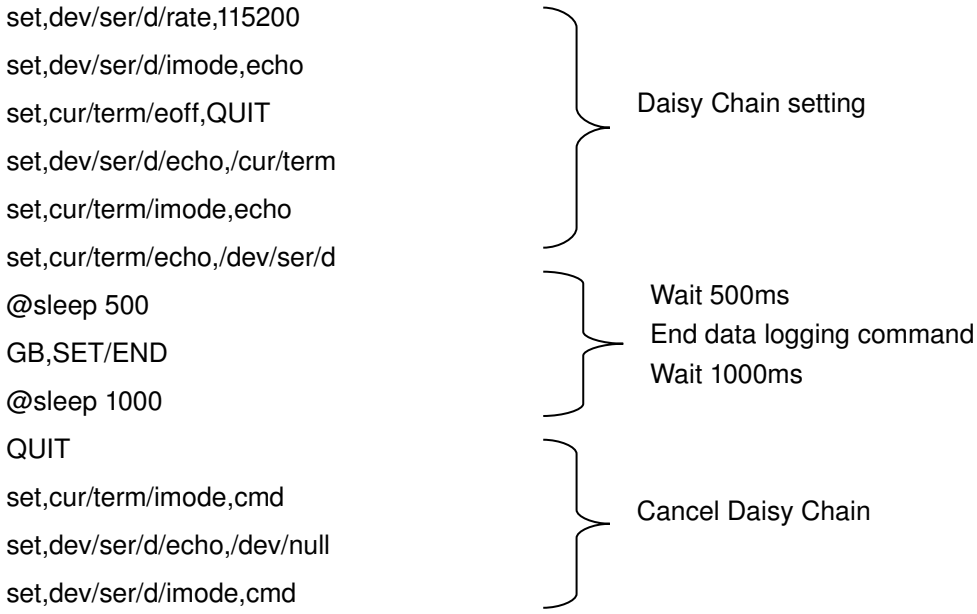
Check the data logging status of Note5 after all process was done.



7. Cancel timer

The cancel timer is available when GB-1000 is waiting the next session.

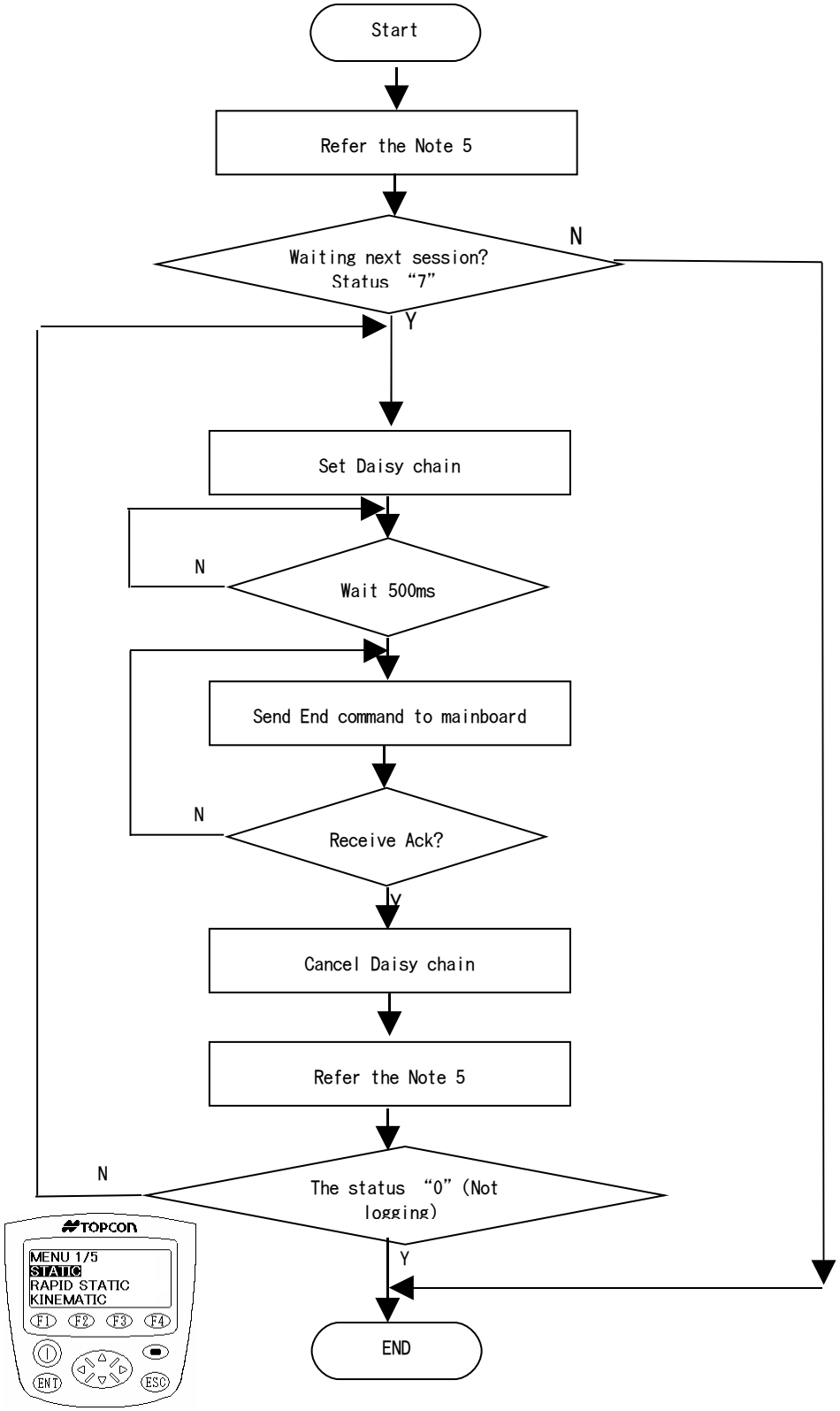
The commands are same as the END data logging command.



To operate perfectly, The PC(Remote) should use the followings operation.

POINT : Check the Ack from Mainboard.

Check the data logging status of Note5 after all process was done.



8. Refer the File list of CF card.

To get the File list of CF card from Mainboard, It is necessary to switch the mode to Remote mode.

And after the operation was finished, It is necessary to turn off the remote mode.

Do not do this operation during CF card data logging. The PC(Remote) should check the data logging status of Note5 before doing File list operation.

Script for getting File list of CF card.

```
set,dev/ser/d/rate,115200
set,dev/ser/d/imode,echo
set,cur/term/eoff,QUIT
set,dev/ser/d/echo,/cur/term
set,cur/term/imode,echo
set,cur/term/echo,/dev/ser/d
@sleep 500
GB,SET/REMOTE
@sleep 500
GB,GET/FILES
```

Daisy Chain setting

Wait 500ms

End data logging command

Wait 500ms

Get File list command

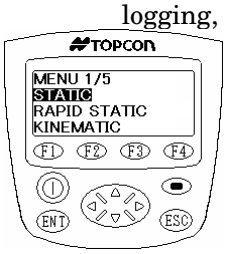
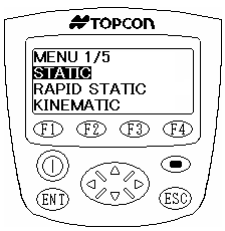
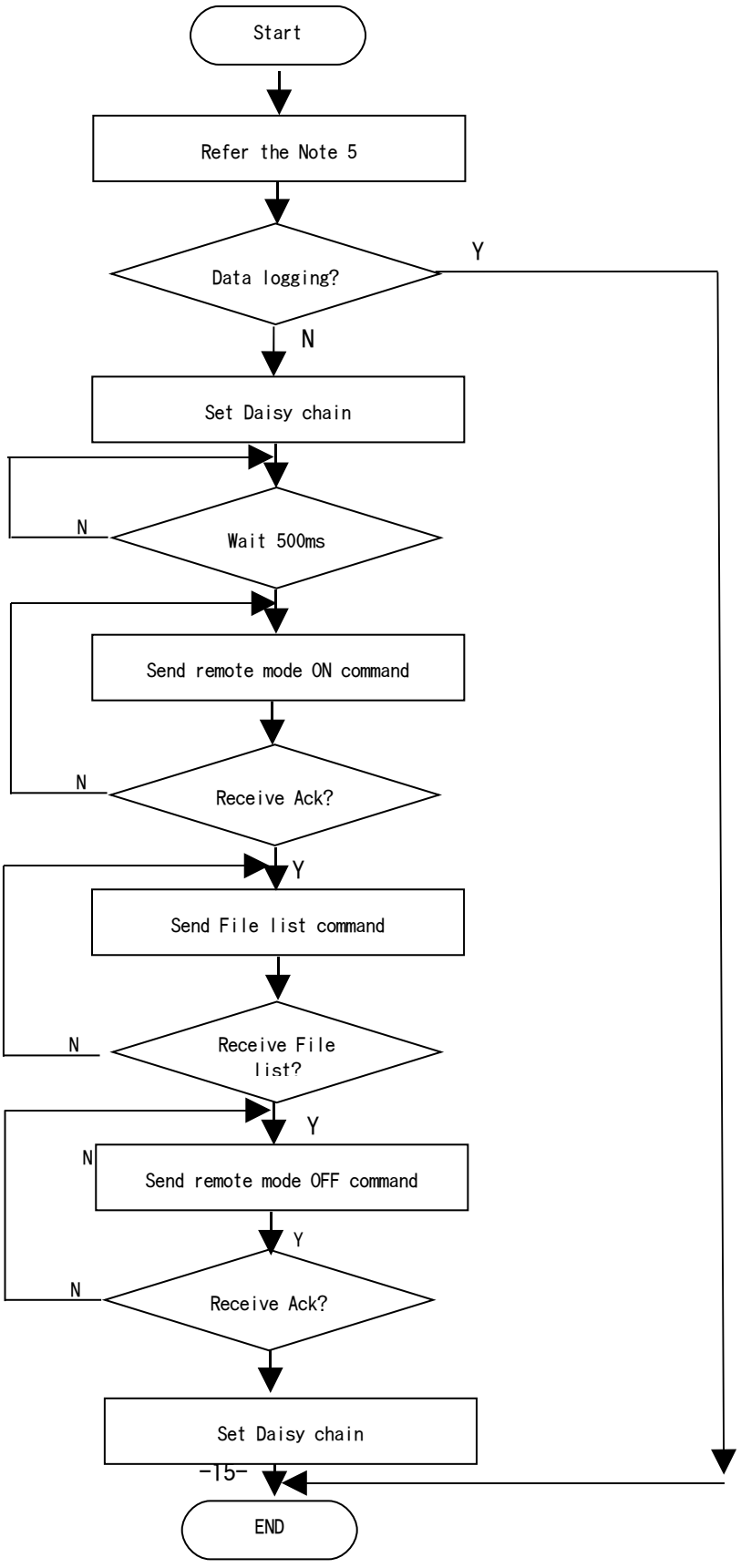
Script for turning the Remote mode off.

```
GB,SET/EXIT
QUIT
set,cur/term/imode,cmd
set,dev/ser/d/echo,/dev/null
set,dev/ser/d/imode,cmd
```

Remote mode OFF

Cancel Daisy Chain

To operate perfectly, The PC(Remote) should use the followings operation.

POINT : Check the Ack from Mainboard.

At first, Check the data logging status of Note5. If the status is in data logging, it must be canceled.