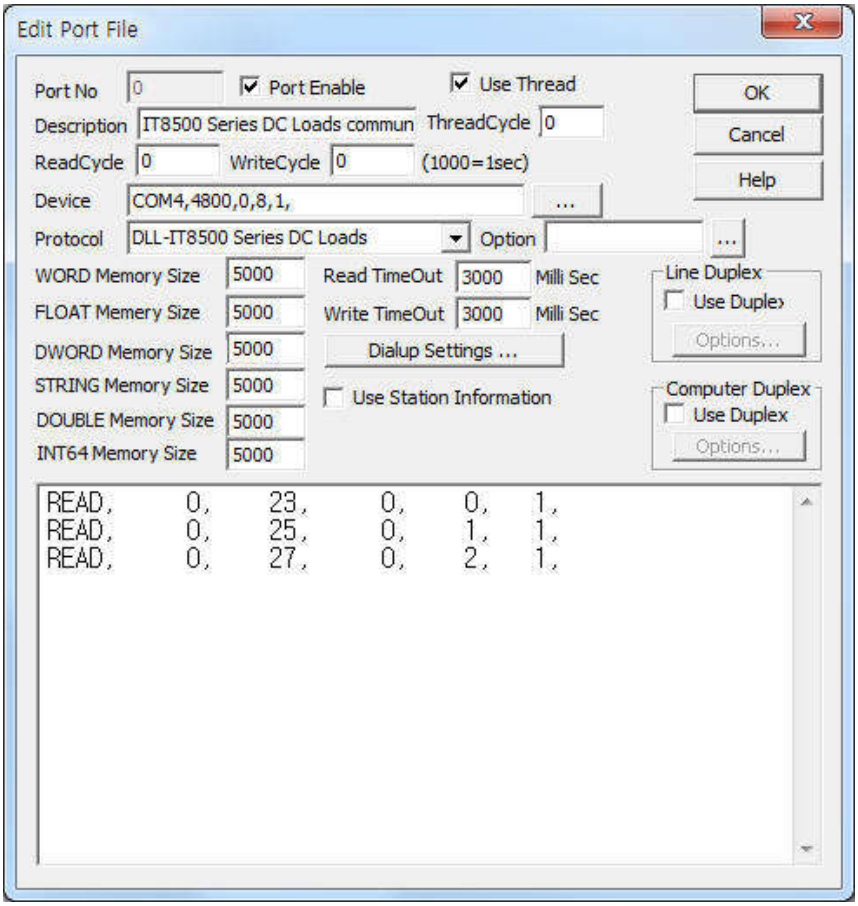
IT8500 Series DC Loads communication driver

IT8500 Series DC Loads communication driver is the driver to communicate with electronic load controller IT8511, IT8512, etc of ITECH Electronic Co,. Ltd. in Korea.

1. Read Settings

<Figure 1> is read setting example of IT8500 Series DC Loads communication driver.



<Figure 1> Read setting example of IT8500 Series DC Loads communication driver

Device part of <Figure 1> input Com Port(COM1), Baud Rate(4800), Parity Bit(0), Data Bit(8), Stop Bit(1) respectively, according to controller.

Note) IT8500 Series DC Loads controller normally communicate with USB device. So, you must install 'PL2303_Prolific_DriverInstaller_v1417.exe' program for virtual serial port.

('PL2303_Prolific_DriverInstaller_v1417.exe' program is provided by the manufacturer of IT8500 series controller)

IT8500 Series DC Loads communication driver read schedule

Read schedule setting parameters are as follows:

1) **Station** – 0 ~ 254 controller station number.

2) **Read Command** – Command = 23, 25, 27, 29, 2B, 2D, 2F, 31, 33, 35, 37, 39, 3B, 3D, 3F, 41, 57, 59, 5F. (refer to <Table 1>)

3) **Read Start Address** – Don't care.

4) **Save start address for Communication Server** – Saving start address of Communication Server.

5) **Read Size** – Fixed to 1, according to read command fixed real read size. (refer to <Table 1>)

Read schedule example)

READ, 0, 23, 0, 0, 1,

READ, 0, 25, 0, 1, 1,

READ, 0, 27, 0, 2, 1,

<Table 1> is data saving address and contents of IT8500 Series DC Loads communication driver.

<Table 2>, <Table 3> are operation state and demand state of each bit for 5F read command.

Read command	Contnetns	Data saving address and contnets
23	Read of Max Setup Input Voltage	Start Add + 0 : Max Setup Input Voltage
25	Read of Max Setup Input Current	Start Add + 0 : Max Setup Input Current
27	Read of Max Setup Input Power	Start Add + 0 : Max Setup Input Power
29	Read of Operation Mode	Start Add + 0 : Operation Mode(0 = CC, 1 = CV, 2 = CW, 3 = CR)
2B	Read of CC Mode Current	Start Add + 0 : CC Mode Current
2D	Read of CV Mode Voltage	Start Add + 0 : CV Mode Voltage
2F	Read of CW Mode Watt(Power)	Start Add + 0 : CW Mode Watt
31	Read of CR Mode Resistance	Start Add + 0 : CR Mode Resistance
33	Read of CC Mode Transient Current	Start Add + 0 : Setting A Current Start Add + 1 : Timer A Value(0.1 mSec unit) Start Add + 2 : Setting B Current Start Add + 3 : Timer B Value(0.1 mSec unit) Start Add + 4 : Trnasition Mode(0 = Continues, 1 = Pulse, 2 = Toggled)
35	Read of CV Mode Transient Voltage	Start Add + 0 : Setting A Voltage Start Add + 1 : Timer A Value(0.1 mSec unit) Start Add + 2 : Setting B Voltage Start Add + 3 : Timer B Value(0.1 mSec unit) Start Add + 4 : Trnasition Mode(0 = Continues, 1 = Pulse, 2 = Toggled)
37	Read of CW Mode Transient Power(Watt)	Start Add + 0 : Setting A Power Start Add + 1 : Timer A Value(0.1 mSec unit) Start Add + 2 : Setting B Power Start Add + 3 : Timer B Value(0.1 mSec unit) Start Add + 4 : Trnasition Mode(0 = Continues, 1 = Pulse, 2 = Toggled)
39	Read of CR Mode Transient Resistance	Start Add + 0 : Setting A Resistance Start Add + 1 : Timer A Value(0.1 mSec unit) Start Add + 2 : Setting B Resistance Start Add + 3 : Timer B Value(0.1 mSec unit) Start Add + 4 : Trnasition Mode(0 = Continues, 1 = Pulse, 2 = Toggled)
3B	Read of List Operation Mode	Start Add + 0 : List Operation Mode(0 = CC, 1 = CV, 2 = CW, 3 = CR)
3D	Read of List Repeat Mode	Start Add + 0 : List Repeat Mode(0 = Once, 1 = Repeat)
3F	Read of Number of List Steps	Start Add + 0 : Number of List Step
41	Read of One of The Step’s Current	Start Add + 0 : Appointed One Step Start Add + 1 : Current Value of current step Start Add + 2 : Timer Value(0.1 mSec unit) of current step

57	Read of Remote Sense Mode	Start Add + 0 : Remote Sense Mode(0 = Disable, 1= Enable)
59	Read of Trigger Source	Start Add + 0 : Trigger Source(0 = Keypad, 1 = External, 2 = Command)
5F	Read of Input Voltage/Current/Power/Relative State	Start Add + 0 : Actual Input Voltage Start Add + 1 : Actual Input Current Start Add + 2 : Actual Input Power Start Add + 3 : Operation State, refer to <Table 2> Start Add + 4 : Demand State, refer to <Table 3>

<Table 1> Data saving address and contents of IT8500 Series DC Loads communication driver

Bit position	Contents	Remarks
0	CAL(Calculate the New Demarcate Coefficient)	
1	WTG(Wait for Trigger Signal)	
2	REM(Remote Control Signal)	
3	OUT(Output State)	
4	LOCAL(Local Button State)	0 = Not in Effect, 1 = in Effect
5	SENSE(Remote Testing Mode)	
6	LOT(For Load On Timer State)	
7	…	

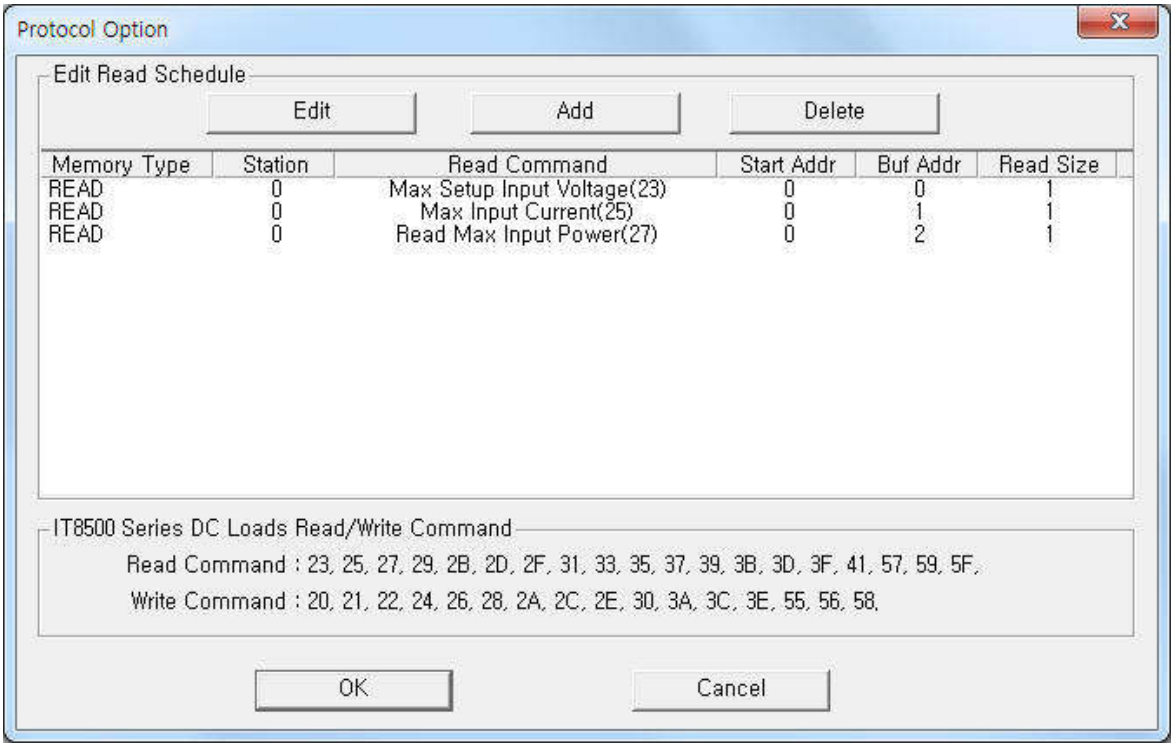
<Table 2> Operation state of each bit for 5F read command

Bit position	Contents
0	RV(Input Reverse Voltage)
1	OV(Over Voltage)
2	OC(Over Current)
3	OP(Over Power)
4	OT(Over Temperature)
5	SV(Not Connect Remote Terminal)
6	CC(Constant Current)
7	CV(Constant Voltage)
8	CP(Constant Power)
9	CR(Constant Resistance)
A ~ F (10 ~ 15)	…

<Table 3> Demand state of each bit for 5F read command

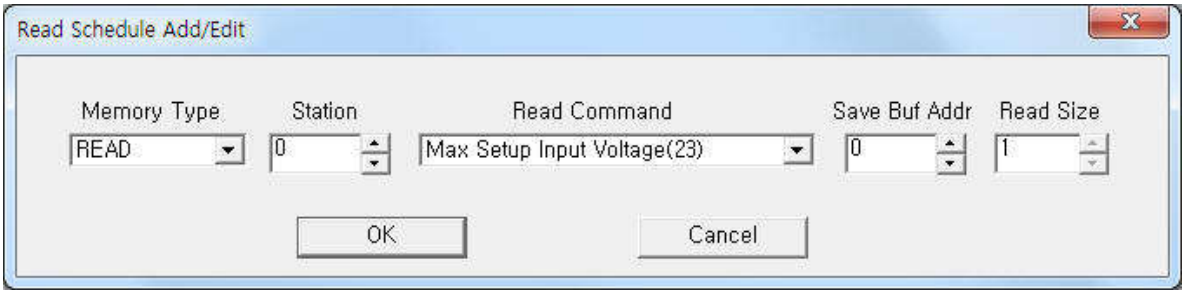
IT8500 Series DC Loads communication driver store the same data in WORD, DWORD, FLOAT memory, but the data format are different.

If you click the icon  in protocol option part, you can see the dialogue box such as <Figure 3>. you can also set read schedule by using this part.



<Figure 2> Example of IT8500 Series DC Loads communication driver's Option dialog box

You can set read schedule by using Edit , Add , Delete button and listbox of <Figure 2>.



<Figure 3> Example of IT8500 Series DC Loads communication driver's read schedule Add/Edit dialog box

When you click Add button or Edit button in dialogue box of <Figure 2>, dialogue box of <Figure 3> is shown.

2. Writing settings

You can set IT8500 Series DC Loads controller by using 'writing settings'.

Digital Write

Digital write and analog write have the same setting parameters except output value(0 or 1).

Analog Write

Analog write setting parameters are as follows:

1) PORT Port no. (0 ~ 255)
2) STATION 0 ~ 254 controller station number.
3) ADDRESS Don't care.
4) Extra1 Write command = 20, 21, 22, 24, 26, 28, 2A, 2C, 2E, 30, 3A, 3C, 3E, 55, 56, 58. (refer to <Table 4>)
5) Extra2 Don't care.

<Table 4> is writing range and contents for write command.

Write command	Contents	Writing range
20	Setting of Remote Control Mode	0 = Front Panel Operation Mode, 1 = Remote Operation Mode
21	Setting of Input State	0 = OFF, 1 = ON
22	Setting of Max Input Voltage	Setting of Voltage 3 decimal point
24	Setting of Max Input Current	Setting of Current 4 digit decimal point
26	Setting of Max Input Power	Setting of Power(Watt) 3 digit decimal point
28	Setting of Operation Mode	0 = CC Mode, 1 = CV Mode, 2 = CW Mode, 3 = CR Mode
2A	Setting of CC Mode Current	Setting of CC Mode Current 4 decimal point
2C	Setting of CV Mode Voltage	Setting of CV Mode Voltage 3 decimal point
2E	Setting of CW Mode Watt(Power)	Setting of CW Mode Watt 3 decimal point
30	Setting of CR Mode Resistance	Setting of CR Mode Resistance 3 decimal point
3A	Setting of List Operation Mode	0 = CC Mode, 1 = CV Mode, 2 = CW Mode, 3 = CR Mode
3C	Setting of List Repeat Mode	0 = Once, 1 = Repeat
3E	Setting of Number of List Steps	Setting of List Step number(by WORD unit)
55	Setting of Local Control Mode	0 = Disable, 1 = Enable
56	Setting of Remote Sense Mode	
58	Setting of Trigger Source	0 = Keypad, 1 = External, 2 = Command

<Table 4> Writing range and contents for write command

Note) To control of IT8500 Series DC Loads, you have to set 'Remote Control Mode'.

If the controller don't set ‘Remote Control Mode’, you can change 'Control Mode' by write command that the setting parameter = 'Output Value : 1', 'Extra1 : 20'.

Also, when turn on the IT8500 Series DC Loads controller, the default 'Control Mode' isn't 'Remote'.

Write example 1)

PORT:0, station:0, ADDRESS:0000, Extra1: 20, Extra2 : 0, Output value = 1,

The setting parameter shown above is 'Remote Control Mode' setting example for 0 station IT8500 Series DC Loads controller.

Write example 2)

PORT:0, station:0, ADDRESS:0000, Extra1: 22, Extra2 : 0,

The setting parameter shown above is ‘Max Input Voltage’ setting example for 0 station IT8500 Series DC Loads controller.

Write example 3)

PORT:0, station:0, ADDRESS:0000, Extra1: 24, Extra2 : 0,

The setting parameter shown above is ‘Max Input Current’ setting example for 0 station IT8500 Series DC Loads controller.

Write example 4)

PORT:0, station:0, ADDRESS:0000, Extra1: 28, Extra2 : 0,

The setting parameter shown above is ‘Operation Control Mode’ setting example for 0 station IT8500 Series DC Loads controller.

Block Write

IT8500 Series DC Loads communication driver don't support 'Block Write'.

3. Connection of communication cable

Please connect USB communication cable that is provided by by the manufacturer.

You can communicate with virtual serial(RS-232C) port by ‘PL2303_Prolific_DriverInstaller_v1417.exe’ program. (

‘PL2303_Prolific_DriverInstaller_v1417.exe’ program is provided by the manufacturer of IT8500 series controller)

<Figure 4> is appearance of IT8500 Series DC Loads controller.

<Figure 4> Appearance of IT8500 Series DC Loads controller