THAMWAY PROT series hardware server software

A/D converter section

TCP/IP port to be used

TCP/IP PORT:5026 It uses to communicate with the DV14U25 A/D converter.

Delimiter of command

Please take always delimiter character in the command using the TCP/IP. Delimiter, 'CR', 'CR + LF', ';' is one of the three out of.

About numerical value to be used

Integer

If you put a "0x" at the beginning it is regarded as hexadecimal.

If you put a "0" at the beginning it is regarded as octal.

If you put a "0b" at the beginning it is regarded as binary.

Other than the above it will consider the decimal.

Example: 0x123 → 291

0b1100 → 12

0123 → 83

Real

If you put a "u" in the back of the numeric value is regarded as 1e-6(micro).

If you put a "m" in the back of the numeric value is regarded as 1e-3(milli).

If you put a "k" in the back of the numeric value is regarded as 1e+3(kilo).

例: 123k → 123000

1.2u → 0.0000012

QPSK

At the same time I will output a QPSK pulse and transmitted pulse. There are two 'QPSK1' and 'QPSK2'.

TIME

Unit of time is sec.

FREQUENCY

Unit of frequency is Hertz(Hz).

VOLTAGE

Unit of voltage is volt.

A/D Command List

TCP/IP PORT NUMBER:5026

Common commands

View device information

[Format]

***idn?**

[Description]

Make the display of the hardware and software of information connected.

[Result]

THAMWAY,N210-1026T AD,Version 2.00,DV14U25 ,101108,CLK=25MHZ,BIT=14,RAM=524288,

Run the Lua script file.

[Format]

run_lua <file name>

[Description]

Run a lua script file on your PC.

[Example]

run_lua c:/myprograms/test1.lua

Write data to the I/O port

[Format]

outb <I/Oaddress>,<byte data(8bit)>

outw <I/Oaddress>,<word data(16bit)>

[Description]

It is used when operating the register of each device directly.

Read data from the I/O port

[Format]

inb <I/O address>

inw <I/O address>

[Description]

It is used when operating the register of each device directly.

inb: read 8bit data.

inw: read 16bit data.

A/D Board commands

Read STATUS register

[Format]

readstatus

[Description]

Return value

	B7	B6	B5	B4	B3	B2	B1	B0
Return value	0	PLL	SOVF	COVF	0	END	BUSY	SP

SP:It is sampling status.

SP	0	AD stopped
	1	AD sampling

BUSY : This shows a state before being finished after receiving a sampling start command.

BUSY	0	AD stopped
	1	Waiting or Sampling

END : This shows a state of the sample end.

END	0	AD sampling is non-completion
	1	AD end sampling

COVF : COS side AD shows a state of the hyperinput.

COVF	0	AD input voltage is appropriate.
	1	AD input voltage is excessive.

SOVF : SIN side AD shows a state of the hyperinput.

SOVF	0	AD input voltage is appropriate.
	1	AD input voltage is excessive.

PLL : It is PLL locking status

PLL	0	PLL locked(normal)
	1	PLL unlocked(error)

Set A/D converter to trigger wait state.

[Format]

startad <block size>,<iteration size>,<frame size>,<flip mode>

[Description]

To set the converter to trigger wait state.

block size 1-524272 (0x0001-0x7fff0)

iteration size 1-65520 (0x0001-0xfff0)

frame size 1-256

flipmode 0:not use

1:use

Read A/D memory

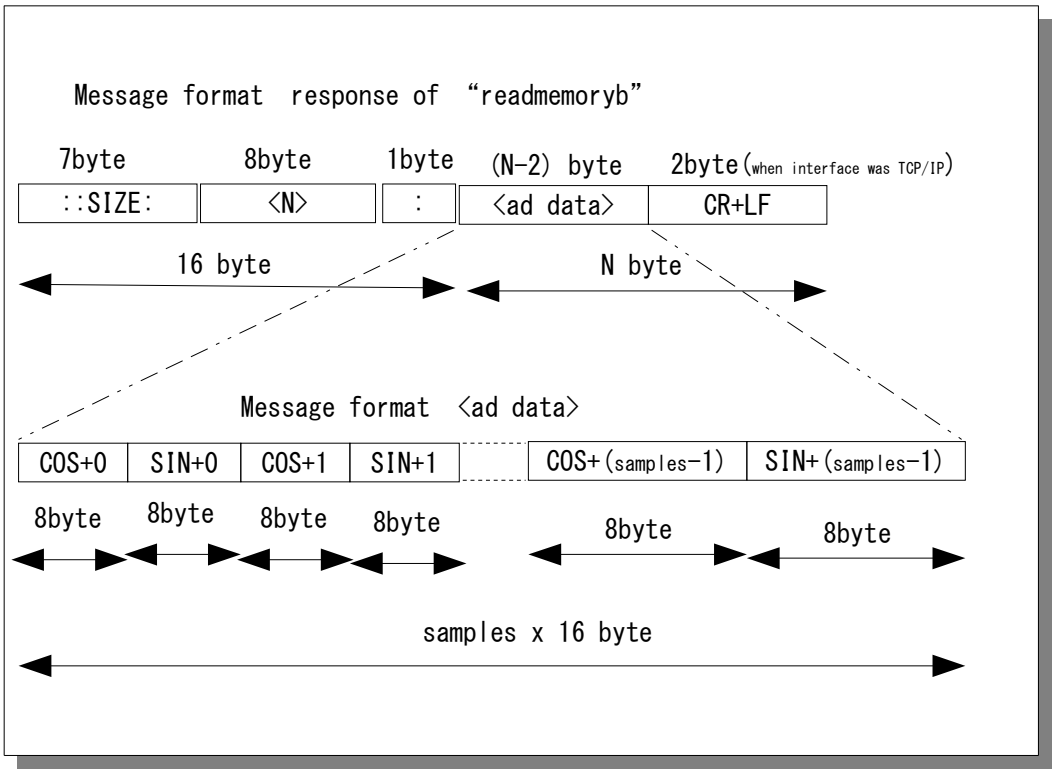
[Format]

readmemoryb <memory address>,<samples>

[Description]

Read A/D memory. Please specify the even number address.

A / D memory read format(“readmemoryb”)



Set sampling frequency

[Format]

setsamplefreq <Frequency(integer) >

[Description]

This is a command to set sampling frequency.The setting unit is Hertz. It sets the frequency close that can be set internally. It returns a set frequency.

Read sampling frequency

[Format]

getsamplefreq

[Description]

It reads the sampling frequency.The setting unit is Hertz.

Reads the accumulated number of times

[Format]

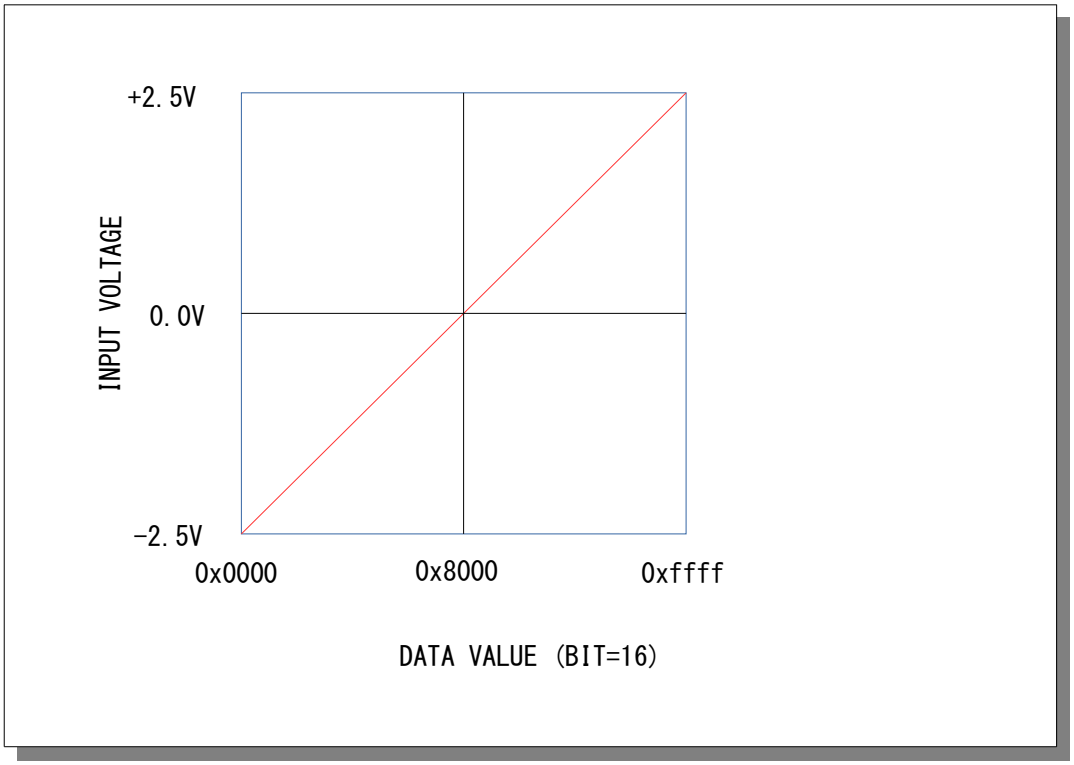
gettriggercount

[Description]

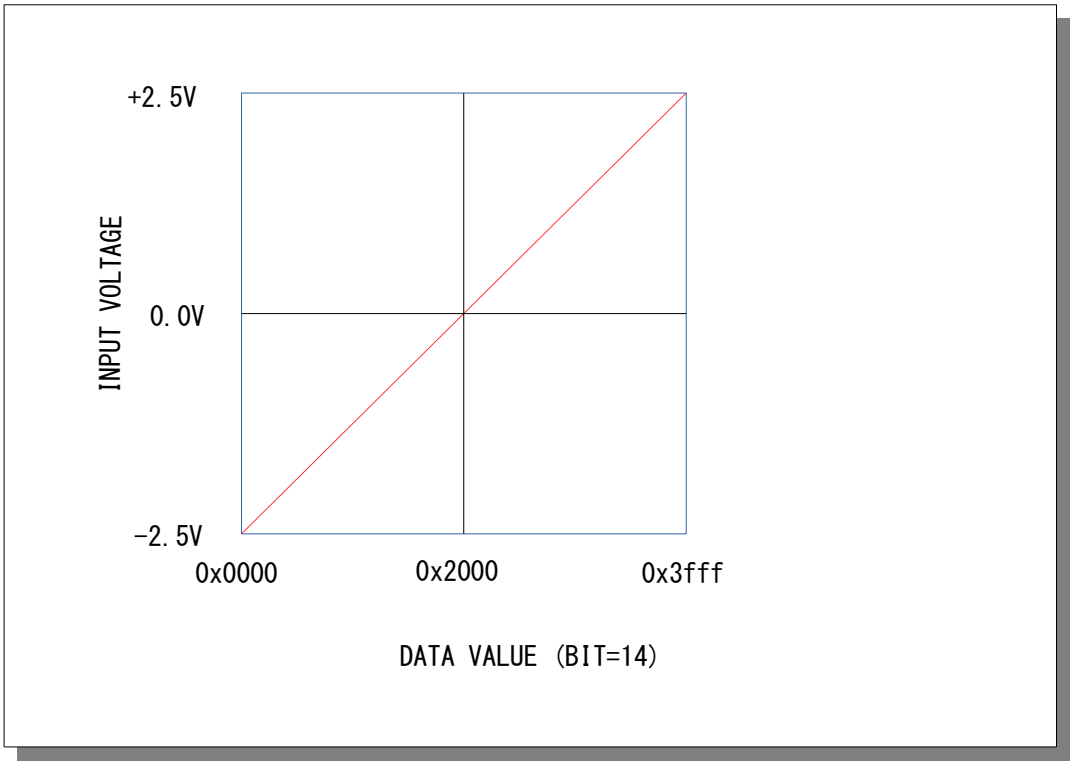
It gets the summing number of times that came from running the 'STARTAD' command. You can dividing the accumulated data by this number. Please note that you stop the sampling When you use this command.

A/D DATA vs Input voltage

case of BIT=16(In the case of AD board whose 'BIT=16' is included in the query result of *IDN?)



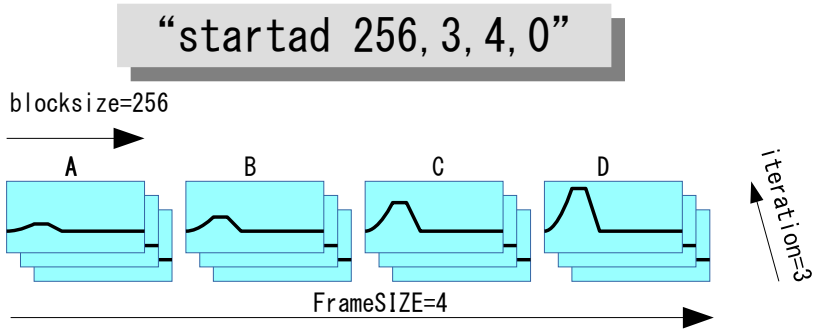
case of BIT=14(* In the case of AD board whose 'BIT=14' is included in the query result of *IDN?)



A/D acquisiton images

Command “startad 256,3,4,0” is need 12trigger pulses.

Command “readmemoryb 512,256” for read waveform 'C'.



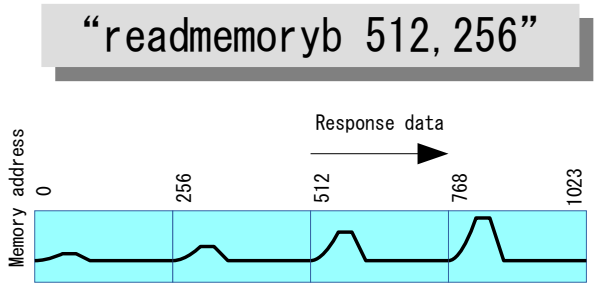


Table 1: A/D Board Register MAP

Low-address	Register name	B7	B6	B5	B4	B3	B2	B1	B0
0x20	status	0	PLL	SOVF	COVF	0	END	BUSY	SP
0x21	control	0	0	0	TEST	0	0	S.TRG	SP ON
0x22	mode	0	INV	TC1	TC0	CS	C2	C1	C0
0x23	clock	CK7	CK6	CK5	CK4	CK3	CK2	CK1	CK0
0x24	BLOCK SIZE	S7	S6	S5	S4	S3	S2	S1	S0
0x25	BLOCK SIZE	S15	S14	S13	S12	S11	S10	S9	S8
0x26	BLOCK SIZE	0	0	0	0	0	S18	S17	S16
0x28	ITERATION COUNT	D7	D6	D5	D4	D3	D2	D1	D0
0x29	ITERATION COUNT	D15	D14	D13	D12	D11	D10	D9	D8
0x2A	ITERATION COUNT	0	0	0	0	0	0	D17	D16
0x2C	FRAME SIZE	F7	F6	F5	F4	F3	F2	F1	F0
0x30	COS RAM ADDR	CA7	CA6	CA5	CA4	CA3	CA2	CA1	CA0
0x31	COS RAM ADDR	CA15	CA14	CA13	CA12	CA11	CA10	CA9	CA8
0x32	COS RAM ADDR	0	0	0	0	0	CA18	CA17	CA16
0x34	SIN RAM ADDR	SA7	SA6	SA5	SA4	SA3	SA2	SA1	SA0
0x35	SIN RAM ADDR	SA15	SA14	SA13	SA12	SA11	SA10	SA9	SA8
0x36	SIN RAM ADDR	0	0	0	0	0	SA18	SA17	SA16
0x38	COS RAM DATA	CD7	CD6	CD5	CD4	CD3	CD2	CD1	CD0
0x39	SIN RAM DARA	SD7	SD6	SD5	SD4	SD3	SD2	SD1	SD0
0x3A	COS AD DATA	CAD7	CAD6	CAD5	CAD4	CAD3	CAD2	CAD1	CAD0
0x3B	COS AD DATA	0	0	CAD13	CAD12	CAD11	CAD10	CAD9	CAD8
0x3C	SIN AD DATA	SAD7	SAD6	SAD5	SAD4	SAD3	SAD2	SAD1	SAD0
0x3D	SIN AD DATA	0	0	SAD13	SAD12	SAD11	SAD10	SAD9	SAD8
0x3E	revision	REV7	REV6	REV5	REV4	REV3	REV2	REV1	REV0
0x3F	board string	ID7	ID6	ID5	ID4	ID3	ID2	ID1	ID0