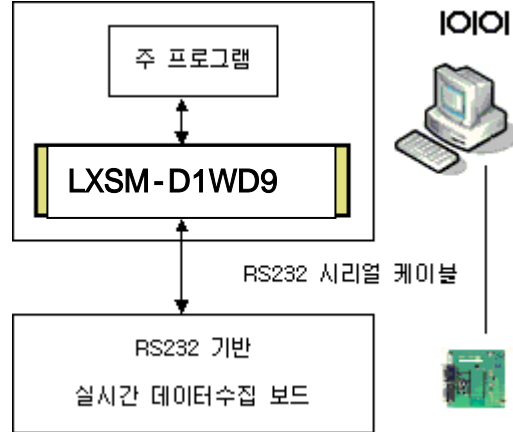


8ch 12bit RS232 Data Acquisition SDK



LXSM-D1WD9 RS232
PC 가 가 S/W
, win32 API DLL DLL
DLL 6 1
가 가
D1WD9
Win 32 API Visual C++ 6.0 DLL
C++ visual



- Analog Input Channel : Max 8 ch
- Real Time Stream Data Acquisition
- Variable Sampling Frequency (Hz): 128, 256, 512, 1024 가 가 .
- Variable voltage gain : 32 step
- : Win98se/Me/2000/XP
- 가 - RS232
- QEEG-4 (: LXE1104-RS232), QEEG-8 (: LXE3208)



LXSM-D1WD9.DLL	DLL core,
LXSM-D1WD9.LIB	link
LXSM-D1WD9.H	include

LXSM-D1WD9

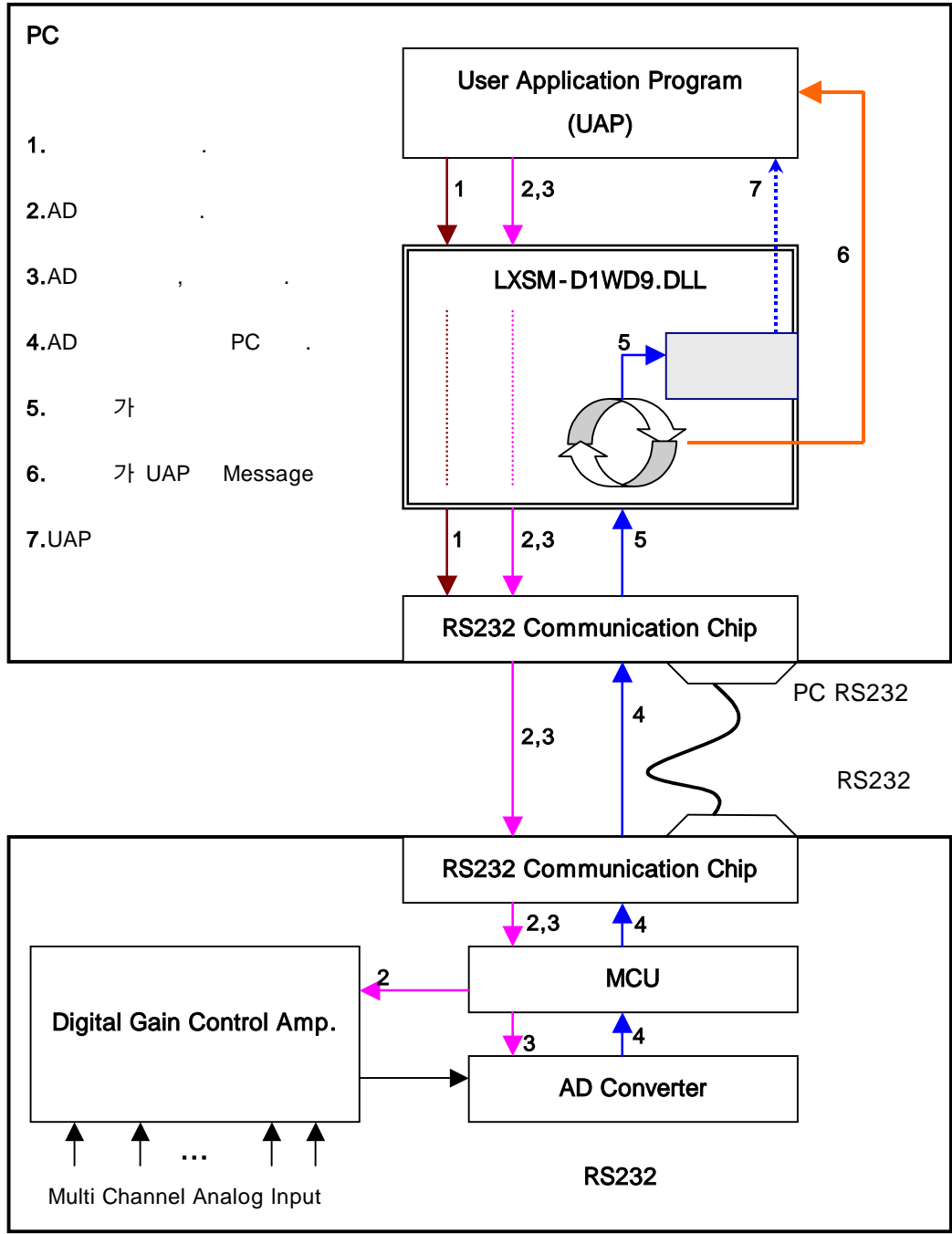
D1WD9		4
		6
		6
		7
<input type="checkbox"/>		7
<input type="checkbox"/>		7
		8
<input type="checkbox"/>	1. message_map	가 8
<input type="checkbox"/>	2.	8
<input type="checkbox"/>		9
		10
<input type="checkbox"/>		10
		11
		12
		12
Init_Device		13
<input type="checkbox"/>		13
<input type="checkbox"/>		13
<input type="checkbox"/>		13
<input type="checkbox"/>		13
<input type="checkbox"/>		13
Start_Stream		14
<input type="checkbox"/>		14
<input type="checkbox"/>		14
<input type="checkbox"/>		14
<input type="checkbox"/>		14
<input type="checkbox"/>		14
Stop_Stream		15

LXSM-D1WD9

<input type="checkbox"/>	_____	15
<input type="checkbox"/>	_____	15
<input type="checkbox"/>	_____	15
<input type="checkbox"/>	_____	15
<input type="checkbox"/>	_____	15
Close_Device	_____	16
<input type="checkbox"/>	_____	16
<input type="checkbox"/>	_____	16
<input type="checkbox"/>	_____	16
<input type="checkbox"/>	_____	16
<input type="checkbox"/>	_____	16
Set_SampleFrequency	_____	17
<input type="checkbox"/>	_____	17
<input type="checkbox"/>	_____	17
<input type="checkbox"/>	_____	17
<input type="checkbox"/>	_____	17
<input type="checkbox"/>	_____	17
Set_PGA	_____	18
<input type="checkbox"/>	_____	18
<input type="checkbox"/>	_____	18
<input type="checkbox"/>	_____	18
<input type="checkbox"/>	_____	18
<input type="checkbox"/>	_____	18
- 1 . D1WD9	4
- 2.	6
- 1. D1WD9	DLL	5
- 2	10

LXSM-D1WD9

D1WD9



- 1 . D1WD9

LXSM-D1WD9

DLL

-1

-1

- 1. D1WD9

DLL

		DLL
1.	Rs232	Init_Device Close_Device
2. AD	AD	Set_SampleFrequency Set_PGA
3. AD	AD On Off ON AD 가 PC DLL 가 AD	Start_Stream Stop_Stream
4. AD PC	가 PC 가	PC가
5. 가	AD DLL PC AD	DLL
6. 가 UAP	5 가	DLL WM_AcqUnitData 가 WM_USER+1
7. UAP	6 가 가	DLL Callback

LXSM-D1WD9



□

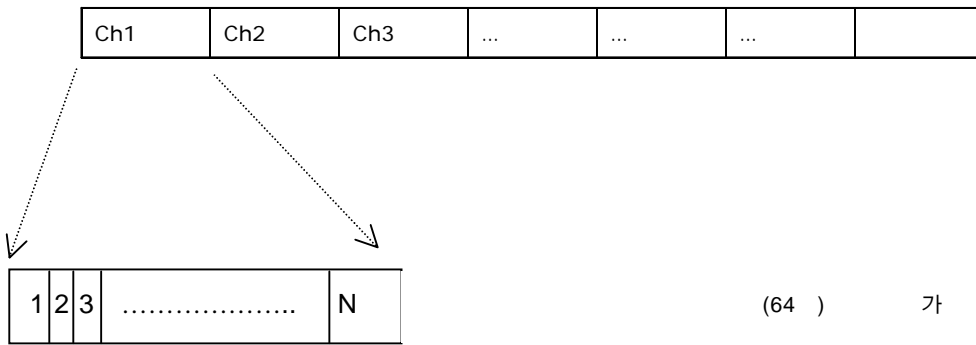
DLL

float

ch1,ch2,ch3,...,

가

: float



-3.

가

□

AD

-1.25

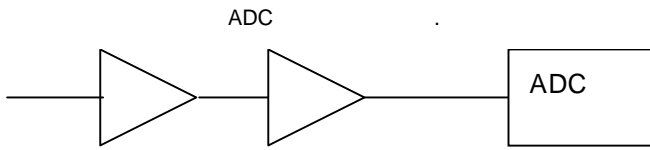
+1.25

(V)

-1.25

+1.25 PGA

-4



Amp.

PGA. 32 step Gain

Fixed Gain

-1.25V~1.25V

- 4.

LXSM-D1WD9

Visual C++ 6.0 view class

□ 1. message_map

가

```

BEGIN_MESSAGE_MAP(CTest_LXSM_D1WD5Uview, CView)
  {{{AFX_MSG_MAP(CTest_LXSM_D1WD5Uview)
    ON_COMMAND(ID_MENU_InitDevice, OnMENUInitDevice)
    ON_COMMAND(ID_MENU_CloseDevice, OnMENUCloseDevice)
    ON_COMMAND(ID_MENU_Sample128, OnMENSUSample128)
    ON_COMMAND(ID_MENU_Sample256, OnMENSUSample256)
    ON_COMMAND(ID_MENU_Sample512, OnMENSUSample512)
    ON_COMMAND(ID_MENU_Sample1024, OnMENSUSample1024)
    ON_COMMAND(ID_MENU_Sample2048, OnMENSUSample2048)
    ON_COMMAND(ID_MENU_Sample4096, OnMENSUSample4096)
    ON_COMMAND(ID_MENU_SetPga, OnMENUSetPga)
    ON_COMMAND(ID_MENU_StartStream, OnMENUStartStream)
    ON_COMMAND(ID_MENU_StopStream, OnMENUStopStream)
    ON_COMMAND(ID_MENU_SetMaxNumChannel, OnMENUSetMaxNumChannel)
    ON_COMMAND(ID_MENU_Sample8192, OnMENSUSample8192)
    ON_COMMAND(ID_MENU_Sample16384, OnMENSUSample16384)
  }}}AFX_MSG_MAP
  ON_MESSAGE(WM_AcqUnitData, OnStreamData) // !!!! STREAM데이터 메시지 처리.
END_MESSAGE_MAP()

```

WM_AcqUnitData

OnStreamData

WM_AcqUnitData LXSM-D1WD9.h

OnStreamData 가

2

□ 2.

...View.h

```

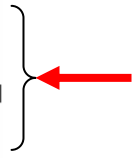
// Operations
public:
  CString y_text[65];
  long OnStreamData(WPARAM wParam, LPARAM lParam); ←

```


LXSM-D1WD9

view.cpp

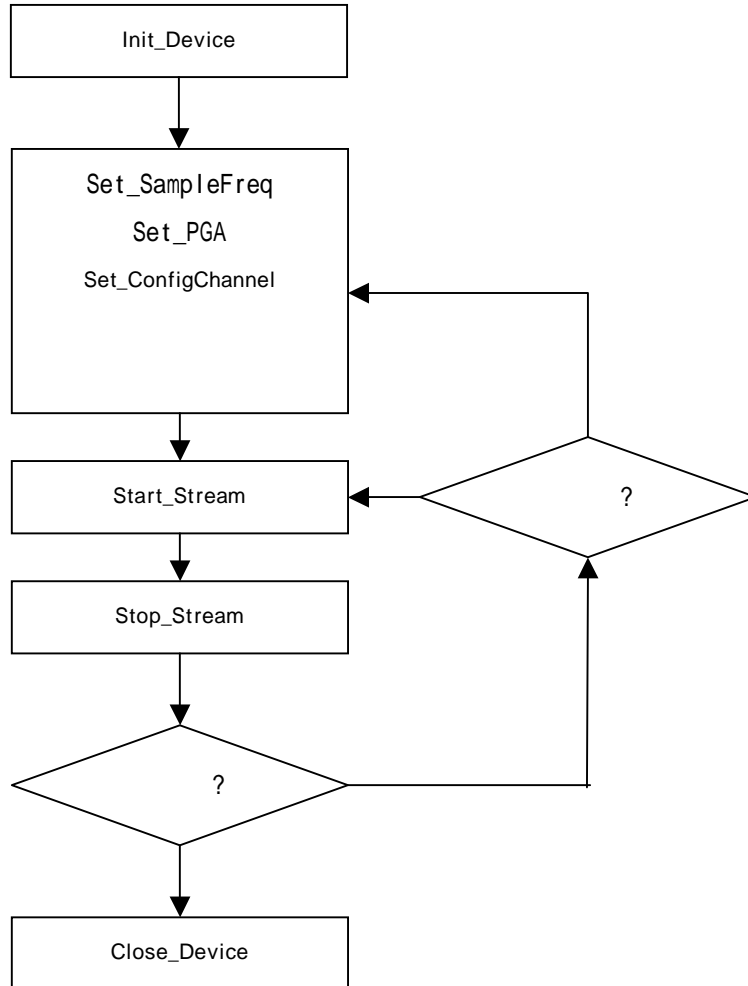
```
long CTest_LXSM_D1WD5View::OnStreamData(WPARAM wParam,LPARAM lParam)
{
    // 파형디스플레이 SWEEP 루틴임.
    ACQPLOT_DLL_Array_Datain_Strip((float *) (lParam),MAXNUMBER_CHANNEL+1)
    return 1;
}
```



□

DLL 가 (-2) 가
가 , 가
DLL
, DLL 64 가
가
1024Hz DLL 0.0625
Stop_Stream() 가
가 Start_Stream()

LXSM-D1WD9



LXSM-D1WD9



,
<input type="checkbox"/>
short Init_Device(HWND msgtarget_wnd,int port_number);
<input type="checkbox"/>
-
<input type="checkbox"/>
● 가
<input type="checkbox"/>
<input type="checkbox"/>
■ 가

LXSM-D1WD9

Start_Stream

□

short Start_Stream();

□

AD					PC		PC
가			DLL		PC		
	가				-2		가
가						가	DLL
			가	가			1
						가	
						가	가
	가						

□

Init_Device , 가 . Stop_Stream

□

□

- 1 :
- 0
 - -1 : Init_Device

LXSM-D1WD9

Stop_Stream

short Stop_Stream();

DLL

Init_Device 가 .

- 1 가 .
- 0
 - -1: Init_Device

LXSM-D1WD9

Close_Device

short Close_Device();

, DLL

Init_Device

- 1 :
- 0
- -1 : Init_Device

LXSM-D1WD9

Set_SampleFrequency

short Set_SampleFrequency(unsigned char samplefreq_idx);

Init_Device

unsigned char samplefreq_idx

- I/O -
- : = $2^{\text{samplefreq_idx}}$, : 512 Hz samplefreq_idx 9
- 가 : 7(128Hz),8(256Hz),9(512Hz),10(1024Hz)

- 1:
- 0
 - -1 : Init_Device가

LXSM-D1WD9

Set_PGA

short Set_PGA(unsigned char gain_idx)

PGA(Programmable Gain amp)	gain_idx	PGA
	-3	ADC PGA
fixed_gain	PGA_Gain	fixed_gain

Init_Device

unsigned char gain_idx

- I/O -
- : 0 31

- 1:
- 0
- -1 : Init_Device가

LXSM-D1WD9

Gain_idx	voltage gain	Gain_idx	Voltage gain
0	Device Gain x 0.12	16	Device Gain x 0.99
1	Device Gain x 0.14	17	Device Gain x 1.12
2	Device Gain x 0.16	18	Device Gain x 1.28
3	Device Gain x 0.19	19	Device Gain x 1.45
4	Device Gain x 0.21	20	Device Gain x 1.65
5	Device Gain x 0.24	21	Device Gain x 1.87
6	Device Gain x 0.27	22	Device Gain x 2.13
7	Device Gain x 0.31	23	Device Gain x 2.42
8	Device Gain x 0.36	24	Device Gain x 2.75
9	Device Gain x 0.40	25	Device Gain x 3.12
10	Device Gain x 0.46	26	Device Gain x 3.55
11	Device Gain x 0.52	27	Device Gain x 4.04
12	Device Gain x 0.59	28	Device Gain x 4.59
13	Device Gain x 0.67	29	Device Gain x 5.21
14	Device Gain x 0.76	30	Device Gain x 5.92
15	Device Gain x 0.87	31	Device Gain x 6.73

Device Gain

가

: LXE1104-RS232

Device Gain = 9000

: LXE3208

Device Gain = 5000

LXSM-D1WD9

“**M**easuring is Believing”

H/W, S/W .
, S/W .
,

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