407790 Data Acquisition Software

HARDWARE REQUIREMENTS

PC HardWare Requirements:

CD ROM, 486 PC or above, with COM1 or COM2 port

DATA RECORDING

Manual Recording:

Click 'Buttons' on the Menu Bar.
The Buttons window appears:

Click 

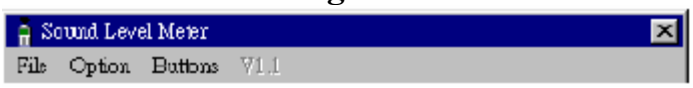
button until 

appears on the LCD.

Click 

button to store an instantaneous reading.

Automatic Recording:



Click 'Buttons' on the Menu Bar.
The Buttons window appears:

When the SAMPLE Rate and Recording TIME have been set,

click 

button to start recording.

The ▶ signal will appear.

To stop recording, click: 

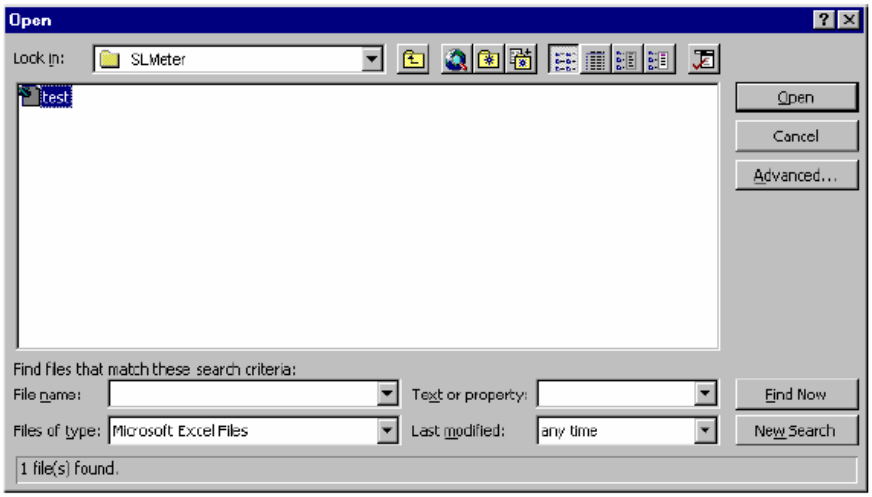
When ▮▮ appears, click 

to stop recording
The ■ signal will appear.

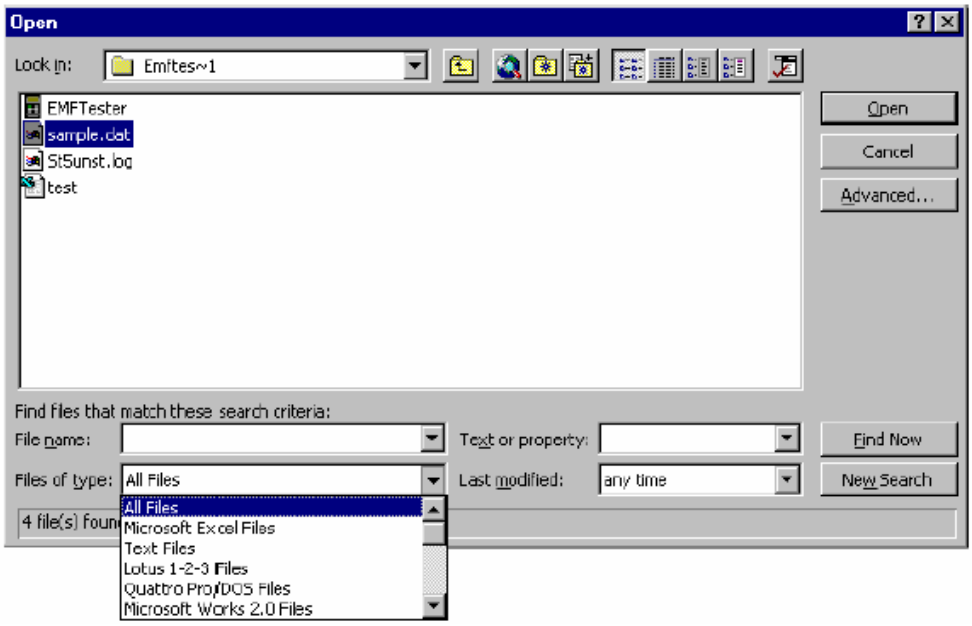
DATA IMPORT

For use with Excel

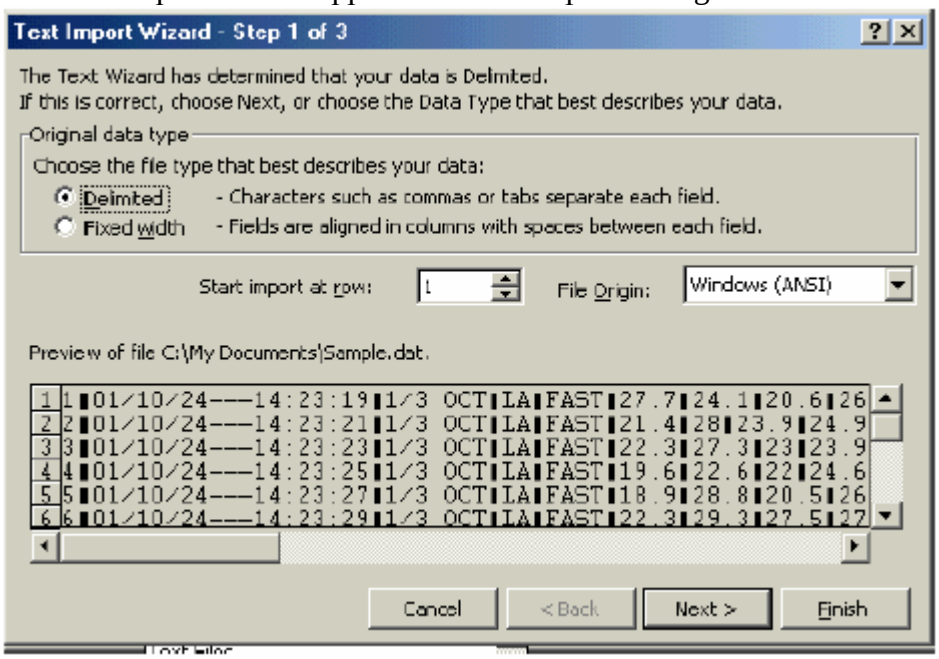
Open **Microsoft Excel**, go to **"Open File"** from the "**Open**" window,
1).Find the file saved in Excel format, for example, **test.xls**.

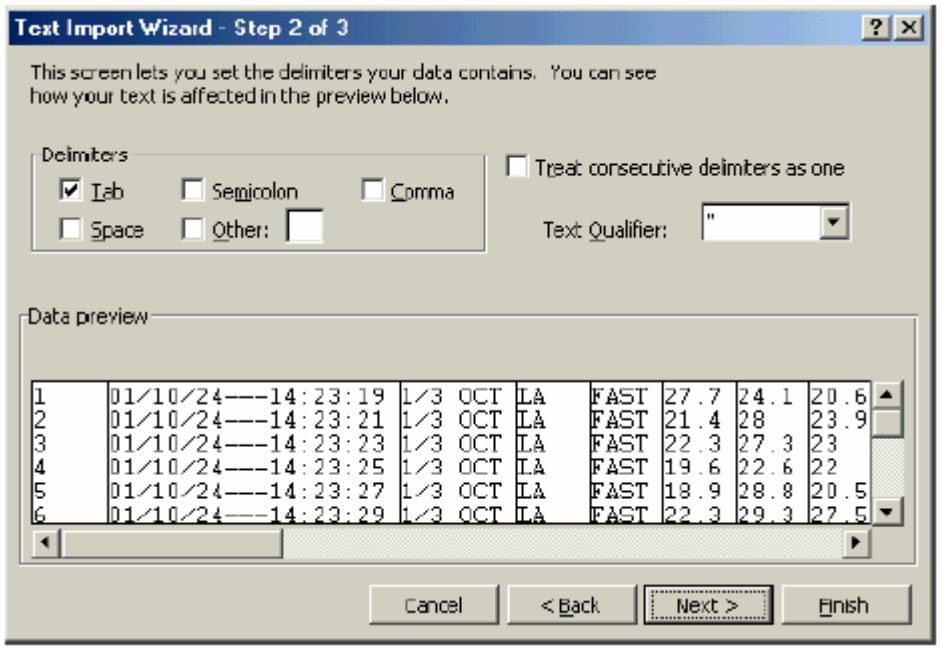


2).From **"Files of type"** in the **"Open"** window, click the **pull down pointer** and choose **"All Files"** find the data file previously stored. For example, **sample.dat**.

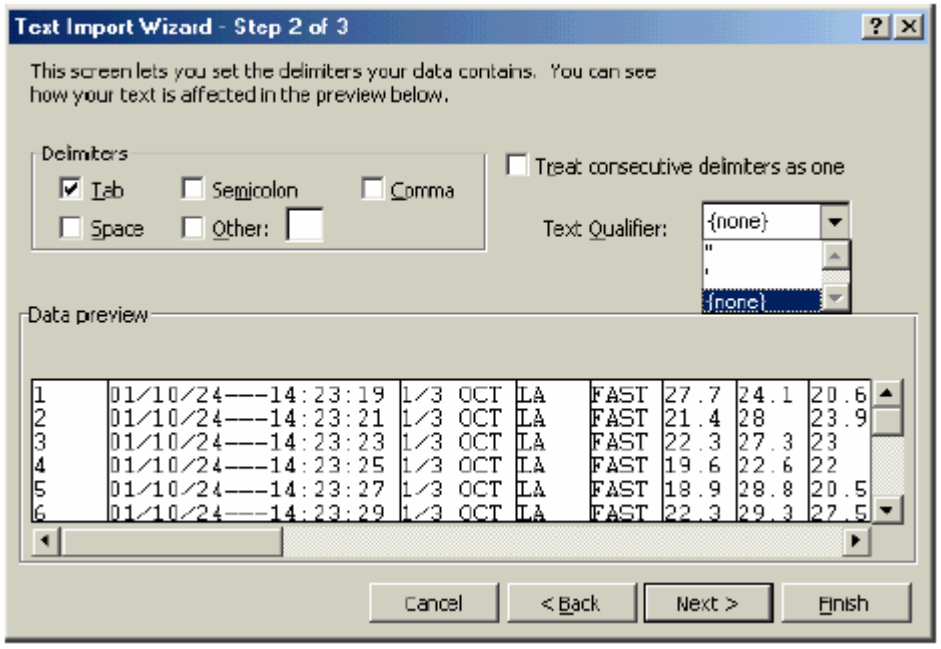


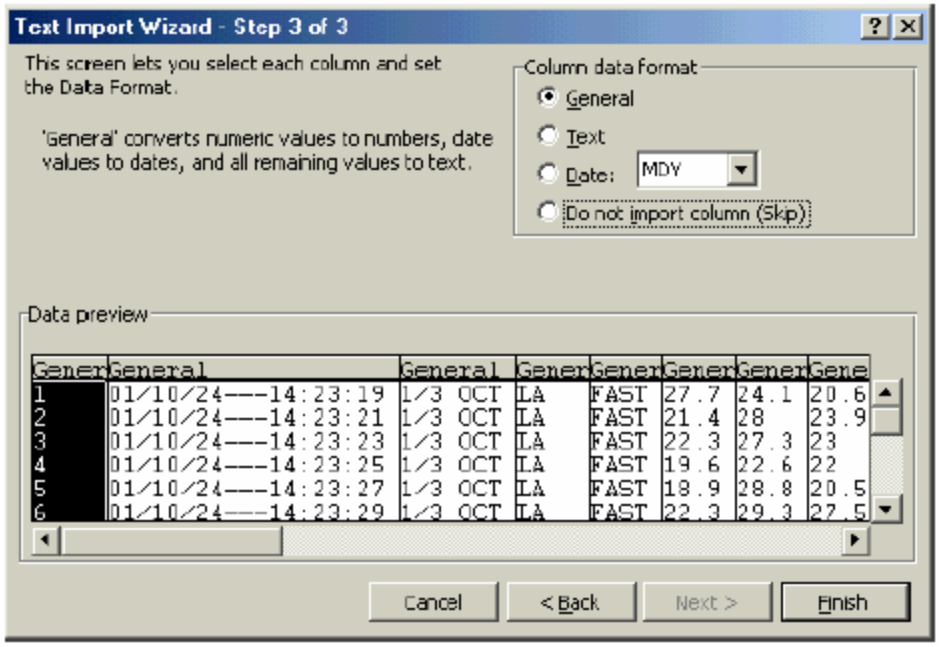
Choose the selected file then click the **Open** button .
The Text Import Wizard appears. Follow steps 1 through 3 below.

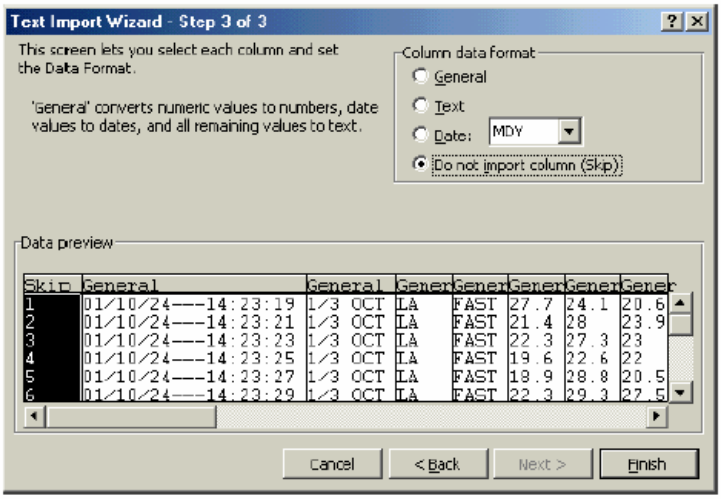




For **Office2000**, select **none** in the **Text Qualifier** field.



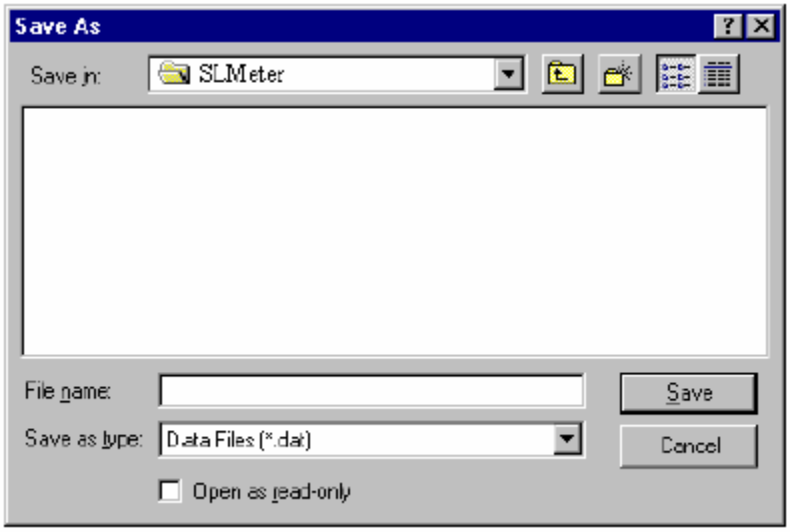




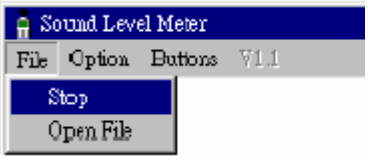
	A	B	C	D	E	F	G	H	I	J
1	01/10/24---14:23:19	1/3 OCT	LA	FAST	27.7	24.1	20.6	26	34.1	33.
2	01/10/24---14:23:21	1/3 OCT	LA	FAST	21.4	28	23.9	24.9	39	32.
3	01/10/24---14:23:23	1/3 OCT	LA	FAST	22.3	27.3	23	23.9	33.8	34.
4	01/10/24---14:23:25	1/3 OCT	LA	FAST	19.6	22.6	22	24.6	37.1	30.
5	01/10/24---14:23:27	1/3 OCT	LA	FAST	18.9	28.8	20.5	26.4	33.6	31.
6	01/10/24---14:23:29	1/3 OCT	LA	FAST	22.3	29.3	27.5	27.8	42.9	31.
7	01/10/24---14:23:31	1/3 OCT	LA	FAST	24	20.6	26.8	32.1	42.4	29.
8	01/10/24---14:23:33	1/3 OCT	LA	FAST	24.4	26.6	29.1	27.1	40.4	31.
9	01/10/24---14:23:35	1/3 OCT	LA	FAST	17.7	23.8	24	24.5	35.2	33.
10	01/10/24---14:23:37	1/3 OCT	LA	FAST	24.8	18.2	31.1	32.2	41.4	29.
11	01/10/24---14:23:39	1/3 OCT	LA	FAST	20.2	25	23.9	27.7	38.2	31.

Save Data to PC:

Click **Save As** button on the Menu Bar .
The dialog box appears.

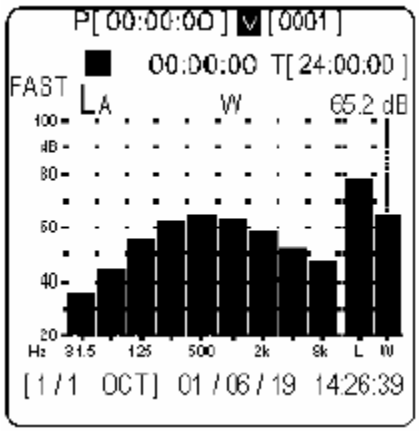


Input a name and then click the Save button to save data. The Rec. signal and No. of records will display from 1 to n (n = last record).



To stop recording, click the Stop button on the Menu Bar.
The Rec. signal will disappear.

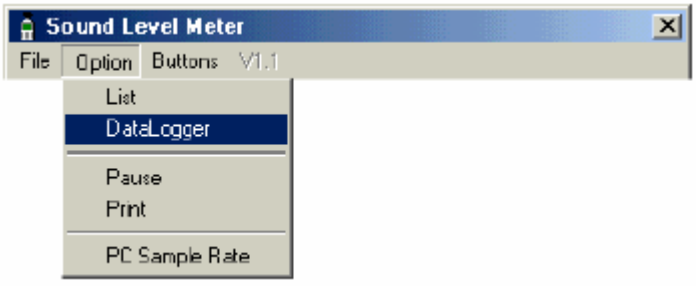
MANUALLY STORE DATA



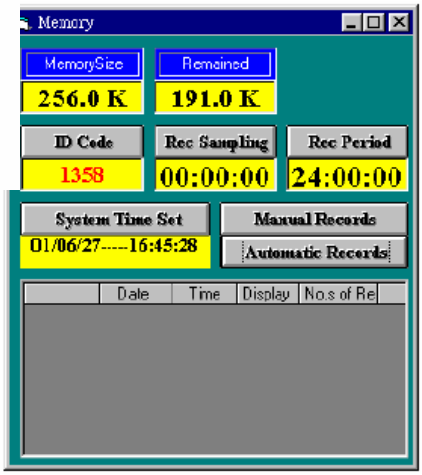
1. Set the power switch of the unit to ON.
2. Use the **SLM/1/1/1/3** key to activate the sound pressure level measurement screen.
3. Press the **MEMORY** key to enter memory mode. The display shows **M [0001] (**first data memory address number).

4. Press the **STORE** key to save one set of data in the **[0001]** memory address. The address counter is is then incremented by one. Repeat this procedure to save additional data to memory.
5. Press the **MEMORY** key again to exit.

DOWNLOAD DATA FROM METER TO PC



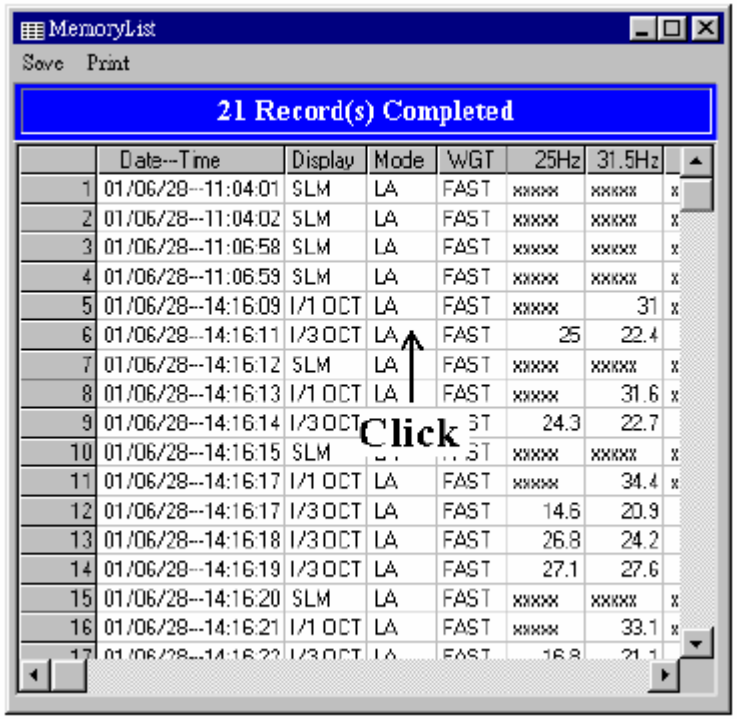
Click the **DataLogger** button on the Menu Bar. The Memory window will appear:

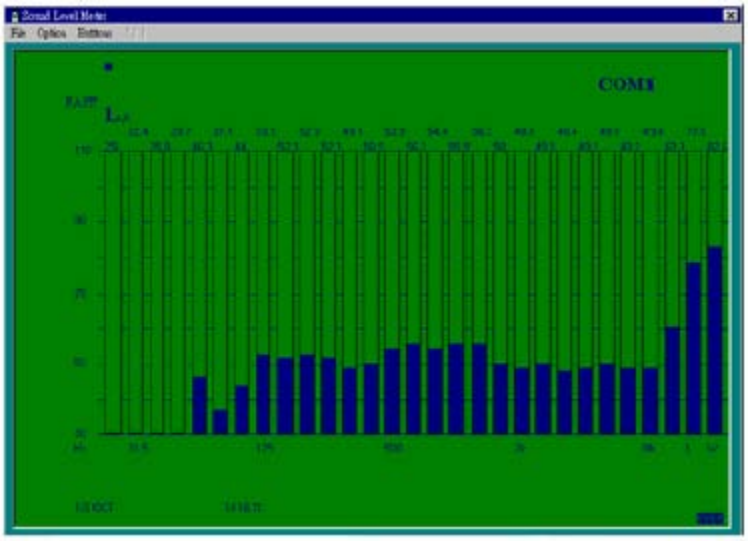


Download Manually Stored Records:

Click  button for the details on Manual Records.
Wait until download is 100% complete.

Choose a record by clicking on it.

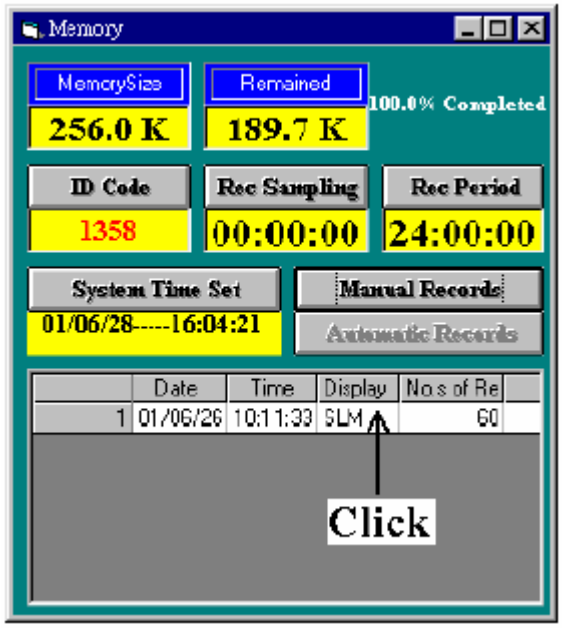




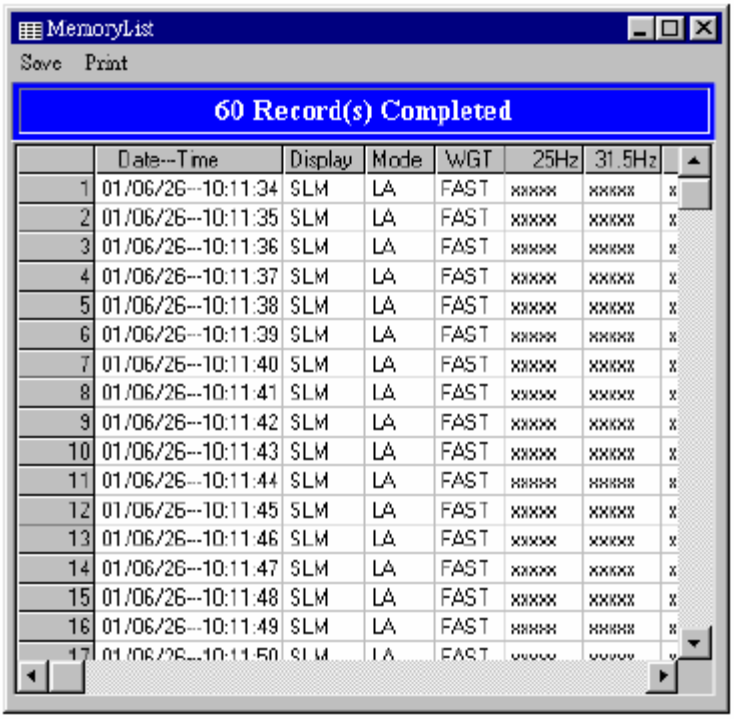
Downloading Automatically Stored Records:

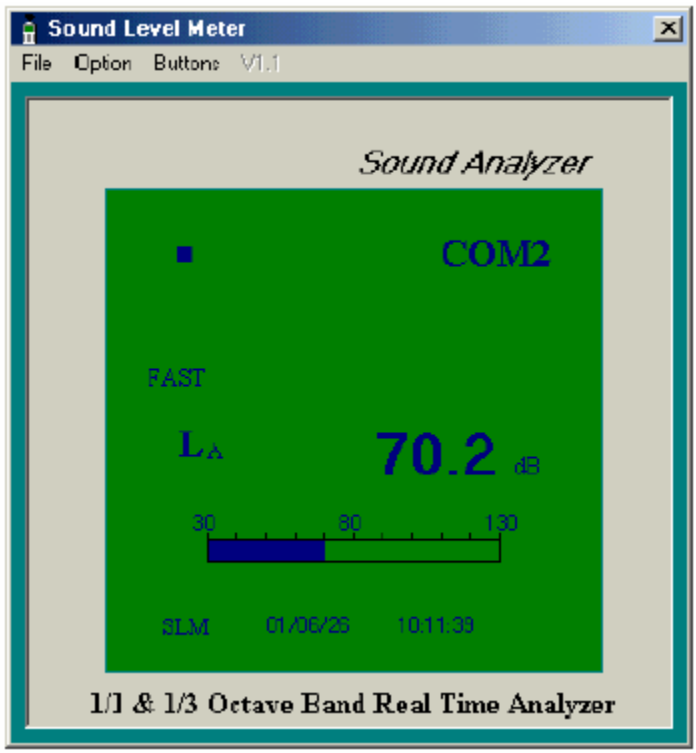
Click  button for details on Automatic Records.
Wait until the download is100% complete.

Click on a data SET for details on records contained in the set.



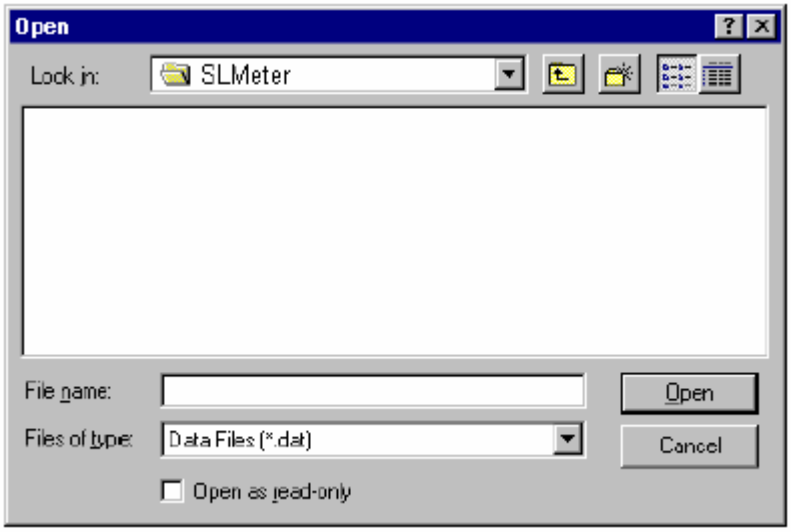
Click on a data record to view it in detail.


MemoryList
Save Print
60 Record(s) Completed
Date--Time Display Mode WGT 25Hz 31.5Hz
1 01/06/26--10:11:34 SLM LA FAST xxxxx xxxxx
2 01/06/26--10:11:35 SLM LA FAST xxxxx xxxxx
3 01/06/26--10:11:36 SLM LA FAST xxxxx xxxxx
4 01/06/26--10:11:37 SLM LA FAST xxxxx xxxxx
5 01/06/26--10:11:38 SLM LA FAST xxxxx xxxxx
6 01/06/26--10:11:39 SLM LA FAST xxxxx xxxxx
7 01/06/26--10:11:40 SLM LA FAST xxxxx xxxxx
8 01/06/26--10:11:41 SLM LA FAST xxxxx xxxxx
9 01/06/26--10:11:42 SLM LA FAST xxxxx xxxxx
10 01/06/26--10:11:43 SLM LA FAST xxxxx xxxxx
11 01/06/26--10:11:44 SLM LA FAST xxxxx xxxxx
12 01/06/26--10:11:45 SLM LA FAST xxxxx xxxxx
13 01/06/26--10:11:46 SLM LA FAST xxxxx xxxxx
14 01/06/26--10:11:47 SLM LA FAST xxxxx xxxxx
15 01/06/26--10:11:48 SLM LA FAST xxxxx xxxxx
16 01/06/26--10:11:49 SLM LA FAST xxxxx xxxxx

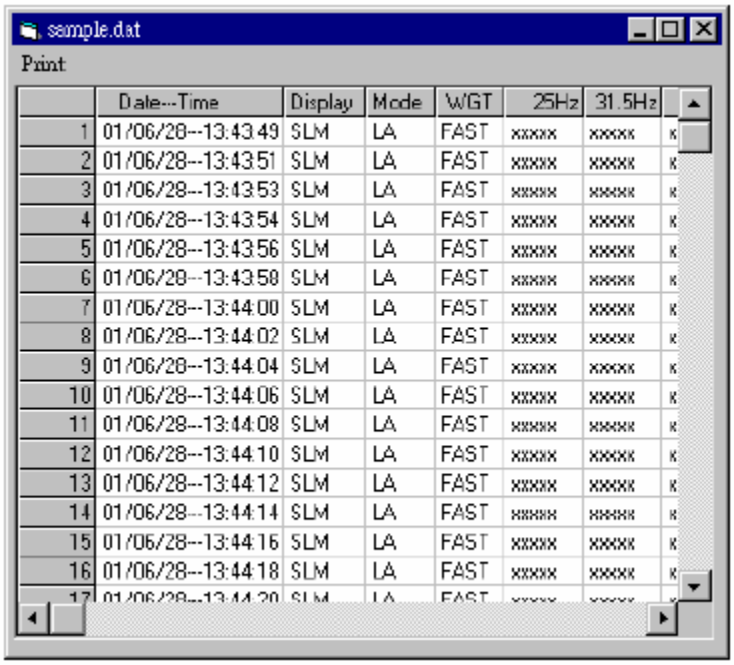

Sound Level Meter
File Option Buttons V1.1
Sound Analyzer
COM2
FAST
LA
70.2 dB
30
80
130
SLM 01/06/26 10:11:39
1/1 & 1/3 Octave Band Real Time Analyzer

Download Data PC to Meter

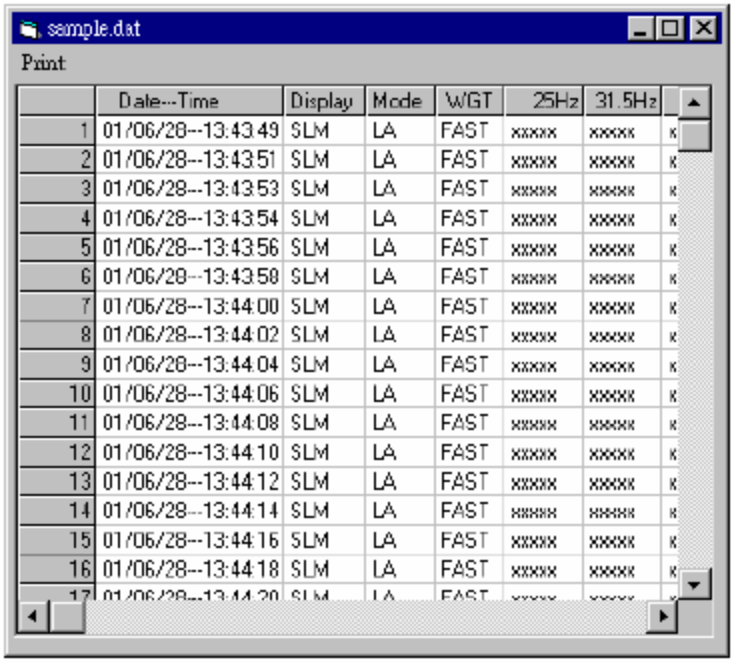
Click **Open File** button on the Menu Bar as above.



Input a file name and then click **Open** to read data from the PC.

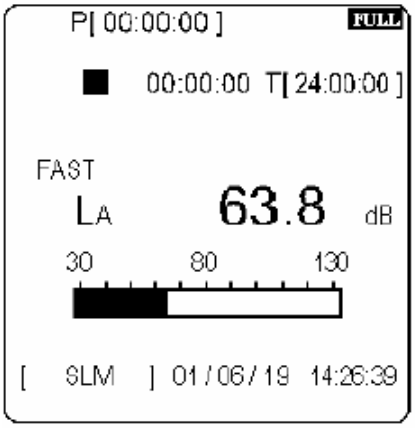


	Date---Time	Display	Mode	WGT	25Hz	31.5Hz
1	01/06/28--13:43:49	SLM	LA	FAST	xxxxx	xxxxx
2	01/06/28--13:43:51	SLM	LA	FAST	xxxxx	xxxxx
3	01/06/28--13:43:53	SLM	LA	FAST	xxxxx	xxxxx
4	01/06/28--13:43:54	SLM	LA	FAST	xxxxx	xxxxx
5	01/06/28--13:43:56	SLM	LA	FAST	xxxxx	xxxxx
6	01/06/28--13:43:58	SLM	LA	FAST	xxxxx	xxxxx
7	01/06/28--13:44:00	SLM	LA	FAST	xxxxx	xxxxx
8	01/06/28--13:44:02	SLM	LA	FAST	xxxxx	xxxxx
9	01/06/28--13:44:04	SLM	LA	FAST	xxxxx	xxxxx
10	01/06/28--13:44:06	SLM	LA	FAST	xxxxx	xxxxx
11	01/06/28--13:44:08	SLM	LA	FAST	xxxxx	xxxxx
12	01/06/28--13:44:10	SLM	LA	FAST	xxxxx	xxxxx
13	01/06/28--13:44:12	SLM	LA	FAST	xxxxx	xxxxx
14	01/06/28--13:44:14	SLM	LA	FAST	xxxxx	xxxxx
15	01/06/28--13:44:16	SLM	LA	FAST	xxxxx	xxxxx
16	01/06/28--13:44:18	SLM	LA	FAST	xxxxx	xxxxx



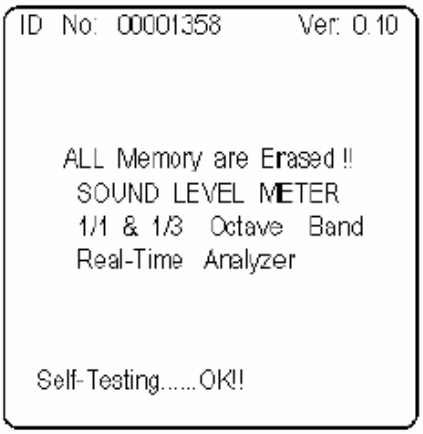
ERASE STORED DATA

1. When the instrument memory is full, the **FULL** annunciator appears in the upper right hand corner of the screen.



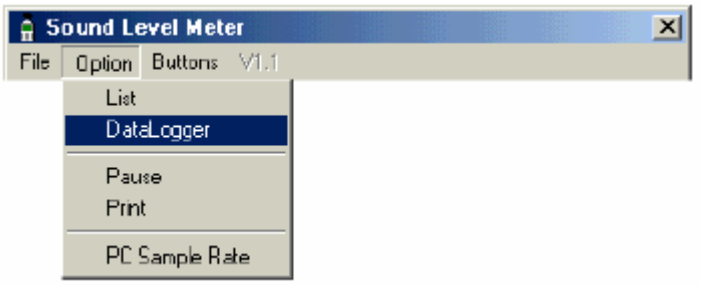
2. Start with the power off. Hold down the **STORE** and **RECALL** keys while turning the unit ON.

3. The LCD will display "ALL Memory Erased !!" and all the data is cleared.

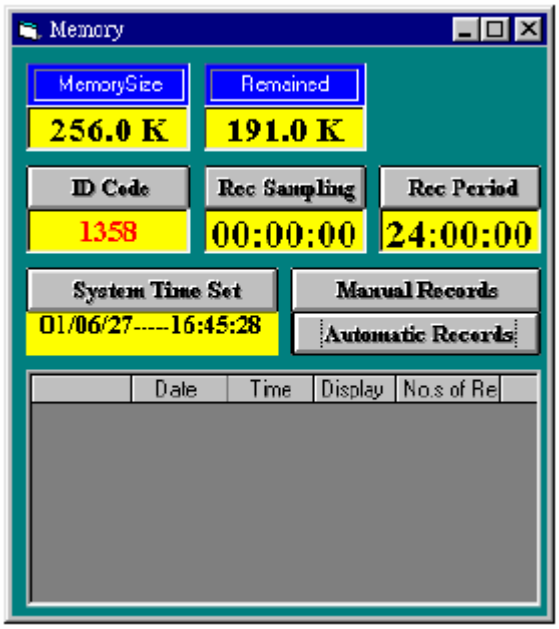


ID CODE

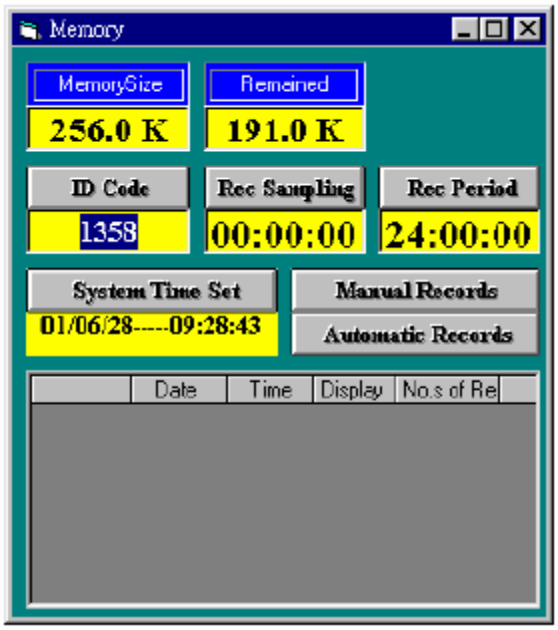
ID CODE



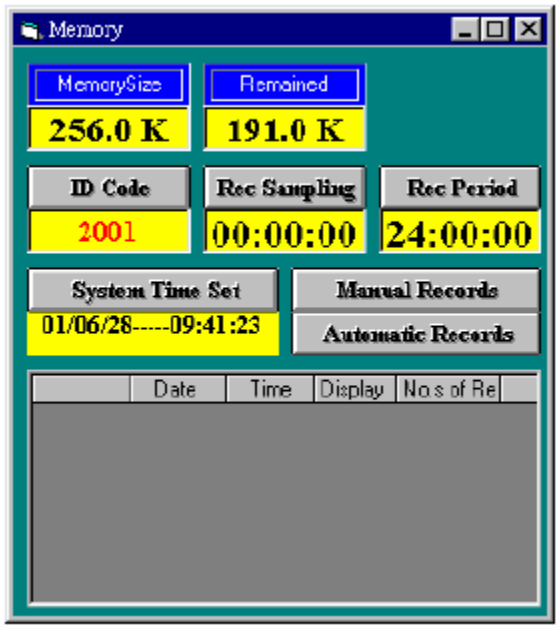
Click DataLogger button on the Menu Bar to open the Memory window:



Click on the ID Code field.



Change the value of the ID Code if desired.



Cllick 

button.

When 

disappears, the ID Code edit is complete.

MEMORY FUNCTION

The sound analyzer incorporates a memory that allows manual and automatic storing of measurement data. Stored measurement
results can be displayed by pressing the **RECALL** key.

MANU (manual store)
Instantaneous reading can be stored manually by the user

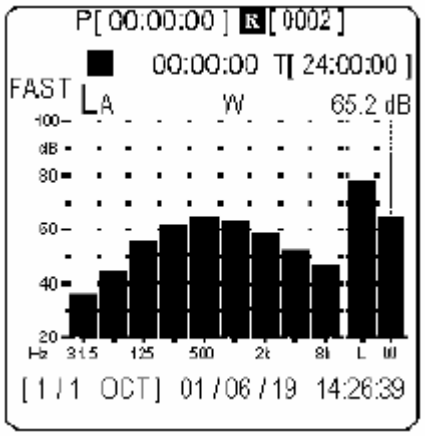
AUTO (automatic store)
Readings can be store automatically at programmed SAMPLE intervals.
Memory capacity (see Table below):

Store mode / Capacity / Function	Manual	Auto
Sound level meter mode	1024 data sets	10000 data sets
1/1-octave analysis	1024 data sets	6140 data sets
1/3-octave analysis	1024 data sets	3070 data sets

READING FROM MEMORY

1. Press the **MEMORY** key to enter the memory mode (display shows **M [****]**).

2. Press the **RECALL** key. LCD shows **R [****] (**record number and data value). If there are no records in memory, the R**ECALL** key is not active.



3. Press **2nd** key, then press **Cursor** to select the memory address of the data to displa.

4. Press **2nd** key, the 2ND annunciator at the upper left of the screen will display.

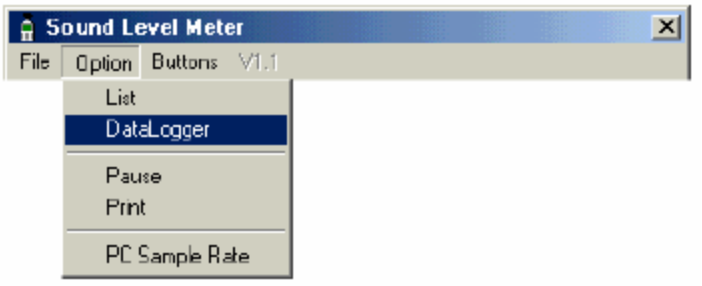
5. When moving the cursor with the **Cursor** key, the frequency and level display at the upper of the screen changes.

6. Press the **RECALL** key to exit the reading mode.

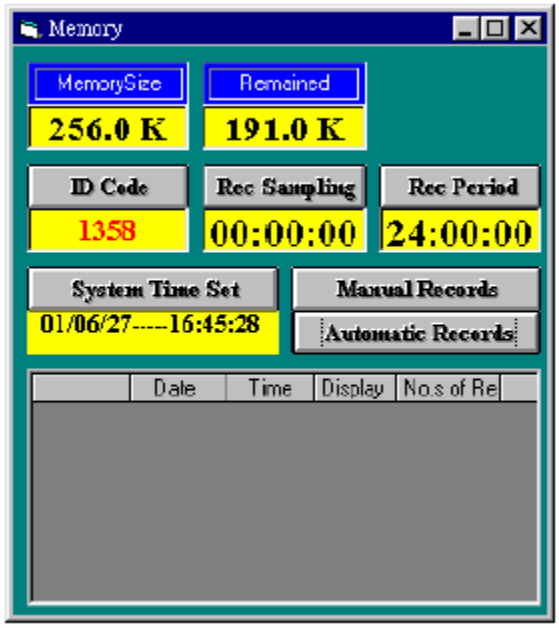
7. Press **MEMORY to** exit the memory mode.

REAL TIME CLOCK

Time Setup:



Click the DataLogger button on the Menu Bar to open the Memory window:



Click 

button to set the meter's time/date to the PC time/date. When 

disappears, the time and date have been set.

RS232 DECODING BYTES

Communication Between PC and Sound Analyzer

To request data from the **Sound Analyzer**, send it a character via the RS232 port. If a **"B"** character is sent to the meter from the **PC**, the meter will send a **17**, **34** or a **70** byte word to the PC. The data includes the information as shown below :

SLM 17 Bytes	1. 1 Byte Header 2. 3 Bytes Header : F0, F0, F0 3. 2 Bytes SPL Value : (High Byte x 256 + Low Byte) / 10 4. 6 Bytes Time : YY / MM / DD---hh : mm : SS 5. 1 Byte Recording Peroid 6. 1 Byte Sampling Rate 7. 1 Byte Status1 8. 1 Byte Status2 9. 1 Byte Full Byte

1 / 1 OCT 34 Bytes	1. 1 Byte Header 2. 2 Bytes Total Value : (High Byte x 256 + Low Byte) / 10 3. 9 Bytes x 2 Band Value : (High Byte x 256 + Low Byte) / 10 4. 2 Bytes SPL Value : (High Byte x 256 + Low Byte) / 10 5. 6 Bytes Time : YY / MM / DD---hh : mm : SS 6. 1 Byte Recording Peroid 7. 1 Byte Sampling Rate 8. 1 Byte Status1 9. 1 Byte Status2 10. 1 Byte Full Byte

1 / 3 OCT 70 Bytes	1. 1 Byte Header 2. 2 Bytes Total Value : (High Byte x 256 + Low Byte) / 10 3. 27 Bytes x 2 Band Value : (High Byte x 256 + Low Byte) / 10 4. 2 Bytes SPL Value : (High Byte x 256 + Low Byte) / 10 5. 6 Bytes Time : YY / MM / DD---hh : mm : SS 6. 1 Byte Recording Peroid 7. 1 Byte Sampling Rate 8. 1 Byte Status1 9. 1 Byte Status2 10. 1 Byte Full Byte

Information

Status1:

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
SPL	0	0	0					
Leq	0	0	1					
LE	0	1	0					
Lmax	0	1	1					
Lmin	1	0	0					
P				0	0			
A				0	1			
C				1	1			
Fast						0		
Slow						1		
							0	
Over							1	
Low Bett.								0
								1

Status2

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Level0	0	0	0					
Level10	0	0	1					
Level20	0	1	0					
Level30	0	1	1					
Level40	1	0	0					
				0				
Under				1				
Run					0	0		
Pause					0	1		
Stop					1	0		
SLM							0	0
1/1 OCT							0	1
1/3 OCT							1	0

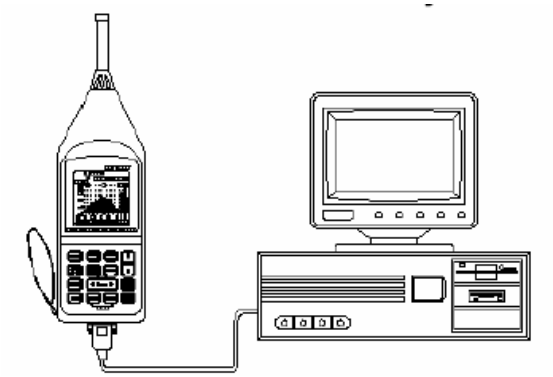
Commands :

L : Lp, Leq, SEL, Lmax, Lmin
F : A / C / P Frequency Weight
T : Fast / Slow Time Weight
U : Frequency Range Change Upward
D : Frequency Range Change Downward
G : SLM , 1 /1 OCT , 1 / 3 OCT
M: Measuring Time
t : Set. Time
m : Memory
p : Set Period
E : Enter
l : Cursor Move Leftward
r : Cursor Move Rightward
d : Recall Address of Memory(-)
i : Recall Address of Memory(+)

S :
S : START / STOP
s : STORE
R : RECALL
C : ERASE
P : PAUSE / CONTINUE
B : Instant dBA
H : Manual Recording Data
A : Automatic Recording Data
I : System Parameter
Q + 4 Bytes : ID Code
V + 1 Byte : CPU Version

RS232 WIRING HARDWARE

Connect the Sound Analyzer to a PC



Connect the RS-232 9-pin male connector to the Sound Analyzer
and connect the 9-pin female connector to the COM1 COM2 PC port.

Cable / Sound Analyzer Wiring Diagram

Sound Analyzer / Data Logger
In order to ignore hardware handshake, the RS-232 wiring should be wired as shown in the diagram below. The RTS must
be pulled low (-10V or -12V) by the software in order to communicate with the PC.

RS-232 Wiring Diagram

Sound Analyzer (Male)

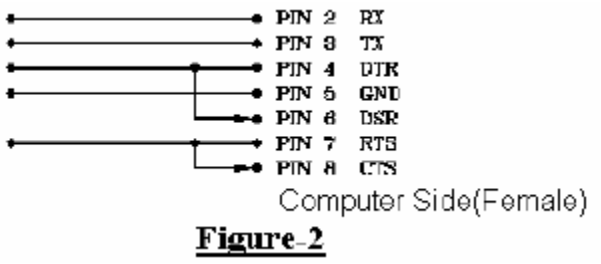


Figure-2

Connector Wiring Diagram

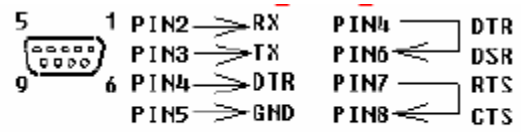


Figure-3

9 pins to 25 pins connection diagram

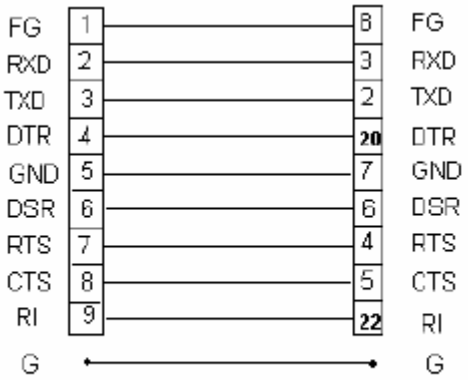


Figure-4

Default RS-232 Settings

When RS-232 communication is enabled ,the default RS-232 settings are:
Baud Rate: 38400
Parity: None
Data bits: 8
Stop bit: 1

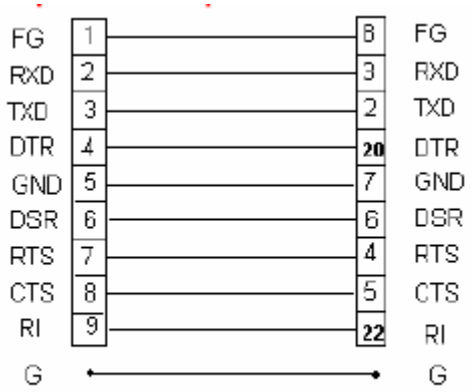
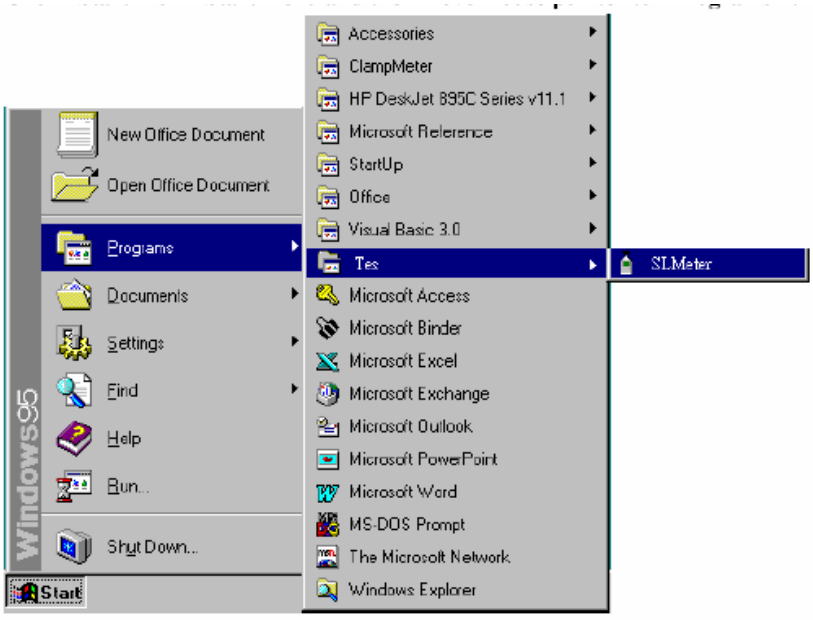


Figure-4

RUN THE SOUND ANALYZER SOFTWARE

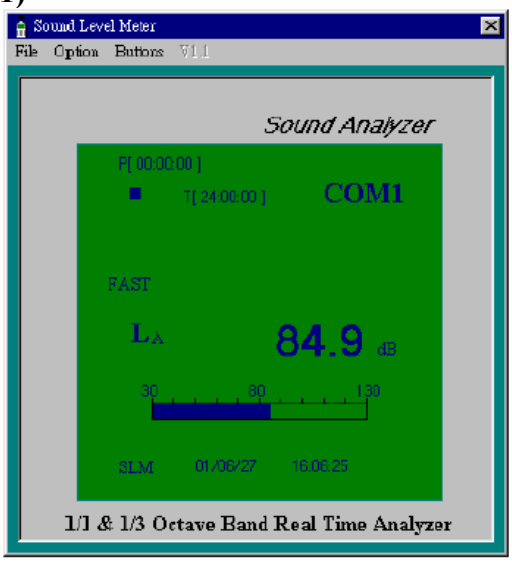
Click "Start" form Start menu and then move mouse pointer to "Programs" then "Tes" and then click the "SLMeter" icon.



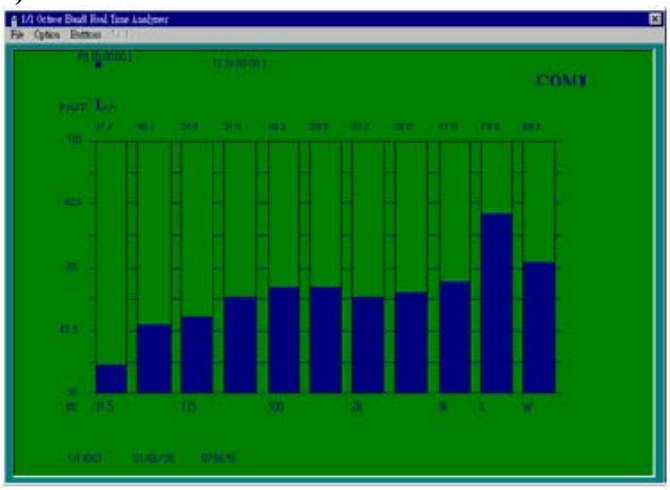
Click available COM port button

Main software displays

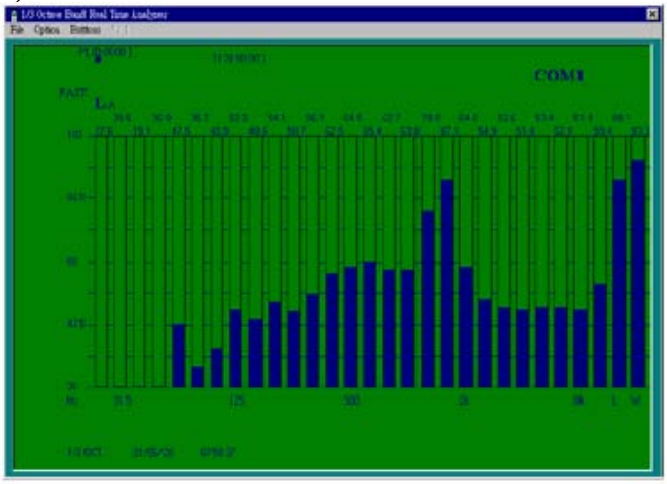
1)



2)

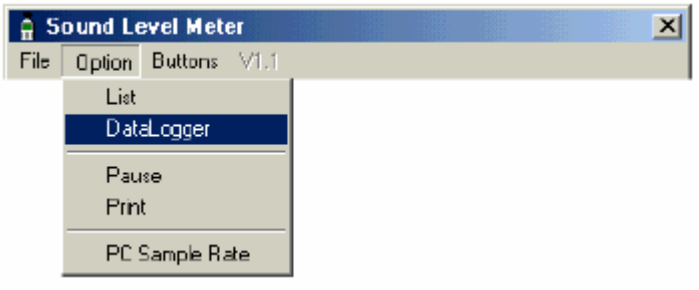


3)

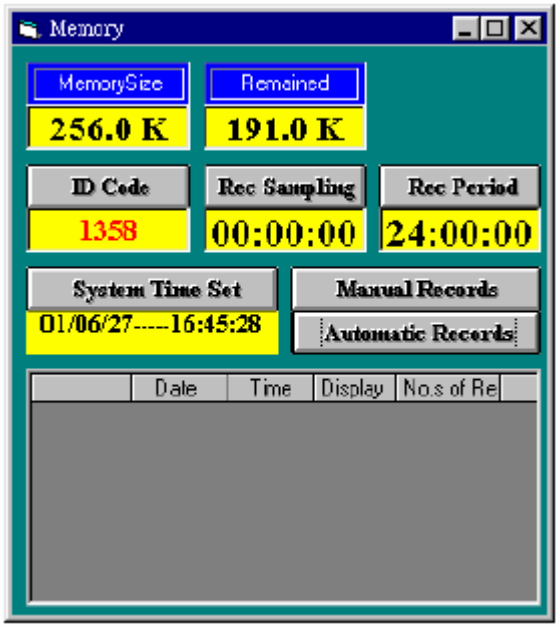


SAMPLING RATE

Datalogging Sampling Rate:



Click DataLogger button on the Menu Bar to open the Memory windo:



In the Memory window, click  button to see the sampling rates:

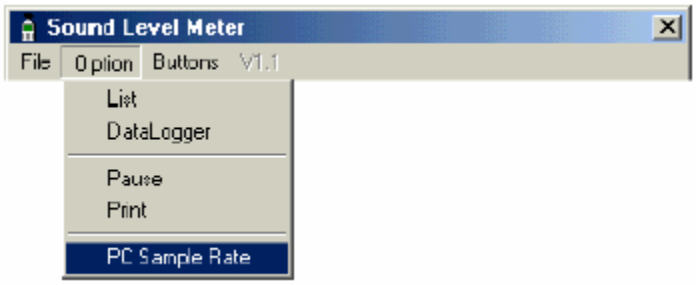
00:00:00
00:00:01
00:00:03
00:00:10
00:00:30
00:01:00
00:05:00
00:08:00
00:10:00
00:15:00
00:30:00
01:00:00
62.5ms

To set up recording period, click 

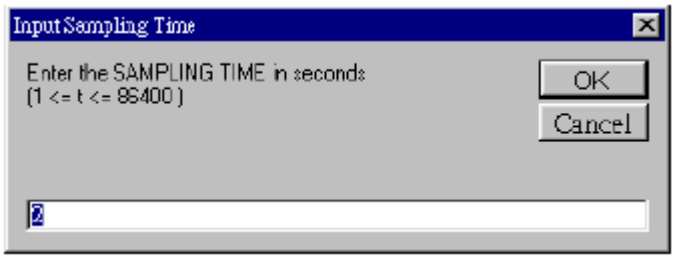
button to get willing recording period:

00:00:00
00:00:01
00:00:03
00:00:10
00:00:30
00:01:00
00:05:00
00:08:00
00:10:00
00:15:00
00:30:00
01:00:00
08:00:00
24:00:00

PC Sampling Rate:



Click PC Sample Rate button on the Menu Bar as shown above.



In the Input Sampling Time dialog box, input the desired sampling time and then click the "OK" button to complete.

SETTING THE DATE AND TIME

Date and time information is stored with each record you save. Therefore, it is important to make sure this information is correct. Set the date and time as described below :

1. Press the **2nd** key once then press the **MEAS TIME** key, the secondary display screen will flash.

2. Use the ▲ **LEVEL** ▼ keys to increment and decrement numeric edit fields.

3. Use the ◀ **Cursor** ▶ key to select the year/month/day/hour/minute/second setting mode.

4. Press ▲ **LEVEL** ▼ key to set the number.

5. When the setting is correct, press the **ENTER** key.