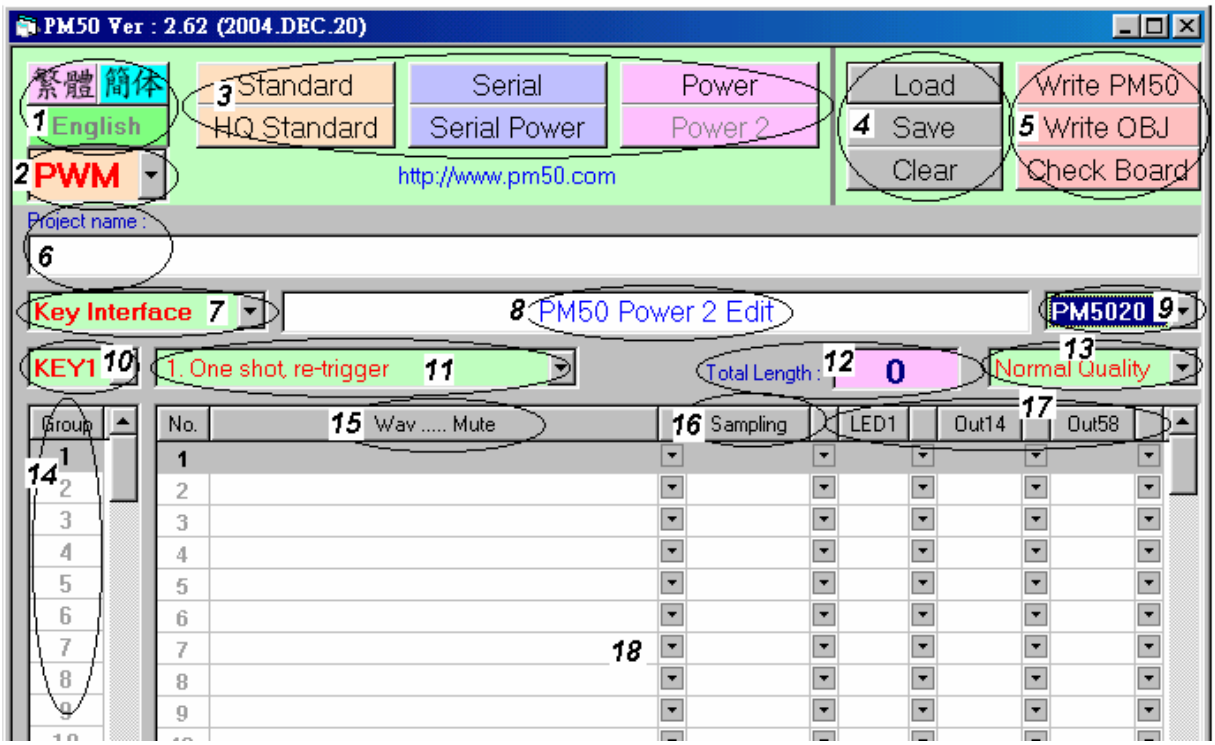
PM50 Easy Write Voice Coding System

PM50 Utility Software is an utility software matching with **PM50XX** / **PM50SXX** / **PM50MXX** / **PM50SSXX** Voice Module Board.
It is an integrated software combining 6 programs –

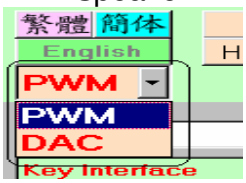
1. **Standard** (Simplest ver. 8 voice_partitions)
2. **HQ Standard** (8 voice_partitions with Sampling Rate Selection)
3. **Serial** (Serial access using 80H~FFH hex code for 128 partition addressing)
4. **Serial Power** (Serial access of 128 partitions with LED1, OUT1~4 & OUT5~8 I/O control)
5. **Power** (Key access with LED1, OUT1~4 & OUT5~8 I/O control)
6. **Power 2** (Most integrated ver. combining Serial & Key addressing mode with Normal Quality & High Quality Voice Sampling Rate Selection and LED1, OUT1~4 & OUT5~8 I/O control)



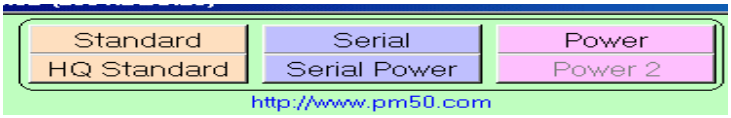
FUNCTIONAL DESCRIPTION:

F1 – Triple Language Selection: **English** / **Chinese** / **Simplified Chinese**

F2 – Speaker Driving Mode: **PWM** / **DAC**

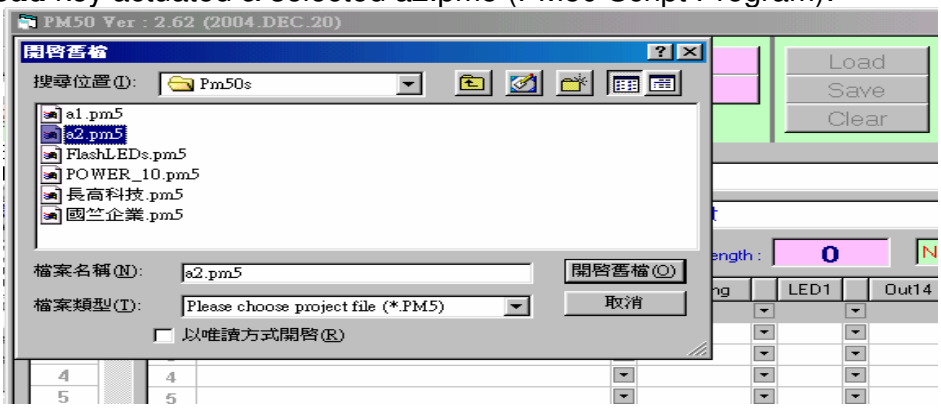


F3 – 6 Program Selection: **Standard** / **HQ Standard** / **Serial** / **Serial Power** / **Power** / **Power 2**

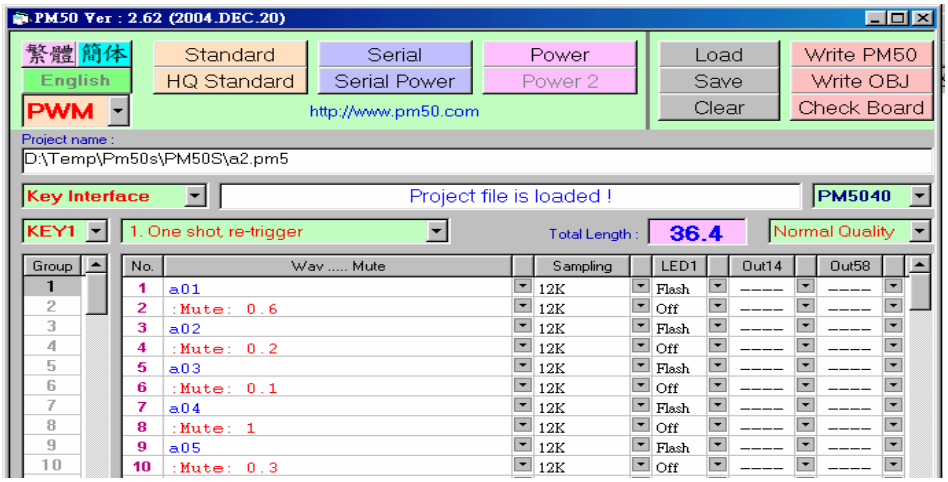


F4 – Script Program **Load** / **Save** / **Clear** operation keys

Load key actuated & selected a2.pm5 (PM50 Script Program):



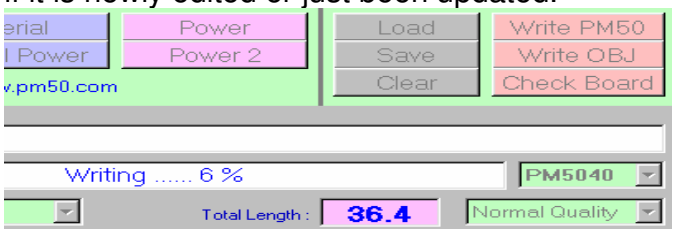
Load in the a2.pm5 Script Program and display the content

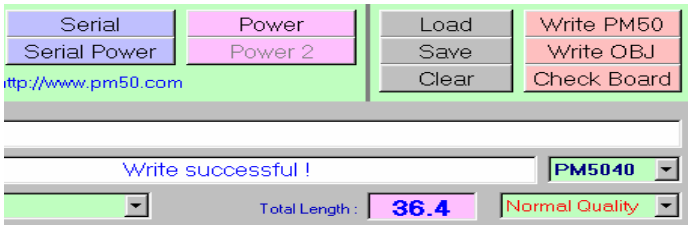


Save key actuated to save the Script Program in the content as a PC file with extension ".pm5".

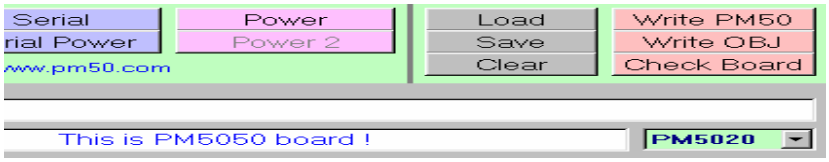
Clear key actuated to clear all the Script Program in the content.

F5 –Voice Module Board operation keys: **Write PM50** / **Write OBJ** / **Check Board**
Write PM50 key actuated to download the Script Program in the content to PM50/PM50S/PM50M Voice Module Board and at meantime save-up the Script Program if it is newly edited or just been updated.



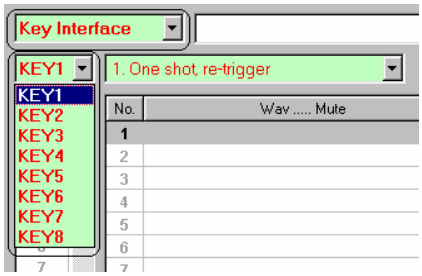


Write OBJ key actuated to download the selected OBJ file in PC to PM50/PM50S/PM50M /PM50SS Voice Module Board. This is operation of transferring machine code to PM50/PM50S/PM50M/PM50SS Voice Module Board and the machine code provide functions which the utility software cannot provide; however, the PM50/PM50S/PM50M /PM50SS Voice Module Board can perform.
Check Board key actuated to check if the PM50/PM50S/PM50M/PM50SS Voice Module Board is connected properly and review the exact part number of the connected PM50/PM50S/PM50M/PM50SS Voice Module Board.

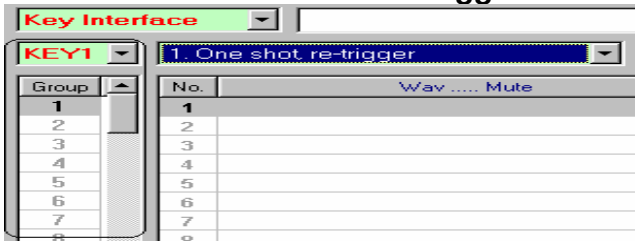


F6 – **Project name** showing the project file in operation
F7 – **Key Interface** / **Serial Interface** / **Parallel Interface** Selection

Key Interface selected showing
i. **F10** - KEY1~KEY8 Selection Bar ii. **F11** - KEY Trigger Function Selection Bar



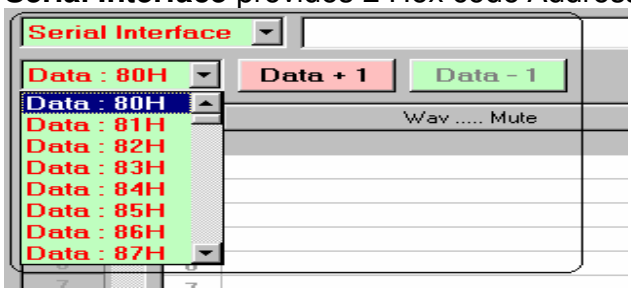
Key Interface provides i. **F10** - **8 Keys for Voice** / **Program retrieval** and each Key has its own selected ii. **F11** - **KEY Trigger Function**. Furthermore, each Key has

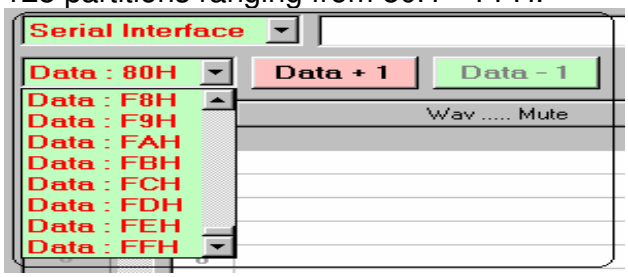


F14 - sequential Groups from 1 to 100 for sequential operation i.e. after inputting Group1 Data
Wav …. Mute / Sampling / LED1 / Out14(1~4) / Out58(5~8)

……

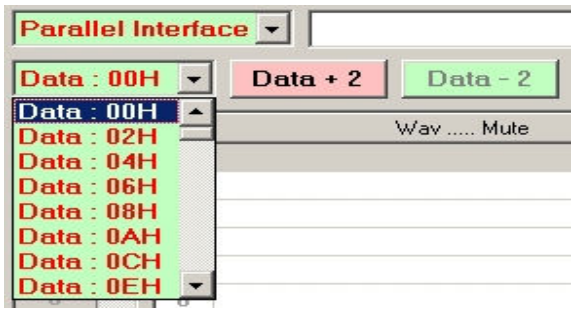
.....
operator can input Group2 Data
Wav …. Mute / Sampling / LED1 / Out14 / Out58
.....
.....
KEY1's Group1 Voice / Program can be retrieved by pressing KEY1 the 1st time and
KEY1's Group2 Voice / Program can be retrieved by pressing KEY1 the 2nd time.
Serial Interface provides 2 Hex code Address 128 partitions ranging from 80H ~ FFH.

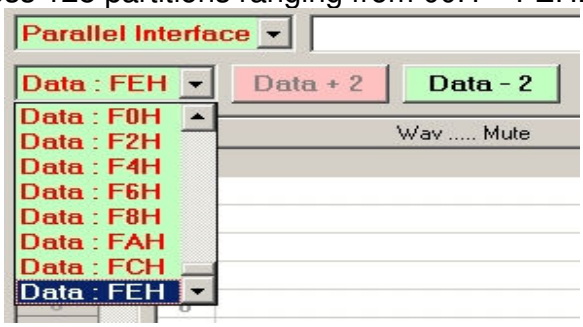




Data +1 Key & **Data –1** Key are used to select either the increment or decrement Serial Address code.

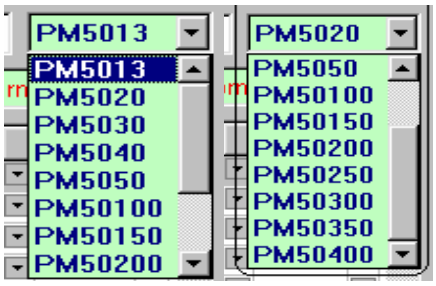
Paralle Interface provides 2 Hex code Address 128 partitions ranging from 00H ~ FEH.





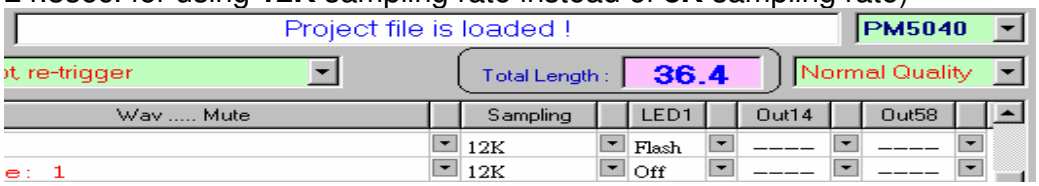
Data +2 Key & **Data –2** Key are used to select either the increment or decrement Parallel Address code.

F8 – **Status Display** showing Voice Module Board P/N, Write Processing Details, Error Warning …etc.
F9 – **Voice Module Board** Selection Bar for selection of Voice Module Board with Voice

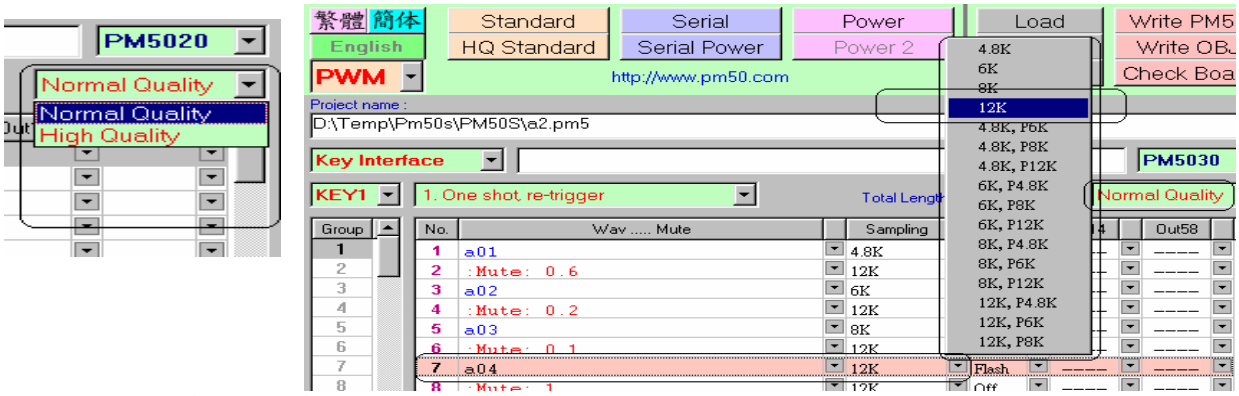


duration from 12.8 sec. ~ 400 sec. (measured by **8K** sampling rate with **5bit** data i.e. **40Kbps**)
PM50XX SIP (COB Gold finger pin) provide 20sec.~50sec.
PM50SXXX DIP28 PCB (COB Dual-in-line 28 pin) provide 12.8sec.~100sec.
PM50MXXX DIP28 PCB (SSOP 28 on board Dual-in-line 28 pin) provide 12.8sec.~400sec.
PM50SSXX DIP16 PCB (COB Dual-in-line 16 pin) provide 12.8sec.~50sec.

F12 – Total Length of time used (equivalent to **40Kbps** memory used, i.e. 36.4sec equivalent to 36.4sec x **40Kbps** = 1.456Mb & exact voice duration: 36.4 sec. x **8**/**12** = 24.3sec. for using **12K** sampling rate instead of **8K** sampling rate)

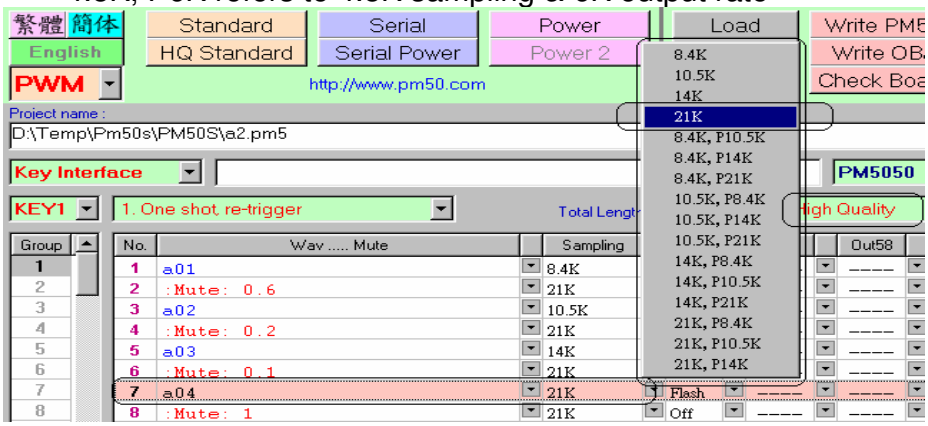


F13 – **Voice Quality Selection**: **Normal Quality**(Default) / **High Quality**



Using **Voice Quality Selection**, yr. content of voices can select a range of sampling rates and output rate. Regarding to **Normal Quality**: **F16** – **Sampling Rate Selection** of

4.8K ~ 12K Sampling Range (Default 8K)
4.8K refers to 4.8K sampling & 4.8K output rate; whereas,
4.8K, P6K refers to 4.8K sampling & 6K output rate

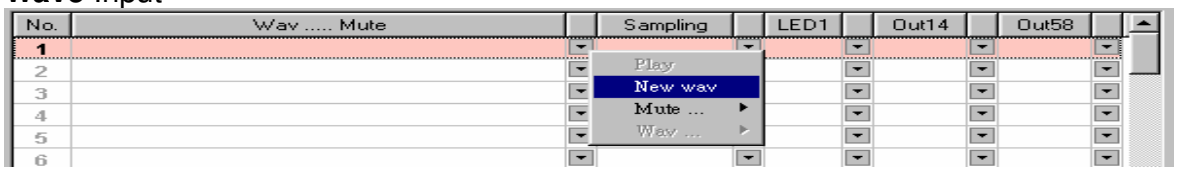


Regarding to **High Quality**: **F16** – **Sampling Rate Selection** of

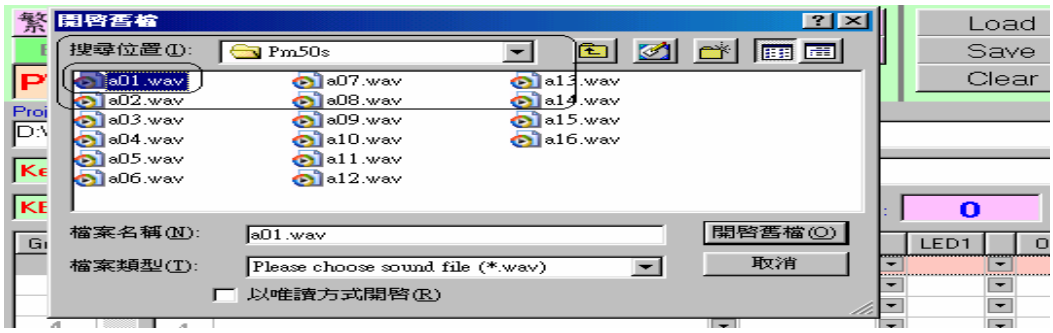
8.4K ~ 21K Sampling Range (Mirroring to 4.8K ~ 12K Sampling Rates if only adjusting the Voice Quality Selection.)
8.4K refers to 8.4K sampling & 8.4K output rate; whereas,
8.4K, P10.5K refers to 8.4K sampling & 10.5K output rate

F15 – **Wav ….. Mute** Content Input

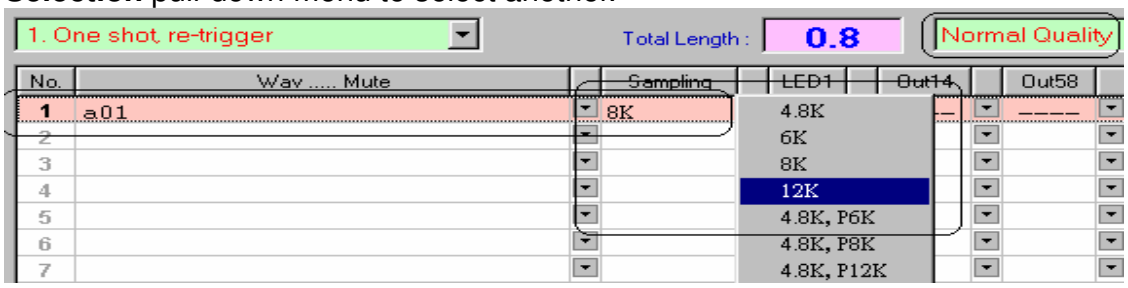
Wave Input



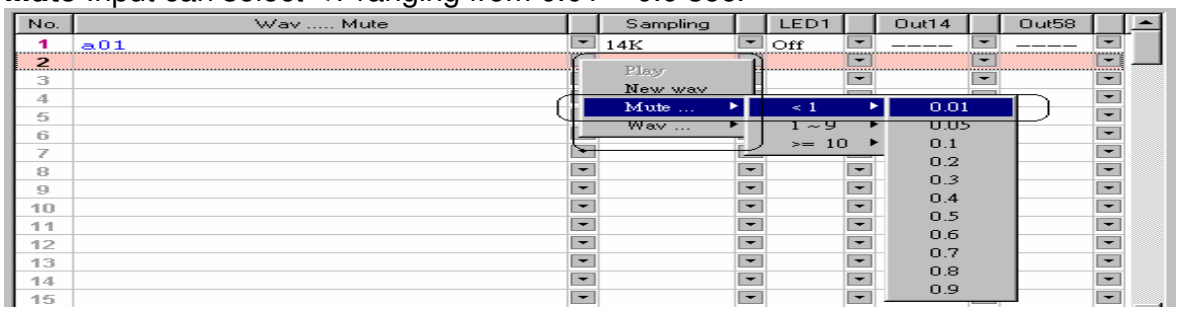
Using pull-down menu(Play / New wav / Mute / Wav) and select **New wav** for new wave input.



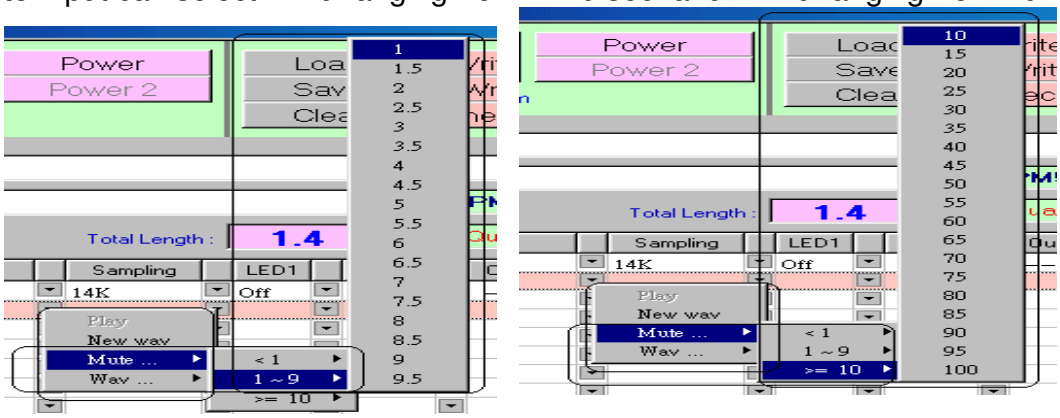
Default 8K for Normal Quality which can be altered by using **F16** – **Sampling Rate Selection** pull-down menu to select another.



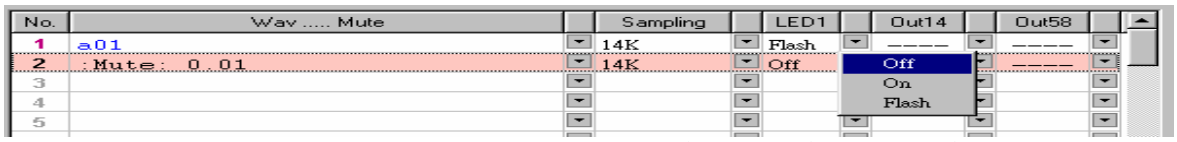
Mute Input can select <1 ranging from 0.01 ~ 0.9 sec.



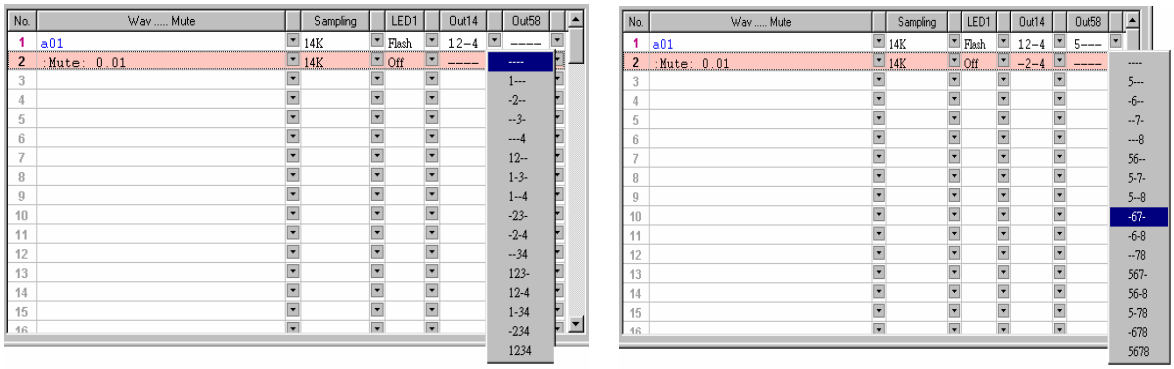
Mute Input can select 1 ~ 9 ranging from 1 ~ 9 sec. and >= 10 ranging from 10 ~ 100 sec.



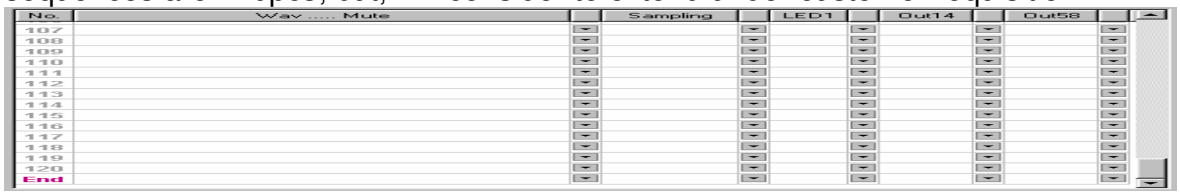
Both **Wav** and **Mute** Input can control **F17** - LED1 output by selecting either Off / On / Flash



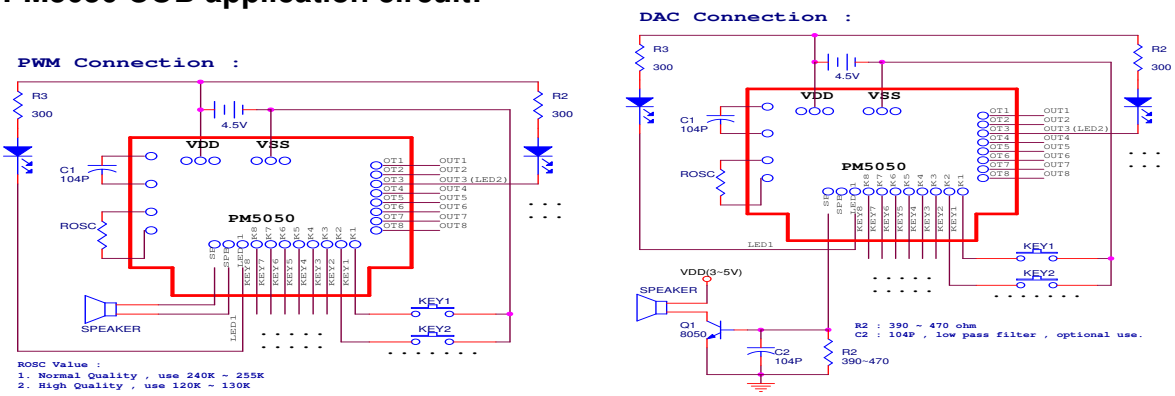
Both **Wav** and **Mute** Input can also control **F17** - Out14 & Out58 i.e. Out1,2,3….8 (All of their combinations). When Out1,2,3….8 actuated, they are low as the a01(wav) or 0.01(Mute duration) is activated.



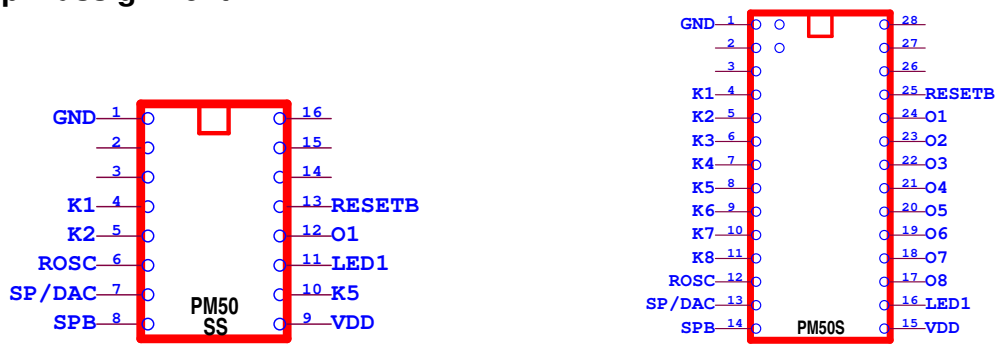
Therefore, operator can use **Mute** function to program a sequential activation of Out1,2,3….8 with or without **Wav** intervening. Moreover, the total allowable program sequences are 120pcs; but, will consider to extend under customer requisition



PM5050 COB application circuit:

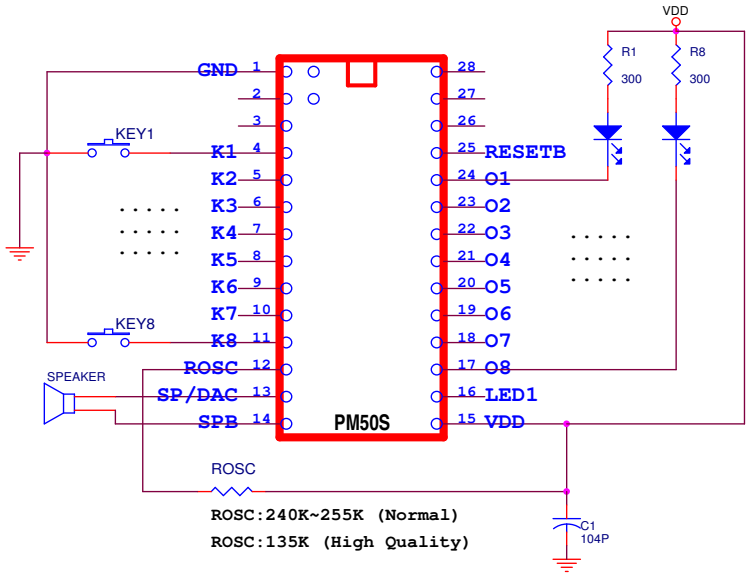


PM50SSXX(DIP-16), PM50SXX(DIP-28), PM50MXX(same as PM50SXX pin) pin assignment:

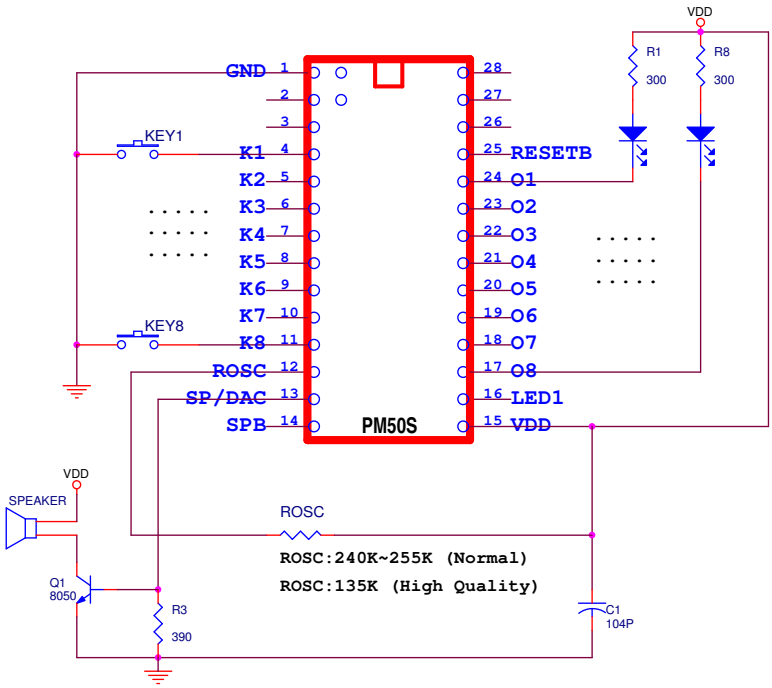


PM50SSXX(DIP-16), PM50SXX(DIP-28), PM50MXX application circuit:

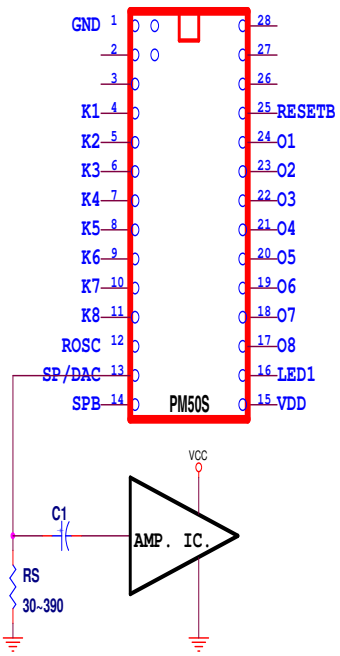
1. PWM output



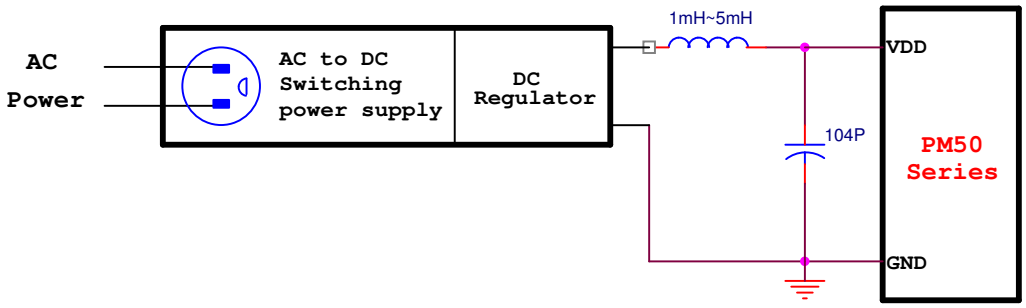
2. DAC output



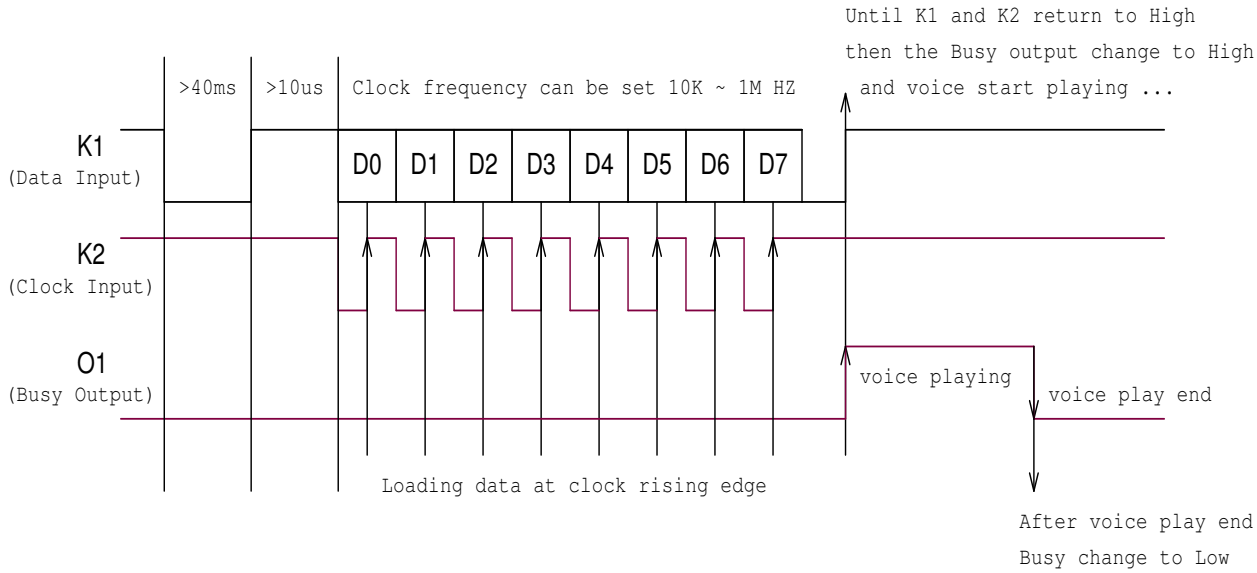
3. DAC to Power amplifier



PM50 power application circuit in switching power supply case:

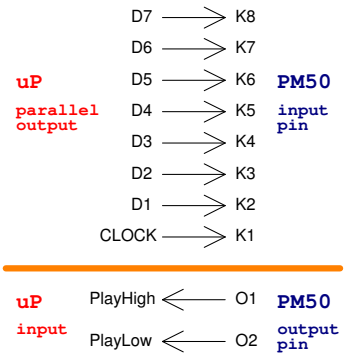


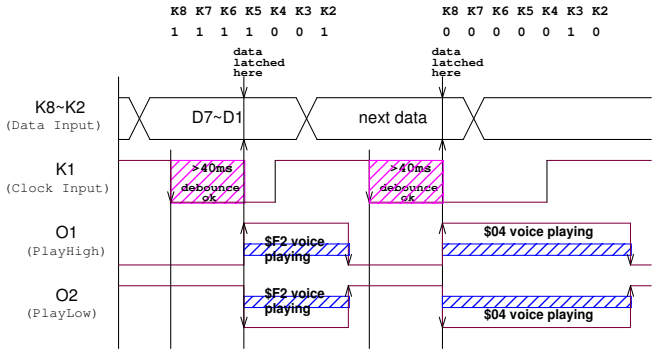
Serial Interface operation:



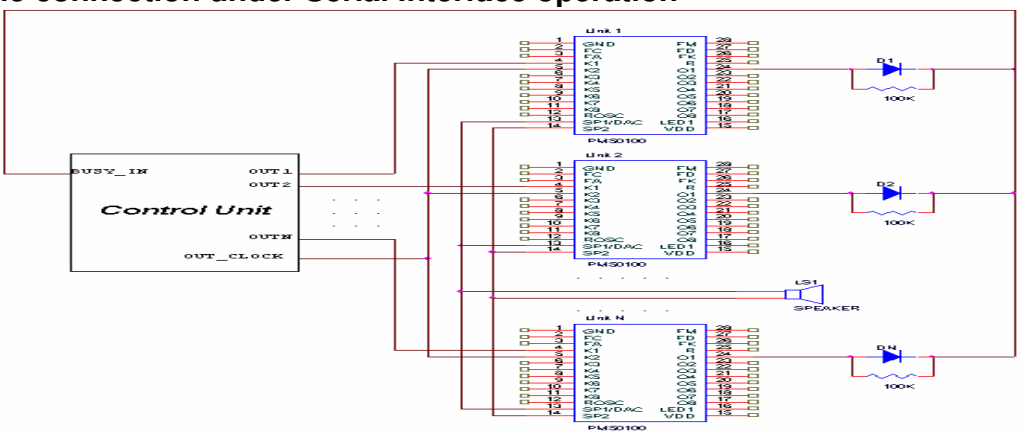
***In serial interface mode, you can use K5 to play the sound contents one by one.**

Parallel Interface operation:





Multiple connection under Serial Interface operation

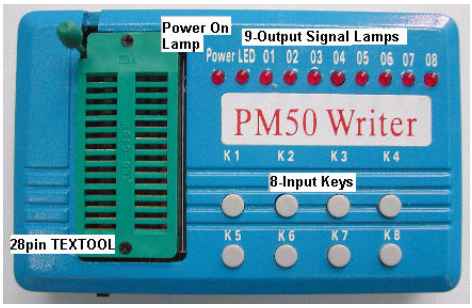


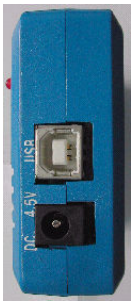
Ordering Information:

PM50 – PM50 Writer Tool

DAC & PWM Recepticle

DAC & PWM Switch

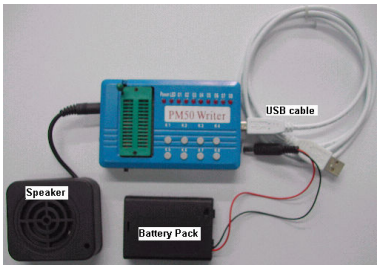




USB Recepticle

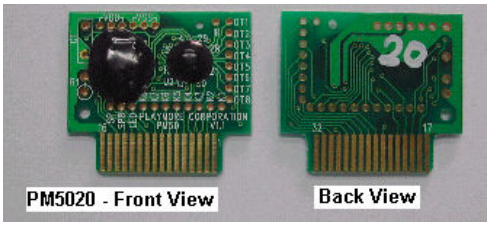
4.5V DC Power Jack

Normal **Q**uality & **H**igh **Q**uality **Switch**
8-Pin Download **CON**nector for Customized Board

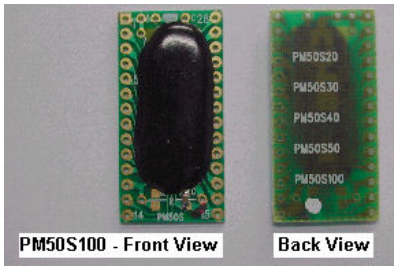


Flash Version – PM50/PM50S/PM50M/PM50SS

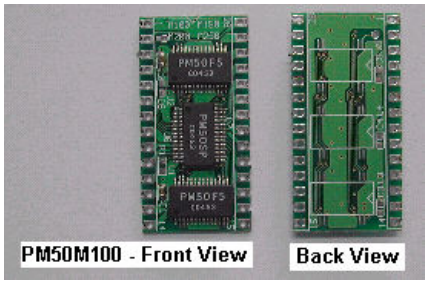
PM5020 / 30 / 40 / 50 : SIP PCB (COB Gold finger pin) provide 20sec.~50sec*.(I/O 8 input / 9 output)

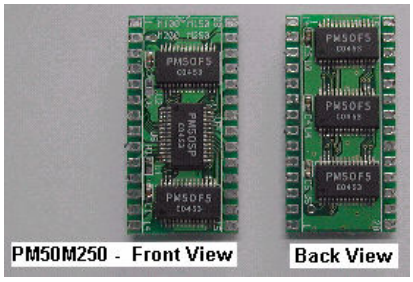


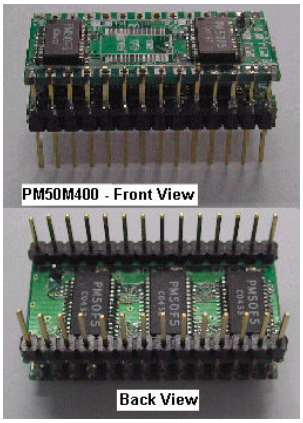
PM50S13 / S20 / S30 / S40 / S50 / S100 : **DIP28 PCB** (COB Dual-in-line 28 pin) provide 12.8sec.~100sec*.(I/O 8 input / 9 output)



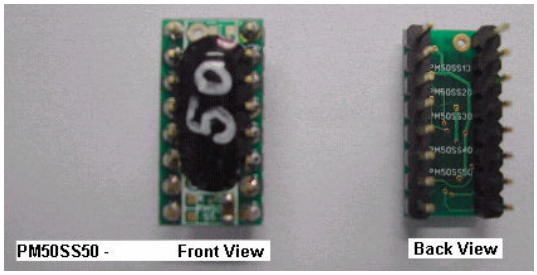
PM50M50 / M100 / M150 / M200 / M250 / M300 / M350 / M400 : **DIP28 PCB** (SSOP 28 on board Dual-in-line 28 pin) provide 20sec.~400sec*.(I/O 8 input / 9 output)







PM50SS13 / SS20 / SS30 / SS40 / SS50 **DIP16 PCB** (COB Dual-in-line 16 pin) provide 12.8sec.~50sec*(I/O 3input / 2 output)



Mask Rom Version – PM51XX
PM5112 / 16 / 20 / 24: Mask Rom Ver. of 12 / 16 / 20 / 24 sec*. (Die form)
PM5132 / 40 / 48: Mask Rom Ver. of 32 / 40 / 48 sec*. (Die form)
PM5164 / 80 / 96: Mask Rom Ver. of 64 / 80 / 96 sec*. (Die form)

Voice Engine MCU(PM50SP SSOP28/ Die form) + External Mask Rom(PM51XXX)
External Mask Rom Version – PM51MXXX
PM51150: Mask Rom Ver. of 150*sec. ((Die form)
PM51200: Mask Rom Ver. of 200*sec. ((Die form)
PM51400: Mask Rom Ver. of 400* sec. ((Die form)
*: 8K sampling.