

MONSTER SOUND - FM PAQ



Yamaha YM2413 based MSX Sound Cartridge Compatible with MSX MUSIC Standard and original FM PAC cartridge by Panasoft.

Welcome! Thank you for buying Cartridge.

The FM Monster Sound FM PAQ Cartridge is an FM sound adaptor that can be used with either MSX, or MSX2 computers that have 32K of Ram or more. This cartridge is 100% Compatible with original FM PAC by PANASOFT, but don't have the SRAM capacities. That's why this cartridge is also called FMPAC Lite.

Optional Jack audio out



Optional 3.5mm Jack Audio can be used to connect the cartridge to external sound speakers. Only FM sound is out by this Jack Audio.

Use with games that have the music mark

Using the FMPAQ with games having the MSX-MUSIC mark will have great sounds and exiting music!!

When you play games on your computer, you notice that the games have neat sounds and music. These sounds are made by the build in sound functions in your computer called PSG sounds. The FM sound function that are in your FMPAQ sounds module.

FM sound extended BASIC : MSX-MUSIC

The FM sound extended BASIC, MSX-MUSIC is made so that you can use the FM sounds in the FMPAQ with your program an commands.

Using MSX-MUSIC to produce sounds will allow you to create beautiful sounds not possible with the PSG.

If you have never composed music using BASIC before, reading the BASIC manual on the play command will give you a understanding on creating music.

There is a semilar extension of BASIC call MSX-AUDIO but they are a little different so take care not to mix them up.



Reading the instructions

The commands will be explained as the example below.

Example:

Command: MUSIC ----- command name

Operation (what the command does)

Format: (how the command is used CALL MUSIC [(**<MODE>**[, ...]])

Sample (example) Notes (notes on the command)

In the format of the command, the following symbols are used. The symbols are not to be entered but mean the following.

[] --- characters and symbols within the bracket are optional < > --- characters within these must be entered in thsi position "... " - characters that are repeated.

Command: MUSIC

When n=0 if any channels are playing, the value -1 will be stored in A and 0 if no channels are playing.

Command STOPM

Operation: Stop play of BGM

Format: CALL STOPM

Sample: CALL STOPM

Command TEMPER (temperament)

Operation This sets the rhythm for the FM sound

Format: CALL TEMPER (n) n can be from 0 to 21 or a variable
default value is 9

Sample: CALL TEMPER (0)

Notes: for a list of rhythms that can be set and their values, see page 45 "Table of Rhythms.

Command TRANSPOSE

Operation: Will transpose in units of half tones 1/100 units

Format: CALL TRANSPOSE (n) n can have values from -12799 to 12799 or a variable

However, some voices have a limited setting even through within the +-12799 range Default setting is 0

Sample: CALL TRANSPOSE (100) transposes a half tone.

Command VOICE

Operation: Set what instrument <Voice> is to be played by the FM sound channels. However, values without * mark and array values are limited to 2 when used together.

Format: CALL VOICE ([@n1], [@n2], [@n9]
n1-n9 can be values from 0-63 (voice nr) or variables
default setting is @0

Note: The voice number can be selected from the table Table of voices numbers.

Command VOICE COPY

Operation: This command copies the voice data to number 63 or an array variable.

Format: CALL VOICE COPY (@n1, -n2) n1 can be voices from 0-63 that have no * mark or array variables. n2 can be 63 or an array variable name.

Sample: DIM A%(16) CALL VOICE COPY (@7,A%)

pipe organ 1 is copied to array variable A. Note: choose the voice from the table on page 44.

Sample Program

Here is an example using the MSX-MUSIC. The first 8 measures of the song Flower is shown below. Refer to this song and the MML table and enter your favorite song to be played with FM sounds.

MML Table

This is a table of the MML (music macro language) that can be used with the PLAY command.

Music MML

| Statement | Meaning | Range | Default Value *1 |
|-----------|--|-------------|--|
| Mn | Envelope cycle setting *2 | 1>=n<=65535 | m255 |
| Sn | Envelope shape *2 | 0<=n<=15 | S0 |
| Vn | Volume | 0<=n<=15 | V8 |
| Ln | Length | 1<=n<=64 | L4 |
| Qn | Division of sound length | 1<=n<=8 | Q8 |
| On | Octave | 1<=n<=8 | O4 |
| > | Raise 1 Octave | - | - |
| < | Lower 1 Octave | - | - |
| Tn | Tempo setting | 32<=n<=255 | T120 |
| Nn | Plays Note raised to n | 0<=n<=96 | - |
| Rn | Rest setting | 1<=n<=64 | R4 |
| A-G | Note | - | - |
| +, # | Sharp (raise half tone) | - | - |
| - | Flat (Lower half tone) | - | - |
| (period). | Lengthen note or rest by 1.5 | - | - |
| XA\$ | Plays MML stored in string variable A\$ *3 | - | - |
| =x; | sets parameter to x | *4 | - |
| & | Tie | - | - |
| { }n | will generate even notes of | 1<=n<=64 | value set n for the number within the {} |
| @n | changes the voice set to n | 0<=n<=63 | - |
| @Vn | sets detail change in volume | 0<=n<=127 | - |
| @Nn | maintain length set by n | 1<=n<=64 | value set with Ln |

*1 Initial value set when CALL MUSIC is used

*2 For PSG only

*3 Adding MML after [XA\$;] will result in error

*4 The value range is determined by the preceding MML but it cannot exceed the value 32767

RHYTHM MML

There are 5 different voices that are available for the rhythm (percussion) MML and up to 3 voices may be played simultaneously. For this reason the rhythm MML first lines up the instruments that are to be played simultaneously.

| Statement | Meaning | Range | Default |
|------------|--|----------|---------|
| B | Bass drum | - | - |
| S | Snare drum | - | - |
| W | Tom tom | - | - |
| C | Cymbals | - | - |
| H | Hi Hat | - | - |
| n (number) | previous notes are played and n th note are rested | 1<=n<=64 | - |
| Vn | Volume | 0<=n<=15 | 8 |
| ! | Accents preceding note | - | - |

@An Sets volume for voices that are accented. $0 \leq n \leq 15$ -

[Tn], [@Vn], [Rn], [XA\$;], [=x;], [.(period)] is the same as music MML

example: `PLAY#2,"", "", "", "BSH8H8H8S!H!8H8"`

Bass, snare, hihat and wait an 8th note
Hi hat and wait an 8th note
snare, hi hat plays accented and waits an 8th note
Hi hat and wait an 8th note

VOICE DATA TABLE

This is a list of the voices available for use with Voice command or the MML @ statement.

| Voice No. | Name | Voice no. | Name |
|-----------|---------------|-----------|----------------|
| 0 * | Piano 1 | 32 | Piano 3 |
| 1 | Piano 2 | 33 * | Wood Bass |
| 2 * | Violin | 34 | Santule 2 |
| 3 * | Flute 1 | 35 | Brass |
| 4 * | Clarinet | 36 | Flute 2 |
| 5 * | Oboe | 37 | Clavicord 2 |
| 6 * | Trumpet | 38 | Clavicord 3 |
| 7 | Pipe Organ | 39 | Koto 2 |
| 8 | Xylophone | 40 | Pipe Organ 2 |
| 9 * | Organ | 41 | POhdsPLA |
| 10 * | Guitar | 42 | POhdsPRA |
| 11 | Santule 1 | 43 | Church Organ L |
| 12 * | Electric bass | 44 | Church Organ R |
| 13 | Clavicord 1 | 45 | Synth Violin |
| 14 * | Hapsicord | 46 | Synth Organ |
| 15 | Hapsicord | 47 | Synth Brass |
| 16 * | Vibraphone | 48 * | Horn |
| 17 | Koto 1 | 49 | Shamisen |
| 18 | Taiko | 50 | Magical |
| 19 | Engine 1 | 51 | Fuwawa |
| 20 | UFO | 52 | Wonderflat |
| 21 | Synth Bell | 53 | Hard Rock |
| 22 | Chime | 54 | Machine |
| 23 * | Synth Bass | 55 | Machine V |
| 24 * | Synthesizer | 56 | Comic |
| 25 | Synth drum | 57 | SE comic |
| 26 | Synth rhythm | 58 | SE laser |
| 27 | Harmo drum | 59 | SE noise |
| 28 | Cow Bell | 60 | SE star 1 |
| 29 | Hi Hat | 61 | SE star 2 |

| | | | |
|----|------------|----|----------|
| 30 | Snare drum | 62 | Engine 2 |
| 32 | Bass drum | 63 | no sound |

* The name of the voice are given for reference only and they may not sound the same as the real instruments

* Are sounds that are build in the FM sound chip and sounds without an

* indicates sounds generated by software.

RHYTHM TABLE

Table of Rhythm usable with the TEMPER statement

| No. | Rhythm |
|-----|----------------------------------|
| 0 | Pythograph |
| 1 | Mintone |
| 2 | Welkmeyster |
| 3 | Welkmeyster (adjusted) |
| 4 | Welkmeyster (seperate) |
| 5 | Kilanbuger |
| 6 | Kilanbuger (adjusted) |
| 7 | Velotte Young |
| 8 | Lamour |
| 9 | Perfect Rhythm (default) |
| 10 | Pure Rhythm c major (a minor) |
| 11 | Pure Rhythm cis major (b minor) |
| 12 | Pure Rhythm d major (h minor) |
| 13 | Pure Rhythm es major (c minor) |
| 14 | Pure Rhythm e major (cis minor) |
| 15 | Pure Rhythm f major (d minor) |
| 16 | Pure Rhythm fis major (es minor) |
| 17 | Pure Rhythm g major (e minor) |
| 18 | Pure Rhythm gis major (f minor) |
| 19 | Pure Rhythm a major (fis minor) |
| 20 | Pure Rhythm b minor (g minor) |
| 21 | Pure Rhythm h minor (gis minor) |

Specifications

Item: Description

Machine: MSX, MSX2, MSX2+ Personal computers with 32K byte of Ram

Conditions: Temperature 10° to 35° C

Humidity: 20%-80% without condensation

FM sound:2 Operators FM soiund generation

General Care

If the FMPAQ should become soiled, clean it in the following manner:

Wipe the case gently with a soft cloth, if a rough cloth is used or it is wiped roughly you will damage the case.

If the case is heavily soiled, use a little dishwashing liquid, if the case does not become clean by gently wiping, use a tiny bit of dishwashing liquid on a soft cloth and wipe the case clean with it.

Always wipe the liquid off with a soft cotton cloth after cleaning with dishwashing liquid.

