

**SCHULMERICH CARILLONS, INC.
SELLERSVILLE, PA**

MelodyWave[™]
Instrument by Schulmerich

OPERATING INSTRUCTIONS

This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained.

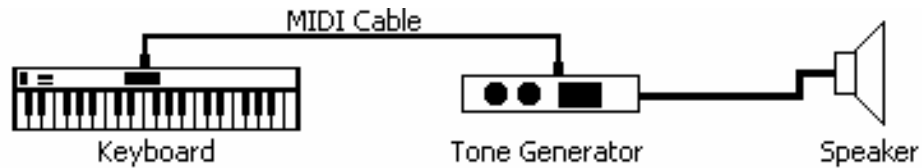
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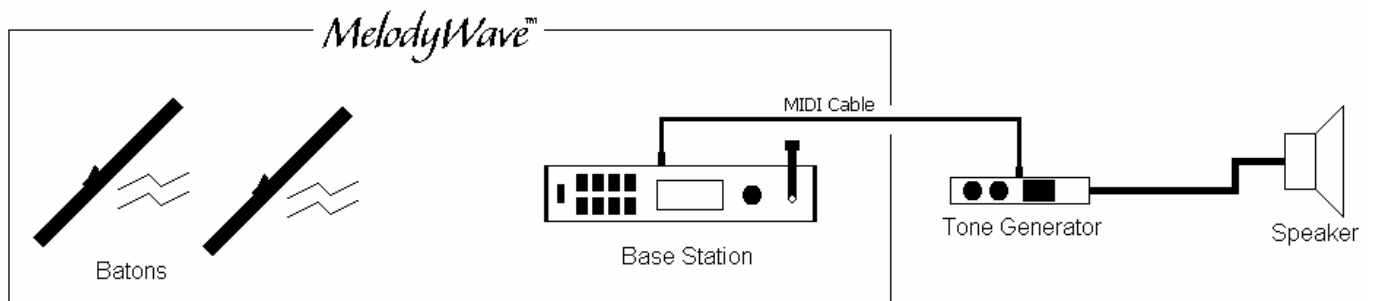
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Introduction

Since the early 1980's, musicians and composers have used a means of communication titled MIDI (Musical Instrument Digital Interface). This protocol allows computers, electronic keyboards, sound generators, and other electronic musical instruments to talk to each other. An example of a basic MIDI link would be an electronic keyboard and separate sound/tone generator. A MIDI cable enables the keyboard to talk to and control the tone generator electronically. Pressing the middle C on the keyboard sends a message to the tone generator that says, "HEY! Play middle C". Notes are not the only items sent via MIDI; the keyboard can also control the tone generator's voice, volume, pitch, etc.



The *MelodyWave* instrument is made up of one or more batons and a base station unit. It is a MIDI controller like the keyboard described above. When you play the *MelodyWave* batons, the base station unit sends note on/off information to the tone generator just like pressing keys on the keyboard. The *MelodyWave* base station also lets you program what voice and note each of your batons plays.



General Description

Batons

The *MelodyWave* baton lets you play and mute a musical note by sending radio messages to the *MelodyWave* Base Station. The baton has a range of at least 50 feet. Each baton is marked with note designators on labels located on the top and end (Figure 1).

When the baton is lifted from a horizontal position it will power up. This is indicated by the red power LED on the top of the baton housing just above the note designator. Shortly after you set the baton on a table, it will power itself down. There is no power switch for the baton.

The baton is played with the note designator upright and facing you. Rotating the baton forward and down, and snapping your wrist to halt the baton's motion plays a note. The faster you move the baton and snap your wrist the louder the note will sound (Figure 2).

Notice the small round light sensors on top and bottom near the end of the baton housing. Covering up either of these sensors will mute the baton. So placing the baton down on a table or touching it to your shoulder covers a light sensor and mutes any sounding note played by that baton. Covering the sensor with your finger will not mute the sound; only non-transparent objects will cause muting.

FIGURE 1

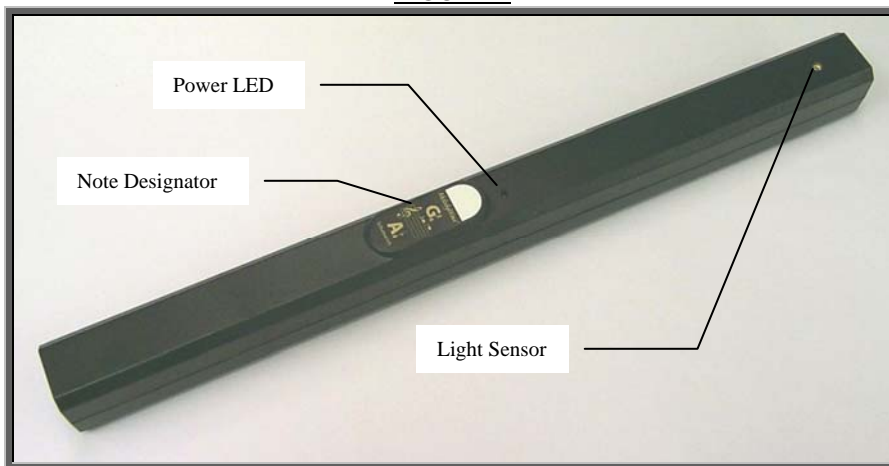


FIGURE 2



Baton Charging Case

Each baton is powered by a rechargeable battery. When not in use the batons should be stored in their charging case (Figure 3). Charge the batons by connecting the charging case to a 110V AC outlet with the included power supply (Figure 4). Fully insert each baton into its labeled hole in the charging case and the red indicator on the end of the baton should light. This indicator lets you know that the baton is charging. Charge the batons for 14 hours (overnight is fine) and only when necessary to extend the number of recharge cycles. Average time between charges is approximately 40 hours of 1 strike/second playing.

FIGURE 3



FIGURE 4



Base Station

The *MelodyWave* base station is the interpreter between your batons and the MIDI world. It communicates with General MIDI System Level 2 (GM2) devices. These devices, like the tone generator you are using, support a standard set of voices detailed in the last pages of this document. Your system operates in one of two modes: Single Mode or Multi Mode.

In **Single Mode**, all powered batons play one selected voice of the maximum available, i.e. 4 octaves of Xylophone. Each voice's volume and register, termed a Single Mode preset, can be changed and stored for later use.

In **Multi Mode**, the base station can be programmed to allow your batons to play up to 16 different simultaneous voices or parts. One or more batons may be assigned to each of the parts you program. This combination of different parts and batons assignments creates one Multi Mode preset, which you can store for later use. These presets can be used for pieces with different lead and accompaniment voices or just for adding individual percussion instruments to an arrangement.

The *MelodyWave* base station has the following front panel controls (Figure 5):

POWER: powers the base station unit.

SINGLE: activates Single Mode of operation where all batons play one voice.

MULTI: activates Multi Mode of operation where batons can play 16 different voices.

MUTE: quenches all notes and prevents further batons from sounding.

PART: allows setup of different instrument parts in a Multi Mode preset.

BATON: allows you to assign each baton to a part and note in a Multi Mode preset.

STORE: saves changes you make to either a Single or Multi preset.

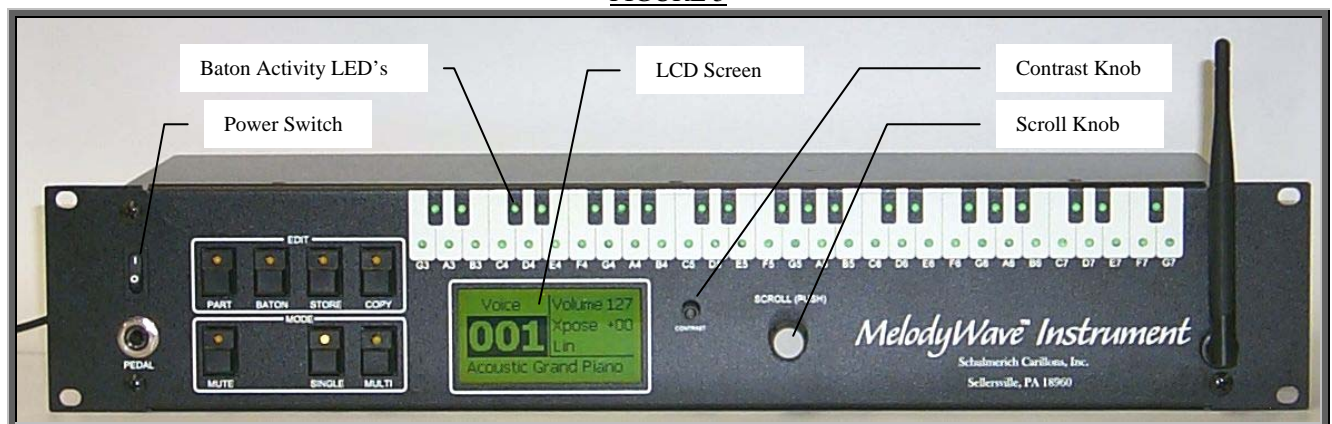
COPY: copies the selected parameter across a range of batons.

SCROLL: rotating scroll changes the **highlighted** parameter; pressing scroll advances the cursor to the next parameter.

CONTRAST: changes the contrast of the LCD screen for different viewing angles.

The *MelodyWave* base station also has a green activity LED indicator for each baton. These LED's are positioned on a keyboard background at the top of the base station front panel. Each LED will light when its corresponding baton is played. When the voice assigned to that baton is a sustained voice, the light will stay on until the baton is muted; when the voice is percussive, the light blinks for 1/4 second. The lights are also used in MULTI mode to aid in preset editing. These details are covered in the MULTI MODE section.

FIGURE 5



Single Mode

When the SINGLE button is pressed, the *MelodyWave* base station enters Single Mode indicated by the light on the SINGLE button. This operation forces all the batons to play the voice indicated on the display. The voices number from 000-256: voices 001-256, detailed in TABLE 1 (see back of instructions), include acoustic and electronic instruments, voice 000, detailed in TABLE 2 is a Drums/Percussion voice that offers a wide array of percussion instruments. Each of these voices has a volume and transpose parameter that can be modified and stored. Only the SCROLL knob is required to make changes to voice settings in Single Mode. See how in the steps below.

Press
SINGLE

1

On power-up the unit starts in Single Mode and is set to Voice 001, Acoustic Grand Piano. Notice the voice number 001 is highlighted. Rotating SCROLL now will change that voice up and down. Also note that the selected voice's name and current volume and register settings are displayed.

Voice	Volume 127
001	Xpose +00
Acoustic Grand Piano	

Rotate
SCROLL

2

Change the active voice by rotating SCROLL. As you do, each voice's volume and transpose values will update on the display. If you play the batons while doing this, the resulting sound will also match the voice shown. In this case we have selected voice 030, Marimba.

Voice	Volume 127
030	Xpose +00
Marimba	

Press
SCROLL

3

Press SCROLL to change volume and transpose of the Marimba. This will first move the cursor to the volume setting. The volume can be changed from 0 (silent) to a maximum 127 by rotating the SCROLL knob. Here we have decided to trim the Marimba's volume a bit by rotating SCROLL to change the value from 127 to 120. The batons will all now play slightly softer.

Voice	Volume 120
030	Xpose +00
Marimba	

Press
SCROLL

4

Pressing SCROLL again after making the volume change will move the cursor to the transpose parameter. The transpose parameter allows pitch shifting of +/- 32 semitones by rotating SCROLL. To get a higher register of the Marimba playing from our set of batons, we rotated SCROLL to shift the voice up 12 semitones, or one octave. Now the batons will all play one octave higher than designated (G3 will play G4).

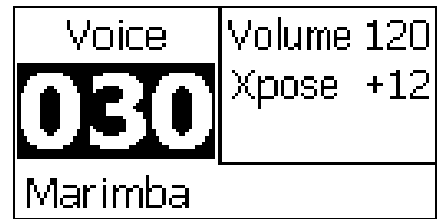
Voice	Volume 120
030	Xpose +12
Marimba	

Press
SCROLL

5

Press
STORE or
Rotate
SCROLL

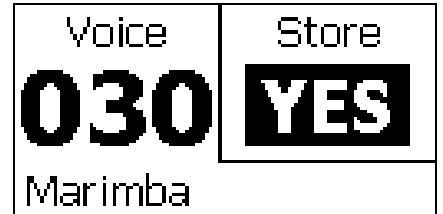
Pressing SCROLL again after making the transpose change will return the cursor to the voice number. Note that the changes made are still active. Before moving to another voice the changes must be stored.



6

Press
SCROLL

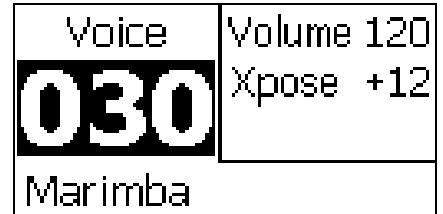
When you attempt to select a different preset or press STORE you will be prompted to store the changes. The volume and transpose parameters will be replaced by a store prompt and the cursor will move to a yes/no decision. The indicator on the STORE button will light. Rotating SCROLL will select YES for storing the changes or NO for canceling the changes.



7

Complete

Press SCROLL with YES highlighted to store the changed volume and transpose and return you to the normal voice selection screen. Note that the new changed parameters are stored and displayed. From here you may select other Single presets for playing and modification.



Parameter changes you save in any one of these presets are stored in non-volatile memory. They will be in effect the next time you select that preset. These changes can be made and stored permanently for any of the SINGLE mode presets. Additionally when you create parts in MULTI mode, these parameters will be your starting point for the voice you select. Changes made in SINGLE mode will not, however, alter previously created parts in MULTI mode.

Multi Mode

When the MULTI button is pressed, the *MelodyWave* base station enters Multi Mode indicated by the light on the MULTI button. This allows each of the batons to play selected notes and voices. The Multi presets number from 01-99. Each of these presets defines a set of voices or parts and which part and note each baton plays.

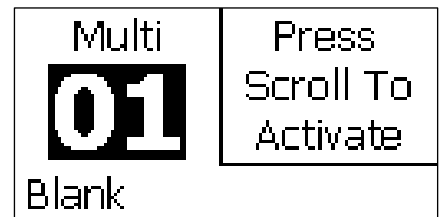
When the PART button is pressed, the *MelodyWave* base station enters Part Edit mode indicated by the light on the PART button. Each part you define has a volume, transpose, and pan parameter that can be modified and stored.

When the BATON button is pressed, the *MelodyWave* base station enters Baton Edit mode indicated by the light on the BATON button. Each baton can be programmed to play a note of one of the defined parts. Typically the desired parts for an arrangement are first defined followed by assigning groups or individual batons to play these parts. See how to create parts and assign batons to them in the example below.

Part Edit

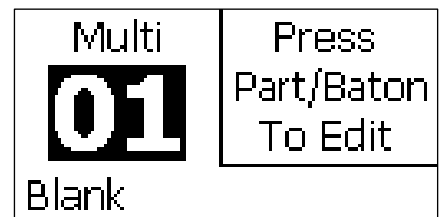
Press
MULTI
|
1

When MULTI is pressed the last used Multi preset is displayed. Rotate SCROLL to change the highlighted preset up and down. The MULTI preset's name is displayed at the bottom of the screen. 'Blank' implies that the preset is empty.



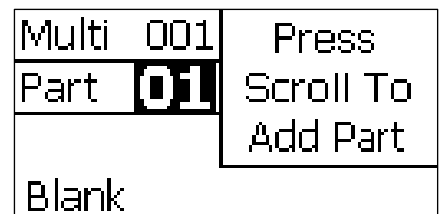
Press
SCROLL
|
2

Press SCROLL to activate the preset. When activated the part settings of voice, volume, and pan are sent to the tone generator. Also the settings of voice and note for each baton are activated. In this case the preset is empty so no parts are defined.



Press
PART
|
3

Press PART to display the part settings for this Multi preset. Because this Multi preset is empty Part 01 is named 'Blank'; we must add a part.



Press
SCROLL
|

4

Press SCROLL to add a new part. When a new part is added it defaults to voice 001 Acoustic Grand Piano. Note that the selected part's voice name and current volume, register, and pan settings are displayed. Also all the green baton LED's on the front panel light up. This indicates that all batons are assigned to Part 01.

Multi	001	Volume	127
Part	01	Xpose	+00
Voice	001	L	←★→R
Acoustic Grand Piano			

Rotate SCROLL

5

Rotate SCROLL to select the desired voice for this part. Here we changed part 01's voice to 030, Marimba. The parameters stored for Marimba in Single mode will appear automatically for this part when the voice is changed.

Multi	001	Volume	120
Part	01	Xpose	+12
Voice	030	L	←★→R
Marimba			

Press SCROLL

6

Press SCROLL after making the voice change to move the cursor to the volume setting for this part's voice. Change the volume of the Marimba part if desired by rotating SCROLL.

Multi	001	Volume	120
Part	01	Xpose	+12
Voice	030	L	←★→R
Marimba			

Press SCROLL

7

Press SCROLL after making any volume change to move the cursor to the transpose parameter. Change the transpose of the Marimba part if desired by rotating SCROLL.

Multi	001	Volume	120
Part	01	Xpose	+12
Voice	030	L	←★→R
Marimba			

Press SCROLL

8

Press SCROLL after making any transpose change to move the cursor to the pan parameter. Change the panning or position in the stereo sound field of the Marimba part by rotating SCROLL. In this case we changed the Marimba part to play fully on the left channel.

Multi	001	Volume	120
Part	01	Xpose	+12
Voice	030	L	←★→R
Marimba			

Press SCROLL

9

Press SCROLL after making the pan change to return the cursor to the part number. Note that the changes made are still active. Now a Marimba part has been fully defined.

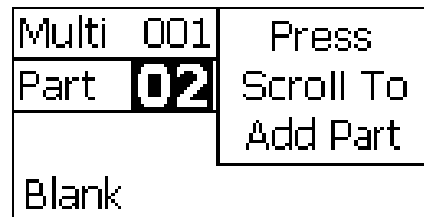
Multi	001	Volume	120
Part	01	Xpose	+12
Voice	030	L	←★→R
Marimba			

Rotate SCROLL

10

Press
SCROLL

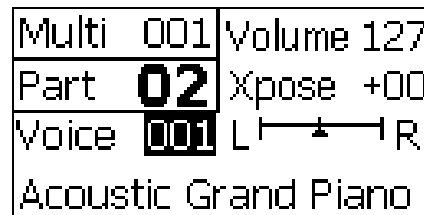
Rotate SCROLL clockwise to allow creation of a new part. Up to 16 parts can be defined in each Multi preset. The name 'Blank' implies that this part is empty. When you move to Part 02, all baton LED's turn off. This tells you that no batons are assigned to Part 02.



11

Rotate
SCROLL

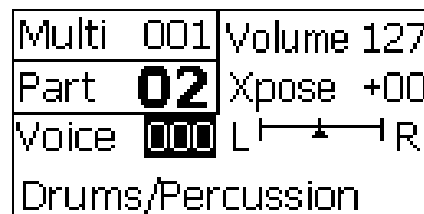
Press SCROLL to create Part 02. This brings up voice 001 and its parameters so we can now add a new voice to the preset. Let's add some percussion to our Marimba.



12

Press
SCROLL
3 Times

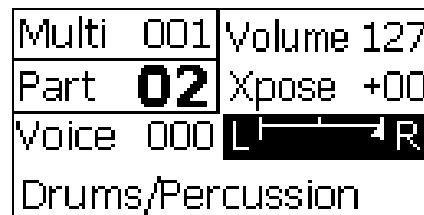
Rotate SCROLL to select a voice for Part 02. Here we selected voice 000, Drums/Percussion. The parameters stored for voice 000 in Single mode appear for this part when the voice is selected. Perform Steps 6-9 to make changes to this part. In this example we'll just change the panning.



13

Press
SCROLL

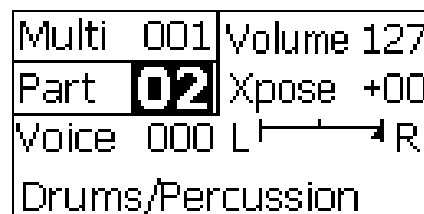
Press SCROLL 3 times to move the cursor to the pan parameter. Change the panning or position in the stereo sound field of the part by rotating SCROLL. Here we set the Percussion part to play fully on the right channel.



14

Press
STORE

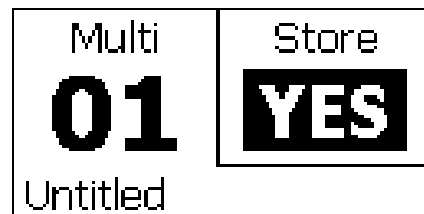
Press SCROLL after making the pan change and the cursor returns to the part number. Now a Marimba and a Drums/Percussion part are fully defined. Perform steps 4 through 10 as necessary to enter settings for each of up to 16 parts in your arrangement.



15

Press
SCROLL

When finished entering part information, press STORE to save the changes. The cursor moves to a yes/no decision and the indicator on the STORE button will light. Rotate SCROLL to select YES for storing the changes or NO for canceling the changes.



16

Press SCROLL with YES displayed and the newly created parts will be stored. The name of the preset has changed from 'Blank' to 'Untitled' because the preset is no longer empty; it contains some part or baton information.

Multi 01 Untitled	Press Part/Baton To Edit
--------------------------------	--------------------------------

Complete

Baton Edit

Press
BATON

1

When BATON is pressed the settings for the G3 baton are displayed. This screen shows that the G3 baton is assigned to play Part 01, Marimba. When the baton is played, it will sound a G4 Marimba note. It plays up an octave because the Part has a +12 transpose. The G3 activity LED will blink, helping to identify which baton you are editing. In this example we will assign two batons, G3 and G#3 to play Drums/Percussion, Part 02.

Multi 001	Plays Note
Baton	G4
G3	Part 01
Marimba	

Press
SCROLL

2

Press SCROLL to change the Part setting for this baton. The Part number highlights.

Multi 001	Plays Note
Baton	G4
G3	Part 01
Marimba	

Rotate
SCROLL

3

Rotate SCROLL to select the desired part. Here we've select Part 02. The G4 note letter changed to a percussion instrument name. This parameter will display as such for the Drums/Percussion voice only. All others will show up as standard note/octave designations. As set now, the G3 baton will play the High Floor Tom.

Multi 001	Plays Note
Baton	Hi Flr Tom
G3	Part 02
Drums/Percussion	

Press
SCROLL

4

Press SCROLL to change the note or, in this case, percussion instrument setting for this baton. The Plays Note setting highlights.

Multi 001	Plays Note
Baton	Hi Flr Tom
G3	Part 02
Drums/Percussion	

Rotate
SCROLL

5

Press and Rotate SCROLL

Rotate SCROLL to select the note this baton plays. In this case we've chosen Maracas. Now the G3 baton will play a Maraca sound. Next we will set the G#3 to play the Claves.

Multi 001	Plays Note
Baton	Maracas
G3	Part 02
Drums/Percussion	

6

Press SCROLL

Press SCROLL to return the cursor to the Baton setting. Rotate SCROLL once clockwise to select G#3. The G#3 activity LED will blink to indicate we're editing the G#3 baton.

Multi 001	Plays Note
Baton	G#4
G#3	Part 01
Marimba	

7

Rotate SCROLL

Press SCROLL to change the Part setting for this baton. The Part number highlights.

Multi 001	Plays Note
Baton	G#4
G#3	Part 01
Marimba	

8

Press SCROLL

Rotate SCROLL to select the desired part. Here again we've chosen Part 02, and the G#4 note letter changed to a Percussion instrument name. As set now, the G#3 baton will play the Pedal Hi-Hat.

Multi 001	Plays Note
Baton	Pedal Hat
G#3	Part 02
Drums/Percussion	

9

Rotate SCROLL

Press SCROLL to change the note or, in this case, percussion instrument setting for this baton. The Plays Note setting highlights.

Multi 001	Plays Note
Baton	Pedal Hat
G#3	Part 02
Drums/Percussion	

10

Press and Rotate SCROLL

Rotate SCROLL to select the note this baton plays. Here we've selected Claves. Now the G#3 baton will play a Clave sound.

Multi 001	Plays Note
Baton	Claves
G#3	Part 02
Drums/Percussion	

11

Press SCROLL to return the cursor to the Baton setting. Rotate SCROLL once clockwise to select A3. The A3 activity LED will blink. This baton and all those up to G7 are set to Marimba.

Multi 001	Plays Note
Baton	A4
A3	Part 01
Marimba	

Press STORE

12

Press STORE to save the changes. The cursor moves to a yes/no decision and the indicator on the STORE button will light. Rotate SCROLL to select YES for storing the changes or NO for canceling the changes.

Multi	Store
01	YES
Untitled	

Press SCROLL

13

Press SCROLL with YES displayed to store the changes. Now baton settings for the MULTI preset have been made and saved for later use. The display returns to the Multi activated screen.

Multi	Press
01	Part/Baton
Untitled	To Edit

Complete

Multi Renaming

Press SCROLL

1

Press SCROLL from the Multi activated screen to rename your newly created Multi preset. The 'Untitled' name will be replaced by a cursor highlighting a blank character. We'll name this preset 'Example', so rotate SCROLL to select the letter 'E'.

Multi	Scroll To
01	Select
█	Letter

Press SCROLL

2

After selecting the letter 'E', press SCROLL to advance to the next letter in the name. Rotate SCROLL to select the letter 'x'. Do this for each letter in the new name until complete. A total of 20 characters may be used to name your preset.

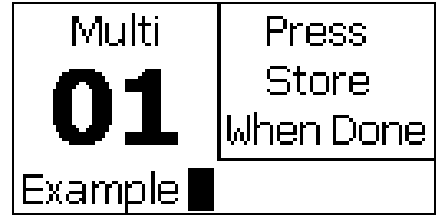
Multi	Press
01	Scroll To
E█	Advance

Finish Renaming

3

Press
STORE

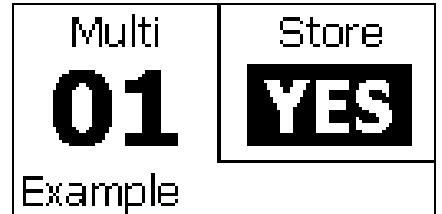
When complete the screen will appear as shown. If you make mistakes and need to move to a previous character, keep pressing SCROLL and the cursor will wrap around to the first character. Now the name is ready to store.



4

Press
SCROLL

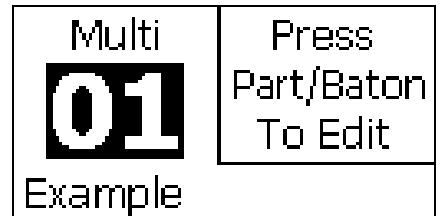
Press STORE to save the changes. The cursor moves to a yes/no decision and the indicator on the STORE button will light. Rotate SCROLL to select YES for storing the changes or NO for canceling the changes.



5

Complete

Press SCROLL with YES displayed to store the new name. Now the new Multi preset, named 'Example' with Marimba and two batons set for Maracas and Claves is complete. The display returns to the Multi activated screen.



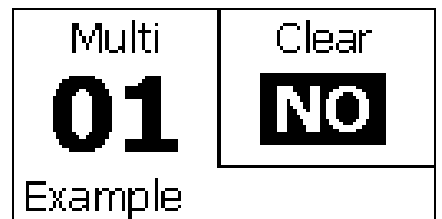
Multi Clearing

Press
MUTE
And
MULTI

1

Press
SCROLL

Press MUTE and MULTI simultaneously from the Multi activated screen to clear the contents of a Multi preset. The cursor moves to a yes/no decision and the indicator on the STORE button will light. Rotate SCROLL to select YES for clearing the preset or NO for canceling.



2

Complete

Press SCROLL with YES displayed to clear the Example preset. The preset's title returned to 'Blank'.

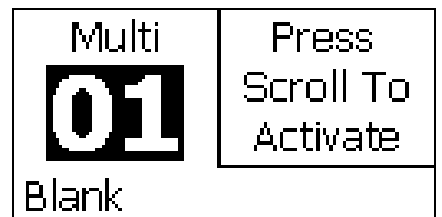


TABLE 1

General MIDI System Level 2 Voice List

This chart shows the names of all 256 GM2 Instruments, and the MIDI Voice numbers which select those Instruments. The patches are arranged into 16 "families" of instruments.

PIANO	ORGAN	GUITAR - CONTINUED
1 Acoustic Grand	37 Drawbar Organ	73 Distortion Guitar
2 Acoustic Grand Wide	38 Detuned Drawbar Organ	74 Distortion Guitar w/ Feedback
3 Acoustic Grand Dark	39 Italian 60s Organ	75 Distorted Rhythm Guitar
4 Bright Acoustic Piano	40 Drawbar Organ 2	76 Guitar Harmonics
5 Bright Acoustic Wide	41 Percussive Organ	77 Guitar Feedback
6 Electric Grand Piano	42 Detuned Percussive Organ	
7 Electric Grand Wide	43 Percussive Organ 2	BASS
8 Honky-tonk Piano	44 Rock Organ	78 Acoustic Bass
9 Honky-tonk Wide	45 Church Organ	79 Electric Bass Finger
10 Electric Piano 1	46 Church Organ Octave Mix	80 Finger Slap Bass
11 Detuned Electric Piano 1	47 Detuned Church Organ	81 Electric Bass Pick
12 Electric Piano 1 Velocity Mix	48 Reed Organ	82 Fretless Bass
13 60s Electric Piano	49 Puff Organ	83 Slap Bass 1
14 Electric Piano 2	50 Accordion	84 Slap Bass 2
15 Detuned Electric Piano 2	51 Accordion 2	85 Synth Bass 1
16 Electric Piano 2 Velocity Mix	52 Harmonica	86 Synth Bass Warm
17 EP Legend	53 Tango Accordion	87 Synth Bass 3 Resonance
18 EP Phase		88 Clavi Bass
19 Harpsichord	GUITAR	89 Hammer
20 Harpsichord Octave Mix	54 Acoustic Guitar Nylon	90 Synth Bass 2
21 Harpsichord Wide	55 Ukulele	91 Synth Bass 4 Attack
22 Harpsichord w/ Key off	56 Acoustic Nylon + Key off	92 Synth Bass Rubber
23 Clavi	57 Acoustic Guitar Nylon 2	93 Attack Pulse
24 Pulse Clavi	58 Acoustic Guitar Steel	
	59 12 String Guitar	STRINGS AND ORCHESTRAL
CHROMATIC PERCUSSION	60 Mandolin	94 Violin
25 Celesta	61 Steel Guitar w/ Body Sound	95 Violin Slow Attack
26 Glockenspiel	62 Electric Guitar Jazz	96 Viola
27 Music Box	63 Electric Guitar Pedal Steel	97 Cello
28 Vibraphone	64 Electric Guitar Clean	98 Contrabass
29 Vibraphone Wide	65 Electric Guitar Detuned Clean	99 Tremolo Strings
30 Marimba	66 Mid Tone Guitar	100 Pizzicato Strings
31 Marimba Wide	67 Electric Guitar Muted	101 Orchestral Harp
32 Xylophone	68 Electric Guitar Funky Cutting	102 Yang Chin
33 Tubular Bells	69 Electric Guitar Muted velo-sw	103 Timpani
34 Church Bell	70 Jazz Man	
35 Carillon	71 Overdriven Guitar	
36 Dulcimer	72 Guitar Pinch	

TABLE 1 (Continued)

ENSEMBLE	REED CONTINUED	SYNTH SFX
104 String Ensembles 1	144 Oboe	182 FX1 Rain
105 String And Brass	145 English Horn	183 FX2 Soundtrack
106 60s Strings	146 Bassoon	184 FX3 Crystal
107 String Ensembles 2	147 Clarinet	185 FX3a Synth Mallet
108 Synth Strings 1		186 FX4 Atmosphere
109 Synth Strings 3	PIPE	187 FX5 Brightness
110 Synth Strings 2	148 Piccolo	188 FX6 Goblins
111 Choir Aahs	149 Flute	189 FX7 Echoes
112 Choir Aahs 2	150 Recorder	190 FX7a Echo Bell
113 Voice Oohs	151 Pan Flute	191 FX7b Echo Pan
114 Humming	152 Blown Bottle	192 FX8 Sci-fi
115 Synth Voice	153 Shakuhachi	
116 Analog Voice	154 Whistle	ETHNIC MISCELLANEOUS
117 Orchestra Hit	155 Ocarina	193 Sitar
118 Bass Hit Plus		194 Sitar 2 Bend
119 6 th Hit	SYNTH LEAD	195 Banjo
120 Euro hit	156 Lead 1 Square	196 Shamisen
	157 Lead 1a Square 2	197 Koto
BRASS	158 Lead 1b Sine	198 Taisho Koto
121 Trumpet	159 Lead 2 Sawtooth	199 Kalimba
122 Dark Trumpet Soft	160 Lead 2a Sawtooth 2	200 Bag Pipe
123 Trombone	161 Lead 2b Saw + Pulse	201 Fiddle
124 Trombone 2	162 Lead 2c Double Sawtooth	202 Shanai
125 Bright Trombone	163 Lead 2d Sequenced Analog	
126 Tuba	164 Lead 3 Calliope	PERCUSSIVE
127 Muted Trumpet	165 Lead 4 Chiff	203 Tinkle Bell
128 Muted Trumpet 2	166 Lead 5 Charang	204 Agogo
129 French Horn	167 Lead 5a Wire Lead	205 Steel Drums
130 French Horn 2 Warm	168 Lead 6 Voice	206 Woodblock
131 Brass Section	169 Lead 7 Fifths	207 Castanets
132 Brass Section 2 Octave Mix	170 Lead 8 Bass + Lead	208 Taiko Drum
133 Synth Brass 1	171 Lead 8a Soft Wrl	209 Concert Bass Drum
134 Synth Brass 3		210 Melodic Tom
135 Analog Synth Brass 1	SYNTH PAD	211 Melodic Tom 2 Power
136 Jump Brass	172 Pad 1 New Age	212 Synth Drum
137 Synth Brass 2	173 Pad 2 Warm	213 Rhythm Box Tom
138 Synth Brass 4	174 Pad 2a Sine Pad	214 Electric Drum
139 Analog Synth Brass 2	175 Pad 3 Polysynth	215 Reverse Cymbal
	176 Pad 4 Choir	
REED	177 Pad 4a Itopia	SFX
140 Soprano Sax	178 Pad 5 Bowed	216 Guitar Fret Noise
141 Alto Sax	179 Pad 6 Metallic	217 Guitar Cutting Noise
142 Tenor Sax	180 Pad 7 Halo	218 Acoustic Bass String Slap
143 Baritone Sax	181 Pad 8 Sweep	219 Breath Noise

TABLE 1 (Continued)

SFX CONTINUED	SFX CONTINUED	SFX CONTINUED
220 Flute Key Click	233 Door Creaking	246 Burst Noise
221 Seashore	234 Door	247 Applause
222 Rain	235 Scratch	248 Laughing
223 Thunder	236 Wind Chime	249 Screaming
224 Wind	237 Helicopter	250 Punch
225 Stream	238 Car Engine	251 Heart Beat
226 Bubble	239 Car Stop	252 Footsteps
227 Bird Tweet	240 Car Pass	253 Gunshot
228 Dog	241 Car Crash	254 Machine Gun
229 Horse Gallop	242 Siren	255 Lasergun
230 Bird Tweet 2	243 Train	256 Explosion
231 Telephone Ring	244 Jetplane	
232 Telephone Ring 2	245 Starship	

TABLE 2

General MIDI System Level 2 Drum/Percussion List

This chart shows what drum sounds are assigned to each MIDI note for a GM2 module (ie, that has a drum part). These notes are activated when Voice 000, Drums/Percussion, is selected.

MIDI Note #	Drum Sound	Midi Note #	Drum Sound	Midi Note	Drum Sound
D#2 (27)	High Q	C4 (48)	Hi-Mid Tom	A5 (69)	Cabasa
E2 (28)	Slap	C#4 (49)	Crash Cymbal 1	A#5 (70)	Maracas
F2 (29)	Scratch Push	D4 (50)	High Tom	B5 (71)	Short Whistle
F#2 (29)	Scratch Pull	D#4 (51)	Ride Cymbal 1	C6 (72)	Long Whistle
G2 (29)	Sticks	E4 (52)	Chinese Cymbal	C#6 (73)	Short Guiro
G#2 (29)	Square Click	F4 (53)	Ride Bell	D6 (74)	Long Guiro
A2 (29)	Metronome Click	F#4 (54)	Tambourine	D#6 (75)	Claves
A#2 (29)	Metronome Bell	G4 (55)	Splash Cymbal	E6 (76)	Hi Wood Block
B2 (35)	Acoustic Bass Drum	G#4 (56)	Cowbell	F6 (77)	Low Wood Block
C3 (36)	Bass Drum 1	A4 (57)	Crash Cymbal 2	F#6 (78)	Mute Cuica
C#3 (37)	Side Stick	A#4 (58)	Vibraslap	G6 (79)	Open Cuica
D3 (38)	Acoustic Snare	B4 (59)	Ride Cymbal 2	G#6 (80)	Mute Triangle
D#3 (39)	Hand Clap	C5 (60)	Hi Bongo	A6 (81)	Open Triangle
E3 (40)	Electric Snare	C#5 (61)	Low Bongo	A#6 (82)	Shaker
F3 (41)	Low Floor Tom	D5 (62)	Mute Hi Conga	B6 (83)	Jingle Bell
F#3 (42)	Closed Hi-Hat	D#5 (63)	Open Hi Conga	C7 (84)	Bell Tree
G3 (43)	High Floor Tom	E5 (64)	Low Conga	C#7 (85)	Castanets
G#3 (44)	Pedal Hi-Hat	F5 (65)	High Timbale	D7 (86)	Mute Surdo
A3 (45)	Low Tom	F#5 (66)	Low Timbale	D#7 (87)	Open Surdo
A#3 (46)	Open Hi-Hat	G5 (67)	High Agogo		
B3 (47)	Low-Mid Tom	G#5 (68)	Low Agogo		

INSTRUCTION TO THE USER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.