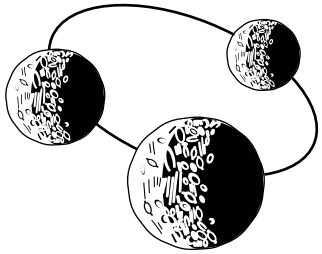
POLYMOON



MANUAL v.4

MORE THAN LOGIC. UNITING ART + ENGINEERING.

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TABLE OF CONTENTS

SECTION 1 - FRONT PANEL CONTROLS

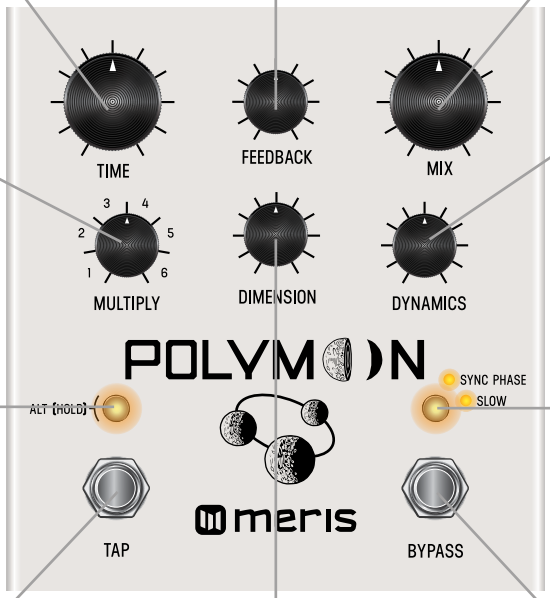
Feedback: Sets the feedback amount
Alt Function: Feedback Filter Controls filter in the feedback path. Set to noon for no filtering, set towards minimum for a darker filter, set towards maximum for a brighter filter

Time: Sets the time for the delay and the synchronized phaser
Alt Function: Early Modulation
Triangle waveform modulation of the early delay taps. Ranges from gentle modulation, to FM, to pitch effects

Mix: Adjusts the balance between Dry and Wet signals
Alt Function: Delay Level Sets the gain of the Wet signal. Ranges from 0dB to -12dB. For auto-scaling, set to min

Dynamics: Sets the intensity/depth of the Dynamic Flanger.
Flanger is off at minimum
Alt Function: Dynamic Flanger Speed
Sets the envelope attack time or LFO speed based on the Dynamic Flanger Mode

Multiply: Sets the number of delay taps added to the output
Alt Function: Late Modulation
Triangle waveform modulation of the later delay taps. Ranges from gentle modulation, to FM, to pitch effects



(Press to Select Phaser)
Slow: Stereo Barberpole phaser with fixed speed of 0.1 Hz
Sync: Stereo Barberpole phaser with speed linked to a quarter note of the delay time
Slow + Sync: Stereo Barberpole phaser with speed linked to a whole note of the delay time

Hold to access Alt Functions:
Alt Functions are only accessible when this button is held

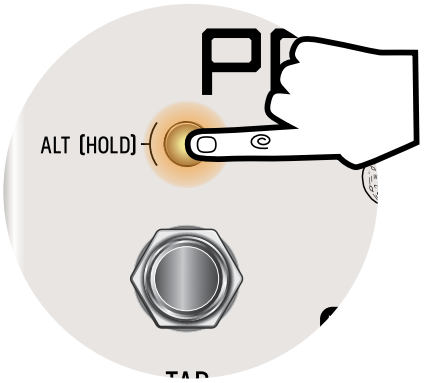
Tap: Sets the time for the delay and the synchronized phaser
Alt Function: Dotted Eighth Note
Changes current tempo from 1/4 notes to dotted 1/8 notes
Hold Tap: to engage Half Speed Delay

Dimension: Sets the dimension amount. Dimension smears and sustains the delay tap reflections
Alt Function: Dynamic Flanger Mode Set to minimum for Envelope Down, set to noon for Envelope Up, and set to maximum for LFO

Bypass: Disables processing and passes the input through to the output
Alt Function: Dynamic Flanger Feedback Adds negative feedback to the Dynamic Flanger

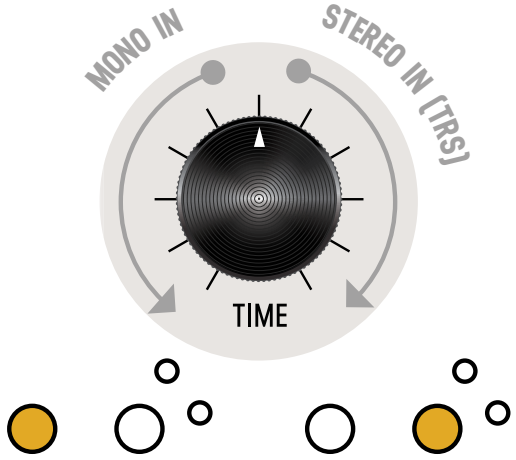
SECTION 2 - GLOBAL SETTINGS CONFIGURATION MODE

TO START GLOBAL SETTING CONFIGURATION MODE



HOLD **(L)** LED switch on power up (power up takes 3 secs); all of the front panels LEDs will blink 3 times

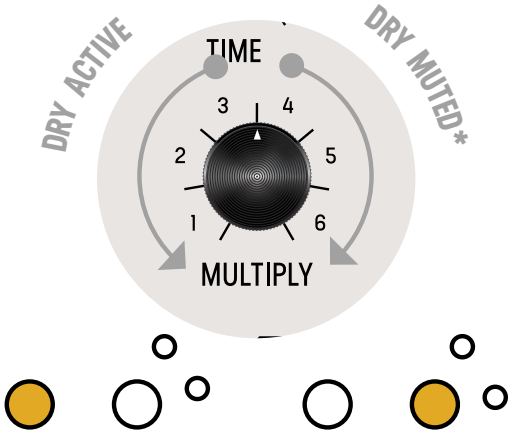
INPUT MODE:



(L) LED indicates MONO

(R) LED indicates TRS

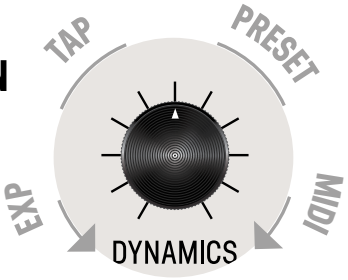
KILL DRY: *With **DRY MUTED**, the pedal delivers wet only in active mode; in bypass, the entire pedal is muted.

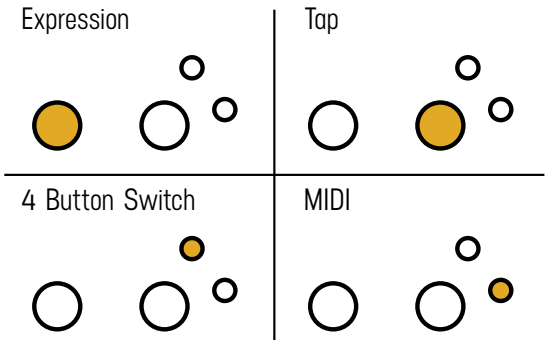


(L) LED indicates DRY ACTIVE

(R) LED indicates DRY MUTED

EXPRESSION MODE:



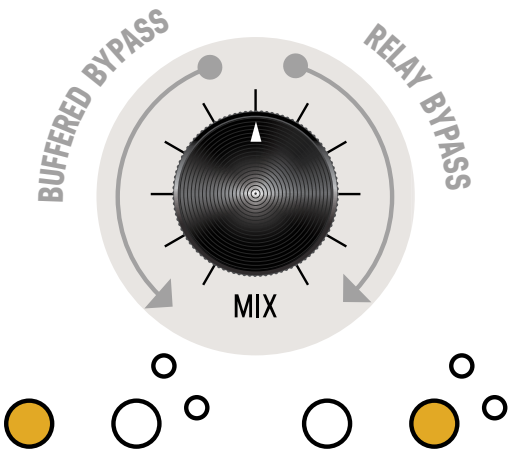


LINE/SYNTH LEVEL:

(L) LED indicates INSTRUMENT LEVEL

(R) LED indicates LINE LEVEL

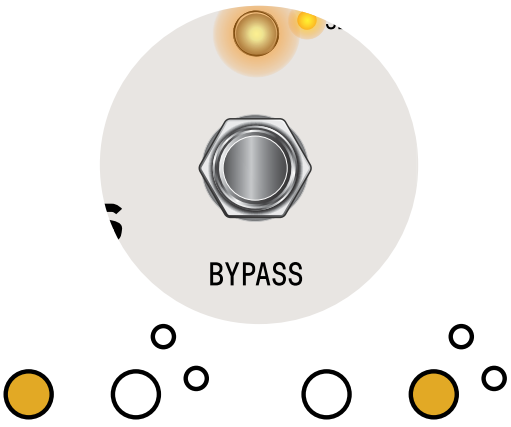
BYPASS MODE:



(L) LED indicates BUFFERED BYPASS

(R) LED indicates RELAY BYPASS

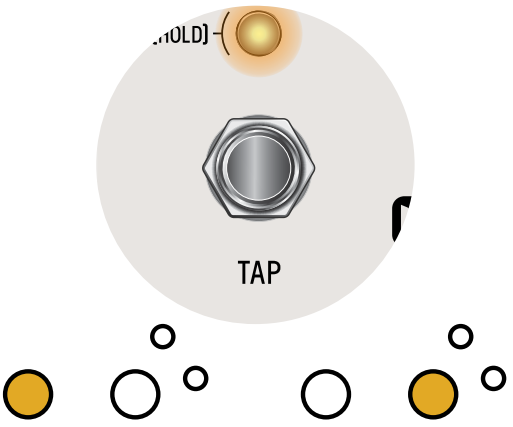
MIDI THRU ON: Toggle [R] foot switch



[L] LED indicates MIDI OUT

[R] LED indicates MIDI THRU

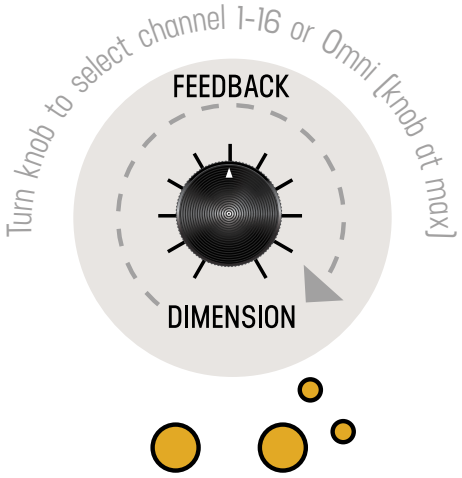
GLOBAL TEMPO: Toggle [L] foot switch



[L] LED indicates GLOBAL TEMPO

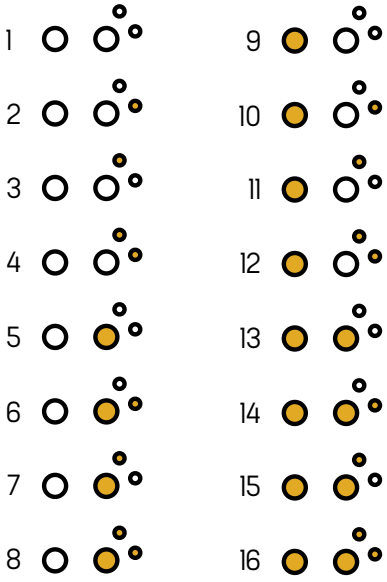
[R] LED indicates per PRESET TEMPO

MIDI CHANNEL:

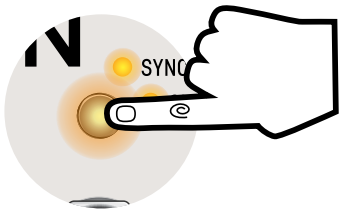


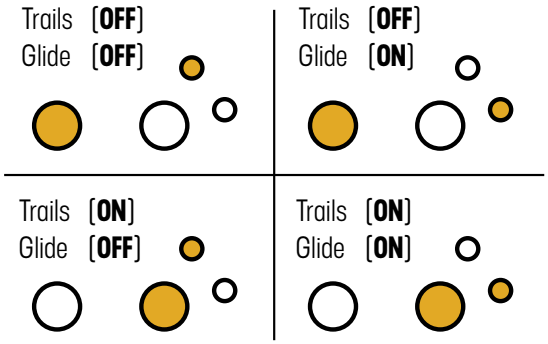
LEDs on front panel blink to indicate binary

MIDI CHANNELS



TRAILS:





<-- Note: This configuration control provides four different combinations of Trails and Glide. With Trails enabled, your echoes will decay naturally when the pedal is bypassed. With Glide enabled, your delay buffer is not cleared during a preset change. Glide allows your echoes to remain in the algorithm as you smoothly transition from one preset to the next. Additionally, with Glide enabled, delay times entered with tap tempo will smoothly transition.

SECTION 3 - DESIGN CONCEPT

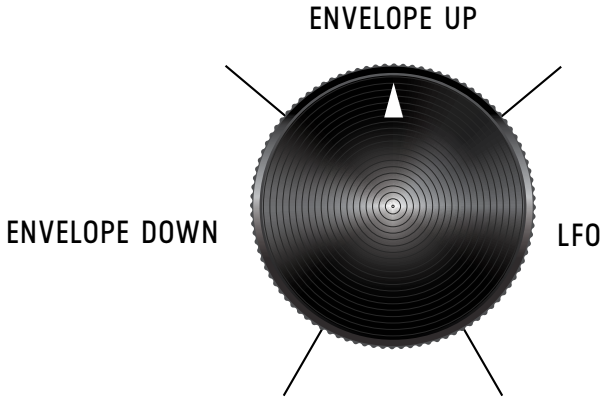
The seed of inspiration for the Polymoon lies in the ways that Holdsworth and Zappa would use and cascade the rack delays of the 80's. The Polymoon opens up those concepts by vastly increasing the ability to modulate and morph every single parameter.

SECTION 4 - SIGNAL FLOW OVERVIEW

The signal flow of the Polymoon starts with parallel mix of a pair of Dynamic Flangers. The Dynamic Flangers feed the Polymoon's unique multi-tap modulated delay structure. Finally, the delay taps pass through a pair of Barberpole Phasers.

SECTION 4A - DYNAMIC FLANGER IN DEPTH

The first element of the signal chain is the pair of Dynamic Flangers driven either by a peak follower or a sine wave lfo depending on the selection you make with the second layer Dynamic Filter Mode control. The top level Dynamics control changes the depth of the peak follower and the lfo, and the minimum position of the knob mutes the Dynamic Flanger's output. The second layer Dynamic Flanger Speed controls either the peak follower's attack time or the sine wave lfo's speed. Finally, the second layer Dynamic Flanger Feedback adds negative feedback to each flanger.

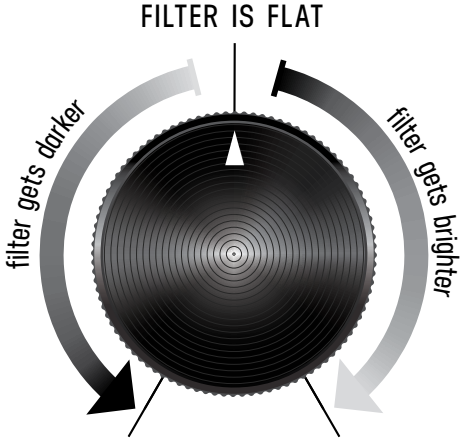


<-- DYNAMIC FLANGER MODE - [Alt of Dimension]

Tip: When controlling the peak follower, the Dynamics control has a wide range of gain to accommodate input levels to match the output of your guitar or drive effects. Start with Dynamics low, and add to taste.

SECTION 4B - DELAY LINE NETWORK IN DEPTH

The Polymoon's Delay Line network is structured as 6 delays each with their own output and modulation source. The Feedback Knob provides a global delay feedback for the whole delay network, with our custom Feedback Filter providing color to the repeats. The Multiply Knob controls the Pan and Level of each delay line. The Dimension Knob controls a special internal feedback for each of the 6 individual series delay lines. The Mix Knob provides the overall balance between the dry signal and the delays, with the second layer Delay Level providing fine tuning over the delays. Finally, the Early and Late Modulation work together to control the 6 triangle wave LFOs which modulate the delay network.



<-- FEEDBACK FILTER - [Alt of Feedback]

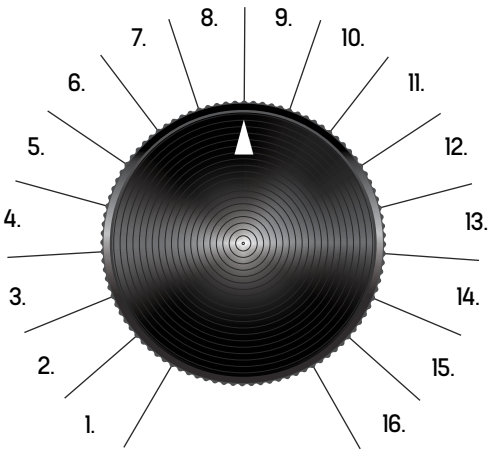
Tip: After setting the mix with the top layer Mix Knob, use the second layer Delay Level control to fine tune the delay. Setting Delay Level to minimum will auto scale the level depending on the position of the Multiply Knob.

SECTION 4C - DELAY NETWORK HEX MODULATION IN DEPTH

The Polymoon features 6 independent triangle waveform lfos to modulate the delay line network. Triangle LFO 1 is controlled by the second layer Early Modulation Knob. Since the delay network is series, modulating this first in the chain delay has an impact on every delay tap. The Late Modulation Knob primarily controls Triangle LFO 6. Again, with the delay network being primarily a series configuration, modulating this last in the chain delay allows for the early taps to pass to the output first before its effect is heard. LFOs 2 through 5, are set to gentle complementary modulation settings as the Late Modulation knob is increased. Turning both Early and Late Modulations to zero bypasses all 6 Triangle LFOs.

Knob sections for both the Early and Late Modulation controls:

1. Modulation Off
2. Slow Speed and Shallow Depth
3. Moderate Speed and Shallow Depth
4. Moderate Speed and Wide Depth
5. Fast Speed and Wide Depth
6. Fast Speed and Exaggerated Depth
7. FM Modulation - 24 Hz
8. FM Modulation - 48 Hz
9. FM Modulation - 96 Hz
10. Major Second Down & Major Second Up
11. Octave Down & Minor Third Up
12. Perfect Fifth Down & Perfect Fourth Up
13. Tremolo Mute + Perfect Fourth Up
14. Octave Down & Perfect Fifth Up
15. Perfect Fifth Down & Octave Up
16. Octave Down & Octave up



SECTION 4D - DUAL BARBERPOLE PHASER IN DEPTH

At the output of the delay line network, the Polymoon has two barberpole phasers one for each side of the stereo spectrum. Each phaser is set to travel and regenerate in an opposing direction to create an wide stereo field. The top layer Phaser button allows you to select between a fixed speed of 0.1 Hz [Slow LED On], speed linked to a quarter note of the delay time [Sync LED On], speed linked to a whole note of the delay time [both Slow and Sync LEDs On] and bypassed [Slow LED Off].

SECTION 5 - EXPRESSION JACK MODES IN DEPTH

The Expression Pedal Jack is a multifunction jack that gives you 4 different modes of operation that you can choose in Global Settings Mode: Expression Pedal, Tap Switch, 4 Button Preset Switch, and MIDI.

Section 5a. Expression Pedal

The expression pedal works by morphing between two complete settings of all of the knob values (even the second layer knob values). This gives you two complete and distinct presets in one that you can then use the expression pedal to morph between. Put the expression pedal to the "toe up position" and set the knobs (including the 2nd layer ones) any way you wish, and then put the expression pedal to the "toe down position" and set the knobs to create your seconds sound. Now sweeping the expression pedal from heel to toe will smoothly morph between those two sets of settings. You can also manipulate the expression pedal using MIDI CC #04.

When using the expression pedal, if you ever want to quickly copy the "toe up" to the "toe down" settings of the expression pedal, just unplug the cable from the Polymoon at the EXP jack and then plug it back in. It's a really useful shortcut so you don't have to manually recreate your sound if all you want the expression pedal to change is just one parameter.

Section 5b. Tap Switch

For the Polymoon, the external switch controls Tap Tempo and has all of the same functionality as the tap button on the main pedal, this includes half speed. As with the main tap switch, if you hold the externally connected tap switch, it will cause the delays to operate at half speed.

Section 5c. 4 Button Preset Switch

This mode gives you access to and instant enabling of presets 1 through 4, when connected with a proprietary Meris 4 button switch.

Section 5d. MIDI

The Polymoon features both MIDI In and Out via the EXP jack, and has a rich and deep MIDI implementation. All the knobs, alt functions, expression pedal, and switches are available via MIDI CCs. You can receive program change messages [MIDI PCs], sync to MIDI Beat Clock[Polymoon], you also have the ability to send and receive presets.

Be sure to set the your desired MIDI channel in Global Settings Configuration Mode. If you have multiple devices connected to MIDI in a chain, you will probably want each to device to set to listen to and send on its own channel.
Also, be sure to check out MIDI CC table later in this manual.

SECTION 6 - KNOB AUTO SCAN IN DEPTH

Depending on the EXP Jack modes you have chosen, the Polymoon will scan the top layer knobs and update the knobs on power up. If your Polymoon is set to either "Expression Pedal" or "Tap Switch" for its EXP mode, then it will scan the knobs at power up. This means if you change the knobs whether the unit is off, those values will be how the pedal sounds next time you turn the pedal is on. Additionally, the Tempo and the Phaserv Types are auto saved and return to whatever they were set to last when powering up the pedal. These behaviors are meant to mimic the behavior of how all classic guitar pedals work.
If your Polymoon is set to either "4 Button Preset Switch" or "MIDI" for its EXP jack mode, then the pedal will simply recall the preset that is stored in the current memory location. This setting makes sure that the Polymoon functions like a standard multi-preset device, for those who depend on recalling exact sounds for a performance.

SECTION 7 - PRESETS IN DEPTH

The Polymoon features 16 internal preset locations. The first four presets are accessible by a compatible 4 button footswitch and all sixteen presets are accessible by MIDI Program Change messages. To save a preset simply hold the Alt button. The preset is saved every time you edit the "Alt"/2nd layer knobs, this is how the Polymoon is able to keep your settings in its memory after a power down. To save a preset to a different location than your current location, either press the desired preset button on a compatible 4 button footswitch or send a Program Change message over MIDI to which ever preset you would like to edit. After you are done with any changes, just press and hold the "Alt" button to save. The Polymoon can send and receive full presets for via MIDI Sysex Data. To send a preset from the Polymoon to your computer, press the Bypass LED switch while holding the Alt button. The Polymoon is always listening for preset data, so simply send any presets you have backed up on your PC back to the Polymoon and it will overwrite that preset with the data you sent. If you are happy with the newly received preset, simply press Alt and the Polymoon will save that data to the current preset location.

***For MIDI preset users, all Meris pedals with a barcode serial number affixed to the back of the unit and packaging include a way to change ALT parameters without auto-saving the current sound. You can now access the Alt parameters w/o auto-saving by holding the Right LED/button while turning a knob. If your pedal has a barcode above the serial number [located on the unit and packaging], your unit includes this feature.

SECTION 8 - TEMPO IN DEPTH

In the Polymoon you can set the tempo using one of the following tapping in quarter notes using the integrated Tap switch, External Tap switch, MIDI Beat Clock, Tempo MIDI CC, or Tap Switch MIDI CC. The Polymoon features a maximum delay time of 1200 milliseconds.

SECTION 9 - MIDI CC TABLE

CONTROL CHANGE	POLYMOON CONTROL	RECEIVE VALUE RANGE	TRANSMIT VALUE RANGE
CC# 04	EXPRESSION PEDAL	0 TO 127	0 TO 127
CC# 09	DOTTED 8TH	0 TO 63 = 1/4 NOTE 64 TO 127 = DOTTED 8TH	0 TO 63 = 1/4 NOTE 64 TO 127 = DOTTED 8TH
CC# 14	BYPASS	0 TO 63 = FX BYPASS 64 TO 127 = FX ENABLE	0 FOR FX BYPASS 127 FOR FX ENABLE
CC# 15	TEMPO (10 MSEC INTERVALS)	0 TO 120	0 TO 120
CC# 16	TIME	0 TO 127	0 TO 127
CC# 17	FEEDBACK	0 TO 127	0 TO 127
CC# 18	MIX	0 TO 127	0 TO 127
CC# 19	MULTIPLY	0 TO 127	0 TO 127
CC# 20	DIMENSION	0 TO 127	0 TO 127
CC# 21	DYNAMICS	0 TO 127	0 TO 127
CC# 22	EARLY MODULATIONS	0 TO 127	0 TO 127
CC# 23	FEEDBACK FILTER	0 TO 127	0 TO 127
CC# 24	DELAY LEVEL	0 TO 127	0 TO 127
CC# 25	LATE MODULATION	0 TO 127	0 TO 127
CC# 26	DYNAMIC FLANGER MODE	0 TO 127	0 TO 127
CC# 27	DYNAMIC FLANGER SPEED	0 TO 127	0 TO 127
CC# 28	TAP	127 = TAP PRESS	127 = TAP PRESS
CC# 29	PHASER MODE	0 - 31 = PHASER OFF 32 - 63 = PHASER SLOW 64 - 95 = PHASER WHOLE NOTE 96 - 127 = PHASER 1/4 NOTE	0 = PHASER OFF 63 = PHASER 0.1 HZ 95 = PHASER WHOLE NOTE 127 = PHASER 1/4 NOTE
CC# 30	FLANGER FEEDBACK	0 - 63 = FEEDBACK OFF 64 - 127 = FEEDBACK ON	0 FOR FEEDBACK OFF 127 FOR FEEDBACK ON
CC# 31	HALF SPEED	0 TO 63 = FULL SPEED 64 TO 127 = HALF SPEED	0 TO 63 = FULL SPEED 64 TO 127 = HALF SPEED

SECTION 10 - POLYMOON PRESET 1 FACTORY SETTINGS

EXPRESSION	PARAMETER	KNOB POSITION	REAL WORLD VALUE	MIDI DECIMAL	MIDI HEX
TOE UP	TIME	JUST BEFORE 1 O'CLOCK	760 MILLISECONDS OF DELAY TIME	80	50
TOE UP	FEEDBACK	JUST AFTER 2 O'CLOCK	FEEDBACK AT 80%	101	65
TOE UP	MIX	2 O'CLOCK	DRY AT 100% DELAY AT 90%	93	5D
TOE UP	MULTIPLY	MIN	1 DELAY TAP	0	00
TOE UP	DIMENSION	MIN	NO DELAY TAP SMEARING	0	00
TOE UP	DYNAMICS	MIN	DYNAMIC FLANGER DISABLED	0	00
TOE UP	EARLY MODULATION	8 O'CLOCK	SLOW AND SHALLOW MODULATION	5	05
TOE UP	FEEDBACK FILTER	12 O'CLOCK	FILTER DISABLED	63	3F
TOE UP	DELAY LEVEL	MIN	AUTO LEVELING ENABLED	0	00
TOE UP	LATE MODULATION	8 O'CLOCK	SLOW AND SHALLOW MODULATION	4	04
TOE UP	DYNAMIC FLANGER MODE	MIN	ENVELOPE DOWN	0	00
TOE UP	DYNAMIC FLANGER SPEED	12 O'CLOCK	MODERATE ENVELOPE SPEED	62	3E
	PHASER	N/A	PHASER DISABLED	0	00
	TEMPO	N/A	760 MILLISECONDS OF DELAY TIME	76	4C
	DOTTED 1/8 NOTE	N/A	1/4 NOTE TAP ENABLED	0	00
	DYNAMIC FLANGER FEEDBACK	N/A	FLANGER FEEDBACK DISABLED	0	00
TOE DOWN	TIME	JUST BEFORE 1 O'CLOCK	760 MILLISECONDS OF DELAY TIME	80	50
TOE DOWN	FEEDBACK	2 O'CLOCK	FEEDBACK AT 76%	97	61
TOE DOWN	MIX	3 O'CLOCK	DRY AT 100% DELAY AT 100%	111	6F
TOE DOWN	MULTIPLY	JUST BEFORE 1 O'CLOCK	4 DELAY TAPS	79	4F
TOE DOWN	DIMENSION	JUST BEFORE 3 O'CLOCK	DIMENSION AT 83%	105	69
TOE DOWN	DYNAMICS	MIN	DYNAMIC FLANGER DISABLED	0	00
TOE DOWN	EARLY MODULATION	JUST AFTER 9 O'CLOCK	MODERATE SPEED WIDE DEPTH	18	12
TOE DOWN	FEEDBACK FILTER	12 O'CLOCK	FILTER DISABLED	63	3F
TOE DOWN	DELAY LEVEL	MIN	AUTO LEVELING ENABLED	0	00
TOE DOWN	LATE MODULATION	9 O'CLOCK	MODERATE SPEED SHALLOW DEPTH	8	08
TOE DOWN	DYNAMIC FLANGER MODE	MIN	ENVELOPE DOWN	0	00
TOE DOWN	DYNAMIC FLANGER SPEED	12 O'CLOCK	MODERATE ENVELOPE SPEED	62	3E

EARLY MOD CC #22

MODULATION	CC RANGE
OFF	0-7
SLOW SPEED AND SHALLOW DEPTH	8-15
MODERATE SPEED AND SHALLOW DEPTH	16-23
MODERATE SPEED AND WIDE DEPTH	24-31
FAST SPEED AND WIDE DEPTH	32-39
FAST SPEED AND EXAGGERATED DEPTH	40-47
FM MODULATION - 24HZ	48-55
FM MODULATION - 48HZ	56-63
FM MODULATION - 96HZ	64-71
MAJOR 2ND DOWN AND MAJOR 2ND UP	72-79
OCTAVE DOWN AND MINOR 3RD UP	80-87
PERFECT 5TH DOWN AND PERFECT 4TH UP	88-95
TREMOLO MUTE AND PERFECT 4TH UP	96-103
OCTAVE DOWN AND PERFECT 5TH UP	104-111
PERFECT 5TH DOWN AND OCTAVE UP	112-119
OCTAVE DOWN AND OCTAVE UP	120-127

LATE MOD CC #25

MODULATION	CC RANGE
OFF	0-7
SLOW SPEED AND SHALLOW DEPTH	8-15
MODERATE SPEED AND SHALLOW DEPTH	16-23
MODERATE SPEED AND WIDE DEPTH	24-31
FAST SPEED AND WIDE DEPTH	32-39
FAST SPEED AND EXAGGERATED DEPTH	40-47
FM MODULATION - 24HZ	48-55
FM MODULATION - 48HZ	56-63
FM MODULATION - 96HZ	64-71
MAJOR 2ND DOWN AND MAJOR 2ND UP	72-79
OCTAVE DOWN AND MINOR 3RD UP	80-87
PERFECT 5TH DOWN AND PERFECT 4TH UP	88-95
TREMOLO MUTE AND PERFECT 4TH UP	96-103
OCTAVE DOWN AND PERFECT 5TH UP	104-111
PERFECT 5TH DOWN AND OCTAVE UP	112-119
OCTAVE DOWN AND OCTAVE UP	120-127

MULTIPLY CC #19

MULTIPLY NUMBER	CC RANGE	NOTATION
1	0-7	
2	8-32	
3	33-62	
4	63-87	
5	88-115	
6	116-127	

DYNAMIC FLANGER MODE CC #26

FLANGER MODE	CC RANGE
ENVELOPE DOWN	0-32
ENVELOPE UP	33-88
LFO	89-127

PHASER MODE CC #29

PHASER MODE	CC RANGE	TRANSMIT CC
OFF	0-31	0
SLOW	32-63	63
SYNC SLOW	64-95	95
SYNC	96-127	127

SECTION 11 - FACTORY RESET

Holding down the "Phaser Mode" button (or R LED button) on power up resets all of the presets and all of the global settings back to their original factory values. Once the reset is complete, simply recycle the power on the unit.

SECTION 12 - TECHNICAL SPECIFICATIONS

Conversion	24 bit A/D and D/A
DSP	32 bit floating point
Sample Rate	48000 Hz
Input Impedance	1 Meg Ohm
SNR	115dB
Frequency Response	20Hz-20kHz
Max Input Level	+9 dBu (instrument level setting)
	+12.5 dBu (line/synth level setting)
Power	9V DC center-negative, 150mA, 2.1mm jack
Bypass	Selectable True Bypass (Relay) or Analog Buffered Bypass
Dimensions	4.25" wide, 4.5" long, 2" tall
Weight	14.6 ounces

FC Federal Communications Commission Radio Frequency Interference Statement

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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment requires shielded interface cables in order to meet FCC class B limit.
Any unauthorized changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.