

MIDI Implementation

V-AMP 2/~PRO, V-AMPIRE

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MIDI V-AMP PRO.doc



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Function	Transmitted	Received	Remarks
Midi Channel	1-16	1-16	
Mode	N	N	
Note Number	N	N	
Velocity	N	N	
After Touch	N	N	
Pitch Bender	N	N	
Control Changes			
1	N (request only)	Y	Wah Pedal
7	N (request only)	Y	Volume Pedal
12	Y	Y	Amp Gain (0-127)
13	Y	Y	Amp Treble (0-127)
14	Y	Y	Amp Mid (0-127)
15	Y	Y	Amp Bass (0-127)
16	Y	Y	Amp Vol (0-127)
17	Y	Y	Presence (0-127)
18	Y	Y	Reverb Mix (0-127) * ²
19	Y (skipped on request)	Y	Amp Type (0-32) with default cabinet * ³
20	Y (skipped on request)	Y	Fx Type (0-15) with defaults * ¹
21	Y	Y	Fx off/on (0/127)
22	Y	Y	Reverb Send off/on (0/127)
23	Y	Y	Cabinet Type (0-15) * ⁵
24	Y	Y	Reverb Type (0-8) * ⁴
25	Y	Y	Noise Gate Level (0-15) * ¹²
26	Y	Y	Drive off/on (0/127)
27	Y	Y	Wah off/position (0/1-127)
44	N (request only)	Y	pre Effect Type (0-2) * ⁶
45	Y	Y	pre Effect Par 1 * ⁶
46	Y	Y	pre Effect Par 2 * ⁶
47	N (request only)	Y	pre Effect Par 3 * ⁶
48	N (request only)	Y	pre Effect Par 4 * ⁶
49	N (request only)	Y	Delay Type (0-2) * ⁷
50	Y	Y	Delay Time hi (0-117) * ⁸
51	Y	Y	Delay Time lo (0-127) * ⁸
52	N (request only)	Y	Delay Spread (0-127)
53	Y	Y	Delay Feedback (0-127)
54	Y	Y	Delay Mix (0-127) * ⁹
55	N (request only)	Y	post Fx Mode (0-6) * ¹⁰
56	Y	Y	post Fx Par 1 * ¹⁰
57	Y	Y	post Fx Par 2 * ¹⁰
58	Y	Y	post Fx Par 3 * ¹⁰
59	Y	Y	post Fx Mix (0-127) * ¹¹
60	N (request only)	Y	Assign Effects Control (0-15) * ¹
61	N (request only)	Y	Amp Type (0-32) w/o cabinet change * ³
64	N	Y	Tap (Value > 63)
80	N	Y	Request Controls (Value = 80)
81	N (request only)	Y	Set Pos (0-15), Set Character (32-127)
82	Y	Y	Tuner Bypass Volume (0-127)
83	Y	Y	Tuner Center Frequency (25-55)
84	Y	Y	Configuration (0-4)
85	Y	Y	Live EQ Treble (0-127)
86	Y	Y	Live EQ Mid (0-127)
87	Y	Y	Live EQ Bass (0-127)
88	Y	Y	Digital out (44.1/48/96/ext; bit 2:pro)* ¹³
89	Y	Y	Global Input Gain (0-127)
90	Y	Y	Wah Wah Character (0-127)
Program Change	Y (0-124)	Y (0-124,127)	127=Tuner toggle on/off
System Exclusive	Y	Y	see SysEx Documentation
System Common	N	N	
System Real Time	N	N	
Running Status	Y (2s Timeout)	Y	

≠ (only ~PRO)

Notes:

*1) Controller 60 assigns the effects control and tap button to a specific function (see Table). Controller 20 assigns the effects control and tap button and also reloads all default effect parameters (controller 44...59) (like the effects selector on the front panel).

Fx Type	Description	Effects Control	2nd Function	Tap Button
0	Echo (R/L with filter)	Mix	Feedback	Delay Time
1	Delay	Mix	Feedback	Delay Time
2	Ping Pong (L/R/C)	Mix	Feedback	Delay Time
3	Phaser/Delay	Delay Mix	Phaser Mix	Delay Time
4	Flanger/Delay 1	Delay Mix	Flanger Mix	Delay Time
5	Flanger/Delay 2	Delay Mix	Flanger Mix	Delay Time
6	Chorus/Delay 1	Delay Mix	Chorus Mix	Delay Time
7	Chorus/Delay 2	Delay Mix	Chorus Mix	Delay Time
8	Chorus/Compressor	Sense	Chorus Mix	Mod Speed
9	Compressor	Sense	Attack Time	-
10	Auto Wah	Depth	Speed	-
11	Phaser	Mix	Feedback	Mod Speed
12	Chorus	Mix	Depth	Mod Speed
13	Flanger	Mix	Feedback	Mod Speed
14	Tremolo	Mix		Mod Speed
15	Rotary	Mix	Depth	Mod Speed

*2) 0: 100% dry, 85: 100% dry/100% wet, 127:0% dry/100% wet

*3) Controller 61 selects the amp model. Controller 19 selects the amp model and also selects the corresponding default cabinet (controller 23) (like the amp selector on the front panel).

Amps 1 - 16	Amp Type	Cabinet-Simulation	Cab #
American Blues	0	4 x 10" Vintage Bass	2
Modern Class A	1	2 x 12" US Class A	9
Tweed Combo	2	1 x 8" Vintage Tweed	1
Classic Clean	3	2 x 12" Twin Combo	8
Brit Blues	4	4 x 12" Vintage 30	12
Brit Class A	5	2 x 12" Brit '67	11
Brit Classic	6	4 x 12" Vintage 30	12
Brit Hi Gain	7	4 x 12" Vintage 30	12
Rectified Hi Gain	8	4 x 12" V-AMP Custom	15
Modern Hi Gain	9	4 x 12" V-AMP Custom	15
Fuzz Box	10	4 x 12" Off Axis	14
Ultimate V-AMP	11	4 x 12" V-AMP Custom	15
Drive V-AMP	12	4 x 12" V-AMP Custom	15
Crunch V-AMP	13	4 x 12" V-AMP Custom	15
Clean V-AMP	14	4 x 12" V-AMP Custom	15
Tube Preamp	15	No Cabinet-Simulation	0

Amps 17 - 32	Amp Type	Cabinet-Simulation	Cab #
and Deluxe	16	1 x 12" Blackface	5
Custom Class A	17	4 x 12" Vintage 30	12
Small Combo	18	1 x 8" Vintage Tweed	1
Black Twin	19	2 x 12" Twin Combo	8
and Custom	20	4 x 12" Vintage 30	12
non top boost	21	2 x 12" Brit '67	11
Classic 50	22	2 x 12" V-AMP Custom	10
Brit Class A 15	23	1 x 12" Brit '60	6
Rectified Head	24	4 x 12" V-AMP Custom	15
Savage Beast	25	4 x 12" V-AMP Custom	15
Custom Hi Gain	26	4 x 12" V-AMP Custom	15
Ultimate Plus	27	4 x 12" V-AMP Custom	15
California Drive	28	1 x 12" Blackface	5
Custom Drive	29	1 x 12" Blackface	5
California Clean	30	4 x 12" V-AMP Custom	15
Custom Clean	31	1 x 12" Blackface	5
amp bypass	32	No Cabinet-Simulation	0

*4) Reverb Type

Reverb Type	Description
0	tiny room
1	small room
2	medium room
3	large room
4	ultra room
5	small spring
6	medium spring
7	short ambience
8	long ambience

*5) Cabinet Type

Cabinet Type	Description
0	none
1	1 x 8" Vintage Tweed
2	4 x 10" Vintage Bass
3	4 x 10" V-AMP Custom
4	1 x 12" Mid Combo
5	1 x 12" Blackface
6	1 x 12" Brit '60
7	1 x 12" Deluxe '52
8	2 x 12" Twin Combo
9	2 x 12" US Class A
10	2 x 12" V-AMP Custom
11	2 x 12" Brit '67
12	4 x 12" Vintage 30
13	4 x 12" Standard '78
14	4 x 12" Off Axis
15	4 x 12" V-AMP Custom

*6) pre Fx

Type	Description	Par 1	Par 2	Par 3	Par 4
0	none	-	-	-	-
1	compressor	ratio *i	attack *ii	-	-
2	auto wah	speed *iii	depth	offset (64=0%)	freq limit

*i: 6 steps (index=val/22): 1.2:1, 1.4:1, 2:1, 2.5:1, 3:1, 4.5:1

*ii: t/ms=val*val/256+1

*iii: 10 steps (index=val/13): 10ms, 20ms, 50ms, 100ms, 200ms, 300ms, 400ms, 500ms, 750ms, 1000ms

*7) Delay Type

Type	Description
0	simple delay
1	R/L echo with filter
2	L/R/C ping pong

*8) Delay Time = (hi*128+lo)*128μs

*9) 0: 100% dry/0% wet, 127: 100% dry/100% wet

*10) post Fx

Type	Description	Par 1	Par 2	Par 3
0	rotary	speed *i	depth	-
1	phaser	speed *i	depth	feedback (64=0%)
2	tremolo	speed *ii	-	-
3	mono chorus	speed *iii	depth	-
4	stereo chorus	speed *iii	depth	-
5	mono flanger	speed *iii	depth	feedback (64=0%)
6	stereo flanger	speed *iii	depth	feedback (64=0%)

*11) Post FX MIX
 0: 100% dry,
 64: 50% dry/50% wet,
 127: 0% dry/100% wet

*i: f/Hz=0.00059*val*val

*ii: f/Hz=0.00062*val*val

*iii: f/Hz=0.00031*val*val

*12) EXPANDER

Expander	Threshold / Release
0	off/off
1	-90dB/250ms
2	-87dB/250ms
3	-84dB/250ms
4	-81dB/250ms
5	-78dB/250ms
6	-75dB/250ms
7	-72dB/250ms
8	-69dB/290ms
9	-66dB/330ms
10	-63dB/330ms
11	-60dB/380ms
12	-57dB/380ms
13	-54dB/460ms
14	-51dB/570ms
15	-48dB/570ms

*13) Digital Out for V-AMP PRO

MIDI CC88	Digital Output Mode
val.	
0	S/PDIF int. 44.1 kHz
1	S/PDIF int. 48 kHz
2	S/PDIF int. 96 kHz
3	S/PDIF ext. 32-96 kHz
4	AES/EBU int. 44.1 kHz
5	AES/EBU int. 48 kHz
6	AES/EBU int. 96 kHz
7	AES/EBU ext. 32-96 kHz

Behringer SysEx MIDI Implementation V-AMP 2/~PRO, V-AMPIRE

General Behringer SysEx Format:

0xF0, 0x00, 0x20, 0x32, DeviceID, ModelID, Commands & Data, ..., 0xF7

(0xaa denotes a hexadecimal value)

The Behringer **CompanyID** is **0x00, 0x20, 0x32**.

The **DeviceID** acts like a MIDI channel number but allows the use of up to 127 identical Devices. The **DeviceID 0x7F** (127 decimal) is used as a broadcast ID (i.e. every device accepts this DeviceID).

The **ModelID** is used to identify the product. E.g. the V-AMP 2 / PRO and V-AMPIRE **ModelID** is **0x11** (17 decimal). These three products share the same Model ID for preset compatibility reasons. Again the **ModelID 0x7F** will be accepted by every Behringer product. **ModelID 0x00** is used to expand the ModelID to two or more bytes.

Commands & Data:

0x01: identify device

Format: **0xF0, 0x00, 0x20, 0x32, DeviceID, ModelID, 0x01, 0xF7**

Response: **0xF0, 0x00, 0x20, 0x32, DeviceID, 0x11, 0x02, asciidata*, 0xF7**
asciidata*: n ascii characters identifying the product and software version

0x20: write single preset

Format: **0xF0, 0x00, 0x20, 0x32, DeviceID, ModelID, 0x20, presetnr, len, data*, 0xF7**

presetnr: number of requested preset (0-124) or temporary edit buffer (127)

len: size of data* (0x30)

data*: single preset data block

Comment: Write temporary edit buffer is always accepted, write preset (0-124) is only accepted while in MIDI setup mode

0x21: write all presets

Format: **0xF0, 0x00, 0x20, 0x32, DeviceID, ModelID, 0x21, num, len, data*, 0xF7**

num: number of presets (0x7d)

len: (size of data*)/num (0x30), i.e. size of one preset

data*: all presets data block, i.e. num*(single preset data block)

Comment: Write all presets is only accepted while in MIDI setup mode

0x22: set MIDI channel

Format: **0xF0, 0x00, 0x20, 0x32, DeviceID, ModelID, 0x22, MidiCh, 0xF7**

MidiCh: MIDI channel (0-15)

0x25: set device name

Format: **0xF0, 0x00, 0x20, 0x32, DeviceID, ModelID, 0x25, Name, 0xF7**

Name: device name (16 ascii chars 0x20...0x7f)

0x60: request single preset

Format: **0xF0, 0x00, 0x20, 0x32, DeviceID, ModelID, 0x60, presetnr, 0xF7**

presetnr: number of requested preset (0-124) or temporary edit buffer (127)

Response: command 0x20

0x61: request all presets

Format: **0xF0, 0x00, 0x20, 0x32, DeviceID, ModelID, 0x61, 0xF7**

Response: command 0x21

0x65: request device name

Format: **0xF0, 0x00, 0x20, 0x32, DeviceID, ModelID, 0x65, 0xF7**

Response: command 0x25

Single Preset Data Block:

Offset	Parameter		Offset	Parameter
0	Amp Gain (0-127)		24	Delay Spread (0-127)
1	Amp Treble (0-127)		25	Delay Feedback (0-127)
2	Amp Mid (0-127)		26	Delay Mix (0-127) *9
3	Amp Bass (0-127)		27	post Fx Mode (0-6) *10
4	Amp Vol (0-127)		28	post Fx Par 1 *10
5	Presence (0-127)		29	post Fx Par 2 *10
6	Reverb Mix (0-127) *2		30	post Fx Par 3 *10
7	Amp Type (0-32) *3		31	post Fx Mix (0-127) *11
8	Fx Mix Assign (0-15) *1		32	Preset Name[0] (32-127)
9	Fx off/on (0/1)		33	Preset Name[1] (32-127)
10	Reverb Send off/on (0/1)		34	Preset Name[2] (32-127)
11	Cabinet Type (0-15) *5		35	Preset Name[3] (32-127)
12	Reverb Type (0-8) *4		36	Preset Name[4] (32-127)
13	Noise Gate Level (0-15)		37	Preset Name[5] (32-127)
14	Drive off/on (0/1)		38	Preset Name[6] (32-127)
15	Wah off/position (0/1-127)		39	Preset Name[7] (32-127)
16	pre Effect Type (0-2) *6		40	Preset Name[8] (32-127)
17	pre Effect Par 1 *6		41	Preset Name[9] (32-127)
18	pre Effect Par 2 *6		42	Preset Name[10] (32-127)
19	pre Effect Par 3 *6		43	Preset Name[11] (32-127)
20	pre Effect Par 4 *6		44	Preset Name[12] (32-127)
21	Delay Type (0-2) *7		45	Preset Name[13] (32-127)
22	Delay Time hi (0-117) *8		46	Preset Name[14] (32-127)
23	Delay Time lo (0-127) *8		47	Preset Name[15] (32-127)

History

- 21.06.00 Creation
- 03.07.00 p5 byte 5 range is 0..127 (not 0..15)
- 02.10.00 Wah control change 27, offset 15, is now wah on/off control & pedal position
- 23.07.01 V-Amp 2 version
- 30.07.01 modifications for automatic cabinet selection
- 24.09.01 added device name sysex cmds
- 01.10.01 added time/rate conversion info

- 17.01.03 - converted to LX1B format
- corresponds to V-AMP PRO_MIDI_Rev1.XLS
- Input Gain control (with 2.2.3)
- Wah-Wah character control (with 2.2.3)
- digital out table
- Tuner toggle on/off with program change x7F (with 2.2.3)