



MIDI Implementation BASS V-AMP (LX1B and LX1B PRO)

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Spezielle Studioteknik GmbH

Function	Transmitted	Received	Remarks
Midi Channel	1-16	1-16	
Note Number	N	Y	MIDI Bass Synth (ID 14) only
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	Compressor Density (0-127)
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	Deep
23	Y	Y	Cabinet Type (0-23) *5
24	Y	Y	Mid Shift/Shape *2
25	Y	Y	Expander (0-15) *10
26	Y	Y	Compressor Speed (0-127)
27	Y	Y	Wah off/position (0/1-127)
28	Y	Y	X-over frequency *4(0-99)
29	Y	Y	X-over balance
30	Y	Y	Denoiser Sensitivity (0-127)
31	Y	Y	Denoiser Range (0-127) *11
33	Y	Y	Pedal simulation (0-4) *6
34	Y	Y	Pedal simulation Drive (0-127)
35	Y	Y	Pedal simulation Tone (0-127)
36	Y	Y	Pedal simulation Boost (0-127)
37	Y	Y	Pedal simulation Split (0-127) *12
38	Y	Y	Compressor on/off (0/127)
39	Y	Y	post FX Mode (0-15) *7
40	Y	Y	post FX Par 1*7
41	Y	Y	post FX Par 2*7
42	Y	Y	post FX Par 3*7
43	Y	Y	post FX Par 4*7
44	Y	Y	post FX Par 5*7
45	Y	Y	post FX Par 6*7
46	Y	Y	post FX Par 7*7
48	Y	Y	pre FX Mode*9
49	Y	Y	pre FX Par 1*9
50	Y	Y	pre FX Par 2*9
51	Y	Y	pre FX Par 3*9
55	N	Y (if FX=Delay/Loop)	Sampler REC *8
56	N	Y (if FX=Delay/Loop)	Sampler PLAY *8
57	N	Y (if FX=Delay/Loop)	Sampler STOP *8
58	N	Y (if FX=Delay/Loop)	Sampler SPEED *8
59	N	Y (if FX=Delay/Loop)	Sampler REVERSE *8
60	N	Y (if FX=Delay/Loop)	Sampler PLAY ONCE *8
61	N (request only)	Y	Amp Type (0-32) w/o cabinet change
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 (0-5=S1,S2,S3,L1,L2,L3)
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)
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 models)

Notes:

*1) FX Type with defaults

Fx Type	Name	Effects Control	2nd Function	Tap Button
0	VCF+FLANGER	Filter Mix	Flanger Mix	VCF Speed
1	CHORUS+DELAY	Delay Mix	Chorus Mix	Delay Time
2	STEREO DELAY	Mix	Feedback	Delay Time
3	DELAY/LOOP	Mix	Feedback	Time
4	REVERB	Mix	Decay	-
5	AMBIENCE	Mix	Decay	-
6	VOICE BOX	Mix	Vowel	Speed
7	ULTRABASS	Mix	Sense	-
8	P-FUNK'N	Depth/Mix	Sense	-
9	AUTO WAH	Depth	Speed	-
10	ROTARY CAB	Mix	Balance	Speed
11	PHASER	Mix	Feedback	Speed
12	FLANGER	Depth	Intensity	Speed
13	CHORUS	Mix	Speed/Depth	-
14	STEREO CHORUS	Mix	Speed/Depth	-
15	BASS SYNTH	Synth Mix	Variation	ADSR

*2) Mid Shift or Shape

Amp Type	Name	CC24	Amp Type	Name	CC24
0	BRITISH 60's	Shape	16	BRITISH CLASS A	Shape
1	BRITISH 70's	Shape	17	MODERN HI GAIN	Shape
2	BRITISH 80's	Shape	18	RECTIFIED HI GAIN	Shape
3	BRIT POP	Shape	19	CUSTOM HI GAIN	Shape
4	THUNDERBIRD	Shape	20	ULTIMATE PLUS	Shape
5	MOSOUND	Shape	21	CRUNCH V-AMP	Shape
6	CLASSIC	Mid Shift	22	DRIVE V-AMP	Shape
7	ROCK 2	Shape	23	BRIT HI GAIN	Shape
8	SILVER PANEL	Shape	24	PIEZO SIM.	Mid Shift
9	WHITE PANEL	Shape	25	MIC SIM.	Mid Shift
10	RED PANEL	Mid Shift	26	MAGNETIC EQ	Mid Shift
11	GOLD PANEL	Shape	27	PIEZO EQ	Mid Shift
12	CALIFORNIAN	Shape	28	BLACK TWIN	Mid Shift
13	JAZZ TONE	Shape	29	ORGAN CLASSIC	Mid Shift
14	BOTTOM END	Mid Shift	30	BRIT CLASSIC	Mid Shift
15	TUBE PREAMP	Shape	31	CLASSIC CLEAN	Mid Shift
			32	amp bypass	0

*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 #
British '60s	0	68 Marshall 4x12"	6
British '70s	1	68 Marshall 4x12"	6
British '80s	2	Trace Elliot 4x10"	2
British Pop	3	Vox AC100 2x15"	9
Thunderbird	4	1x8" Tweed Combo	16
Mosound	5	Ampeg B15 1x15" Closed Back Combo	7
Rock Classic	6	Ampeg SVT 8x10" '97	1
Rock 2	7	Ampeg SVT 8x10" '97	1
Silver Panel	8	Fender Bassman 2x15" with JBLs	11
White Panel	9	SWR Goliath Senior 6x10"	3
Red Panel	10	SWR Goliath Senior 6x10"	3
Gold Panel	11	Ampeg 4x10"	4
Californian	12	Mesa/Boogie 2x15"	10
Jazz Tone	13	Polytone A101, 1x15" Closed Back Combo	8
Bottom End	14	Ampeg SVT 18E, 1x18"	14
Tube Preamp	15	Keine Cabinet-Simulation	0

Amps 17 - 32	Amp Type	Cabinet-Simulation	Cab #
British Class A	16	2x12" Twin Combo	18
Modern Hi Gain	17	4x12" V-AMP Custom	23
Rectified Hi Gain	18	4x12" Vintage 30	20
Custom Hi Gain	19	4x12" '78 Std.	21
Ultimate Plus	20	4x12" V-AMP Custom	23
Crunch V-AMP	21	4x12" '78 Std.	21
Drive V-AMP	22	4x12" Vintage 30	20
British Hi Gain	23	4x12" '78 Std.	21
Piezo Sim.	24	Keine Cabinet-Simulation	0
Microphone Sim.	25	Keine Cabinet-Simulation	0
Magnetic EQ	26	Keine Cabinet-Simulation	0
Piezo EQ	27	Keine Cabinet-Simulation	0
Black Twin	28	2x12" Twin Combo	18
Organ Classic	29	Leslie 760 Cabinet, 1x15"+HF Horn	12
British Classic	30	4x12" '78 Std.	21
Classic Clean	31	2x12" V-AMP Custom	19
Preamp Bypass	32	Keine Cabinet-Simulation	0

*4) relation controller value to split frequency

contr.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
freq.	off	50	50	50	50	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	200	220	220	240

contr.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
freq.	240	260	260	280	280	300	300	320	320	340	340	360	360	380	380	499	400	420	420	440	440	460	460	480	480

contr.	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
freq.	500	500	520	520	540	540	560	560	580	580	600	600	630	630	630	630	660	660	660	690	690	690	720	720	720

contr.	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
freq.	750	750	750	780	780	780	810	810	810	840	840	840	870	870	870	900	900	900	930	930	930	960	960	960	990

*5) Cabinet Type

Cabinet Type	Description
0	None
1	8 x 10" Ampeg SVT '79
2	4 x 10" Trace Elliot
3	4 x 10" SWR Goliath
4	4 x 10" Ampeg
5	1 x 12" Gallien Krueger B120
6	4 x 12" '68 Marshall
7	1 x 15" Ampeg B-15 closed back combo
8	1 x 15" Polytone A101 closed combo
9	2 x 15" Vox AC100
10	2 x 15" Mesa/Boogie
11	2 x 15" Fender Bassman with JBL'
12	1 x 15" + HF Horn Leslie 760 cabinet
13	1 x 18" SWR
14	1 x 18" Ampeg SVT18E
15	1 x 18" + 1 x 12" Sunn Coliseum 8028 cab
16	1 x 8" Vintage Tweed
17	1 x 12" Mid Combo
18	2 x 12" Twin Combo
19	2 x 12" V-AMP Custom
20	4 x 12" Vintage 30
21	4 x 12" '78 Standard
22	4 x 12" Off Axis
23	4 x 12" V-AMP Custom

*6) Overdrive Pedal Simulation / Stompbox

Type	Name	Description	Par 1	Par 2	Par 3	Par 4
0	Bypass	None	-	-	-	-
1	Big Bass Boost	Electro Harmonix, Hogs Foot, warm bass boost	Drive	-	Boost	Split
2	Big Fuzz	Electro Harmonix, Big Muff Pi Fuzz	Drive	Tone	Boost	Split
3	El Ratón	The Rat, buzz saw bass and squeal	Drive	Tone	Boost	Split
4	Booster Line Driver	T.C. electronics, Booster Line Driver/Distortion	Drive	Tone	Boost	Split

*8) Sampler

MIDI Ctrl	55	56	60	57	58	59
Funktion	Rec / Overdub	Loop Play	Play once	Stop	Speed	Reverse
CTRL-Val	RecGain	PlayGain	PlayGain	/	Play speed	direction
Range	0-127	0-127	0-127	/	0=off,1=half,2=normal	0=ff,1=rew



*9) Pre Effects, Wah

Pre FX Mode	FX-Name	Par 1	Par 2	Par 3
0	MIDI-Wah	/	/	/
1	P-Funk'n	depth	speed	base
2	Auto Wah	depth	speed	base
Op-Element		FX-MIX	TAP+FX-MIX	MIDI
MIDI Channel		49	50	51

*10) Expander, 16 steps (index=val/8):

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

*12) Stompbox: Split 17 steps (index=val/7)

Stompbox Split Function		
LED	CC 37	Frequenz
off	0...6	full range
1	7...13	41 Hz
	20	49 Hz
2	27	58 Hz
	34	70 Hz
3	41	84 Hz
	48	101 Hz
4	55	121 Hz
	62	145 Hz
5	69	174 Hz
	76	209 Hz
6	83	251 Hz
	90	301 Hz
7	97	362 Hz
	104	416 Hz
8	111	470 Hz
	118	531 Hz
9	127	600 Hz

*11) Denoiser Range: base frequency not available

*7) Post Effects

	LED Control	A	B	C	D	E	F	G
	MIDI CC	40	41	42	43	44	45	46
POST FX	FX ID	FX-MIX	TAP+FX-MIX	MIDI1	MIDI2	MIDI3	MIDI4	TAP
VCF+FLANGE	0	VCF Mix	Flg.Mix	Spd/Depth	Flg.Feedb.	VCF Freq	VCF Q	VCF Spd
DEL. CHOR.	1	DelayMix	Chor.Mix	Feedback	Feedb. LP	Spd/Depth	Del.Time	Del.Time
ST. DELAY	2	DelayMix	Feedback	/	Feedb. LP	/	Del.Time	Del.Time
DELAY/LOOP	3	DelayMix	Feedback	/	/	/	/	Del.Time
REVERB	4	ReverbMix	Decay	Damping	Diffusion	/	/	/
AMBIENCE	5	Ambience	Decay	Damping	/	/	/	/
VOICE BOX	6	Mix	Vowel	Pedal	/	/	/	Speed
ULTRABASS	7	SubMix	Sense	/	/	/	/	/
ROTARY CAB	8	Mix	Balance	Split Freq.	/	/	/	Speed
PHASER	9	Mix	Feedback	Feedb. LP	Spread	/	/	Speed
FLANGER	10	Mix	Spd/Depth	Intensity	/	/	/	/
CHORUS	11	Mix	Spd/Depth	Intensity	/	/	/	/
STEREO CHORUS	12	Mix	Spd/Depth	Intensity	/	/	/	/
SYNTH	13	SynthMix	Variation	/	Interval	Key	/	/
MIDI Bass Synth	14	SynthMix	Variation	/	/	Reverb	/	/
Post FX OFF	15							

VCF+Flanger:

Speed=0,039*val (Hz)

Chorus+Delay:

delay time = (hi*128+lo)*128μs

delay feedback (0-127) 0% ..100%

Stereo Delay:

delay Time = (hi*128+lo)*128μs

feedback (0-127) 0%...100%

Delay/Loop:

feedback (0-127) 0%...100%

time=00079*val

Reverb:

decay (0-127) 1,2 s... 2,5 s

damping (0-127) 500 Hz ... 15 kHz

--> = (8,759*val + 0,5) kHz

Ambience:

decay (0-127) 0,1 s... 1 s

damping (0-127) 500 Hz ... 15 kHz

--> = (8,759*val + 0,5) kHz

SYNTH ¹⁾: (default key=0, Int.=3)

for Key = 1...12

Transpose=on -->

Interval: 0...6 = -oct, -4th, -3rd, unisono, +3rd,
+5th/6th, +oct.

Key: 1=C, 2=C#, ...12=B

for Key = 0

Transpose=off -->

Interval: 0...6 = -12, -5, -3, 0, +4, +7, +12
(semitones of VCO1)**MIDI BASS SYNTH ²⁾:**reacts on MIDI Note messages (Note On: &9n,
note #)

Variations (1-17)

Reverb Mix: 0..127, default=0

Range: note # 0 (C-2)....94 (Bb5).

(see next page)

Note	C-2	Db-2	D-2	Eb-2	E-2	F-2	Gb-2	G-2	Ab-2	A-2	Bb-2	B-2	C-1
MIDI-#	0	1	2	3	4	5	6	7	8	9	10	11	12

Note	C0	C1	C2	C3	C4	C5	C6	C7	C8	G8
MIDI-#	24	36	48	60	72	84	96	108	120	127

key
(Yamaha-Convention)

**Voicebox:**

Speed=0,057*val (Hz)

Vowel= val/15

LED ID	0	1	2	3	4	5	6	7	8
Vowel	A-E	A-I	A-O	A-U	E-I	E-O	I-O	I-U	O-U

Rotary Cab:

Balance (0-127) 0%..100%

Speed=0,047*val (Hz)

Flanger

Speed=0,039*val (Hz)

Phaser:

Speed=0,00031*val*val (Hz)

*13) Digital Output Formats of PRO models
(not available with BASS V-AMP / V-AMPIRE)

MIDI CC88	
val.	Digital Output Mode
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 BASS V-AMP SysEx Implementation

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 BassV-amp **ModelID** is **0x13** (19 decimal). 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, 0x13, 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)		31	post Fx Mode (0-15)
1	Amp Treble (0-127)		32	post Fx Par 1
2	Amp Mid (0-127)		33	post Fx Par 2
3	Amp Bass (0-127)		34	post Fx Par 3
4	Amp Vol (0-127)		35	post Fx Par 4
5	Presence (0-127)		36	post Fx Par 5
6	Compressor Density(0-127)		37	post Fx Par 6
7	Amp Type (0-32) *3		38	post Fx Par 7
8			39	
9	Shape / Mid Shift (0-127)		40	Preset Name[0] (32-127)
10	Deep (0-127)		41	Preset Name[1] (32-127)
11	Compressor Speed		42	Preset Name[2] (32-127)
12			43	Preset Name[3] (32-127)
13	FX on/off		44	Preset Name[4] (32-127)
14			45	Preset Name[5] (32-127)
15	Cabinet (0-23)		46	Preset Name[6] (32-127)
16	X-Over Frequency		47	Preset Name[7] (32-127)
17	X-Over Balance		48	Preset Name[8] (32-127)
18	Expander (0-15)		49	Preset Name[9] (32-127)
19	Denoiser dyn. LP Sensitivity		50	Preset Name[10] (32-127)
20	Denoiser dyn. LP Freq.Range		51	Preset Name[11] (32-127)
21	Overdrive Simulation (0-4)		52	Preset Name[12] (32-127)
22	OD Sim. Drive (0-127)		53	Preset Name[13] (32-127)
23	OD Sim. Tone (0-127)		54	Preset Name[14] (32-127)
24	OD Sim. Boost (0-127)		55	Preset Name[15] (32-127)
25	OD Sim. Split (0-127)			
26	Wah off/position (0/1-127)			
27	pre FX Mode (0,1,2)			
28	pre FX Par 1			
29	pre FX Par 2			
30	pre FX Par 3			

History

- | | |
|----------|--|
| 16.10.02 | created for Bass Vamp |
| 25.11.02 | <ul style="list-style-type: none">- corresponds to LX1B_MIDI_Rev1.XLS- old V-AMP command relicts removed- tables switched to XLS format- global input gain shifted to CC89 for compatibility with LX1B PRO- pre FX off state removed- Synth description completed |
| 26.11.02 | <ul style="list-style-type: none">- corresponds to LX1B_MIDI_Rev2.XLS- range of sysex offset 31 corrected- Post FX Synth Variation commented |
| 09.12.02 | <ul style="list-style-type: none">- corresponds to LX1B_MIDI_Rev3.XLS- digital out table included- Phaser speed factor included |
| 17.01.03 | <ul style="list-style-type: none">- corresponds to LX1B_MIDI_Rev4.XLS- voice box speed factor corrected- stompbox #1 without TONE- now toggles the Tuner on/off with program change 128- Synth Transpose/Key/Intervall description |
| 18.02.03 | <ul style="list-style-type: none">- corresponds to LX1B_MIDI_Rev5.XLS- Compressor on/off on CC38- Synth transpose implementation corrected |