M-AUDIO



Reloaded: with updated firmware and additional features.



User Guide English

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IMPORTANT!

Audio equipment should ALWAYS be powered up and down in a certain order. The power amp feeding your speakers should ALWAYS be turned ON LAST and turned OFF FIRST. If you turn other pieces of audio equipment on while they are connected to the powered speakers, loud transient pops will occur which can damage your hearing and your speakers. Always turn on all of your other audio devices that are connected to your powered speakers BEFORE you turn on your powered speakers. The same is true for turning things off. ALWAYS turn off your powered speakers BEFORE you turn off any other equipment connected to them. Following this simple rule will ensure that both your ears and your speakers will function optimally for a long time to come.

Hello From Roger Linn

Thank you for purchasing the Black Box, a very exciting product created collaboratively by Roger Linn Design and the great folks at M-Audio. You may know of me from having invented the first digital drum machines in the 1980s, or from my MPC MIDI Production Center products with AKAI in the 1990s. But you may not know that I'm also a guitarist, and my passion for guitar sound led to my more recent creation of the award-winning AdrenaLinn beat-synced guitar effects processor (www.rogerlinndesign.com.) Now I'm very proud to combine many of the best parts of AdrenaLinn with M-Audio's considerable expertise in computer-centric products. The result is the Black Box.

What is the Black Box? It's a superb amp modeler combined with a unique effects processor that syncs to an internal drum machine. Plus, it's a complete digital audio interface that connects to your computer via USB. The beat-synced effects are the part I enjoy most: tremolo, flanging, delay—even looped sequences of filtered tones or arpeggiated notes and more—all playing in perfect sync to the beat or your recording software tempo. And now with the improved version 2 firmware, it's far more powerful than before. I think you'll find—as others have—that the Black Box will lead you down a path of new musical ideas and head-turning recordings.

On behalf of all the creative minds at both M-Audio and Roger Linn Design, I'd like to welcome you to the brave new world of the Black Box.

fogerlinn

Introduction

Thank you for choosing the M-Audio Black Box. The Black Box has been designed to inspire any guitarist by providing great-sounding amp models, drum loops and beat-synced effects. Using the convenience of USB, the Black Box is also a high-resolution 24-bit/ 44.1 kHz audio interface for your computer, complete with instrument input, microphone input, balanced analog outputs and S/PDIF digital output. Included WDM, ASIO II, and Core Audio drivers allow for easy setup with any recording application that is compatible with Windows XP (SP2), Mac OS X 10.3.9, 10.4.4 or higher.

As a stand-alone device, the Black Box is primarily a songwriting or performance tool. Alternatively, you can use its USB connection to record directly to your computer. However, the analog outputs or digital S/PDIF output can be used to send your guitar's processed signal to other recording devices. The main outputs can be used with powered monitors like the M-Audio BX5a's and the headphone jack can be used with standard headphones. There are 40 amp models, 121 modulation and filter effect types, an independent beat-synced delay effect, reverb, compression and 100 different drumbeats to choose from. All of the effects automatically lock to the tempo of the drumbeat or your recording software. This way, the sounds of your effects are always in perfect sync with your music. A chromatic tuner is also built in.

Even if you are an experienced musician and digital recording enthusiast, we recommend you take a few moments to read through this owners' manual and familiarize yourself with the Black Box's features and operation. You may also want to refer to your audio software's documentation, to better understand how the Black Box's features are integrated with your audio software. Your experience and enjoyment of your Black Box will be greatly enhanced by a good working knowledge of your audio software.

What's in the Box

Your Black Box package contains the following:

- Black Box
- CD-ROM containing driver software and user manual in PDF form.
- CD-ROM containing Ableton Live Lite 4 GTR and Pro Sessions Drum Loops
- Printed Quick Start Guide
- USB cable
- 9 Volt AC IA Power Supply
- Mic stand mounting bracket with screws

Minimum Computer System Requirements

If you intend to use your Black Box as an audio interface with your computer, please make certain that your computer meets the minimum requirements below. See the "Driver Installation" section later in this manual for instructions on using the Black Box with a computer.

Windows*

- Pentium III 500 MHz
- I 28 MB RAM
- Windows XP (SP2) with DirectX 9.0c or higher
- Onboard USB connection

The Black Box is not supported under Windows 98, Windows 98SE, Windows ME or Windows 2000.

Mac OS*

- Macintosh G3/G4** 500 MHz
- 512 MB RAM
- OS X 10.3.9 / 10.4.4
- Onboard USB connection

*Please be sure to also check your DAW software's minimum system requirements, as they may be higher than those of the Black Box.

**G3/G4 accelerator cards not supported.

New Version 2 Firmware Inside

Your Black Box has been upgraded to our new version 2 firmware, making it far more powerful than before at no extra cost. If you're familiar with the original Black Box, the principal new features are:

- The number of amp models is increased from 12 to 40 and the original amps have been improved to be more accurate. Plus, we've included four classic bass amps, a fuzz tone and an octave fuzz.
- The number of effect types is increased from 43 to 121. In addition to new variations of the existing effects, we've added lots more of Black Box's unique filter sequences, tremolo sequences and arpeggio sequences, as well as great new effects like rotary, vibrato, auto-pan, talk pedal, volume swell, fixed filters and even a few sci-fi effects.
- Myraid enhancements to existing features.

However, we didn't stop there. We also added a number of new bonus features:

- Amp Mid control
- Reverb
- Compression
- Link Drumbeat: Now selecting a preset will automatically call up its assigned drumbeat, which you can change.
- Tempo Source: Now you can select one of three sources for the playing tempo: the preset's assigned tempo, the drumbeat's assigned tempo or the global tempo.

These new bonus features go beyond the 16 parameter menus in the LCD display, so we created a new Shift mode to access their settings. To learn about Shift mode, see the section entitled "Additional Shift Parameters."

Front Panel Connectors



- Plug your headphones into the jack with the headphone icon (11).
- Plug your guitar into the Guitar Input jack (12).

Rear Panel Connectors



- Plug a dynamic microphone into the Mic input (1).
- Use the Balanced Outputs to connect to powered speakers or an analog mixer (2).
- Use a 75-ohm S/PDIF cable to record from the S/PDIF digital output (44.1kHz only) (3).
- Mic stand mount (optional hardware you may attach to bottom of the device with four mounting screws) (4).
- Connect an expression pedal, like the M-Audio EX-P, to the Expression pedal jack to control continuous functions like wah effects (5).
- Connect momentary pedals, like the M-Audio SP-I, to the PI (6) and P2 (7) jacks to control on/off functions like Start/Stop, Inc/Dec, etc. (6).
- Connect the USB connection on the Black Box to your computer with the included USB cable (8).

- Only use the 9V AC 1000ma power supply included in the package. Using an improper power supply can damage your unit (9).
- Use a Kensington lock system with the Kensington lock slot to protect your unit from theft (10).

Top Panel



Drumbeat Increment (up arrow) key (23)

Black Box has 100 fixed drumbeats, numbered 00-99. Pressing this key will show the current drumbeat number and name for three seconds; pressing it again within this time will select the next higher drumbeat number. Holding it will rapidly and repeatedly increment the drumbeat number.

Drumbeat Decrement (down arrow) key (25)

Black Box has 100 fixed drumbeats, numbered 00-99. Pressing this key will show the current drumbeat number and name for three seconds; pressing it again within this time will select the next lower drumbeat number. Holding it will rapidly and repeatedly decrement the drumbeat number.

Drumbeat View (press Drumbeat Increment [23] and Drumbeat Decrement [25] simultaneously)

Pressing these two keys simultaneously will change the display to show the current drumbeat number and name for three seconds.

Preset Increment (up arrow) key (27)

A preset is a unique combination of all the settings that affect the guitar sound, including guitar amp models, effects, delay, reverb and compression. Black Box has 100 fixed "factory" presets numbered 00-99, followed by 100 editable "user" presets number 00-99. Pressing this key will increment the preset. Holding it will rapidly and repeatedly increment the preset number.

Preset Decrement (down arrow) key (29)

A preset is a unique combination of all the settings that affect the guitar sound, including guitar amp models, effects, delay, reverb and compression. Black Box has 100 fixed "factory" presets numbered 00-99, followed by 100 editable "user" presets numbered 00-99. Pressing this key will decrement the preset number. Holding it will rapidly and repeatedly decrement the preset number.

Store (press Preset Increment [27] and Preset Decrement [29] simultaneously)

Press these two keys simultaneously to store any edits to the current preset into either the same or a different preset. See the section "How to Store and Name a Preset" for more information.

Тар Тетро Кеу (31)

This key allows you to enter the tempo for the drum machine by tapping 1/4 notes. As the effects are beat-synced to the drum machine, this also sets the tempo of the effects. The drums do not need to be playing for the effects to lock to the tempo.

This key has another special function: It enables a simple intro or ending to the drumbeat. To hear a simple intro of four 1/4 note hi-hats before the drumbeat starts, press Tap Tempo before pressing Start/Stop. If the drumbeat is playing, press Tap Tempo before pressing Start/Stop to automatically stop the drumbeat playing at the exact beginning of the next measure.

Amp Key (22)

Pressing the Amp key brings up the four AMP menus in the LCD; AMP, AMP DRIVE, AMP BASS and AMP TREBLE. The rotary control under each menu parameter in the LCD allows you to change the parameter value. Holding the Amp key down for one half second will turn the amp effect off and "AMP OFF" will be displayed in the LCD. Holding the Amp key down for another half second will turn the amp effect back on, and "AMP OFF" will disappear from the LCD display.

FX Key (24)

Pressing the FX key brings up the four Effects menus in the LCD; EFFECT, FX SPEED or FX FREQUENCY, FX DEPTH or FX KEY and FX WET/DRY. The rotary control under each menu parameter in the LCD allows you to change the parameter value. Holding the FX key down for 1/2 second will turn the effect off and "FX OFF" will display in the LCD. Holding the FX key down for another half second will turn the effect back on, and FX OFF will disappear from the LCD display.

Compare (press Amp [22] and FX [24] simultaneously)

If both the Amp and FX keys are pressed simultaneously, the Compare function is activated and "COMPARE" will be displayed in the LCD. During this time, any edits to the preset are removed, permitting you to compare your changes to the original, unedited preset. Press the Amp and FX keys simultaneously again to exit the Compare function.

Delay Key (26)

Pressing the Delay key brings up the four Delay menus in the LCD; DELAY TIME, DELAY REPEATS, DELAY VOLUME and DRUMS TO DELAY. The rotary control under each menu parameter in the LCD allows you to change the parameter value. Holding the Delay key down for one half second will turn the delay effect off and "DLY OFF" will display in the LCD. Holding the Delay key down for another half second will turn the delay effect back on. "DLY OFF" will disappear from the LCD display.

Utility Key (28)

Pressing the Utility key brings up the four Utility menus in the LCD; PRESET VOLUME, GUITAR/DRUMS BALANCE, EXPRESSION PEDAL and TEMPO. The rotary control under each menu parameter in the LCD allows you to change the parameter value. When both the Delay and Utility keys are quickly pressed simultaneously, the Tuner function is activated. "TUNER" will be displayed on the LCD along with the note value of the currently played string. Press any key to exit the Tuner function and "TUNER" will disappear from the LCD display.

Tuner (press Delay [26] and Utility [28] simultaneously)

If both the Delay and Utility keys are pressed simultaneously, the Tuner function is activated and "TUNER" will be displayed in the LCD. When the Tuner is active the display will tell you if the notes you're playing are in standard guitar tuning. See the section entitled "Tuner Function" for more information.

Start/Stop Key (32)

Pressing this key will start and stop the drum machine. When in Play mode, the tempo LED will blink 1/4 notes at the current tempo. When in Stop mode, the LED will be unlit. To hear a simple intro of four 1/4-note hi-hats before the drumbeat starts, press Tap Tempo before pressing Start/Stop. If the drumbeat is playing, press Tap Tempo before pressing Start/Stop to automatically stop the drumbeat playing at the exact beginning of the next measure.

Rotary Controls (13)

These are used to change the parameter values and also used to name presets. When a parameter value has been changed, "EDIT" will be displayed in the LCD display and "PARAMETER" will be displayed. This is a reminder that you must store any changes to keep them. If the changes are not stored and another preset is loaded, the previous preset will revert to its stored settings.

LCD Display (33)

All presets, parameters and values are displayed in the LCD.

Mic Input Control

The Mic Input knob (17) boosts the level of the mic input signal. The green Signal LED (21) will light when a detectable threshold input level is reached. The red Clip LED (20) will light if the input signal is too hot. The best input signal level is achieved when the green LED is solid and the red LED only blinks occasionally. This input mixes into the other audio outputs so when not using the mic input, turn this knob down to minimize any noise.

Mix (Input/Playback) Knob (16)

This knob is used when recording into a multi-track recording application or DAW via USB. It is a ratio control you can use to balance how much input signal you hear versus how much playback signal you hear from the DAW. When you are overdubbing tracks, you'll need to hear previously recorded tracks or a click track to play along with as well as your input signal. Adjust this control to fit your needs. When you are mixing down a song, this knob should be turned all the way to the right as you will not need to hear any input signals while mixing.

Output Level (15)

This controls the overall volume to the Main Outputs as well as the headphones.

Guitar Input Control (14)

The Guitar Input knob boosts the level of the guitar input signal. The green Signal LED (19) will light when a detectable threshold input level is reached. The red Clip LED (18) will light if the input signal is too hot. The best input signal level is achieved when the green LED is solid and the red LED only blinks occasionally.

Presets and Drumbeats

Presets

A preset is a unique combination of all the settings that affect the guitar sound, including guitar amp models, effects, delay, reverb and compression. There are 100 fixed factory presets (0-99) and 100 editable user presets (0-99). To change between presets, press the Preset Increment (27) and Preset Decrement (29) keys. The 100 user presets follow the 100 factory presets. The active preset number and six-character name will always appear after a preset is selected.

To edit the settings that comprise a preset, you'll use the Amp, FX, Delay and Utility buttons. When one of these buttons is pressed, the lower part of the display will show four names. These are the functions of the four rotary controls below the display. For example, when you press Amp, the four rotary controls will have the functions AMP, DRIVE, AMP BASS and AMP TREBLE.

Drumbeats

There are 100 fixed drumbeats numbered 0 to 99. To view the current drumbeat number and name for three seconds, press either Drumbeat Increment, Drumbeat Decrement or both. Press Drumbeat Increment (23) during this time to go to the next higher drumbeat; press Drumbeat Decrement (25) during this time to go to the previous lower drumbeat. Hold Drumbeat Increment to rapidly and repeatedly increment the drumbeat number; hold Drumbeat Decrement to rapidly and repeatedly decrement the drumbeat number.

Editing the Guitar Amp and Compression Settings

Black Box provides 40 highly accurate and dynamic guitar amp models based on the most popular classic and modern amps in existence. We even throw in four bass amps, a few custom amp designs of our own, a fuzz tone and octave fuzz, plus a clean mic preamplifier. This represents a tremendous library of cherished guitar tones from which to choose, and will definitely allow you to find the sound you need for your songs.

Black Box also provides an audio compressor. This is useful either as a note sustainer or as a limiter, reducing the level of loud notes and increasing the level of soft notes. It is placed in the signal chain just before the amp modeling.

To access the amp model and compressor settings, press the Amp key. The lower part of the screen will display the following four control parameters: AMP, DRIVE, AMP BASS and AMP TREBLE. Here is a description of those four settings plus a couple of others:

Amp

This knob (#1) is used to select one of 40 guitar amplifier models.

Amp Drive

This knob (#2) changes the Amp Drive (0-99), which affects the amount of distortion in the signal. On most amp models, a setting of 0 is a clean sound and higher settings give increasing levels of distortion or overdrive. The amount of overdrive depends on the amp selected.

Compression (Shift: Amp Drive)

This permits the level of drive to the compressor, adjustable from 0 to 99:

- CMP 0 (no compression)
- CMP 99 (maximum compression)

This is a Shift parameter. To view or adjust it:

- I) Press the Amp button and select column 2.
- 2) Double-tap the Amp button to enter Shift mode.
- 3) The screen will show the current Compression value. To change it, turn rotary control 2.

Use lower values to gently limit peaks. Use higher values to sustain your guitar notes, similar to increasing Amp Drive but without the distortion that overdriving provides.

Amp Bass

This knob (#3) lets you control the amount of bass. The knob's range and frequency follow that of the modeled amp and therefore vary depending on the amp selected. The control range is from 0 to 99.

Amp Mid (Shift: Amp Bass)

To adjust Amp Mid, select Amp Bass then double-tap the Amp button. (See the "Additional Shift Parameters" section below.) This lets you control the amount of midrange. The knob's range and frequency follow that of the modeled amp and therefore vary depending on the amp selected. The control range is from MID 0 to MID 99.

Amp Treble

This knob (#4) lets you control the amount of treble. The knob's range and frequency follow that of the modeled amp and therefore vary depending on the amp selected. The control range is from 0 to 99.

Amp On/Off

Hold the Amp button for one half second to bypass amp modeling entirely. When bypassed, the Amp Off icon will appear in the LCD. Hold it again for one half second to re-enable amp modeling; the Amp Off icon will disappear.

Amp Descriptions

Here's a list of the amp names and the original guitar amps they were modeled after:

١.	BASMAN	Fender Bassman
2.	DLXREV	Fender Deluxe Reverb
3.	TWNREV	Fender Twin Reverb
4.	DELUXE	Fender Deluxe
5.	CHAMP	Fender Champ
6.	MAR 45	Marshall JTM45
7.	PLEXI	Marshall Super Lead Plexi
8.	MAR800	Marshall JCM800
9.	MAR2K	Marshall JCM2000
10.	VOKS30	VoxAC30
11.	VOKS15	VoxAC15
12.	JAZZ	Roland Jazz Chorus
13.	HIWHAT	Hiwatt DR103
14.	STU70S	(Studio 1970s) Mesa Boogie Mark IIc
15.	BIG90S	(Big 1990s) Mesa Boogie Dual Rectifier
16.	SOLDON	Soldano SLO 100
17.	UBER	Bogner Uberschall
18.	DIESEL	Diezel VH4
19.	ANGLE	ENGL Powerball
20.	EDDIEV	Peavey 5150 MkII
21.	XTACY	Bogner Ecstasy
22.	BUDDHA	Budda Twinmaster
23.	CHIEF	Matchless Chieftain
24.	INTENS	Custom model with an intense high-gain solo tone
25.	BIGMID	Custom model with strong high-gain mid tone
26.	SIZZLE	Custom model with a present high-end sizzle
27.	PLEXIS	Custom model based on Marshall Super Lead Plexi with EQ
28.	SCOOP	Custom high gain model with scooped mid
29.	CRISP	Custom model with a '60s twangy tone
30.	HOLLOW	Custom model with a hollow tone
31.	BITE	Custom model with biting high notes
32.	NECKPU	Custom model, great with a Strat neck pickup
33.	SOLID	Custom model with a solid tone
34.	ACO360	Bass amp:Acoustic 360
35.	AMPSVT	Bass amp: Ampeg SVT
36.	GK 800	Bass amp: Gallien-Krueger 800RB
37.	SWR500	Bass amp: SWR SM500
38.	FUZZ	Fuzz tone
39.	OCTAVE	Octave fuzz
40.	MICPRE	Clean mic preamp

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The following is a description of each of the 40 amps modeled in the Black Box.

1. BASMAN (based on Fender Bassman)

The Bassman is a marvelous and very early Fender amp that was embraced by many blues, rock and country guitarists in the '60s. With four 10'' speakers and very sweet 40-watt power amp distortion, this one is worthy of the high prices the originals fetch. Excellent clear as well as overdriven, our hats are off to Leo and the guys. Incidentally, this was the amp that Marshall virtually copied in designing their early amps.

2. DLXREV (based on Fender Deluxe Reverb)

The Deluxe Reverb is another stellar Fender design. With a single 12", a very high and intense treble and sweet power amp distortion, this amp was and still is a popular mid-volume blues/rock amp. The bass folds over a little because of the open back, single 12" design, but that's part of the sound. Oddly, they chose to call the tremolo on this early amp "vibrato." The real amp had only bass and treble controls, so in adding our Mid control, we tried to stick to the spirit of the Fender design principle by looking at what they did in subsequent models.

3. TWNREV (based on Fender Twin Reverb)

It seemed that in the '70s, just about everybody had a Twin or a friend that had one. With 100 watts in two 12" speakers as well as intense treble boost, this amp is probably responsible for more tinnitus than any other. It might not achieve that much distortion by today's standards, but it gets a sound that's pure classic Fender.

4. DELUXE (based on Fender Deluxe)

This early Fender delivered great distortion—regardless of whether it was intended or not—by virtue of its low power and relatively flat EQ before the distortion. I'm not sure if Leo bought into Minimalism with this design, but this little screamer had but one "tone" control, effectively a treble control. In adding our bass and mid controls, we tried to predict what Leo would have done had he been less austere.

5. CHAMP (based on Fender Champ)

Intended as a low-cost beginner's amp, the small '60s-vintage tweed unit was embraced by a number of studio players who valued it for its solid tone and kindness to their backs when carrying it around. The little speaker didn't deliver much low end, but the uniquely crisp high end more than makes up for it.

6. MAR 45 (based on Marshall JTM45)

Released in 1962, this amazing amp head has a full, warm and remarkable tone. Though its circuitry is largely copied from the original Fender Bassman, subtle differences gave it its own distinct and very attractive personality.

7. PLEXI (based on Marshall 100 watt Super Lead "Plexi")

This wasn't just an amp but almost an instrument in itself, redefining how guitar is played—it's that significant. Released in 1966, this 100-watt head is the heart of the famous Marshall stack used by countless bands in the '60 and '70s. Along with the JTM-45, this amp was usually played with all controls set to full because compared to later high-gain amps, it doesn't provide that much gain.

8. MAR800 (based on Marshall JCM800)

A very popular evolution of the Plexi, this was one of the first amps to include higher gain, a master volume and an overdrive stage before the tone controls. Although preamp distortion isn't quite the same as power amp distortion, it introduced a distinctive tone similar to putting a distortion stomp box before your amp. The full and intense high gain sound further redefined lead guitar.

9. MAR 2K (based on Marshall JCM2000 TSL100)

This modern amp stretched the Marshall sound to include more versatile tone controls and 3 channels—clean, crunch and lead. You could easily switch between clean, full mid, scooped mid and super high gain tones just by switching channels. We modeled the lead channel here and love the full bass and warm treble it serves up.

10. VOKS30 (based on VoxAC30 Top Boost)

A unique and truly inspired design, the VoxAC30 is one of the most famous and coveted amps ever created. It was used by the Beatles, Rolling Stones, and lots of other British Invasion bands on tons of early recordings, as well as later recordings by Brian May of Queen and countless others. Originally launched in the late '50s, this gem produced a warm and singing power amp distortion by virtue of its 30 watts into two 12" speakers. Both the intense but warm treble and the full bass are characteristically different than other amps, making it a highly addictive amp to play through.

11. VOKS15 (based on VoxAC15)

This smaller precursor to the AC30 produced an understatedly elegant 15 watts of power into a single 12" speaker. It wasn't exactly a stadium filler but like the 30, it delivered a warm and unique tone that is cherished to this day.

12. JAZZ (based on Roland Jazz Chorus JC-120)

A classic transistor amp? You bet. This was a very popular unit for its shimmering highs, full range and loud, clear tones. It departed from the designs of the day with its inclusion of chorus instead of the standard tremolo. This will give you a lovely soft jazz tone, an intense treble twang and even a bit of overdrive.

13. HIWHAT (based on Hiwatt DR103)

Most famous for Pete Townshend's sound on old The Who recordings, this classic was also popularized by David Gilmour and many others. With a brilliant and responsive tone unlike any others of the day, it's easy to see why those who have played them won't turn back.

14. STU70S ("Studio 1970s", based on Mesa Boogie Mk II)

This innovative design put high quality and high gain together into a small, portable package, making it the choice of studio pros in the '70s. It's the perfect gig amp—it produces a very solid midrange tone with great sustain and articulation, plus unusually high volume for its small size.

15. BIG90S ("Big 1990s", based on Mesa Boogie Dual Rectifier Solo head)

Clear guitar tone? Who needs it?! This exceptional amp turns your guitar signal into a solo or crunch tone that is powerful, thick, well-defined and just plain fun to play. Our model of this monster will give you all that low-end power, high-end sizzle, scooped or full mids and make you sound huge. Revel in your tonal grandeur.

16. SOLDON (based on Soldano SLO 100 Super Lead Overdrive)

We're sold on this amp. Originally released in 1987, this stellar design was a major force in defining the high gain sound in scores of famous players. Solid both in tone and construction, we're proud to pay homage to this fine creation with our Black Box model.

17. UBER (based on Bogner Uberschall)

Designed primarily for heavy playing and aggressive styles of music, this amp blows all others out of the water. It delivers extreme gain and volume while staying focused—no mushy sounds here. This model is guaranteed to split eardrums and shatter rib cages.

18. DIESEL (based on channel 4 of a Diezel VH4)

This is an intense, very high gain lead amp with big bass and great high end for the most shredding of shredders. German engineering at its best.

19. ANGLE (based on ENGL Powerball)

Another great work of German engineering, ENGL's high gain amps are played by the likes of Richie Blackmore and Steve Morse. The Powerball is the culmination of years of research and creation by the ENGL team. Extreme flexibility, tone and gain structure converge in this unit, resulting in the ultimate amp. Close the windows and doors and crank this model up.

20. EDDIEV (based on Peavey 5150 MkII)

This amp is the result of a collaboration between guitar god Eddie Van Halen and the all-American Peavey musical instrument company. We think they achieved something great here and we're certainly not alone in our opinion. Check out our model of this fine creation and savor its exceptional lead tone and rhythm crunch, which goes well beyond the classic Van Halen "brown sound."

21. XTASY (based on Bogner Ecstasy)

This great Bogner amp was designed to deliver more of the classic tones like the Marshall amps Mr. Bogner used to personally modify for the likes of Eddie Van Halen. A versatile amp delivering clean to bark to growl and beyond, we're proud to model this fine design.

22. BUDDHA (based on Budda Twinmaster)

A well-loved boutique amp, this gem is similar in tone to an old blackface Fender Deluxe but with more midrange fullness. With relatively low power, the distortion here is all in the power amp and that's a big part of its sound. Great note articulation with mild or higher gain.

23. CHIEF (based on Matchless Chieftain)

Another superb boutique amp, this one has a unique and addictive sound (not to mention a very cool backlit "Matchless" logo on the front panel). With a Class A power amp, a unique tone circuit and two 12" speakers, there is a quality to the mids and highs in this amp that is, well, Matchless. We've done our best to model its special character.

24. INTENS (same as Black Box version 1's "LAMOD")

This is the same model as version 1 software's "LAMOD" (L.A. modern high gain amp). It delivers a very intense, screaming lead tone. Not for the faint of heart—it may make you faint of hearing.

25. BIGMID (same as Black Box version 1's "UBER")

This is the same model as version I software's "UBER" (Bogner Uberschall). Since our new and improved UBER model better represents that fine amp, we kept this one but changed its named to better reflect its true nature. This model delivers a very solid and powerful midrange lead tone to cut through a mix.

26. SIZZLE (same as Black Box version 1's "MAVRIK")

This is the same model as version 1 software's "MAVRIK" (Mesa Boogie Maverick), but we've renamed it Sizzle to emphasize its own special personality. This model delivers tremendous presence.

27. PLEXIS (same as Black Box version 1's "PLEXI")

This is the same model as version 1 software's "PLEXI" (Marshall Super Lead "Plexi" 100 watt). Though we've created a new Plexi model for version 2 software, we kept this one because it captures a particular character of Marshall recordings of the 70s. (Think of Free's "All Right Now".)

28. SCOOP (a custom high gain model with scooped mid)

This custom model gives a big scooped-mid high-gain tone for solid crunch or lead work. Scoop away...

29. CRISP (a custom model with a 60s twangy tone)

This fun model gives a very crisp, twangy exaggerated tone for those early Beatles chord or solo clear sounds, often originally achieved with a VoxAC15 and console EQ. Sounds great overdriven too.

30. HOLLOW (a custom model with a cool, "hollow" sound)

This custom model gives an exaggerated "hollow" sound that will make people turn their heads and say "huh?" Try it for something completely different.

31. BITE (a custom model with biting high notes)

This custom model gives a great treble bite on the high notes coupled with a nice, overall warmth. Sort of like an AC30 off-mic'd through warm console EQ.

32. NECKPU (a custom model great for a Strat neck pickup)

This completely exaggerated "amp + console EQ" model gives an intensely boosted upper-mid treble and high bass with almost no mids, intended to be used when playing a Strat on the neck pickup. Think of the Rolling Stones' "Midnight Rambler" or Jimi Hendrix's "The Wind Cries Mary."

33. SOLID (a custom model with a very solid crunch and lead tone)

This custom amp model delivers a vintage tone with hints of Tweed Fender Deluxe but with tight upper bass, strong mids and pronounced high-end presence. Its solid rhythm crunch and vintage lead tones will take you places where other amps fear to tread.

34. ACO360 (based on Acoustic 360 bass amp)

The Acoustic 360 was another amp that just about everybody in the '70s used, including John Paul Jones. Its deep, loud bass partly derives from its unique 18" folded horn design. We pay homage to this fine instrument in our model.

35. AMPSVT (based on Ampeg SVT bass amp)

The 300-watt SVT—a classic and virtually ubiquitous rock bass amp of the '60s and '70s—was heavy both in tone and weight, particularly with the $8^{\circ} \times 10^{\circ}$ SVT cabinet we used for our model.

36. GK 800 (based on Gallien-Krueger 800RB bass amp)

Gallien-Krueger amps are very well-engineered, very loud and very heavy! (We dare you to try lifting the 800RB head, from which this model was created.) The Gallien-Krueger team understands that you need massive amounts of power to reproduce low bass without distortion. Beyond that, they also understand bass tone. This amp, very popular in the '80s, was a testament to an intimate knowledge of all the fundamentals that bassists require. We honor the Gallien-Krueger team with our model of their fine amp.

37 SWR500 (based on SWR SM500 bass amp)

The SWR-500, upon which our model is based, is the successor to the world-famous SWR400, chosen by professionals for its welldefined tone and graphic EQ. SWR amps have great, versatile sound and high, consistent quality and we're proud to include it in the Black Box's arsenal.

38. FUZZ (fuzz tone)

This amp and stomp box hybrid gives you the sound of vintage fuzz tones like Fuzz Face with bass, mid and treble controls. Think "American Woman" and create your own classic.

39. OCTAVE (based on Octave fuzz)

Here you'll find the classic Octave Fuzz sound, heard on hits like "Purple Haze." Excellent results are achieved on the high E string above the 7th fret using the neck pickup.

40. MICPRE (a clean mic preamp)

Select this one to get the clean, warm sound of plugging directly into the console. Thought we don't recommend drive settings above 0, overdriving it will produce a sound similar to the opening of the Beatles' "Revolution." Don't worry—this won't damage the circuitry...

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Editing the Modulation and Filter Effects

The Black Box has 121 different modulation and filter effects for you to choose from, most of which can be beat-synced to the drumbeats or to an external MIDI clock. It is these synchronized effects—including Black Box's wonderful filter sequences—that help make this device so creative, fun and inspirational to work with.

When you press FX, the lower part of the screen will display the following four control parameters: EFFECT, FX SPEED (or FX FREQ), FX DEPTH (or FX KEY), and FX WET/DRY. Here is a description of those settings:

Effect

This knob (#1) is used to select one of 121 modulation or filter effects. See the next section "Modulation and Filter Effect Descriptions" for a list of the effects and a description of each. Once selected, the effect can be modified by the other three parameters below.

FX Speed or FX Freq

This knob (#2) controls either FX Speed or FX Frequency, depending on the selected effect:

1) **FX Speed** controls the speed of modulation effects (effects that move up and down in frequency over time) and ranges from 0-99 (fixed speeds of .1 cycle per second through 10 cycles per second), followed by 16 tempo-synced speeds:

8M	8 measures	4N	I/4 note
4M	4 measures	4T	I/4 note triplet
2M	2 measures	8N	I/8 note
2MT	One cycle every 2 whole note triplets	8T	I/8 note triplet
IM	I measure	16N	I/I6 note
IMT	One cycle every whole note triplet	16T	I/I6 note triplet
2N	I/2 note	32N	I/32 note
2T	I/2 note triplet	32T	I/32 note triplet

2) **FX Freq (frequency)** controls the brightness of the effect for filter tremolo, random filter or filter sequence effects. "0" is the lowest frequency setting and creates a deep tone. The highest setting is 99 and creates a very bright tone.

FX Depth or FX Key

This knob (#2) controls either the FX Depth or FX Key, depending on which effect is selected:

- FX Depth controls how far up and down the effect moves over time. A setting of 0 gives no movement; a setting of 99 gives maximum movement. A setting of -99 gives maximum negative movement; for example, this will cause the auto wah effect to sweep only down instead of up when you play a note.
- 2) FX Key only appears when the arpeggiator effect is selected. It allows you to transpose the arpeggio sequence to a different musical key in semitone steps (i.e. half-steps) from 0 to 99. Settings of 0, 12, 24, 36, etc., are different octaves in the key of E. Most of the included sequences are set by default to 24, which is the key of E at an octave that is not too low and not too high. To transpose the sequence, change this value up or down by the number of semitones you which to transpose. For example, if the value is 24 (key of E) and you wish to transpose the arpeggiator sequence up to A, change the Key value from 24 to 29 (5 semitones). You can also transpose arpeggio sequences in real time by sending MIDI Note On messages from the computer.

FX Wet/Dry

This is a balance control between the effected and unaffected signal. 0 is no effect (effect is bypassed) and 99 is full effect.

Modulation and Filter Effect Descriptions

Black Box includes a variety of unique beat-synced modulation and filter effects that you won't find in other products. These unique sounds range from beat-synced versions of classic effects like tremolo or flanging to our innovative random filtering, filter sequences, tremolo sequences and arpeggio sequences. To hear these synchronous effects in their best light, we recommend that you audition them while the drum machine is playing . An effect by itself may sound interesting, but that same effect heard beat-synced to the drums suddenly becomes inspiring. Simply play open chords at first to get the full sound of the effect.

The MIDI effects permit various MIDI messages (note number, note velocity or controller) to alter the frequency of either the internal bandpass filter (wah-wah) or resonant flanger (also useful for arpeggiator effects). For example, you could use a computer sequencer to record your own custom filter or arpeggiator sequences. The Black Box's effects will then follow this sequence as you play along with your composition. These effects are for MIDI geeks only (you know who you are!) and some fantastic sounds can be created using these tools.

TREMI	Normal tremolo	ATOWA3	Auto-wah 3 (louder notes produce lower filter freq)
TREM2	Hard-switched tremolo	ATOWA4	Auto-wah 4 (same as I but soft filter tone)
TREM3	Sawtooth wave tremolo	ATOWA5	Auto-wah 5 (same as 2 but soft filter tone)
PANI	Normal stereo panning	ATOWA6	Auto-wah 6 (sharp attack, fixed decay)
PAN2	Hard-switched stereo panning	ATOWA7	Auto-wah 7 (louder notes = higher fixed filter)
PAN3	Left-to-right only stereo panning	ATOWA8	Auto-wah 8 (louder notes = lower fixed filter)
PAN4	Hard-switched random panning	WAHPDL	Wah pedal
FTREMI	Filter tremolo 1, up and down sweeping low-pass filter	ТКВОХІ	Talk Box I (voice box simulator)
FTREM2	Filter tremolo 2, sawtooth down mod of low-pass filter	TKBOX2	Talk Box 2 same as I but louder notes result in lower tone)
FTREM3	Filter tremolo 3, slow up and down band-pass filter	ТКВОХ3	Talk Box 3 (slow attack and decay speeds)
FTREM4	Filter tremolo 4, sawtooth up mod of band-pass filter	TKBOX4	Talk Box 4 (fast attack, slow delay speed)
FTREM5	Filter tremolo 5, switches between low-pass frequencies	ТКВОХ5	Talk Box 5 (note-triggered chorus sound)
FLANGI	Slow flanger, positive phase (full bass at top of cycle)	ТКВОХ6	Talk Box 6 (louder notes result in higher fixed freq)
FLANG2	I-bar flanger, inverted phase (less bass at top of cycle)	SWELL	Volume swell
FLANG3	I/4-note flanger, inverted phase	FIXFLT	Fixed band-pass filter (use FX FREQ to change frequency)
CHORSI	Chorus I, triangle wave, low depth	FIXFLA	Fixed flanger (use FX FREQ to change frequency)
CHORS2	Chorus 2, sine wave, higher depth	TLKPDL	Pedal-controlled talk box
ROTORI	Rotary speaker at slow speed	SCIFII	Science fiction sound FX 1
ROTOR2	Rotary speaker at fast speed	SCIFI2	Science fiction sound FX 2
VIBRAI	Vibrato at slow speed	SCIFI3	Science fiction sound FX 3
VIBRA2	Vibrato at medium speed	SCIFI4	Science fiction sound FX 4
RNFI 4	Random filter 1/4 notes, band-pass filter	SCIFI5	Science fiction sound FX 5
RNFI 8	Random filter 1/8 notes, band-pass filter	TRSQ I – TRSQ 20	20 preset tremolo sequences
RNFI8T	Random filter 1/8 note triplets, band-pass filter	FLSQ I – FLSQ 20	20 preset filter sequences
RNFI16	Random filter 1/16 notes, band-pass filter	ARSQ1 - ARSQ20	20 preset arpeggio sequences
RNFI24	Random filter 1/16 note triplets, band-pass filter	MVE2FI	MIDI velocity modulates filter freq
RNFL 4	Random flanger 1/4 notes	MNT2FI	MIDI note modulates filter freq
RNFL8	Random flanger 1/8 notes	MMD2FI	MIDI controllers I (mod wheel), I I, I 6, 70 or 74 modulate filter freq
RNFL8T	Random flanger 1/8 note triplets	MVE2FL	MIDI velocity modulates flanger freq
RNFL16	Random flanger 1/16 notes	MNT2FL	MIDI note modulates flanger freq
RNFL24	Random flanger 1/16 note triplets	MMD2FL	MIDI controllers I (mod wheel), II, I6, 70 or 74 modulate flanger freq
ATOWAI	Auto-wah I (filter frequency follows guitar level)		
ATOWA2	Auto-wah 2 (fixed attack-decay speed)	1	

Tremolo (TREM1 - TREM3)

This is a classic effect where the volume pulses up and down slightly at a selected speed. With a slow speed (8N) and low depth (30) you can achieve a nice mellow effect that can give a guitar track some character. With a high speed (16N) setting and a full depth setting (99) you can get an extreme machine-gun sound. There are three different tremolo effects to choose from—normal tremolo, "pulse" tremolo (in which the sound is switched fully on or off instead of a gradually pulsing) and "sawtooth" tremolo (in which the volume repeatedly diminishes then instantly switches to full volume.

Auto-Pan (PAN1 - PAN4)

This effect automatically pans the signal left and right at the selected speed, with four variations.

Tip: Try PAN2 at a speed of 8M, causing your guitar sound to switch between speakers exactly every four measures; it's like "trading fours" with yourself.

Filter Tremolo (FTREM1 - FTREM5)

This is similar to a standard tremolo, but rather than the volume pulsing up and down, the filter frequency (brightness) goes up and down, similar to a wah-wah pedal automatically rocking back and forth. Try 1/4 note triplets (4T) with a depth of (40) for a cool sound. There are several variations to choose from. Another great effect is FTREM3 which sounds like a wah pedal automatically being rocked back and forth every 4 measures; try this with a high-gain amp for a stellar lead sound.

Flanger (FLANG1 - FLANG3)

Flanging imparts a whooshing, "jet airplane" sound that slowly cycles up and down over time. There are three variations. FLANGI is a positive-phase flanger, giving a fuller bass at the top of its cycle whereas FLANG2 and FLANG3 are inverted-phase flangers, giving a more pronounced effect (like real tape flanging) at the top of the cycle. Black Box makes its own flanger much cooler than other products by making it move in sync to the beat.

For your information, the term "flanging" comes from how this effect used to be achieved in the old days of analog tape recording: The sound engineer would set up two tape machines with copies of the same recording then while listening to a mix of both, try to manually play them in sync. When their playback would drift apart to within about 20 milliseconds of each other, you'd start to hear this "jet airplane" sound because of the slight out-of-phase interaction of the two copies of the same recording. The method the engineer would use to manually get the two tape machines closer in sync was to put his hand on the "flange" (the circular top metal piece) of the tape reel and press down rhythmically to make one tape drag slightly slower than the other.

Chorus (CHORS1 and CHORS2)

This effect adds a subtle doubling effect to your sound. With a speed of one measure (1M) and a depth of (4) you'll get a nice, mellow chorus sound. Extreme settings like (8N) with a depth of (99) might make you seasick! There are two chorus effects to choose from.

Rotary Speaker (ROTOR1 and ROTOR2)

This is a simulation of the classic Leslie rotary speaker effect, primarily used with the Hammond organ but also appearing on countless guitar recordings, including Cream's classic hit "Badge." Use ROTOR1 for the slow rotary effect and ROTOR2 for the fast effect.

Vibrato (VIBRA1 and VIBRA2)

Vibrato, a periodic variation of pitch, is an effect that can add a moving feel to your sound that is more subtle than chorus or flanging—kind of like continuously bending the whammy bar on a Strat. Jazz guitarist Bill Frisell commonly plays with vibrato control on all the time and this adds a very nice quality to his tone, particularly when the vibrato interacts with the delay and reverb in his sound to produce chorus-like textures.

Random Filter (RNFI 4, RNFI 8, RNFI8T, RNFI16, RNFI24)

Sometimes called "Sample and Hold Filter," this effect changes to a new, randomly chosen filter frequency at even time intervals of either 1/4 notes, 1/8 notes, 1/8 note triplets, 1/16 notes or 1/16 note triplets. You can think of this, for example, as a wah pedal that instantly changes to a new random position on every 1/8 note. The FX FREQ parameter allows you to set a base frequency value. The Depth parameter determines how far above and below the base frequency the random frequencies' range will be. For tempo settings of 110BPM or less, try the RNFI16 effect. For tempo settings above 110BPM, try the RNFI18 effect.

Random Flanger (RNFL 4, RNFL 8, RNFL8T, RNFL16, RNFL24)

This effect is similar to the classic flanger effect except that instead of slowly sweeping up and down, it generates a new, randomlychosen flanger tone at every 1/4 note, 1/8 note, 1/8 note triplet, 1/16 note or 1/16 note triplet. The Frequency parameter allows you to set a base frequency value. The Depth parameter determines how far above and below the base frequency the random flanger frequencies' range will be. For tempo settings of 110BPM or less, try the RNFL16 effect. For tempo settings above 110BPM, try the RNFL 8 effect.

Auto Wah (ATOWA1 - ATOWA2)

Also known as envelope wah, this effect simulates, for example, a wah pedal that automatically rocks back and forth each time a new note is played. Because of this automatic rocking back and fourth, you can achieve an affect that is simply not possible with a standard wah pedal. A perfect example of this effect can be heard on the guitar solo in the song, "What I Am," by Edie Brickell and the New Bohemians. Instead of a speed control, this effect has a "frequency" control. You can think of frequency as a "brightness" control. Lower values create a deeper tone while higher values create a brighter tone. Each of the eight variations has a unique character. In auditioning them, play both loud and soft notes to get an idea of how each variation responds to dynamics.

Wah Pedal (WAHPDL)

The "wah" pedal has been around since the early 60's. The wah pedal uses a bandpass filter that exhibits a resonant peak at its bandpass frequency. The resonant peak can be moved up and down in frequency by the player, and this makes for a striking emulation of the human voice making a "waaaah" sound. A standard wah pedal usually has an on/off switch at the toe position, but since expression pedals have no such on/off function, a momentary foot switch connected to the rear panel must be used to turn the wah effect on and off.

Talk Box (TLKBX1 - TLKBX6)

This simulates the classic talk box effect made popular by Peter Frampton's song "Show Me the Way" and later by Bon Jovi's "Living on a Prayer." Originally, this effect was generated by a device that piped the instrument's sound into your mouth via a plastic tube. Moving your mouth as you played added vocal characteristic to the sound, which was picked up by a mic. This simulation doesn't generate specific words, but it does replicate a variety of mouth movements—without making you choke on a plastic tube. Each of the eight variations has its own unique character. In auditioning them, play both loud and soft notes to get an idea of how each variation responds to dynamics.

Volume Swell (SWELL)

With this effect, the strike of each note is silent but immediately fades up in volume afterward. For best results, try to silence each note before playing the next one. Otherwise, you'll hear a little bit of the subsequent note as the volume is very quickly being turned down from the full level of the last note's sustain.

Fixed Filter (FIXFLT)

This is like having a single parametric EQ before the amp models. Use the FX Freq control to set the frequency and the FX Wet/Dry control to set the amount.

Fixed Flanger (FIXFLA)

A flanger is actually a very short delay (0 to 10 ms) with feedback that moves up and down periodically, so a fixed flanger is merely a short delay with feedback. This can be used to achieve a sound similar to that of your amp in a small brick room—you can even use the FX Freq control to set the size of the room.

Talk Pedal (TLKPDL)

This is the same effect as the talk box above but in this case the frequency of the talk box is control by the external expression pedal. You can think of this as a wah pedal with a talk box sound.

Sci-Fi Effects (SCIFI1 - SCIFI5)

These sounds are just plain wacky. Use them to add an unexpected element to your performance or recording.

Tremolo Sequences (TRSQ 1 - TRSQ20)

Similar to the classic tremolo effect, but here the volume pulses in pre-programmed two-measure looping rhythmic patterns. There is no speed control for this effect as it simply follows the current tempo or incoming MIDI Clock. The depth should be set at (99) for best results. There are 20 different 32-step looped tremolo sequences, some with soft volume pulsing and soft with hard volume switching. Don't try to play rhythmically; best results are obtained either by holding sustained chords or arpeggiating the individual notes of chords in time to the rhythm. Examples of tremolo sequences in the presets are preset 84 ("GRNDAY"), the sound from Green Day's 2004 hit "Boulevard of Broken Dreams", 90 ("SYNCOP"), a sequence of syncopated rhythms, and 94 ("3+2+2+").

Filter Sequences (FLSQ 1 - FLSQ20)

This is one of the effects that really makes the Black Box unique. You'll probably be writing a new song based around this sound within minutes of trying it. In this effect, your instrument tone changes in two-measure looping rhythmic patterns of filter tones. As with the tremolo sequences, try playing sustained chords at first in order to get a feel for how the rhythm of the sequences best complements your playing. There are 20 different 32-step looped tremolo sequences, some with hard transitions of filter frequency and some that slide the filter frequency from step to step. As with tremolo sequences, don't try to play rhythmically; best results are obtained either by holding sustained chords or arpeggiating the individual notes of chords in time to the rhythm. Instead of a speed control, this effect has a "frequency" control. You can think of frequency as a "brightness" control. Lower values create a deeper tone while higher values create a brighter tone. Examples of filter sequences in the presets are 86, 87, 88, 89, 91, 92 and 93.

Arpeggio Sequences (ARPG 1 - ARPG20)

This effect definitely pushes the weird/cool meter to the limit. It accentuates specific musical notes in two-measure patterns. Even if you play muted strings on the guitar, you'll still hear the generated note sequence because the sequence's notes are actually generated in response to your playing. The note sequence is fixed and does not change depending on what you play, however you can transpose it up or down. You can choose from 20 different arpeggio sequences, each with a different pre-programmed note sequence, all in the key of E by default. There is no speed control for this effect as it simply follows the current tempo or incoming MIDI Clock. Instead of a depth control, this effect has an "FX Key" control, which allows you to transpose the sequence to a different musical key from its normal key of "E." Changing the key value transposes the arpeggio sequence in semi-tone steps numbered 0 to 99. Simply change the key value up or down to transpose the sequence to match your song. For example, the normal key value for a sequence in the key of "E" is usually 24; to transpose three semitones up to "G, change the value from 24 to 27. The arpeggiator will also react to incoming MIDI note values, which will transpose the key of the sequence in real time. This effect from Roger Linn Design's AdrenaLinn was used on John Mayer's 2003 hit "Bigger Than My Body" and you can hear that very sequence and drumbeat in our preset 85-JMAYER. To sound just like the recording, play an E suspended chord at the start of bar 1 and an E major at the start of bar 2. Other examples are presets 95-98. To start, don't try to play rhythmically; best results are obtained either by holding sustained chords or arpeggiating the individual notes of chords in time to the rhythm. Start with E chords and then work your way around.

MIDI Velocity to Filter

In this effect, incoming MIDI note velocity data is used to modulate the frequency of a bandpass filter. For example, if you record a MIDI track into a sequencer by simply pressing a keyboard key over and over at different velocity values, then play that MIDI track back to the Black Box while you play guitar, the filter frequency will change proportionally to the note velocities you played. This allows you to create your own custom filter sequences. If you don't find a filter sequence that you like among the 20 in Black Box, take the opportunity to create your own custom sequences!

MIDI Note to Filter

In this effect, incoming MIDI note numbers are used to modulate the frequency of a bandpass filter. For example, if you record a MIDI piano track in your sequencer and play that track in to the Black Box as you play guitar, the filter frequency will roughly track the frequency of the notes played by the sequencer. If you don't find a filter sequence that you like among the 20 in Black Box, take the opportunity to create your own custom sequences,

MIDI Modulation to Filter

In this effect, a bandpass filter is used with incoming MIDI controller values modulating the filter frequency. The filter will respond to controller numbers 1 (mod wheel), 11, 16, 70 and 74. For example, you could use a MIDI keyboard's mod wheel as a wah wheel.

MIDI Velocity to Flanger

In this effect, a flanger is used with incoming MIDI velocity modulating the flanger frequency. For example, if you record a MIDI track into a sequencer by simply pressing a keyboard key over and over at different velocity values, then play that MIDI track back to the Black Box while you play guitar, the flanger tone will change proportionally to those velocity values.

MIDI Note to Flanger

In this effect, a flanger is used with incoming MIDI note values modulating the flanger frequency. For example, if you record a MIDI piano track into a sequencer and play that track into the Black Box as you play guitar, the flanger frequency will exactly match the frequency of the notes played by the sequencer. If you don't find an arpeggio sequence that you like among the 20 in Black Box, this gives you the opportunity to create your own custom sequence.

MIDI Modulation to Flanger

In this effect, a flanger is used with incoming MIDI controller values modulating the flanger delay. The flanger will respond to controller numbers 1 (mod wheel), 11, 16, 70 and 74.

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Editing the Delay and Reverb

The Black Box has a dedicated delay effect with a special advantage—it can automatically sync its delays to the drumbeat or incoming MIDI clock. This is great for creating syncopated delays; setting the delay time to dotted 1/8 notes will create fascinating rhythmic effects similar to those used by U2's The Edge. And setting the delay time to one measure enables simple looping; you play one measure then solo over it on the second measure when it comes back.

With version 2 firmware, Black Box now has a stereo reverb. Between the beat-synced delay and the reverb, Black Box can achieve some very big sounds.

Push the Delay key to bring up the four Delay menus: DELAY TIME, DELAY REPEATS, DELAY VOLUME and DRUMS TO DELAY. Reverb is also controlled by this key. The three reverb parameters—REVERB TIME, REVERB HIGH FREQUENCY and REVERB VOLUME—are implemented as Shift parameters of the first three Delay parameters.

Here is a description of each of the Delay and Reverb parameters:

Delay Time

This parameter sets the time between your original signal and the delayed signal. This is where the Black Box differs from other delay effects. Most delay effects make you set delay time in milliseconds (ms). This is useful and the Black Box can do this too. However, it is very difficult to try to make a (ms) setting match the tempo of your song. On the Black Box you simply set the delay time using note values. Try a half-note (2N) for starters or dotted 1/8 notes (8D) for a great syncopated effect. This is the beauty of beat-synced effects. The delay time settings are:

0 - 2511ms:	100 fixed delay values from 0 to 2511 milliseconds. The actual delay time in milliseconds is shown in the LCD.
2M	2 measures (Uses 'IM' below I72 BPM, '2n' below 86 BPM and '4n' below 43 BPM)
2MT	2 'measure triplets' (3 delays in 4 measures; uses '1Mt' below 115 BPM and '2t' below 58 BPM)
I Md	Dotted whole note (1.5 measures; uses '2d' below 129 BPM and 4d below 65)
IM	I measure (Uses '2n' below 86 BPM and '4n' below 43 BPM)
IMT	I 'measure triplet' (3 delays in 2 measures; uses '2t' below 58 BPM)
2D	Dotted 1/2 note (1/2 note + 50%; uses '4d' below 65 BPM)
2N	I/2 note (Uses '4n' below 43 BPM)
2Т	I/2 note triplet (3 delays in 1 measure)
4D	Dotted 1/4 note (1/4 note + 50%)
4N	I/4 note
4T	I/4 note triplet (3 delays in a I/2 note)
8D	Dotted 1/8 note (1/8 note + 50%)
8N	I/8 note
8T	I/8 note triplet (3 delays in a 1/4 note)
I6D	Dotted I/16 note (1/16 note + 50%)
16N	I/I6 note
16T	I/16 note triplet (3 delays in an 1/8 note)
32N	1/32 note
32T	1/32 note triplet (3 delays in a 1/16 note)

Delay Repeats

This parameter sets the number of repeats in your delayed signal. Lower settings have fewer repeats, while higher settings have more repeats. Try a setting of (25) for starters.

Delay Volume

This parameter simply sets how loud the delayed signal is compared to your original signal. Try a setting of (20) for starters.

Drums to Delay/Input

This is a special feature that allows you to send the drum machine signal into the delay effect or directly into the input path of the Black Box. The whole idea here is to create interesting drum sounds. Since you can record the output of the Black Box via USB, S/PDIF or the analog outputs, you can now also create a custom drum loop library based on drum sounds created with the Black Box. The parameter value can be set from "DLY 00" to "DLY 99" for delay. The higher the number, the more delayed drum signal you will hear along with your original drum sound. This parameter can also be used to send the drums signal to the input of the amp modeling, effects and delay signal chain, just like the guitar input. To do this, turn the rotary control past the 100 delay settings for another 100 settings: "INP 00" to "INP 99." Again, since the effects are beat-synced to the drum machine, all of the effects stay in perfect time. You can get some truly new and inspiring drum sounds. Increasing this parameter further permits sending the drum signal to the reverb; the options are REV 00 (no send to reverb) through REV 49 (maximum send to reverb).

Delay On/Off

To turn delay on or off, hold the Delay button for one half second. When off, the Dly Off icon will appear in the LCD screen.

Reverb Time (Shift: Delay Time)

This permits the selection of one of five reverb times:

- RVTM I (tiny)
- RVTM 2 (small)
- RVTM 3 (medium)
- RVTM 4 (large)
- RVTM 5 (huge)

This is a Shift parameter. To view or adjust it:

- I) Press the Delay button and select column I.
- 2) Double-tap the Delay button to enter Shift mode.
- 3) The screen will show the current Reverb Time value. To change it, turn rotary control I.

Reverb High Frequencies (Shift: Delay Repeats)

This permits the level of high frequencies in the reverb signal to be controlled. The range is from 0 to 99:

- RHF 0 (least high frequencies)
- RHF 99 (most high frequencies)

This is a Shift parameter. To view or adjust it:

- I) Press the Delay button and select column 2.
- 2) Double-tap the Delay button to enter Shift mode.
- 3) The screen will show the current Reverb High Frequency value. To change it, turn rotary control 2.

Reverb Volume (Shift: Delay Volume)

This permits the level volume of the reverb signal to be adjusted. The range is from 0 to 99:

- RVL 0 (no reverb)
- RVL 99 (high reverb volume)

This is a Shift parameter. To view or adjust it:

- I) Press the Delay button and select column 3.
- 2) Double-tap the Delay button to enter Shift mode.
- 3) The screen will show the current Reverb Volume value. To change it, turn rotary control 3.

Reverb On/Off

To turn reverb on or off, hold the Utility key for more than 1/4 second (just like holding Amp, FX and Delay turns on or off the amp, effects and delay).

And one more thing...

Reverb/Delay Compromises

If reverb is on, delay is limited to a maximum of 625 milliseconds. Specifically:

- 1) If reverb is on and delay time is increased past a fixed value of 625 ms, then reverb is turned off. If reverb is on and delay time is set to any tempo-based value that requires more than 625 ms at the current tempo, the delay time is internally changed to 1/2 or 1/4 of that value to fit within 625 ms.
- 2) If delay time is set to a fixed value higher than 625 ms and reverb is turned on, then delay is turned off (the Dly Off icon will appear). If delay time is set to any tempo-based value that requires more than 625 ms at the current tempo and reverb is turned on, the delay time is internally changed to 1/2 or 1/4 of that value to fit within 625 ms.

Editing the Utilities

The Utility key provides access to the following settings:

- Preset Volume
- Noise Gate
- Guitar/Drums Balance
- Link Drumbeat
- Expression Pedal Assignment
- Tempo
- Tempo Source

Here's a description of each of these parameters:

Preset Volume

This sets the output level of the selected preset. It only has an effect if amp modeling is used; it will have no effect if the amp modeling is bypassed. Use this control to adjust the volume of the preset relative to other presets, as well as to set the recording level to your recording software. In setting this value, choose a setting that sounds equal in volume to the sound level when the amp and FX are both bypassed. To do this, toggle the amp on and off by holding the Amp key; toggle the modulation/filter effects on and off by holding the FX key. When the effected and bypassed levels are about the same, you've set the preset volume to the right level. As a reference, if Drive = 0 and Bass, Mid and Treble = 60, a preset volume of 50 should be roughly equal to the level when the amp is bypassed.

Noise Gate (Shift: Preset Volume)

Black Box includes a noise gate that will silence or reduce any background noise when you're not playing. This is actually a dynamic expander, gradually decreasing the background noise as you gradually decrease your playing level. In order to accommodate different playing styles and levels of pickup/background noise, there are 9 gate thresholds:

- GATE 0: Noise gate is disabled.
- GATE I: Noise gate is on at lowest threshold. Very sensitive to soft picking, OK when very little background noise and pickup hum exists.
- GATE 9: Noise gate is on at highest threshold. Least sensitive to soft picking, but best rejection of high background noise and hum.

This is a Shift parameter. To view or adjust it:

- I) Press the Utility button and select column I.
- 2) Double-tap the Utility button to enter Shift mode
- 3) The screen will show the current Gate value. To change it, turn rotary control 1.

Guitar/Drums Balance

This controls the relative balance between the guitar and drum signals. This is a global parameter, meaning that it stays where you set it even after you change presets. A setting of G50 will only provide guitar sound. A setting of D50 will only provide drum sounds. Any setting in between will play a combination of both. A middle setting of EQU means that the output of the drums is equal in volume to the output of the guitar effect. A setting of SEP means the drum signal will come out of one output, while the guitar effect signal will come out of the other, which is useful if you wish to record both signals simultaneously, but have them each on one of two separate (mono) tracks.

Link Drumbeat (Shift: Guitar/Drums Balance)

This setting permits each preset to have an assigned drumbeat. When the preset is selected, its assigned drumbeat is automatically selected. Certain presets and drumbeats go together well and with this setting on, selecting a preset will automatically select a drumbeat that goes well with it. This is a global parameter, meaning that it stays where you set it even after you change presets. This parameter has two options:

- LKDB N:When you select a new preset, the drumbeat won't change (as in version 1 software).
- LKDBY: When you select a new preset, its assigned drumbeat is automatically selected.

This is a Shift parameter. To view or adjust it:

- I) Press the Utility button and select column 2.
- 2) Double-tap the Utility button to enter Shift mode.
- 3) The screen will show the current Link Drumbeat value. To change it, turn rotary control 2.

Note: To assign a specific drumbeat to a user preset, simply select the drumbeat and save the preset. The assigned drumbeat of factory presets cannot be changed.

Expression Pedal Assign

This allows you to assign the function of the expression pedal. This assignment is saved with each preset. The options are:

VOLUME	A volume pedal before amp models
FXSPED	FX speed
RVBVOL	Reverb volume
FXDPTH	FX depth
FXKEY	FX key
WETDRY	FX wet/dry
DLYVOL	Delay volume
DLYRPT	Delay repeats
DM2DLY	Drums send to delay
DM2INP	Drums send to input of entire signal chain, same as guitar
DM2RVB	Drums send to reverb

For an expression pedal, we recommend using either the M-Audio Black Box Pedal Board, which contains an expression pedal and two foot switches, or the M-Audio EX-P Expression Pedal. Many expression pedals, including the M-Audio EX-P, have a range control knob. This knob needs to be turned all the way up for the expression pedal to have maximum effect range. Turning the knob down limits the lowest value of the parameter you are controlling.

Tempo

This allows you to view and manually set a specific tempo value rather then using the tap tempo feature. The range is from 30 to 250 Beats Per Minute. You can also view this parameter by pressing Tap Tempo once.

Tempo Source (Shift: Tempo)

This permits the choice of one of three sources for the playing tempo:

- TPO PR (Preset tempo): Whenever a new preset is selected, its assigned tempo automatically becomes active.
 Note: Whenever a preset is saved, the current tempo setting it had is saved with the preset as its assigned tempo.
- TPO DB (Drumbeat tempo): Whenever a new drumbeat is selected, its assigned tempo becomes active.
 Note: The assigned tempo of the drumbeat is set at the factory and though it can be changed, the changed value cannot be resaved to the drumbeat.
- TPO GL (Global tempo): The tempo never changes unless manually changed.

This is a Shift parameter. To view or adjust it:

- 1) Press the Utility button and select column 4.
- 2) Double-tap the Utility button to enter Shift mode
- 3) The screen will show the current Tempo Source value. To change it, turn rotary control 4.

This is a global parameter, meaning that it stays where you set it even after you change presets.

Black Box also has two inputs for connecting momentary foot switches. When you connect one or two foot switches to these inputs, you can use your feet to remotely control any of the top panel's button functions, such as incrementing or decrementing presets or drumbeats, turning effects on or off, turning the tuner on or off, etc..

Assigning Momentary Foot Switch Pedal Settings

The Black Box has three pedal connections on the back panel. One of these is for an expression pedal and the two others are for momentary foot switch pedals. To learn how to assign an external expression pedal, see "Expression Pedal Assignment" in the "Editing the Utilities" section.

The two inputs labeled "P1" and "P2" are for momentary foot switch pedals. These pedals can perform the same functions as the keys on the left side of the Black Box. To assign these pedals, simply hold down the pedal you wish to assign, press the desired keys on the left side of the Black Box, then promptly release the pedal. The possible assignments are:

- Drumbeat Decrement
- Preset Increment
- Preset Decrement
- Tap Tempo
- Start/Stop
- View Drumbeat (Hold foot switch while pressing both Drumbeat Increment and Drumbeat Decrement)
- Tuner (Hold foot switch while pressing both Delay and Utility keys)
- Amp On/Off (Hold foot switch while pressing Amp key)
- FX On/Off (Hold foot switch while pressing FX key)
- Delay On/Off (Hold foot switch while pressing Delay key)
- Reverb On/Off (Hold foot switch while pressing Utility key)

We recommend using the M-Audio SP-1 momentary pedal, or the Black Box Pedal Board which contains two foot switches and an expression pedal. You may use either "normally closed" or "normally open" foot switches; the Black Box automatically senses which type is connected when power is turned on. For this reason, it is better to connect or disconnect any foot switches while power is off. If not, the Black Box can't tell the difference between connecting/disconnecting a foot switch and holding the foot switch down. For example, if you assign a foot switch to Preset Increment and then disconnect it, Black Box may think you're holding down the foot switch, intending to rapidly scroll upward through the presets. Don't worry—this will not cause any serious problems and the Black Box will adapt to the situation after 30 seconds. To avoid confusion, simply remember to connect or disconnect the foot switches while power is off.

Accessing the Shift Parameters

The new version 2 firmware installed in your Black Box contains the following new bonus features:

- Amp Mid control
- Reverb
- Compression
- Link Drumbeat: Now selecting a preset will automatically call up its assigned drumbeat, which you can change.
- Tempo Source: Now you can select one of three sources for the playing tempo: the preset's assigned tempo, the drumbeat's assigned tempo or the global tempo.

These new bonus features go beyond the 16 parameter menus in the LCD display, so we created a new Shift mode to access their settings. To access these settings, you'll need to use the new Shift mode.

The parameters for these new features are implemented as Shift menus. Similar to how the Shift key on your computer keyboard permits a single key to have two functions, the new Shift mode permits a single row and column in the 4×4 menu matrix to have both a normal and shifted menu function.

For example, the new Amp Mid control is the Shift function of Amp Bass. To view or change Amp Mid:

- 1) Select Amp Bass by pressing Amp and then turning the third menu knob one "click" to select its column. You'll now see the current value of Amp Bass.
- 2) Double-tap the Amp button to view the Shift parameter, Amp Mid. Even though the menu still blinks "AMP BASS," the screen text shows "MID 50" and the screen's Parameter icon blinks to indicate that Shift mode is active.
- 3) To change the value of Amp Mid, turn the third menu knob up or down.

To exit Shift mode, press any key or turn another menu knob.

Here's an overview of the new Shift functions and where they are located in the 4×4 menu matrix:

Double-tap this button to SHIFT	Shift parameter found under KNOB 1	Shift parameter found under KNOB 2	Shift parameter found under KNOB 3	Shift parameter found under KNOB 4
		COMPRESS	AMP MID	
FX				
Delay	REVERB TIME	REVERB TREBLE	REVERB VOL	
Utility	GATE	LINK DRUMBEAT		TEMPO SOURCE
_	\bigcirc	\bigcirc	\bigcirc	\bigcirc

For an explanation of these functions, see the relevant section of this manual.

Tuner Function

Tuner Function

Pressing the Utility and Delay buttons simultaneously will engage the Black Box's built-in instrument tuner. This is a tuner sensitive enough for any guitar or bass. Play a note and it will be displayed in the LCD with a pair of arrows to either side. More arrows on the left side than the right indicate that the note is flat; more arrows on the right side than the left indicate that it is sharp. When all four arrows are displayed, two on either side of the note, then you are perfectly in tune for the note displayed. Pressing any button will exit the tuner function.

How to Store and Name a Preset

When browsing presets, the Preset icon will be displayed along with the User icon (if a user preset is selected). The preset name will also be shown in the LCD. Anytime a change is made to a preset, the Edit icon will display letting you know that you must store the change if you wish to keep the changes. To engage the Store function, press the Preset Increment and Preset Decrement keys simultaneously. When the Store function is engaged, the Preset Number icon will blink and the first three characters of the preset name will blink. To rename the preset, turn the first three rotary knobs to change the values of the first three characters. The fourth rotary knob is used to switch between editing the first three and the last three characters. Turning it to the left selects the first three characters. Turning the encoder to the right selects the last three characters. You can then use the Preset Increment and Preset Decrement keys to select a different preset number to store to. If a factory preset was being edited, the same-numbered user preset will be stored to the newly selected user preset, and the Preset Number icon will stop blinking. The newly written preset will now be loaded.

Initializing Black Box to Factory Settings

To completely initialize Black Box to its new factory-delivered settings, hold Utility and Start while connecting power. This will copy the factory presets over the user presets and set all global settings to factory status. The global settings are:

- Active Preset
- Active Drumbeat
- Guitar/Drums Balance
- Footswitch | Assignment
- Footswitch 2 Assignment
- Noise Gate
- Link Drumbeat Yes/No
- Tempo Source (Preset, Drumbeat or Global)
- Global Tempo

Connecting your Hardware to the Computer

The Black Box is a class-compliant device for both Windows XP (SP2) and Mac OS X 10.3.9 or 10.4.4 and above. "Class-compliant" means that there is no need to install M-Audio software drivers on your computer in order to achieve minimum functionality. Minimum functionality means that you will be able to record the processed guitar sound in most standard DAW applications, including Ableton Live Lite 4 GTR. However, without the drivers installed, the DAW will not have access to the dry guitar or the XLR mic input, nor will your unit be able to lock to incoming MIDI Clock from a DAW. You will also not be able to save and load presets to your computer, as this is a function of the Black Box control panel. You will also not be able to update the firmware of your unit. You can always start by running the unit as a class-compliant device and then install the drivers later in order to obtain these other features if you need them. However, be sure that your Black Box is not connected to your computer via USB when you begin to install the drivers.

To start using the Black Box as a class-compliant device, simply power the unit on and connect it to your computer via USB.

Windows XP Setup

In your Windows XP control panel, double-click on the Sounds and Audio Devices icon, then select the Audio tab. You should see the screen below. If the Black Box does not show up automatically, use the drop-down menus to select it. If the device is not available, restart your computer and try again.

olume	Sounds	Audio Voice	Hardware
Sound	olayback		
0,	Default devid	ce:	
-	Black Box		×
		Volume	Advanced
Sound	ecording		
2	Default devid	ce:	
18	Black Box		~
		Volume	Advanced
MIDI mu	isic playback		
-	Default devid	ce:	
	USB Audio	Device	~
		Volume	About
Use a	nly default dev	ices	

Mac OS X Setup

On the Mac, open Audio MIDI Setup in your Applications > Utilities folder. You should see the screen below. If the Black Box does not show up automatically, use the drop-down menus to select it. If the device is not available, restart your computer and try again.

$\Theta \Theta$			Audio MI	DI Setup				
		Audio	Devices	MIDI Device:	5			
System Settings								
Default Input:	🕈 Black Box		•	Default Outp	ut: 🕂 Bla	ck Box		;
				System Outp	ut: 🕂 Bla	ck Box		
Properties For:	🖞 Black Box		•					
Clock Source:	Default		Å					
Audio Input				Audio Output	t ———			
				C	Configure	Speakers		
Master Strea	m (Master S	tream	A T		
Source: De	fault		A Y	Source:	Default			A Y
Format: 441	.00.0Hz 🔽 👍	h–24bit	•	Format:	44100.0Hz	2 ch-	24bit	;
Ch Volume	dB V	alue Mute	Thru	Ch Volume		dB	Value	Mute
M	n/a	n/a 📃	06	M 🔶		n/a	n/a	
1 ()	n/a	n/a		1 0		n/a	n/a	
2 💮	n/a	n/a 📃	- T	2 💮 🚽		n/a	n/a	

Using the Black Box with the Computer

As a stand-alone device, the Black Box does not require connection to a computer. Many users may never hook their Black Box up to a computer and be perfectly happy with it. For those of you who wish to use the audio/MIDI interface features of your unit ... read on.

Latency

One of the major issues that people often experience with computer-based recording is "latency." Latency is defined as the time it takes from the moment you play a note until the time your computer records this note and then plays that note back to you. It may come as a surprise to you that there can be a substantial delay from the time you play a note until you hear that note. The amount of delay (latency) you may experience depends on many things—the speed of your computer, your operating system and your audio hardware. Even settings in your software application can make a difference. Additionally, using plug-ins can increase latency. When recording guitar parts on a DAW (Digital Audio Workstation), some people will use plug-ins. These are software-based effects processors that can be inserted into your dry input signal. Many plug-ins can sound very good. However, using plug-ins also adds even more latency because the processing takes a little time to accomplish. It comes down to the fact that if you can't hear your guitar sound at the exact moment you play it, you cannot possibly play in time with the rest of the tracks. You'll be happy to know that you don't have to worry about ANY of these problems when using the Black Box.

When recording with the Black Box, you are ALWAYS monitoring your guitar sound in real time—there is no delay whatsoever. You are NOT input-monitoring the track you are recording. You are monitoring the DSP sound output of the Black Box. Simply set the Mix (Input/Playback) knob on the unit to the 12 o'clock position (right in the middle), MUTE the track in the sequencer that you are using to record, and adjust the output level to taste. When you are done recording that track, turn the mute off. Turn the mute ON for the next track you wish to record. When you start recording a new track at the beginning of the song again, now you will hear your previous track along with the input of the sound you are recording on the new track. If you find that you need to hear more of the input signal or the playback signal, simply adjust the Mix (Input/Playback) knob. Even when using the Black Box as a class-compliant device, you will never experience any latency when you record.

MIDI Clock

One of the coolest features of the Black Box is the fact that the effects are beat-synced to the internal drum machine. However, if you install the Black Box drivers on your computer, the drum machine and beat-synced effects can now also lock to incoming MIDI Clock from the DAW via USB. For instance, if you set your session tempo to 135 BPM, the internal drum machine and beat-synced effects on the Black Box will also follow the session's tempo via incoming MIDI clock. There are a few settings that must be made to make this happen. On the Effects & MIDI tab of the Black Box control panel, you must change the timing source to External MIDI Beat Clock. Then, in your DAW software, you must tell it to send MIDI Beat Clock to the Black Box. For example, in Live Lite 4 GTR, select Preferences and then click on the MIDI/Sync page. In your Active Devices area, check Black Box as Output. In the Sync area, select MIDI Clock, and under Output, select Black Box. Now the drum machine and the beat-synced effects will follow the tempo you have set in Live. When you click on Play in Live, the drum machine will automatically begin to play and the tempo LED on the Black Box will blink to the incoming tempo. If you don't wish to hear the drum machine and only wish to clock the beat-synced effects, press the Utility key on the Black Box, then change the GTR/DRM BAL parameter to G50. Now only the effects will be heard.

0 0			
Audio MIDI / Sync	Plug-In	Defaults	Misc
Active Devices			
Input		Output -	
Computer Keyboard Black Box Delta-AP MIDI	ļ	Black B Delta-AF	ox ▲ ▶ MiDi
Remote Control			
Input		Output -	
Black Box		Black Box	
Black Box	4		Send Updates
Sync Input			
None	♥ 0	0.00 ms Syne	Delay
MIDI Timecode	Time	code Rate	Smpt All
MIDI Clock	Time	code Offset	0:0:0:0
Output			
Black Box		0.00 ms Syne	: Delay

Driver Installation

Windows XP (SP2)

NOTE: Do NOT connect the Black Box to your computer until you have run the installer application and completed the installation.

Insert the Black Box driver CD-ROM into your computer. If your computer's "Autoplay" function is on, an M-Audio menu screen will come up. If not, you'll need to browse the contents of the CD and select "Autoplay." With the M-Audio menu up, use the Product drop-down menu to select Black Box. Then click on "Install." The installation process will begin. Click "Next>" to continue.



After you've read the license agreement, please click the "I accept..." circle if you agree to the terms. Then click "Next" to continue.



The installer will copy the necessary files to your computer's hard drive when you click on INSTALL.

Setup is rea	dy to install your M	Audio Black Box	drivers.	

During the installation, you will be prompted with a message warning that the driver software has not passed Windows Logo testing

Select "Continue Anyway" and proceed with the installation.

Once the installer has finished copying the files, you will see the "Installation Successful" screen. Click FINISH.

Plug your USB cable into your Black Box, and then plug the other end of the USB cable into the computer.

Windows will identify the Black Box. You may be asked if you want to search the internet for a driver. Select "No, not this time" and press "Next."

Your computer will display a "New Hardware Found" message indicating your Black Box is now installed and ready to use.

You will see the M-Audio Black Box Control Panel icon in your system tray (lower right corner of your desktop). Double-click on the icon to open the Black Box control panel.

In your Windows XP control panel, double-click on the Sounds and Audio Devices icon, then select the Audio tab. You should see the screen below. If the Black Box does not show up automatically, use the drop down menu to select it. If the device is not available, restart your computer and try again.

olume	Sounds	Audio	Voice	Hardware
Sound p	layback			
0	Default device:			
9	Black Box Out 1/2	2		*
	<u>⊻</u> o	lume	Adva	oced
Sound r	ecording			
2	Default device:			
18	Black Box In 1/2			~
	Vg	Ame	Adva	nged
MIDI mu	sic playback			
PAA	Default device:			
and the second	Microsoft GS Way	retable SW/S	ynth	~
	[Va	àme	Ab	out
	ly default devices			

Skip to the Control Panels section following the Mac installation instructions.

Mac OS X

Insert the M-Audio driver CD into your CD-ROM drive and open the CD to view its contents. Click the "Open Me" icon. An M-Audio menu will appear. Use the Product drop-down menu to select Black Box. Then click on "Install." The installation process will begin. Click "Continue."



Click "Continue" when you see the Welcome screen below.

00	Install M-Audio Black Box		
Welcome to the M-Audio Black Box Installer			
Introduction	Welcome to the Mac OS X Installation Program. You will be guided through the steps necessary to install this software.		
Read Me			
License			
Select Destination			
Installation Type			
Installing			
Finish Up			
	Go Back Continue		
	Go back Continue		

M-AUDIO

The Read Me box will appear next. This box contains important information on changes that may have occurred since the writing of this manual, so be certain to read through it. Then click "Continue."

	Important Information
⊖ Introduction	M-Audio Black Box
Read Me License	Please read these notes carefully before proceeding.
Select Destination	We suggest running with Mac OS X version 10.3.9 or newer.
 Installation Type Installing Finish Up 	You are about to install or upgrade software which may have several effects on your M-Audio USB devices. The software will: • provide the latest audio drivers for the M-Audio Black Box. Once you have completed installation, connect the device to a USB port on your computer. (We do not recommend the use of USB hubs with our devices.) Version History
	1.6.4 • Added support for Black Box version 2 DSP firmware.

You will then be presented with the License Agreement. Click "Continue," and then click "Agree" if you agree with the License Agreement.

	Install M-Audio Black Box				
To the	continue installing the software, you must agree to the terms of a software license agreement.				
⊖ Int	English 🖓				
⊖ Rei Cli	ck Agree to continue or click Disagree to cancel the installation.				
e Lic	THEFTOR AND LATER OF THE SEAL AND RE-				
• Sel	Disagree Agree				
• Instance	Type				
• Installing	THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT,				
• Finish Up	PROMPTLY EXIT THIS PAGE WITHOUT INSTALLING THE SOFTWARE.				
	Grant of License (WHAT YOU MAY DO): Midiman, Inc. and M-Audio ("Licensor") hereby grants to you a non-exclusive license to use the program and/or program update with which this license is distributed (the "Software"), including any documentation files accompanying the Software (the "Documentation") on a single server (if the Software is server based) or personal Computer or Mac (if the Software is PC or Mac based) to support one user, and to make one (1) backup copy of the Software, provided that (it he Software is installed on only one (1) server or PC or Mac as the				

Select a destination disk for the installation, and then click "Continue."



In the Easy Install box, click "Upgrade."

00	Install M-Audio Black Box			
Easy Install on "Macintosh HD"				
Introduction				
⊖ Read Me	Click Upgrade to perform a basic installation of this			
⊖ License	software package on the volume "Macintosh HD."			
Select Destination				
Installation Type				
Installing				
Finish Up				
	Co Pack Ungrade			
	Go Back Opgrade			

You will need your Administrator Password for the next step. After you enter it, click "OK" and then click "Upgrade."

	Authenticate
	taller requires that you type your password.
Name:	User Name
Password:	
Details	
?)	Cancel OK

On the following box, click "Continue Installation."

00	Install M-Audio Black Box
e Introduct e Read Me f License e Select De	Installing this software requires you to restart your computer when the installation is done. Are you sure you want to install the software now?
Installation Type	
Installing	
Finish Up	
	Go Back Upgrade

Your M-Audio drivers will install. You will then see that the software was successfully installed. Click Restart.

Install Software		
 Introduction Read Me License Select Destination Installation Type Installing Finish Up 	The software was successfully installed Click Restart to finish installing the software.	
	Go Back Restart	

After the computer has restarted, connect the Black Box to your computer via USB.

The Black Box will now be available in your Audio MIDI Setup. Be sure that the device is shown as "M-Audio Black Box." If it is only listed as "Black Box," the unit is still being recognized only as a class-compliant device. Try reinstalling the driver if this happens.

Go to "System Preferences" in the Apple Menu. You will find the Black Box icon listed under "Other." Click on the icon to see the Black Box control panels.



Control Panels

A description of each function follows the screen shots.

Effects & MIDI Page



Effects Input Source

Only one source at a time can feed the effect processor. The default setting is "Guitar." In stand-alone mode, the input source is ALWAYS "Guitar." When connected to the computer you can change the input source to "Microphone." This allows for some crazy vocal effects. Left-clicking on the radio button will make your source selection.

Timing Source

The delay and filter effects of the Black Box can lock to the internal drum machine tempo or external MIDI beat clock. Simply leftclick on the radio button to make your selection. Your MIDI application must be set to send MIDI beat clock out to the Black Box MIDI port. (Although the Black Box does not have standard MIDI 5-pin DIN connections, it responds to MIDI over USB.)

MIDI Channel

This setting allows you to specify a MIDI channel from which the Black Box will respond to MIDI messages. The choices are 1-16 or ALL (default). The Black Box will respond to program changes to select user presets 0-99.

Latency Page (Windows Only)

fects & MIDI	Presets & Firmware Latency About
4096 128 256	Latency is a measure of the delay between the time you make a sound and the time the computer records (or monitors) that sound. Here, the unit for latency is the number of samples the driver collects before sending them to an application as input. Lower latency can make recording easier and more accurate, but not all computer systems can operate at the lowest latencies without introducing noise. If you experience unwanted input noise, increase latency.

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In this field you can adjust the latency buffer size you wish to work with. Smaller buffer sizes result in lower latency ("latency" refers to the time it takes for your input signal to pass through your audio software and appear at the outputs), but smaller buffers may not function well with slower systems. The default buffer size setting is 256. This setting may adequately serve your purposes, but if you wish to, you can experiment with lower settings. If you experience any stuttering or crackling in your audio signal playback, try selecting a larger buffer size. A general rule of thumb is that you want the smallest buffer setting possible for recording and the largest buffer setting available for mixing.

NOTE: This section does not apply to Mac OS X, and will not appear if you are running that operating system. However, most Mac DAW applications do allow you to define a preferred buffer setting in the application. It has the same effect as the adjustment described above.

Presets & Firmware Page

 Effects & MIDI	Presets & Firmware	About	
Current Preset	DSP Firmw	are	
Copy to Device	Copy	to Device 🔻	
Copy from Device	current v	version: 2.3.1	

fects & MIDI	Presets & Firmware	Latency	About
- Current P	reset	DS	P Firmware
C	opy to Device		version 2.3.1 👻
Co	py from Device		Copy to Device

Current Preset

Copy to Device

Presets are saved on the computer as MIDI SYSEX files (.syx). These files can be named like any other file in the Windows or Mac OS. Be aware that the name of the file on the computer has nothing to do with the name of the file in the Black Box. The Black Box has its own naming convention described on page 24 in this manual. When you click the OK button for the Import Preset, a browser window appears allowing you to select the proper preset file. Once the file is selected and you click OK, the selected preset is loaded into the current Black Box Preset location. This will replace the previously loaded preset in the Black Box. **NOTE**: If that preset was not already backed up to the computer, that preset will be lost forever.

Copy from Device

Presets are saved on the computer as MIDI SYSEX files (.syx). When you click the OK button for the Export Preset, a browser window appears allowing you to select a location to store the preset file. Once the location is selected, you click OK and the selected preset is stored to the computer. This file can be named like any other file in the Windows or Mac OS. Be aware that the name of the file on the computer has nothing to do with the name of the file in the Black Box. The Black Box has its own naming convention described on page 24 in this manual.

DSP Firmware

Copy to Device

When installing an updated driver for the Black Box, the necessary files for an optional firmware update will also be copied to your computer. However, the new firmware files are not uploaded to the Black Box during the driver installation. Select the latest firmware version from the drop-down menu and select Copy to Device to initiate the firmware update process. After a few minutes, the Black Box will reboot itself to complete the firmware update process.

ATTENTION: Do NOT disconnect the power supply from your Black Box while the firmware is being updated as this may render the device permanently inoperable.

About Page

Eff	fects & MIDI Presets & Firmware About	_
Versions panel: 1.0.3 audio: 1.6.4 helper: 1.0.2 TUSB: 1.2.0 PIC: 2.3.1 DSP: 2.3.1	Knowledge Base Manuals Registration Support Updates M-AUDIO, the M-AUDIO logo, Black Box, and the Black Box logo are trademarks of Avid Technology, Inc. Black Box software © 2006 Avid Technology, Inc., All Rights Reserved.	



This page contains information on your device including the installed firmware and driver versions. This information will be helpful if you ever have the occasion to call for technical support. Clicking on any of the links on this page will bring you directly to the relevant sections on the M-Audio website, if you are currently online.

Recording with a DAW (digital audio workstation)

When recording to a DAW, the input sources provided by the Black Box software driver are I (left DSP output), 2 (right DSP output), 3 (dry guitar), 4 (dry mic)—the last two inputs will only be available if you've installed the Black Box driver. If "Guitar" is selected, the dry, unprocessed instrument signal will be recorded on that track. If "Mic" is selected, the dry, unprocessed microphone signal is recorded on that track. If "DSP Output" is selected, the stereo effect-processed signal of the guitar or mic (whichever is selected as the FX Input Source) will be recorded to that track. The Guitar, Mic and DSP inputs can all be recorded simultaneously on different tracks. However, only the input that is selected as the FX Input Source will be able to be "monitored" post-FX processor. For example, if "Guitar" is chosen as the FX Input Source, you will only be able to monitor the processed guitar signal although you may be recording both the dry and processed guitar signals simultaneously.

Using the Black Box

The following sections address a number of real-life situations that you may encounter while using your Black Box. These brief tutorials should help guide you. We also recommend you check the M-Audio website from time to time for other tutorials or FAQ's that might provide additional valuable information.

Using the Mic and Guitar Inputs

Connect your dynamic microphone's XLR cable to the Mic Input. Connect your guitar or bass's instrument cable to the front-panel Guitar Input. Adjust the mic and guitar level inputs so that your strongest signals only peak the red clip indicator occasionally and the green signal indicator remains steadily green while you're playing. Instruments with active pickups or hot "humbucker" pickups will need less input gain while instruments with passive single-coil pickups will require more gain.

Monitoring Your Inputs for Recording

The Black Box has a Mix (Input/Playback) knob on the top panel. This is a ratio control of the "balance" between your input signal and your playback signal. When turned all the way counter-clockwise to Input, only the output of the DSP FX and the dry mic or guitar signal will be heard. When turned all they way to the right, only the main stereo bus output of the DAW will be heard. When set anywhere between, a blend of both input and playback signals will be heard.

General Recording Instructions

The Black Box's DAW inputs (DSP Outputs, Guitar and Mic) will appear in your audio software. Depending on your chosen application, these may also be labeled as ASIO inputs, WDM inputs or Core Audio inputs. Typically, the inputs will be shown simply as numbers 1-4.

- I (left output of DSP) 3 (dry guitar)
- 2 (right output of DSP) 4 (dry mic)

Mounting the device to a mic stand

A mic stand mounting bracket with four mounting screws is included in the box. Once the mounting bracket has been screwed into the Black Box, a mic stand can be screwed into the bracket. This can be handy for operating the device at a convenient height while standing up to play, such as in a live setting.

Troubleshooting

The Black Box has been designed to give you high performance and professional quality audio. It has been tested under a wide range of systems and operating conditions. In the real world, however, there are a nearly infinite number of possible operating scenarios, any of which could affect your system's performance. Much like owning an automobile, "your mileage may vary." This section cannot cover all possible issues you may encounter, however we want to give you some basic suggestions on common problems you may experience.

You should avoid is connecting too many devices on the same bus. The computer's USB bus is a dependable, high-speed, highbandwidth protocol, which is ideally suited for digital audio. Nonetheless, it's important to remember that audio and multimedia streaming can place considerable demands on your processor and the available bandwidth of the USB bus. Although it is theoretically possible to chain multiple USB devices in series, doing so may potentially degrade your audio performance. Please make an effort to run the Black Box on a dedicated USB port connector (not chained through another device or attached to a USB hub).

Generally, USB devices do not suffer from the IRQ conflicts sometimes encountered with PCI cards. If you are having trouble getting audio into or out of your Black Box, please check the following.

If you have no sound:

- Be sure your Mix (Input/Playback) knob is set appropriately and that your output level knob is turned up. Also make sure that you are plugged in to the proper input jack and the input level knob is turned up.
- If you can hear drums, but no guitar—or you can hear guitar but no drums—check the GTR/DRM BAL parameter in the Utility menu. A setting of G50 will only provide guitar sound. A setting of D50 will only provide drum sounds. Any setting in between will play a little of both. A middle setting of EQU means that that output of the drums is equal in volume to the output of the guitar effect. A setting of SEP means the drum signal will come out of one output, while the guitar effect signal will come out of the other.
- Check to see if the Black Box drivers are properly installed. In Windows XP, go to the Control Panel and double-click the System icon (under Performance and Maintenance if you're in Category view). Select the Hardware tab and click the Device Manager button. Click the plus sign ("+") next to "Sound, Video and Game Controllers," and locate the M-Audio Black Box listing. If you see a question mark or exclamation point next to it, or if you don't see the M-Audio Black Box listed, you may need to reinstall the driver software.
- Make sure your audio software has been properly set up to use the Black Box. Open your application's audio settings page and check to see if the Black Box's ASIO or WDM drivers have been correctly selected.
- If you're certain the Black Box is correctly installed and configured for your audio software but there is still no audio, check your signal path. Make sure your inputs are routed correctly by verifying that your application is receiving an audio signal. Make sure your outputs are routed correctly so that your signal is sent to your headphones, amp and/or monitors.
- Check your audio connections and make sure that everything is plugged in correctly.

If you are experiencing clicks and pops in your recordings:

- Make sure your input signal levels are not too hot, as overdriving the inputs can cause distortion and clipping. The red clip light on the Black Box should only light up on the highest of peaks. Also check the input level meters in your audio application.
- In addition, you may want to try using a larger buffer size. Larger buffer sizes can increase input latency time, but this is only a problem when overdubbing. If you're doing a mixdown, for example, this is not an issue. Increasing the buffer size can be helpful, particularly in the case of older or lower-powered computer systems.

Warranty

Warranty Terms

M-Audio warrants products to be free from defects in materials and workmanship, under normal use and provided that the product is owned by the original, registered user. Visit www.m-audio.com/warranty for terms and limitations applying to your specific product.

Warranty Registration

Thank you for registering your new M-Audio product. Doing so immediately both entitles you to full warranty coverage and helps M-Audio develop and manufacture the finest quality products available. Register online at www.m-audio.com/register to receive FREE product updates and for the chance to win M-Audio giveaways.



WARNING: This product contains chemicals, including lead, known to the State of California to cause cancer, and birth defects or other reproductive harm. **Wash hands after handling.**

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Specifications

General	Sample Rate	44.1kHz
Microphone Input		
	Available Gain	40dB
	Input Range	-42 to -2dBu (0.01 to 0.6Vrms)
	Signal-to-Noise Ratio (min gain)	-98dB (a-weighted)
	Dynamic Range (min gain)	98dB (a-weighted)
	THD+N (min gain)	0.0049% (-86dB), 1kHz, -1dBFS
	Frequency response (min gain)	+/-0.50dB, 20Hz to 20kHz
	Impedance	ΙθκΩ
Instrument Input		
	Available Gain	30dB
	Input Range	-28 to +12dBV (0.04 to 4.0Vrms)
	Signal-to-Noise Ratio (min gain)	-98dB @ 48kHz (a-weighted)
	Dynamic Range (min gain)	98dB @ 48kHz (a-weighted)
	THD+N (min gain)	0.0079% (-82dB), 1kHz, -1dBFS
	Frequency response (min gain)	+/-3dB, 20Hz to 20kHz
	Impedance	370 kΩ
Line Outputs	Max Output (balanced)	+10.2dBu (2.5Vrms)
	Max Output (unbalanced)	+2.0dBV (1.26Vrms)
	Signal-to-Noise Ratio	-100dB @ 48kHz (a-weighted)
	Dynamic Range	100dB @ 48kHz (a-weighted)
	THD+N	0.0024% (-92.5dB), 1kHz, -1dBFS @ 48kHz
	Frequency Response	+/-0.2dB, 20Hz to 20kHz @ 48kHz+/-0.3dB,
		20Hz to 40kHz @ 96kHz
	Crosstalk	-118dB, 1kHz, channel-to-channel
	Impedance (balanced)	300 Ω
	Impedance (unbalanced)	150 Ω
Digital Outputs		
	S/PDIF Output Connector	75 Ω
Headphone Outputs		
	Max Output	-2.0dBV (0.8Vrms) into 32 Ω
	Signal-to-Noise Ratio	-100dB @ 48kHz (a-weighted)
	Dynamic Range	100dB @ 48kHz (a-weighted)
	Frequency Response	+/-0.2dB, 20Hz to 20kHz @ 48kHz
		+/-0.3dB, 20Hz to 40kHz @ 96kHz
	Crosstalk	-86dB, IkHz, channel-to-channel
	Output Impedance	75 Ω
	Working Headphone Impedance	32 to 600 Ω
Physical	Mic Stand Connector Size	5/8" by 27 threads per inch
	Mounting Bracket Screw Holes	3.5mm each
	Weight	3.54 pounds / 1.6 kilograms
	Dimensions	9.84" wide x 6.69" depth x 1.88" height
		25 cm wide x 17 cm depth x 4.8 cm height

English

MIDI Implementation Charts

Channel Mode, System Common and System Real Time Messages

Channel Mode Messages

Black Box always receives Channel Mode messages on all 16 MIDI channels. The computer control panel software application that comes with the Black Box has a MIDI input filter to select which or all of the 16 MIDI channels are passed to Black Box. The following messages are recognized.

Status	Second	Third	Description
1001 nnnn	0kkkkkk	0vvvvvv	Note On message; nnnn = channel, kkkkkkk = note number and vvvvvvv = velocity.
			If effect = arpeggiator sequence, note number is used to transpose the sequence down or up. Number 60 = no transposition.
			If effect = any of the MIDI options, then the effect's specified MIDI data source is used to modulate the frequency of the effect's specified filter type.
1011 nnnn	Оссссссс	0vvvvvv	Control Change; nnnn = channel, ccccccc = control number, vvvvvv= value.
			If control number = 32 (bank select) and value = 0, Factory Preset bank is selected; if value = 1, User Preset bank is selected. If the specified control bank select is different than of the active preset, the active preset is changed to the respective preset for selected bank, factory or user. Power-up bank selection depends on the active preset on power-up. If effect = "MIDI Controller to Filter" or "MIDI Controller to Flanger," then the data value of control number 1, 11, 16, 70 or 74 modulate filter or flanger frequency.
1100 nnnn	Орррррр		Program change; ppppppp = new program number. Used to select presets F0-F99 or U0-U99, depending on last received "bank select" controller message. If ppppppp is greater than 99, message is ignored.

No channel mode messages are sent.

System Common messages

Status	Second	Third	Description
1111 0010	0vvvvvv	0vvvvvv	Song Position Pointer – LS Byte then MS Byte.
			Used to remotely set the starting position within Black Box's filter and drumbeat sequences. Because the sequences are only two measures, incoming positions above two measures are reduced to give the correct position within the two measure sequences. For example, if the received number gives a position of bar 55, beat 2 and tick 3, it is automatically changed to bar 1, beat 2 and tick 3. Song Position Pointer messages are not sent out.

System Real Time Messages

Status	Description
1111 1000	Timing Clock.
	When received, replaces the internal tempo clock. Sent if Main param Send MIDI Clock Enable = 1.
1111 1010	Start.
	When received, starts the sequencer from the beginning. Sent when sequencer started. Sent if Main param Send MIDI Clock Enable = 1.
1111 1011	Continue.
	When received, starts the sequencer from the current step. This message is not sent.
1111 1100	Stop.
	When received, stops the sequencer. Sent when sequencer is started. Sent if Main param Send MIDI Clock Enable = I.

Universal System Exclusive Messages

Identity Request

When Black Box receives this message, it responds by sending an "Identity Reply" message.

Status	Description
1111 0000	System Exclusive (SysEx)
0111 1110	Universal SysEx Non-realtime message
01111111	Device ID, Always 7Fh ("all call")
0000 0110	General Information ID (sub-ID #1)
0000 0001	Identity Request ID (sub-ID #2)
11110111	End of Exclusive (EOX)

Identity Reply

Status	Description		
1111 0000	System Exclusive (SysEx)		
0111 1110	Universal Sysex Non-realtime message		
0000 0000	Device ID (Always 0000 0000)		
0000 0110	General Information ID (sub-ID #1)		
0000 0010	Identity Reply ID (sub-ID #2)		
0000 0000	M-Audio ID, 1st byte = 00h (indicates ID follows in next 2 bytes)		
0000 0001	M-Audio ID MSB = 01h		
0000 0101	M-Audio ID LSB = 05h		
0000 0001	Black Box family code LSB (always 01h)		
0000 0000	Black Box family code MSB (always 00h)		
0000 0010	Black Box family member ID LSB = 02h		
0000 0000	Black Box family member ID MSB = 00h		
00xx zzzz	x bits I-0 of PIC software version x of x.y.z		
	z bits of PIC software version z of x.y.z		
	(xxxx, yyyy, zzzz = 0-15 where 10-15 translate to A-F)		
00хх уууу	x bits 3-2 of PIC software version x of x.y.z		
	y bits of PIC software version z of x.y.z		
	(xxxx, yyyy, zzzz = 0-15 where 10-15 translate to A-F)		
00xx zzzz	x bits I-0 of DSP software version x of x.y.z		
	z bits of DSP software version z of x.y.z		
	(xxxx, yyyy, zzzz = 0-15 where 10-15 translate to A-F)		
00хх уууу	x bits 3-2 of DSP software version x of x.y.z		
	y bits of DSP software version z of x.y.z		
	(xxxx, yyyy, zzzz = 0-15 where 10-15 translate to A-F)		
1111 0111	End of Exclusive (EOX)		

System Exclusive Messages

Transmit Single Parameter (message ID 1)

The external device sends this message to Black Box in order to change a single parameter within the preset edit buffer or Main parameters data structure. Black Box does not send this message.

Status	Description	
1111 0000	System Exclusive (SysEx) ID	
0000 0000	M-Audio ID byte I = 00h	
0000 0001	M-Audio ID byte 2 = 01h	
0000 0101	M-Audio ID byte 3 = 05h	
0000 0001	Black Box family code LSB (always 01h)	
0000 0000	Black Box family code MSB (always 00h)	
0000 0010	Black Box family member ID LSB = 02h	
0000 0000	Black Box family member ID MSB = 00h	
0000 0001	Message ID for "Receive single parameter into preset/drumbeat edit buffers or Main parameters"	
0000 00vv	File Version for preset or main/MIDI data structure	
	vv = 10 for Preset file version	
	vv = 10 for Main params file version	
0000 00 _{PP}	If pp=00, parameter within Preset edit buffer	
	If pp=10, parameter within Main parameters	
00aa aaaa	Address of parameter within preset or Main data structures. See "Data structures" below.	
0000 dddd	LS 4 bits of datum	
0000 dddd	MS 4 bits of datum	
1111 0111	End of Exclusive (EOX)	

Transmit Preset (Message ID 2)

This message is sent to the Black Box to modify the currently selected preset or as a response to a "Request Stored Preset" message. If this message is sent from an external device to Black Box while a user preset is selected, the preset is stored to the selected preset location. If this message is sent from an external device to Black Box while a factory preset is selected, the message is ignored. Regardless of whether the current preset is user or factory, a "Save Complete" message (ID 17) is sent as a response.

Status	Description
1111 0000	System Exclusive (SysEx) ID
0000 0000	M-Audio ID byte I = 00h
0000 0001	M-Audio ID byte 2 = 01h
0000 0101	M-Audio ID byte 3 = 05h
0000 0001	Black Box family code LSB (always 01h)
0000 0000	Black Box family code MSB (always 00h)
0000 0010	Black Box family member ID LSB = 02h
0000 0000	Black Box family member ID MSB = 00h
0000 0010	Message ID for 'Transmit preset'
0000 0010	File Version for preset data structure
0ddd dddd	Preset data: 64 bytes coded into 74 bytes of 7-bit MIDI data (see "Data packing" below.)
1111 0111	End of Exclusive (EOX)

NOTE: Black Box requires nearly a full second to save the received user preset to its slow flash memory. Any messages received while Black Box is still saving the received user preset will be ignored. After the external device sends this message, it should either wait a full second or wait until a "Save Complete" message (ID 17) is returned before sending any further messages.

Request Stored Preset (Message ID 5)

When Black Box receives this request, it responds by sending the requested preset as a "Transmit Preset" message.

Status	Description
1111 0000	System Exclusive (SysEx) ID
0000 0000	M-Audio ID byte I = 00h
0000 0001	M-Audio ID byte 2 = 01h
0000 0101	M-Audio ID byte 3 = 05h
0000 0001	Black Box family code LSB (always 01h)
0000 0000	Black Box family code MSB (always 00h)
0000 0010	Black Box family member ID LSB = 02h
0000 0000	Black Box family member ID MSB = 00h
0000 0101	Message ID for "Request stored preset"
0000 000ь	Bank select – 0 for factory preset, I for user preset
Onnn nnnn	Requested preset number, 0 to 99
0	End of Exclusive (EOX)

Select Drumbeat (Message ID 8)

When Black Box receives this request, it responds by making the requested drumbeat number active.

Status	Description
1111 0000	System Exclusive (SysEx) ID
0000 0000	M-Audio ID byte I = 00h
0000 0001	M-Audio ID byte 2 = 01h
0000 0101	M-Audio ID byte 3 = 05h
0000 0001	Black Box family code LSB (always 01h)
0000 0000	Black Box family code MSB (always 00h)
0000 0010	Black Box family member ID LSB = 02h
0000 0000	Black Box family member ID MSB = 00h
0000 1000	Message ID for 'Select drumbeat"
0nnn nnnn	Requested drumbeat number, 0 to 99
1111 0111	End of Exclusive (EOX)

Select preset (message ID 9)

When Black Box receives this request, it responds by making the requested preset number active. This has the same effect as a MIDI Program Change message, except that this message ignores Black Box's MIDI Channel setting in the control panel application.

Status	Description
1111 0000	System Exclusive (SysEx) ID
0000 0000	M-Audio ID byte I = 00h
0000 0001	M-Audio ID byte 2 = 01h
0000 0101	M-Audio ID byte 3 = 05h
0000 0001	Black Box family code LSB (always 01h)
0000 0000	Black Box family code MSB (always 00h)
0000 0010	Black Box family member ID LSB = 02h
0000 0000	Black Box family member ID MSB = 00h
0000 1001	Message ID for 'Select preset"
0000 000ь	Bank select – 0 for factory preset, I for user preset
0nnn nnnn	Requested preset number, 0 to 99
1111 0111	End of Exclusive (EOX)

Request Preset Edit Buffer (Message ID 10)

When Black Box receives this request, it responds by sending the current working preset data as a "Transmit preset edit buffer" message.

Status	Description
1111 0000	System Exclusive (SysEx) ID
0000 0000	M-Audio ID byte I = 00h
0000 000 I	M-Audio ID byte 2 = 01h
0000 0101	M-Audio ID byte 3 = 05h
0000 0001	Black Box family code LSB (always 01h)
0000 0000	Black Box family code MSB (always 00h)
0000 0010	Black Box family member ID LSB = 02h
0000 0000	Black Box family member ID MSB = 00h
0000 1010	Message ID for 'Request preset edit buffer''
1111 0111	End of Exclusive (EOX)

Transmit Preset Edit Buffer (Message ID 11)

This message is sent by Black Box in response to a "Request preset edit buffer" message.

It is also received by Black Box, allowing an external editor to overwrite Black Box's preset edit buffer.

Status	Description
1111 0000	System Exclusive (SysEx) ID
0000 0000	M-Audio ID byte I = 00h
0000 0001	M-Audio ID byte 2 = 01h
0000 0101	M-Audio ID byte 3 = 05h
0000 0001	Black Box family code LSB (always 01h)
0000 0000	Black Box family code MSB (always 00h)
0000 0010	Black Box family member ID LSB = 02h
0000 0000	Black Box family member ID MSB = 00h
0000 1011	Message ID for 'Transmit preset edit buffer'
0000 0010	File Version for preset data structure
0ddd dddd	Preset data: 64 bytes coded into 74 bytes of 7-bit MIDI data (see "Data packing" below.)
1111 0111	End of Exclusive (EOX)

Request Main Parameters (Message ID 14)

When Black Box receives this request, it responds by sending a "Transmit Main Parameters" message.

Status	Description	
1111 0000	System Exclusive (SysEx) ID	
0000 0000	M-Audio ID byte I = 00h	
0000 0001	M-Audio ID byte 2 = 01h	
0000 0101	M-Audio ID byte 3 = 05h	
0000 0001	Black Box family code LSB (always 01h)	
0000 0000	Black Box family code MSB (always 00h)	
0000 0010	Black Box family member ID LSB = 02h	
0000 0000	Black Box family member ID MSB = 00h	
0000 1110	Message ID for 'Request Main parameters"	
1111 0111	End of Exclusive (EOX)	

Transmit Main Parameters (Message ID 15)

This message is sent by Black Box in response to a "Request Main Parameters" message. It is also received by Black Box, allowing an external editor to overwrite Black Box's settings.

Status	Description	
1111 0000	System Exclusive (SysEx) ID	
0000 0000	M-Audio ID byte I = 00h	
0000 0001	M-Audio ID byte 2 = 01h	
0000 0101	M-Audio ID byte 3 = 05h	
0000 0001	Black Box family code LSB (always 01h)	
0000 0000	Black Box family code MSB (always 00h)	
0000 0010	Black Box family member ID LSB = 02h	
0000 0000	Black Box family member ID MSB = 00h	
0000	Message ID for "Transmit Main parameters"	
0000 0010	File Version main/MIDI data structure	
0ddd dddd	Main parameters: 16 bytes coded into 19 bytes of 7-bit MIDI data (see "Data packing" below.)	
11110111	End of Exclusive (EOX)	

NOTE: After the external device sends this message, it should either wait a full second or wait until a "Save Complete" (ID 17) message is returned before sending any further messages.

Save Complete (message ID 17)

After a Transmit Preset message is received by Black Box, this message will be sent out as an acknowledgement. After the transferred data has been successfully saved to flash, Black Box sends this message. Until it is sent, Black Box will ignore any subsequently received messages. The external device should wait for this message before sending another message. If the external device can not detected messages from Black Box, the external device should wait one second before sending another message.

Status	Description	
1111 0000	System Exclusive (SysEx) ID	
0000 0000	M-Audio ID byte I = 00h	
0000 0001	M-Audio ID byte 2 = 01h	
0000 0101	M-Audio ID byte 3 = 05h	
0000 0001	Black Box family code LSB (always 01h)	
0000 0000	Black Box family code MSB (always 00h)	
0000 0010	Black Box family member ID LSB = 02h	
0000 0000	Black Box family member ID MSB = 00h	
0001 0001	Message ID for "Save complete"	
1111 0111	End of Exclusive (EOX)	

Copy Factory Presets to User (Message ID 19)

This message instructs Black Box to copy all factory presets to the corresponding user presets. Also, all main parameters are reinitialized to their default settings.

Status	Description	
1111 0000	System Exclusive (SysEx) ID	
0000 0000	M-Audio ID byte I = 00h	
0000 0001	M-Audio ID byte 2 = 01h	
0000 0101	M-Audio ID byte 3 = 05h	
0000 0001	Black Box family code LSB (always 01h)	
0000 0000	Black Box family code MSB (always 00h)	
0000 0010	Black Box family member ID LSB = 02h	
0000 0000	Black Box family member ID MSB = 00h	
0001 0011	Message ID for "Copy Factory Presets to User"	
1111 0111	End of Exclusive (EOX)	

NOTE: Black Box requires nearly a full second to copy all presets. Any messages received while Black Box is still saving the presets will be ignored. After the external device sends this message, it should either wait a full second or wait until a "Save Complete" (ID 17) is returned before sending any further messages.

Copy User Presets to Factory (message ID 20)

This message instructs Black Box to copy all user presets to the corresponding factory presets.

Status	Description	
1111 0000	System Exclusive (SysEx) ID	
0000 0000	M-Audio ID byte I = 00h	
0000 0001	M-Audio ID byte 2 = 01h	
0000 0101	M-Audio ID byte 3 = 05h	
0000 0001	Black Box family code LSB (always 01h)	
0000 0000	Black Box family code MSB (always 00h)	
0000 0010	Black Box family member ID LSB = 02h	
0000 0000	Black Box family member ID MSB = 00h	
0001 0100	Message ID for "Copy User Presets to Factory"	
1111 0111	End of Exclusive (EOX)	

NOTE: Black Box requires nearly a full second to copy all presets. Any messages received while Black Box is still saving the presets will be ignored. After the external device sends this message, it should either wait a full second or wait until a "Save Complete" (ID 17) is returned before sending any further messages.

Data Structures

Preset Data Structure (unique for each preset)

Byte	Parameter	Range/Description		
0	Amp	0-39 (See manual for list of amp names)		
I	Drive	0-99		
2	Bass	0-99		
3	Treble	0-99		
4	Effect	0-120 (see list of effects in manual)		
5	FX Speed or FX Freq	This parameter is either FX Speed, FX Freq or unused, depending on which effect is selected:		
		 FX Freq is active if one of the following effects is selected: RNFI4-RNFI24, RNFL4-RNFL24, ATOWA I-8, WAHPDL, TKBOX I-6, FIXFLT, FIXFLA, TLKPDL, SCIFII-4, FLSQI-20, and all 6 MIDI effects at end of list. In this case, the range is 0-99 for 100 arbitrary filter frequencies. 		
		2) This parameter is unused for the following effects: TRSQ1-20,ARSQ1-20.		
		3) For all other effects, FX Speed is active. In this case, the range is 0-114 consisting of 100 fixed arbitrary speeds from 0 to 99 followed by 15 tempo-synced speeds 100-114 (8M, 4M, 2M, IM, IMt, 2n, 2t, 4n, 4t, 8n, 8t, 16n, 16t, 32n, 32t).		
6	FX Depth or FX Key	This parameter is either FX DEPTH, FX KEY or unused, depending on which effect is selected:		
		 FX Key is active if ARSQ1-20 or MNT2FL is the selected effect. In this case, range is 0-99 (arpeggio sequence may be transposed to one of 100 semitones). 		
		2) This parameter is unused for the following effects: FIXFLT and FIXFLA.		
		 For all other effects, FX Depth is active. In this case, range is 0-198, representing -99 (negative modulation depth) to 0 to 99 (positive modulation depth). 		
7	FX Wet/Dry	0-99 (0 = dry, 99 = full effect). This parameter is unused for the following effects: TREMI-3, PANI-4, VIBRAI-2, SWELL and ARPGI-20.		
8	Delay Time	0-118 consisting of 0-99 (fixed rates shown in display) followed by 100-118 (19 tempo-synced rates: 2M, 2Mt, 1Md, 1M, 1Mt, 2d, 2n, 2t, 4d, 4n, 4t, 8d, 8n, 8t, 16d, 16n, 16t, 32n, 32t.)		
9	Delay Repeats	0 (no feedback) to 99 (nearly infinite feedback)		
10	Delay Volume	0-99		
п	Drums send to FX	0-249 consisting of:		
		0-99 (100 send levels to delay),		
		100-199 (100 send levels to input),		
		200-249 (50 send levels to reverb)		
12	Preset Volume	0-99 (output level of amp models. 50 = normal.)		
13	Exp Pedal Assign	One of 11 expression pedal assignments:		
		:VOLUME (volume pedal before amp models)		
		: FXSPED (FX Speed)		
		2: RVBVOL (Reverb Volume)		
		3: FXDPTH (FX Depth)		
		4: FXKEY (FX Key)		
		5:WETDRY (FX Wet/Dry)		
		6: DLYVOL (Delay Volume)		
		7: DLYRPT (Delay Repeats)		
		8: DM2DLY (Drums send to Delay)		
		9: DM2INP (Drums send to input of entire signal chain, same as guitar)		
		10: DM2RVB (Drums send to reverb)		
14	Тетро	30-250		
15	AmpFxDlyRevOn	Feature on if bit = 1 or off if bit = 0 (bit $0 = amp$, bit 1 = effect, bit 2 = delay, bit 3 = reverb)		
16	Mid	Midrange control for amp models, 0-99		
17	Linked Drumbeat	0-99 drumbeat (used when main param Linked Drumbeat = 1)		
18	Unused			
19	Compressor	Compression level - 0-99 (0 = OFF)		
20	Reverb Volume	0-99		
21	Reverb Time	0 – TINY, I – SMALL, 2 – MEDIUM, 3 – LARGE, 4 - HUGE		
22	Reverb high freq	0-99		
23-31	Unused			
32-37	Name	Six character preset name – byte 32 is the leftmost character. Character codes 0-50 are: Space, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, -, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, VW, X, Y, Z, *, +, (,), ', <, >, [.]		
38-63	Unused			

Main Data Structure (Global settings)

Byte	Parameter	Range/I	Range/Description			
0	Active Preset	00-99 (fac	00-99 (factory presets), followed by 100-199 (user presets)			
I	Active Drumbeat	00-99	00-99			
2	Guit/Drm Bal	0 (G50) to	0 (G50) to 50 (EQU) to 100 (D50), plus 101 (SEP)			
3	Footswitch I asn	Foot swite	Foot switch I assignment. Legal codes are:			
		33: Increm	33: Increment Drumbeat			
		34: Decre	ment Drumbeat			
		36: Increm	nent Preset			
		40: Decrei	ment Preset			
		48: Tap Ter	npo			
		80: Start/S	top			
		35:View D	Drumbeat			
		76:Tuner				
		193:Amp	On/Off			
		194: FX O	n/Off			
		196: Delay	v On/Off			
		200: Revei	rb On/Off			
4	Footswitch 2 asn	Foot swite	ch 2 assignment. Same as for foot	switch I.		
5	FX Sync source	0 – intern	al MIDI clock, external clock igno	red		
		I – exterr	I – external MIDI clock (internal if no external clock present) (power-up default)			
6	FX Input Source	Controls	the hardware audio signal routing	(power-up default = 0)		
		Mode	Normal Mode Processor In	Diag Mode Left/Right Out	Left/Right Analog Out	
		0	Guitar	Guitar/Mic	Mic	
		1	Mic	Guitar/Mic	Guitar	
		2	N/A	USB L/R	None	
		3	N/A	Guitar/Mic	None	
		4	N/A	0/0	Note	
		5	N/A	USB L/R	Mic+Guitar	
		Note I:A	ll modes pass the USB input to th	e L/R analog outputs.		
		Note 2:The Input/Playback knob determines the mix of digital and analog output.				
7	Gate	0 (off) or	OnI - On9 (9 gate thresholds)			
8	Send MIDI Clock					
	enable					
		0 - do not	0 - do not send (power-up default)			
		I - send out MIDI System Realtime messages,				
9	Link Drumbeat	1 – ON: w	vhen new preset is selected, set A lon't	ctive Drumbeat to preset's Link I	Drumbeat	
10	Tempo Source	0 – PRESE	T: when new preset is selected, co	opy preset's tempo over global te	empo	
		I – DRUMBEAT: when new drumbeat is selected, copy drumbeat's tempo over global tempo				
		2 – GLOB	AL: no tempo change on preset c	or drumbeat load	0 1	
11	Global Tempo	This is the	e tempo setting that is always used	to determine the current playin	g tempo. If Tempo Source is	set to Preset, then when a
		new preset is selected, its Preset Tempo is copied over Global Tempo. If Tempo Source is set to Drumbeat, then when a new preset				
		is selected, its Drumbeat Tempo is copied over Global Tempo.				
12	MIDI channel	0 (receive	0 (receive on all channels) or I-16 (receive on single channel). Note: always set to 0 to receive on all channels; Midi input channel			
		filter exist	filter exists on PC "control panel" application. (power-up default = 0)			
13-15	Reserved					

7-Bit Data Packing

The general data packing scheme for Preset and Drumbeat Data Dumps groups 7 bytes of data, stripping off the MS bit of each, and packing these MS bits into an additional byte. 7 bytes of internal memory yields 8 bytes of MIDI data.

Assuming 7 bytes of memory data are:

0:	AAAAaaaa	Memory byte 0

- I: BBBBbbbb Memory byte I
- 2: CCCCcccc Memory byte 2
- 3: DDDDdddd Memory byte 3
- 4: EEEEeeee Memory byte 4
- 5: FFFFffff Memory byte 5
- 6: GGGGgggg Memory byte 6

Then it is sent over MIDI with the MS bits first as follows:

- 0: 0GFEDCBA Packed MS bits
- I: 0AAAaaaa MIDI Data Bytes
- 2: 0BBBbbbb
- 3: 0CCCcccc
- 4: 0DDDdddd
- 5: 0EEEeeee
- 6: 0FFFffff
- 7: 0GGGgggg

Note that fewer than 7 bytes can be sent, and the unused MS bits will be set to zero. For example, if two bytes are sent:

Assuming 2 bytes of memory data are:

- 0: AAAAaaaa Memory byte 0
- I: BBBBbbbb Memory byte I

Then it is sent over MIDI as a three-byte sequence, with the MS bits first as follows:

- 0: 000000BA Packed MS bits
- I: 0AAAaaaa MIDI Data Bytes
- 2: 0BBBbbbb

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