PANGAEA VIRGINCAB VC16

the AMT Bricks Series

User's manual

AMT Electronics engineers present a new device in the AMT Bricks series - the AMT PANGAEA VIRGIN CAB VC16. It is an IR cabinet simulator for individual practice, live gigs, and recording. The device has a universal interface of the AMT Bricks series of the devices, which lets you combine the devices of this series in the easily controllable complex. The input attenuator lets you use the device not only with line-level signals but with power amps output signals. The device main outputs can be used either in balanced or unbalanced modes.

Appearance, Connectors and Controls

Fig.1

1. PHONES - this output (TRS Mini Jack 3.5mm) is used to connect headphones and it can be used during individual practice and for monitoring. The source of the output signal on this connector is a sum of two signals. One is the signal on the INPUT (19) that has been digitally processed (IR convolution and different effects of the VC16), the other is the AUX (19) input signal from an external device (smartphone, MP3 player, etc.).

2. OUT R - right channel balanced output (TRS Jack 6.3mm). The source of the output signal on this connector is the signal on the INPUT (19) that has been digitally processed (IR convolution and different effects of the VC16). You can use a TS plug if you need to send the signal to an unbalanced input.

3. LINE/MIC - is a switch of the output signal attenuator. Moving the switch from the LINE position to the MIC position reduces the output signals on the OUT R(2) and OUT L(4) connectors by 22dB.

4. OUT L - left channel balanced output (TRS Jack 6.3mm). The source of the output signal on this connector is the signal on the INPUT (19) that has been digitally processed (IR convolution and different effects of the VC16). You can use a TS plug if you need to send the signal to an unbalanced input.

5. USB - use a USB cable to connect Pangaea to your computer. Connecting to a computer allows you to update the VC16 firmware, download IR files, and work with the Pangaea computer application.

6. CTRL IN/OUT - TRS 3.5mm external control connector (input/output)

7. Foot switch button. When using the AMT VC16 as a separate device, pressing the button switches between preset sections A and B. When using the device as part of tha AMT Pedalboard, the function of the button is determined by the Pedalboard program.

8. OUT CLIP - two-color LED. The green color indicates the presence of the output signal. When there is a signal clipping (either because of a large signal at the input of the device, or because of digital processing inside the device), the LED lights up in red.

9. Four-position switch for selecting Presets of set A

10. Four-position switch for selecting Banks of set A

11. LED indicates current active set (SET A)

12. LED indicates current active set (SET B)

13. Four-position switch for selecting Presets of set A

14. Four-position switch for selecting Banks of set B

15. IN CLIP - two-color LED. The green color indicates the presence of the INPUT(19) signal. The red color shows the INPUT signal clipping.

16. EXT.F - the led is used when the VC16 is used as part of the AMT Pedalboard

17. AUX IN - (TRS Mini Jack 3.5) connector for plugging an additional signal source (MP3 player, smartphone, etc.) This signal is sent only to the PHONES connector (1)

18. 100mA DC 12V - VC16 power connector (Central pin - minus !!!)

19. INPUT jack for connecting the main signal source. The signal source can be a guitar pedal, a guitar preamp or the output of a power amplifier (when using a Y-cable or a Speaker Splitter Box)

20. H/L - two-position input attenuator switch (High / Low attenuation)

21. 0 -24 -28 -32 -38 -40 (dB) three-position switch to select the level of attenuation (in conjunction with switch 20)

22. Interface connector for the device operation as part of the AMT Bricks Pedalboard

General description

All guitarists are well aware that the sound of an electric guitar is made up of a large amount of equipment making up the sound path. The guitar tones are defined mainly by a guitar, a tube power amplifier, a guitar cabinet and by a set of mikes which capture the sound.

Using the AMT Pangaea VC16 device, you can easily emulate the sound of any guitar cabinet by loading the corresponding impulse responses (IRs) of guitar cabinets that can be easily found on the Internet (both paid and free) or create your own IR and apply it. The device has 4 banks of 4 presets each (16 presets in total) in which wav-files of impulse responses and settings of various effect parameters are stored.

USB interface

- The VC16 communicates with a computer via USB interface in one of two modes determined by the power-on sequence of the device:
- Mode 1: the system identifies the VC16 as a USB drive. In this mode you can work with files and update the firmware version.

To enter mode 1:

- Connect the USB connector (5) of the !!! NOT POWERED !!! VC16 with a USB cable to a corresponding computer connector.
- Mode 2: the system identifies the device as a USB serial port (USB COM). In this mode, you communicate with the VC16 via the AMT Pangaea CP computer application.

To enter Mode 2:

a) Power up the VC16. It can be done connecting power adapter to the 100mA DC 12V (18) power socket, if you use the VC16 as a separate device, or power up the device thru the connector (22) if you use the VC16 on the AMT pedalboard.

b) USB connector (5) of the VC16 device connect with USB cable to the corresponding computer connector.

Fig.2 shows the folder organization and contents of the VC 16 device connected as a USB disk (mode 1).

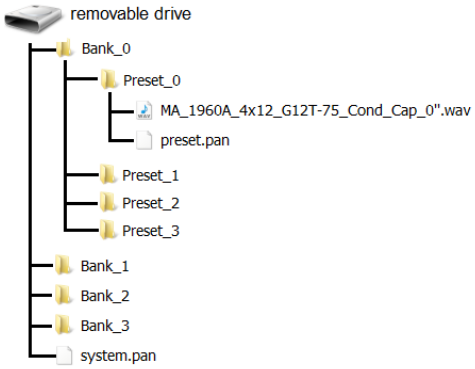


Рис.2

- system.pan - is the system file of the device settings. The file is created automatically.
- *.wav - the files in the preset folders are the Impulse Response files. (MA_1960A_4x12_G12T-75_Cond_Cap_0".wav is a sample IR file)
- preset.pan- the file of preset's settings.

When the device is connected to the computer as a USB disk, you can put IR files in the preset folders or delete them. If you delete system.pan, preset.pan files, Bank_X and Preset_X folders, they will be re-created the next time you turn on the power. The settings files will be created with the default values.

VC16 and AMT PANGAEA computer application

Connecting the VC16 to a computer via USB interface in mode 2, you can use the AMT PANGAEA computer application. The app was developed by us for interactive control, loading impulse responses (IRs) and changing device parameters. There are versions of the app for Windows and for MAC OS. You can download (for free) the AMT PANGAEA applications and the latest firmware version of the vc16 device by visiting the MEDIA CENTER section of our company's official website

The application has an intuitive graphical interface. Fig.3 shows the application window.

Fig.3

With the AMT PANGAEA app, you can interactively (hearing the result) enable / disable function modules in presets and change their parameters. When you finish setting and disconnect the device from the computer, all changes will be saved and you will be able to use the presets you have configured when working with the device.

Functional modules of the VC16 and parameters available for editing using the AMT PANGAEA application:

- ER Early Reflections (ROOM)
- EQ EQ Parametric EQ -5 bands parametric equalizer
- LP Tunable low-pass filter
- HP Tunable high-pass filter
- PS Presence – the presence control boosts the upper mid-range frequencies
- VL Volume – the common volume control
- IR Impulse Response of a guitar cabinet

- PA Power amps' models
- PR Preamp's module
- CM Compressor
- GT GT Noise Gate

All these functions are configured and executed separately for each preset.
Note: PH/LINE/BAL output modes of the device's DAC. For VC16 use LINE

The VC16 has two working sections A and B, a lit LED (11 or 12) indicates the currently selected (active) section. The active section is the preset section which is currently working. Using the four position slide switches (9.10 and 13.14), you pre-assign presets for sections A and B, which can be quickly used while working with the device. For example, you can assign presets to sections A and B that use different Impulse Responses, make various tone adjustments in these presets using EQ, set different preset volumes, etc. If you work with the device as a separate device, you could switch between sections by pressing the foot switch (7). There are other options for switching between sections A and B, which will be discussed below.

Basic use of the VC16 device is when its INPUT (19) is supplied with the output of a pre-amplifier or drive pedal and the attenuator ATT (20,21) is in the 0dB position. In the case of using the drive pedal, the preamp emulation (PR-preamp module) must be enabled in the used presets.

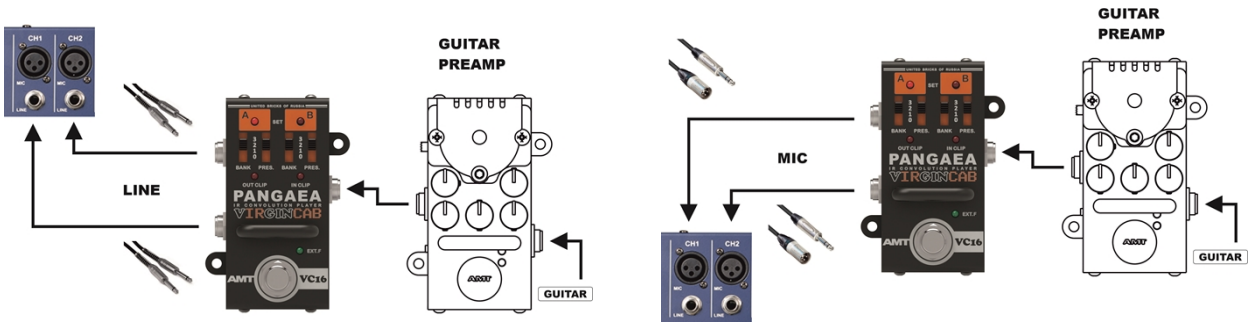


Fig. 4 Using the AMT VC16 with one preamplifier on a stage

In this scheme (Fig.4), the VC16 is controlled independently of the preamp. Using the slide switches, you can assign different presets to sections A and B, and by pressing the VC16 footswitch select different presets when playing. It can be presets with different IRs, different effects, different equalizer settings, volumes, which allows you to diversify (accent) the sound of your guitar during performance.

Based on two preamps from the AMT Bricks series and the VC16 device (Fig.5), you can "create" two channel preamp with a cabinet simulator. When you press the foot switch of the currently inactive preamp, the preamp is turned on (becomes active), and the second preamp goes into by-pass mode. In addition, in synchronization with this, sections A and B of the VC16 are switched. Thus, each preamp is assigned a specific section of VC16 (A or B), choosing the channel of two channel preamps, you automatically select the VC16 preset assigned to it. When you press the foot switch of the currently active preamp, the preamp will remain active, and the VC16 will switch between sections A and B. Thus, when playing, you can change the section of the VC16 on the selected channel of the two channel preamp. !!! Pressing the VC16 footswitch will switch its sections (A and B) and put both preamps into by-pass mode !!!

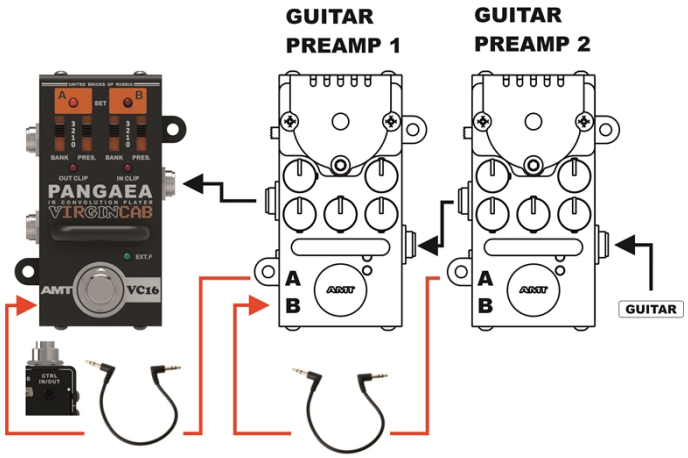


Fig. 5 using of the VC16 in conjunction with a two-channel preamp based on AMT Bricks preamps

TRS-TRS Jack 3.5mm cables are used to connect devices via control sockets (See Fig.6)

If you do not connect preamp 1 to the VC16 with the TRS-TRS 3.5mm cable in the diagram in Figure 5, you can control the VC16 independent of the preamps. The use of a larger number of AMT Bricks series preamps interconnected by TRS-TRS 3.5mm cables allows creating a multi-channel preamp (see the manual "AMT Bricks Series Tube Guitar Preamps Line").

Рис. 6

The presence of an additional AUX signal input (17) and output to head phones (1) makes the VC16 a convenient tool for individual lessons under the backing tracks.

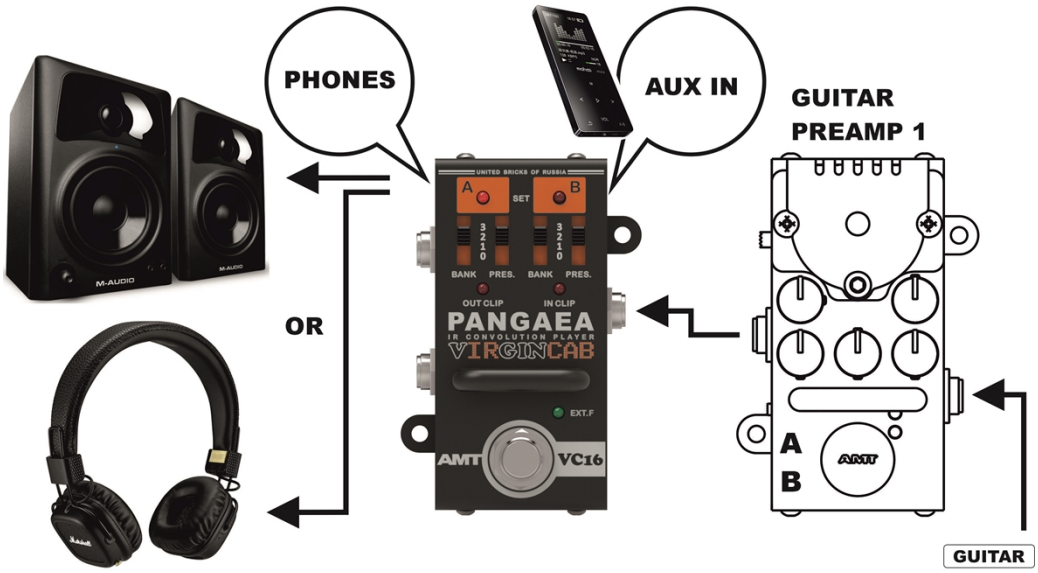


Fig. 7 Scheme of using AMT VC16 for home lessons.

The presence of an attenuator of the input signal ATT (20.21) allows you to apply the output signal of the power amplifier to the input of the device. Since tube guitar amps cannot be used without load, and the VC16 is not a load, it is not enough to simply feed the power amplifier output to the VC16 input. You must use the Y-Speaker Splitter Cable or Speaker Splitter Box. Such products are used to connect two cabinets to the output of a power amplifier at once, for example, to connect two 16 Ohm cabinets to an 8-ohm output of an amplifier. Examples of Y-Speaker Splitter Cable and Speaker Splitter Box circuits are provided in the Appendix.

The input attenuator should be set to the position corresponding to the expected level of the input signal.

- Examples of attenuator settings:
- -0dB– preamp (-10dBV ... 0dBu)
- -24dB - amplifier (3W, 8 Ohm / 2W, 16 Ohm)
- -28dB - amplifier (8W, 8 Ohm / 5.5W, 16 Ohm)
- -32dB - amplifier (20W, 8 Ohm / 14W, 16 Ohm)
- -36dB - amplifier (50W, 8 Ohm / 35W, 16 Ohm)
- -40dB – amplifier (130W, 8 Ohm/95W,16 Ohm)

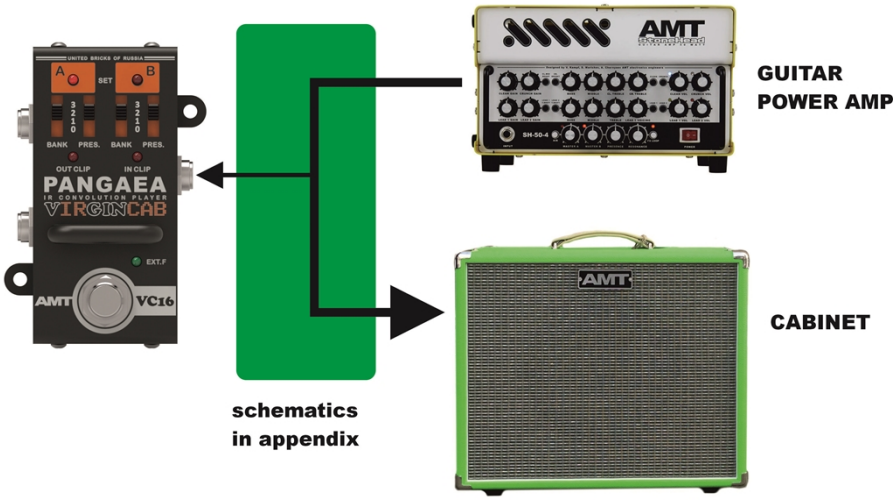
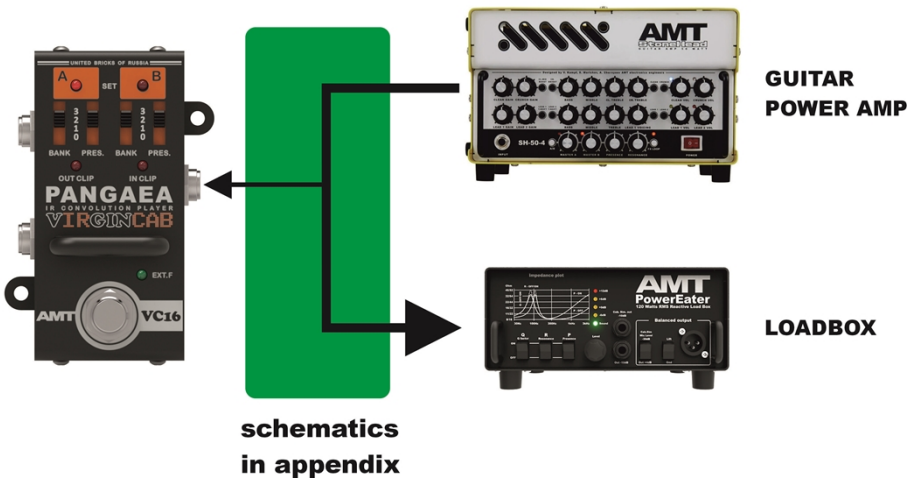


Рис. 8 AMT VC16 connection to a power amplifier output and a guitar cabinet.



\Рис. 9 Схема AMT VC16 connection to a power amplifier output and a LoadBox.

Specifications

1. INPUT - Input of the main source of the audio signal	
input impedance	300kOhm
maximum input sinusoidal voltage 1.26V (+ 2dBV)	1,26V (+2dBV)
rated input voltage of audio signal	0.316Vrms (-10dBV)
1. AUX IN	
input impedance	2kOhm
maximum input sinusoidal voltage 0.85V	0.85V (-1.4dBV)
2. OUT R, OUT L - Audio signal outputs	
maximum sinusoidal voltage (Line mode, no load)	
unbalanced (TS)	2V(+6dBV)
balanced (TRS)	4V(+12dB)
(MIC mode, no load)	- 22dB
output impedance	1kOhm
3. PHONES - output to headphones	
Minimum headphone impedance	32 Ohm
Maximum output sinusoidal voltage (no load)	2,6V (8dBV)
output impedance	12 Ohm
4. Dimension (HxWxD)	47mm x 55mm x 95mm
5. Weight	200 g (without package)
6. Power	
Voltage	DC 12V
Current consumption Approx.	160 mA
7. Polarity of the power adapter.	

The complete set includes:

AMT PANGAEA VC16	1pc.
Packaging	1 pc.
Warranty card	1 pc.

!!! ATTENTION !!! A power supply isn't included in the set.

Appendix;

Y -Speaker Splitter Cable