

7. TELCO-LINE MODULE 7-8 CONNECTORS, CONTROLS, & FUNCTIONS

Input modules 7 & 8 have integrated Hybrid circuitry with built in high quality Telephone Hybrids as well as stereo line inputs in case only one Hybrid is needed.

Highlights are:

- * High quality Telephone Hybrid circuit to directly connect to phone lines
- * Stereo line input
- * Gain control
- * Telco send Control
- * Direct access **CONN**ect and **TB** (Talk Back) switches
- * Stereo Aux send
- * Stereo CUE switch for pre fade listening
- * Start (ON) switch
- * 100mm smooth professional faders

WHAT IS A TELEPHONE HYBRID?

Telephone hybrids are hardware interfaces between professional audio equipment and public telephone networks. They provide protection for your equipment and the public telephone lines, allowing for various line signals and line conditions. Automatically canceling out the unwanted signal, they facilitate two-way communication when using a single 2 wire telephone line.

Each Airmate-USB hybrid module has a Telephone line (WALL) connection and a handset connection.

Thousands of D&R Telephone Hybrids (also built into this Airmate-USB) are used in radio and television broadcasting facilities around the World allowing external callers to be connected to the studio mixer for live broadcast. Many of the D&R Telephone Hybrids are supplied to radio stations allowing extremely effective conversion between 4-wire audio circuits and standard 2 wire telephone lines.

Specs:

Output : Internally connected in the Airmate.
Input : Line level 0 dBu balanced, internally connected in the Airmate.
R/C balance : fully adjustable.
Separation : more than 30dB.

The controls of the Hybrid/Line modules have the following functions.

TELCO SEND

With this control you adjust the level of the outgoing signal to the telephone line.

TELEPHONE HYBRID / STEREO LINE INPUT SWITCH

When switched to the stereo line input, you have a high impedance line level input for connecting cart machines, iPods, tape machines, or CD players.

The up position of this switch changes this module into a full blown telephone Hybrid module. It is a Hybrid that can be connected to any standard telephone line.

R-BALANCE

Internal potentiometer (screwdriver control) to adjust for maximum side tone attenuation via top panel hole.

C-BALANCE

16 position rotary switch to select the optimum side tone attenuation.

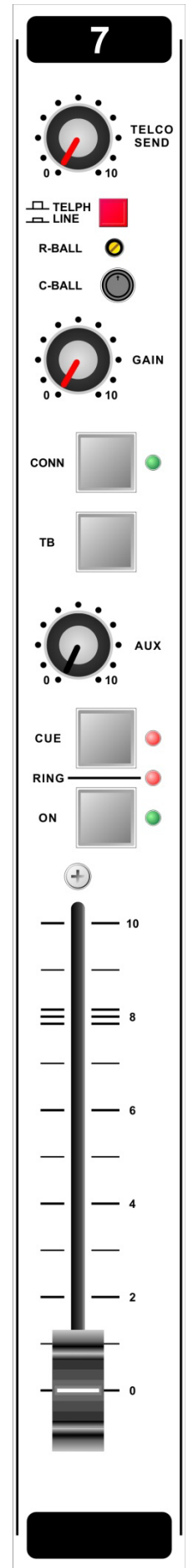
GAIN

With the **GAIN** control, the source level is adjusted to the internal mixer level. This is for both the Telephone Line input and the Stereo Line inputs.

CONNect

This switch (when pushed) picks up the phone line when a call comes in.

Note: the incoming call will not be heard until the CUE is pressed or the ON switch and the fader are activated which brings the signal to the mixer.



TALKBACK

By pushing the TB switch on the Hybrid module, the internal talkback microphone is activated and allows you to talk to the caller without being ON-Air.

AUX SEND

Below the TB switch is the stereo Aux send that can be set to send stereo source signals pre or post fader (pre or post jumper settings on the circuit board). The factory default is post fader.

RING (LED)

This LED lights to alert you when a call comes in.

CUE

Next you will see the stereo CUE switch (Pre Fader Listening). This switch allows you to check the signal before you mix it with your other channel signals in the mixer.

ON

The ON switch is used to activate the module and generate a signal to start turntables, CD players, and cart or jingle machines. This switch sends out a momentary pulse or switches continuously to the Start connector on the back of the console. When used on either of the Hybrid modules, any other function needed can be activated.

FADER

Final control of the signal in either of these modules is the 100mm channel fader. With the fader you can send the amount of signal from this module to be mixed with the other signals feeding the outputs whether the need is live streaming or recording for production. At the beginning of the fader movement you will feel the internally built in start switch that is activated when you bring up the fader. This switch activates the start circuitry which can control externally connected (via the Start Connector on the back) devices such as CD players, turntables, etc.

INPUT CONNECTORS

On the back of each of the AIRMATE-TELCO modules 7 and 8 you find five connectors.

Two unbalanced **stereo line** RCA Cinch connectors for connecting CD players, iPods, or any play-back devices as long as they are line level equipment.

The level can be set using the **gain** control to match most source levels.

The left RCA Cinch connector is the left input and the right RCA Cinch connector is the right input. The shield is to be connected to the ground or case of the RCA Cinch connector.

The START switch has two active connections to be wired.

The tip and ring are shorted when the ON switch or fader switch is activated.

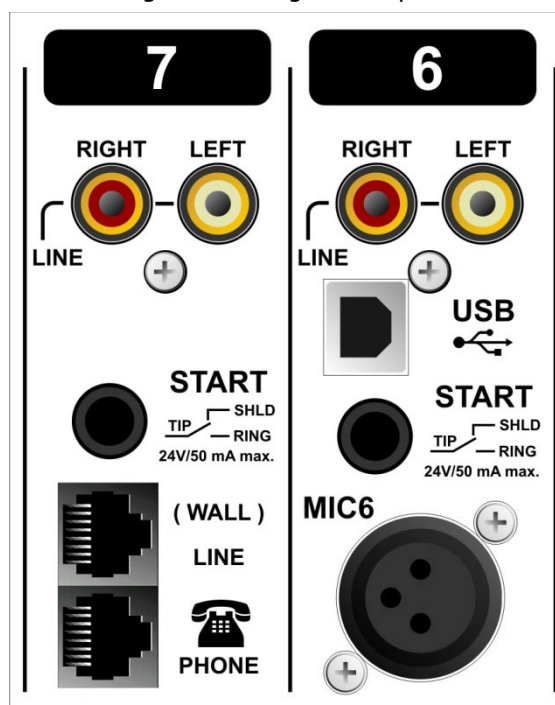
Once you have done this, you can start the turntable with the ON (if connected to the START connector) switch on the back panel.

These switches quick start turntables through the remote jack by a continuous contact action at the back of the mixer. If your turntable only needs a pulse to start ask your dealer to modify the internal circuitry to change it into a momentary action, so you can use it as a pulse start switch.

NEVER CONNECT ELECTRICAL POWER TO THIS REMOTE-JACK

Connections on the START connector should only be made with a maximum of 24 Volts by 50 mA. Please contact your dealer in case of doubt.

The two **RJ11** connectors connect the Module to the telephone utility companies phone line connection (Wall) and to your telephone appliance (Phone) so you can dial-out to people you want to interview or your radio program listeners.



SPECIAL AVAILABLE OPTIONS IN YOUR AIRMATE-TELCO MODULE

On the input PCB of your AIRMATE-USB module there are several jumpers that can be changed to enable different configurations of the channel settings. This should be done by a D&R dealer or service center.

The following 4 jumper settings can be changed to adjust the Airmate-USB Telco modules to your needs.

1	J6/16	Stereo Aux send pre or post selectable via Jumper J6/16 (post is default).
2	J7	Clean-Feed (CLN-FEED) jumper (J7) to select whether the audio stereo signal (summed to mono) is sent to the clean-feed bus (available in the master section for external Hybrids).
3	J17	Pulse/continuous Jumper J17 to change the start pulse from latching (continuously) to pulse.

CONNECTION WIRING OF BOTH (Wall) LINE and PHONE RJ-11 CONNECTORS

PHONE/WALL RJ-11	FUNCTION	CONNECTION
Pin 1	n.c.	
Pin 2	A (telephone line)	In/out
Pin 3	B (telephone line)	In/out
Pin 4	n.c.	



- It is calibrated to indicate 0 dB on the scale corresponding with a +4dBu output level.
 - Release the CUE switch so the led bar now reads the output signal again.
 - Now push the ON button to connect the input signal to the fader.
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- Now move the fader to the "8" position screened alongside the channel faders and turn up the master fader to the "10" position. Further volume adjustments can be made on the equipment your signal is feeding, such as power-amps or transmitters.
 - The other inputs are similarly adjusted, using the "CUE" switches to (pre fade) listen to the connected sources. Use the input gain for precise adjustments.

Be carefully not to place the AIRMATE-USB near heavy power transformers such as power amps. Although the AIRMATE-USB is constructed using a thick metal frame, this could cause hum.

11. SETTING UP THE USB MODULES

Input modules 5 & 6 are identical to triple input modules 1 thru 4 except for line-B input is replaced with a USB (stereo input and output circuit) connector on the back panel.

To be able to set up a connection with your PC, use a standard USB cable from a local computer shop. (See picture).



When connecting the Airmate-USB to your computer, the computer (PC or Mac) will recognize the Airmate as new hardware and will establish a connection to any audio programs needing audio hardware. After establishing a connection, there is no need to download drivers or performing complicated setup routines, just plug in the USB cable to your Windows or Mac computer and start tracking!

If you first want to know more about USB try this link
http://en.wikipedia.org/wiki/Audio_Stream_Input/Output

If you are already familiar with digital audio recording, the latest versions of Kristal Audio Engine and Audacity are available free of charge via the Internet. Use this link <http://www.asio4all.com/> for third party downloads.

12. SETTING UP THE TELCO MODULES

Connect the two wires of the telephone line's wall unit to the RJ-11 connector labeled wall (LINE) and connect the telephone appliance itself to the RJ-11 connector labeled PHONE. Note that to originate calls, a local phone must be connected to the Airmate-USB.

Now the internal hybrid is interfaced (fully balanced) between your telephone appliance and its connection to the outside world. The hybrid can now split the send and return signals.

Position both Telco send and gain potentiometers in the 12 o'clock positions. If a local phone is connected, originate a call to a remote site (someone's phone). If no local phone is present, someone at a remote site must call you. When a call comes in, the red RING LED (positioned between the CUE and ON switches) lights up each time the phone rings. The line is picked up by pushing the CONN button.

If you want to hear the caller, press the CUE button to listen to the incoming call. Adjust the Gain control to get a good input level from the telephone line. To be able to talk to the caller press the TB (Talkback) button and... talk to him. Adjust the Telco send potentiometer to increase or decrease the outgoing level to the caller. Note: This is all happening outside of the broadcast.

If all is Ok and both parties know what to do, you can press the ON switch and fade up the caller ON-AIR, or, put the fader in its "8" position and activate the ON switch to put the caller on-air.



Before going "live" with your caller, you will need to adjust the optimum RC balance to create the best separation of in and outgoing signals to the telephone line, otherwise your listeners will be presented with bad quality audio. These adjustments are only required once when installing the Airmate-USB. To achieve the optimum attenuation, you must adjust the C and R balance first.

This is how it is performed:

1. Check if the Telephone connection is established and all connections to the mixing console are correctly wired.
2. Send an audio signal to the telephone line by activating another module, for example, a CD player.
3. Now activate the CUE button of the TELCO module where the telephone line is connected.
4. You will faintly hear the send signal coming out of the mixing console.
5. Adjust the R-Balance for minimum feed through of the mixers send signal.
6. Listen now which switch position of the C-balance gives a further reduction of the return signal.
7. Maybe it is good to re-adjust the R-balance after having selected another switch position.
8. Repeat steps 5 and 6 until no further improvement is achieved for this telephone line.
9. Note: If you use the mixer in different locations this procedure must be done again.

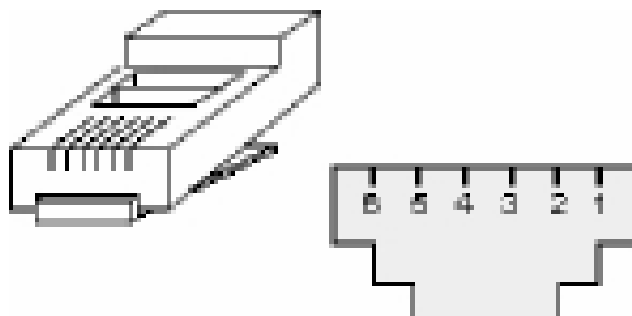
Below is an explanation for the German area where different telephone connectors are used.

Eingang und Ausgang **Telefonhybrid Module (RJ11):**

- Pin 1:** nicht belegt
- Pin 2:** Amt Leitung A
- Pin 3:** Amt Leitung B
- Pin 4:** nicht belegt

Anschluss **Telefon (RJ11):**

- Pin 1:** nicht belegt
- Pin 2:** nicht belegt
- Pin 3:** Amt Leitung A
- Pin 4:** Amt Leitung B
- Pin 5:** nicht belegt
- Pin 6:** nicht belegt,



oder bei Nichtfunktion:

- Pin 1:** nicht belegt
- Pin 2:** Amt Leitung B
- Pin 3:** nicht belegt
- Pin 4:** nicht belegt
- Pin 5:** Amt Leitung A
- Pin 6:** nicht belegt

Ein Verbindungskabel ist durch ein Fachmann entsprechend anzupassen!

13. SUMMERY

We hope this manual has given you sufficient information to use this new AIRMATE-USB mixer to the extreme specs it was designed to deliver. If you require more info please contact your local dealer or send us an email at info@d-r.nl and we will answer your email within 24 hours during weekdays.

In case you have bought this mixer from a previous owner, check out the dealer in your area on our website www.d-r.nl in case you need assistance.