

# BBX-1 "The Baker Box"

## Convert Stereo Field Microphones to AES via CAT-5



*The high quality RJ-45/CAT-5 alternative to dry-pair and line amps for remote broadcasting & pro-audio*

The BBX "Baker Box" provides a convenient, high performance way to transport your microphone signals from the field to your audio console. Using widely available CAT-5 unshielded twisted pair cables with RJ-45 connectors, each box accommodates an analog, stereo pair mic source. These analog signals are immediately converted to 24-bit digital AES, establishing your noise floor at the mic source, and transported down the CAT-5 cable. Up to 4 boxes can be combined, by either a daisy-chain or star topology, to deliver signals up to 500 meters (1,640 ft.).

Power to the units may be provided locally or upstream via the CAT-5 cable. This eliminates the need for line amplifiers and the 9-volt batteries required to run them.

Each MIC level input provides phantom power for both 24V and 48V powered mics. There are also three gain options to adjust audio levels going to the mixer.

Each box delivers the converted AES signal at a front-panel BNC. It also sends the signal down the CAT-5 to the RX unit, via up to three other BBX units, each of which adds another stereo mic pair AES signal to the CAT-5 trunk.

The RX unit features four RJ-45 inputs for use in "star" configurations, one RJ-45 for use in daisy-chain configurations, and four AES outputs on BNC's. Two RX units are housed in a 1RU frame.

The BBX system can be used by itself or as a compliment to our various fiber optic transport systems, such as Adder II multichannel AES/EBU fiber optic multiplexers.

### Features

- Pre-amplifies, digitizes & transports mic audio
- Eliminates cable transmission noise
- Distances up to 500 meters (1,640 ft.)
- Add and insert up to 8 mics on one CAT-5
  - Daisy-chain up to 4 TX units or
  - Create a 4-way "Star" configuration
- Stand-alone field "Baker Box" transmitter
  - Uses common RJ-45 Ethernet cables
  - Can be used as stand-alone A/D converter
  - Accepts two mic level, analog audio inputs
  - Power locally or via RJ-45/CAT-5 cable
  - Provides 24V and 48V phantom power
  - Adjustable microphone gain
- Compact rack-mount RX breaks out to BNCs
  - Two receiver units in a 1RU frame
  - Each RX delivers 4 AES signals to 4 BNCs
  - Provides power to TX units and mics
- Plug-and-play operation
- High reliability design

### Applications

- Audio acquisition for remote broadcasts
- Easy audio analog to digital conversion
- Television broadcast production
- Professional audio production

### Electrical/Signal Interface

Connector, Unshielded Twisted Pair	RJ45
Cable compatibility	CAT-5, EIA/TIA-568-A
Recommended Distance	500 m (1640 ft.)
Connector In, Power	4-Pin, XLR
Connector In, Microphone	3-pin XLR
Input Impedance	10kΩ
Connector Out, AES	75 ohm BNC

### Audio

Audio In	Analog, MIC level	
Gain Settings	<u>Switch Setting</u>	<u>Max. Mic Input @ 0 dBfs</u>
	0dB	-24 dBm
	-10 dB	-15 dBm
	+10 dB	-34 dBm
Signal to Noise Ratio, A-weighted	≥100 dB	

### Mechanical/Environmental

Dimensions (WxLxD)	TX 1.50" x 8.25" x 6.0"
Dimensions (WxLxD)	RX 1.85" x 16.5" x 4.5"
Weight (per TX)	1 lb. 4 oz
Weight (per RX)	6 lbs
Power Req., nominal	3 watts @ 10 to 18VDC
Temperature Range	0° to +50°C
Humidity Range	10 to 90% RH, Noncond.

# Operating Notes for: BBX-1 TX "Baker Box" and BBX-1 RX

## BBX-TX-1 Faceplate



Each of the two BBX-TX inputs accepts a mono, mic level analog audio source. Mic gain is selected via a toggle switch to the left of each input. Similarly, phantom power can be selected, 24V or 48V, to the right of each input via a slide switch.

If the TX unit is to be used as a stand-alone A/D converter, then local 12-18VDC should be supplied at the 4-pin XLR input. In this application, the 75Ω AES signal will be available on the BNC connector. If the units are to be used with CAT-5 cable, then power will be provided by the RX unit via the CAT-5 cable. The front panel BNC will also deliver AES for local monitoring when using CAT-5 cable. The presence of power, either locally provided or via the CAT-5, is indicated by a green LED.

Baker Boxes employ standard EIA/TIA-568-A Category-5 straight through cable. Using CAT-5 cable is very simple. Up to four TX "Baker Boxes" can be connected to the BBX RX unit using either a daisy chain or star topology. With daisy-chain, each TX loops from one to the next, ending at the RX. With a star configuration, each TX connects directly to the BBX RX. See diagrams, below.



## BBX-RX -1 Faceplate

The RX unit accepts either one RJ-45 input from a daisy-chain of up to four TX Baker Boxes, or individual RJ-45 inputs directly from up to four TX boxes. The RX supplies the power to all TX units upstream via the RJ-45 cable. Note that local powering is used only when a TX is serving as a stand-alone A-D converter.



## Installation, Care and Maintenance

The TX units have no internal switches or adjustments and are designed to be "plug and play" devices. The units are completely sealed on five sides, with the connections available on the sixth. Thus, hanging the Baker Box by its handle will provide for greater protection in an outdoor environment.

The BBX-1 RX comprises a 1RU 19-inch frame that actually contains two operating RX units, each capable of handling up to four TX units. Each half of the BBX-1 RX accepts a 12VDC power input, and power presence is indicated by green LEDs on the front panel.

## Ordering Information

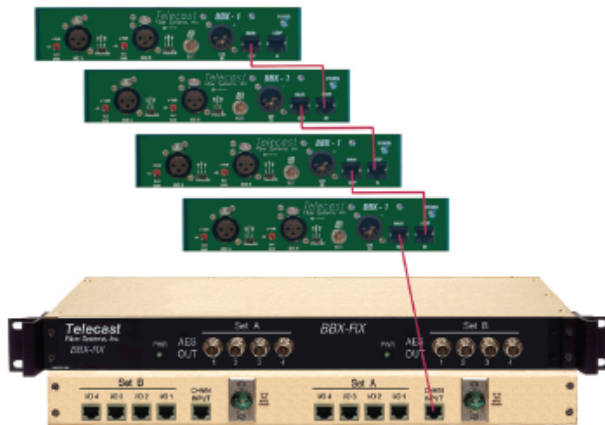
### BBX-TX-1

Baker Box Transmitter, max. 4 TX units per chain

### BBX-RX-1

Baker Box Dual Receive, accommodates 2 chains

## Baker Boxes in a Daisy-Chain...



## or in a Star Configuration

