



# TH-03 Digital Hybrid

## AEQ's Frequency Extender

The TH-03 is an advanced digital hybrid that comes in versions or 1 or 2 telephone lines, and either analog or AES/EBU digital inputs and outputs.

Feedback is automatically mitigated by the digital hybrid, and no adjustments or calibration required.

The two line models include a mix-minus bus for multiplex communication while on-air or on-hold in the studio: Pressing the MPX button automatically establishes a conference between the two telephone lines, so only a single audio feed to and from the hybrid to the mixing console is needed. The TH-03 takes care of simultaneously getting both in-bound calls to the console, and provides audio from the console back to each individual telephone line, with both console audio and the other callers audio.

The TH-03 also has AEQ's exclusive built-in frequency extender. When activated, it moves all frequencies 250 Hz upwards on the send line and 250 Hz downwards on the receive line. This additional 2 ½ octaves results in enhanced bass frequencies. To use the frequency extender functionality, another AEQ hybrid must be used at the far end.

Each telephone line incorporates a SET port which is disabled when the hybrid is on-air.

Each of the TH-03's telephone lines Off-Hook, Frequency Extender, and On-Air functions can be controlled locally via the front panel, or remotely using a console or a remote control panel. The TH-03 also has outputs for remote signaling of RING, WAIT, ON-AIR and EXTENDED MODE.



## TECHNICAL SPECIFICATIONS

### AUDIO INPUTS:

- Analog: Electronically balanced.
- Input impedance: > 6 K !
- Nominal input level: 0 dBv.
- Digital: AES/EBU transformer balanced.
- Internal adjustment of audio gain..

### AUDIO OUTPUTS:

- Analog: Electronically balanced.
- Nominal output level: 0 dBv.
- Digital: AES/EBU transformer balanced.
- Internal adjustment of audio gain.

### TELEPHONE INTERFACE:

- Input/Output: Transformer coupled.
- Impedance: 600 !
- Nominal input level: -10 dBm.
- Nominal output level: -6.5 dBm.

\*In conferencia mode, telephone line output level (nominal line input level): -7.5 dBm.

### DIMENSIONS:

- 1 Standard 19" Rack Unit.
- Width: 482 mm. (19").
- Height: 44,5 mm. (1.75").
- Depth: 230mm. (9").

### AUDIO BANDWIDTH (Frequency Extender OFF)

- Telephone Line: 300 – 4,000 Hz +/- 1 dB
- Audio Output: 300 – 4,000 Hz +/- 1 dB

### AUDIO BANDWIDTH (Frequency Extender ON)

- Telephone Line: 50 – 3,750 Hz +/- 1 dB
- Audio Output: 50 – 3,750 Hz +/- 1 dB
- Distortion: THD+N: 1 KHz at nominal I/O levels
- Telephone Line: < 0.20%.
- Audio Output: < 0.15%.
- Absolute Noise: TX < -66 dBm. RX < - 68 dBm.
- Frequency Extender: TX = 250 Hz. RX = - 250 Hz.
- Cross-Talk: Lower than absolute noise.

### ELECTRONIC ECHO SUPPRESSION:

- Line impedance: One and two lines: 600 !
- Signal source: One and two lines 1 KHz.
- Nominal input and output levels.
- Audio output level:
  - One line: < -64 dBm typical.
  - Two lines: < -54 dBm typical.

### POWER SUPPLY:

- AC 90 a 250 V. 50-60 Hz. 35VA.



TH-03.2 AA: Two lines, analog inputs & outputs.

TH-03.2 AD: Two lines, one with analog input & output, the second with digital input & output.

TH-03.2 DD: Two lines, with digital inputs & outputs.

TH-03.DIO : Internal digital I/O board for TH 03. Convert in digital the I/O of a line.

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