

TH-03 Digital Hybrids with AEQ's Frequency Extender



**Just when you thought that Telephone Hybrids
couldn't get any better...
AEQ's new TH-03s prove that they can!**



The TH-03 is an advanced digital hybrid that comes in versions for 1 or 2 telephone lines, and either analog or AES/EBU digital inputs and outputs. Each model has built-in signal level metering for each hybrid line.

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.

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Specifications:

AUDIO INPUTS:

Analog: Electronically balanced.
Input impedance: $> 6 K \Omega$
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 Ω
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 Ω

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:

90 - 250 VAC, 50-60 Hz, 35 VA.

Available models:

TH-03.1 A: One line, analog input & output

TH-03.1 D : One line, digital input & output

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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