



941/942

dbx Type II Broadcast tape noise reduction

The dbx Models 941 and 942 provide broadcasters with dbx Type II Noise Reduction in the convenient 900 series modular format. The Model 941 is a two-channel encode-only Type II noise reduction module. The Model 942 is a two-channel decode-only Type II noise reduction module which features an additional switchable provision for decoding dbx encoded discs. The two modules can be used independently or in conjunction to provide up to 16 channels of dbx Type II noise reduction in a single dbx 900 Series frame occupying only 5¼ vertical inches of rack space.

The Type II Noise Reduction format provides a minimum of 30 dB of broadband noise reduction with a 10 dB increase in system headroom for audio storage and transmission media. In the encode process the system compresses applied audio signal by a 2:1 ratio, linear in decibels over a 100 dB range. In the decode process the circuitry produces an exact mirror image 1:2 expansion of the encoded signal. There are no pilot tones or routine calibrations of the Type II system necessary for accurate decoding of encoded material.

True RMS level sensing insures perfect encode/decode tracking for accurate transient response and immunity from mistracking found in conventional noise reduction systems due to phase shift in the transmission or storage medium.

The dbx system effectively eliminates tape hiss in recording and prevents the noise buildup normally encountered in the transferring of information from one recorded medium to another. It does not remove noise present in the original signal. The 941 and 942 noise reduction modules are built to professional standards using the latest advances in circuit design and technology and are covered by a two-year limited warranty on parts and labor.

Features

- 30 dB broadband audio noise reduction
- 10 dB added system headroom
- True RMS level detection for proper encode/decode tracking
- Linear decibel compression/expansion over 100 dB range does not require pilot tones or level matching
- Electronically balanced input
- +24 dBm output drive capability
- Two noise reduction channels per module (941-dual encode, 942-dual decode)
- Can be used in dbx 900 Series frame to provide up to 16 channels of noise reduction in 5¼" vertical rack space
- LED function indicators
- Decodes dbx encoded discs (942 only)



Application

dbx Type II encoding of program material, announce copy, drop-ins, etc. effectively eliminates the tape hiss which usually accompanies the recording process. This allows sound bites or other program content originated on cartridges (historically, the noisiest link in the broadcast chain) to approach the sound quality of live broadcasting. When used for transfer of program material to cartridge from other recorded sources, dbx Type II encoding prevents any additional noise build up beyond that contained in the original material. The Type II system minimizes the audible quality differences between cart playback and live announce or between one cart and another. dbx Type II Noise Reduction provides freedom from "automated sound" and allows a fully automated station to approach live sound quality while insuring that cartridge noise is low enough so as to not be a problem when "pumped up" during drive-time. In the control room multiple 942 decoders are used to decode multiple cart machine sources and feature the additional ability to decode dbx encoded discs.

Non-cartridge related broadcast use of the dbx Type II system includes improving the signal to noise ratio of TV audio tracks and cleaning up noisy full frequency land lines or microwave links to improve competitiveness or achieve compliance with FCC guidelines. A modest investment in dbx Type II Noise Reduction modules can protect a much larger investment by prolonging the useful life of major studio equipment and installations that might not otherwise meet contemporary performance standards.

Specifications

Input impedance

Balanced — 25 k ohms
Unbalanced — 18.5 k ohms

Output impedance

22 ohms, designed to drive 600 ohms
or greater

Dynamic range

110 dB (weighted background noise to
peak signal)

Maximum input level

+24 dBm

Maximum output level

+24 dBm into 600 ohms or greater

Level match range

±10 dBm (setting does not affect tracking
accuracy)

Frequency response

±0.5 dB 40 Hz to 20 kHz, -1 dB at 30 Hz
(encode/decode, typical program material
tracking)

Effective noise reduction

30 dB, plus 10 dB headroom; 40 dB for
dbx encoded discs (A weighted).

Equivalent input noise

-85 dBm, unweighted, 20 kHz bandwidth

Distortion

THD @ 100 Hz <.5%
THD @ 1 kHz <.1%

Slew rate

>10V/μsec

Compression/expansion slope

>2:1 constant linear decibel

Crosstalk isolation

>60 dB at 1 kHz

Controls

Level match

Switches

Noise reduction in/out
disc/tape (942 only)

Power supply requirements

±15 V regulated at 60 ma
±24 V unregulated at 40 ma

Dimensions

Front panel 5¼" H × 1½" W, card depth
behind panel 9½"



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Specifications subject to change without notice. Manufactured under one or more of the following U.S. patents: 3,681,618; 3,714,462; 3,789,143; 4,101,849; 4,097,767. Other patents pending.

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