# Dynamic Noise Filter

## Model DNF 1100
**Band Width 10CPS to 30KC**

A SIGNAL CONTROLLED AUTOMATICALLY VARIABLE LOW PASS FILTER WHICH REDUCES NOISE FROM ANY SOURCE WITH NO AUDIBLE EFFECT ON EITHER MUSIC OR SPEECH.

## Features

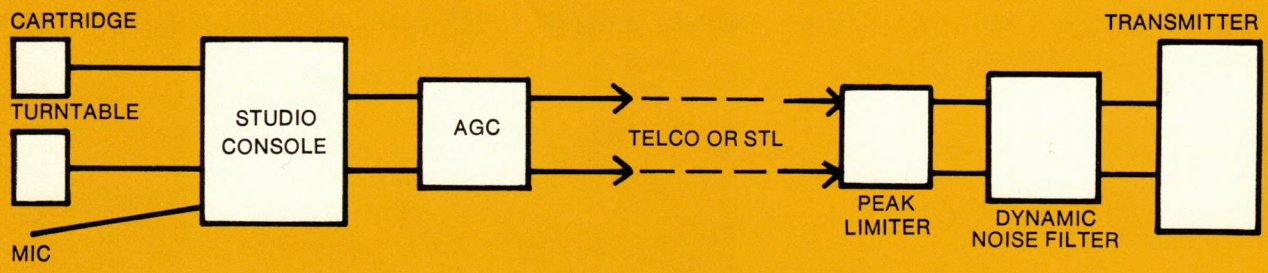
- One or two independent channels
- Hiss attenuation 6 to 14 db
- Up to 37 db attenuation at 10 kc
- Flat music response ± .3 db, 10 cps to 20 kc
- Less than .2% total harmonic distortion
- Dynamic range of 97 db
- Output of up to 21 dbm into 600 ohms
- Mode switch for phono 78, phono, tape, or matrix encoded signals
- LED indicators
- By pass switch
- Two-year warranty

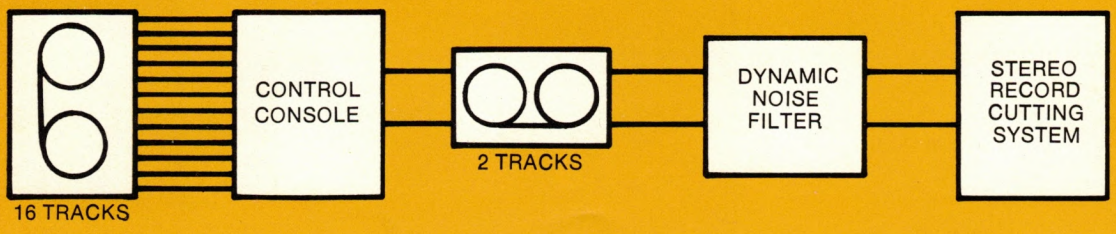
## Applications

- Master tape
- Multitrack mix
- Cartridge
- Cassette
- Record
- FM program line
- Video tape sound

**Burwen LABORATORIES**

# Connection



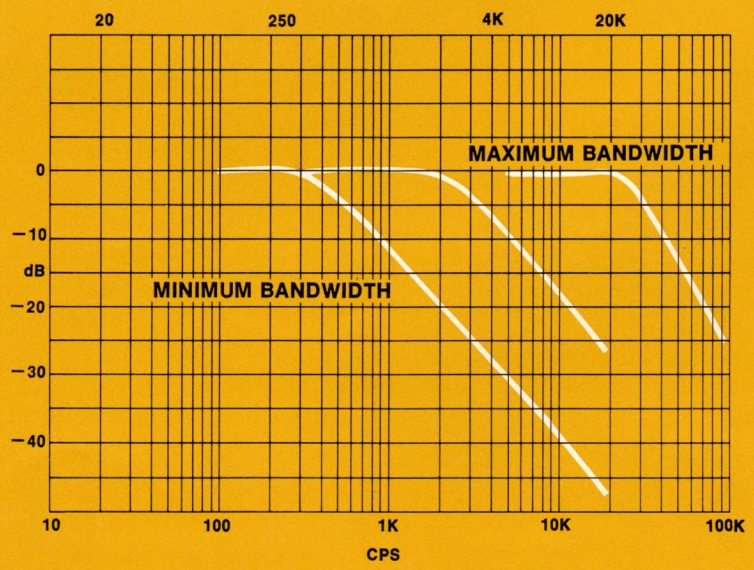




The DNF 1100 is designed to operate in a program channel where the 0 vU level is 0 to +8 dbm. The DNF 1100 may be connected into the studio console, just ahead of the stereo generator, or at the end of the program line at a broadcast station. In a recording studio it may be used on the output of a console, the two track playback, or directly at the disc cutting channel.

# Function

The DNF 1100 dynamic noise filter reduces noise by attenuating high frequencies when there is little or no musical information present. As the high frequency content of the program material increases, the high frequency cut off gradually increases from 500 cps to 30 kc. Since the device can go from one extremity to the high end of its bandwidth in 400 microseconds, there is no audible loss of high frequency transients. When high level signals are present, the DNF 1100 utilizes the "masking" principle and does not attenuate high frequencies.

**FREQUENCY RESPONSE**

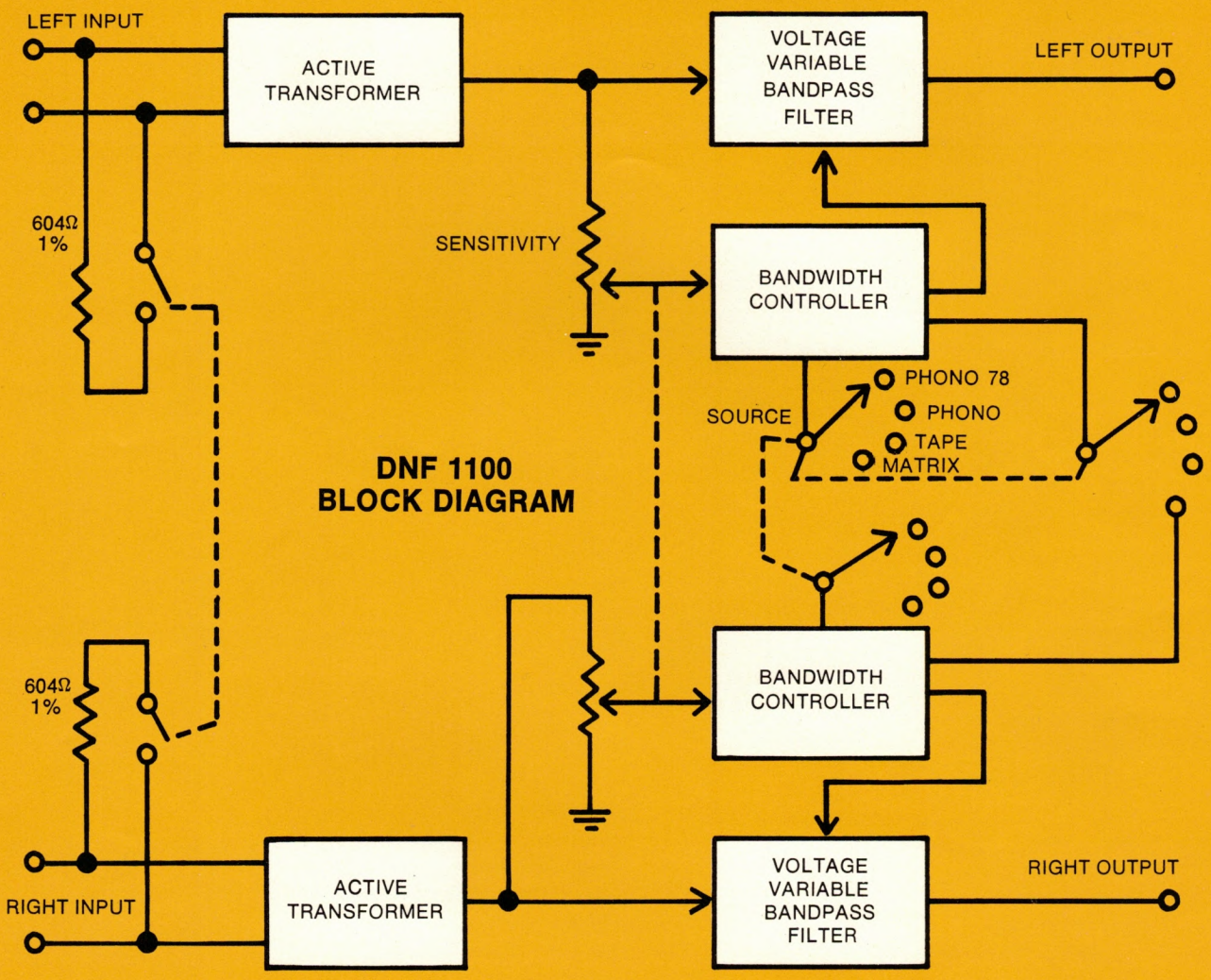


# Operation

The DNF 1100, like all Burwen noise filters, can operate on any source at any time. Since no pre-encoding is required, the DNF 1100 will remove noise from tapes, discs, program channels, telephone lines, etc.

The sensitivity control is set to achieve the maximum noise reduction without removal of high frequency material. There are 4 LED indicators to independently show the action of the left and right channel filters. These are an aid in setting the sensitivity control quickly.

# Description




The DNF 1100 operates in 4 modes. The *tape* mode allows operation of the filter in 400 microseconds. *Phono* reduces the attack time to one millisecond and is helpful in eliminating ticks and pops on discs. *Phono 78* reduces the attack time to 2 milliseconds and the bandwidth controller is less sensitive to noise above 6 kc.

*Matrix* ties the two channels together to obtain matched frequency response and phase shift for use with any *matrix* encoded source

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## Model DNF 1100 Specifications

TYPICAL @ 25°C WITH 600 OHM LOAD UNLESS OTHERWISE SPECIFIED.

| | |
|---|---|
| **CHANNELS** | Prewired for 1 or 2 independent channels. Operation is independent except in MATRIX position of mode switch which provides common bandwidth control. Modules are interchangeable without modification or adjustment. |
| **INPUT** | |
| 0 vu level | +4 dBm |
| Maximum input | +21 dBm, 12 V instantaneous peak |
| Impedance | Balanced 600 ohms or 200k |
| Common Mode Rejection | 50 dB minimum dc to 1 kc<br>46 dB minimum with 600 ohm source unbalance |
| Common Mode Impedance | 200k each input to ground |
| Maximum Common Mode Voltage | ±100 V dc or peak |
| Maximum Differential Input | ±30 V dc or rms |
| **OUTPUT** | +21 dBm maximum into 600 ohms<br>Termination unnecessary |
| Output Impedance | 10 ohms |
| Short Circuit Protection | Included |
| Connections | Single ended, common grounded to chassis |
| **FREQUENCY RESPONSE** | |
| Minimum bandwidth | −3 dB @ 500 cps / −10 dB @ 1 kc / −20 dB @ 2.5 kc |
| Maximum bandwidth | ±.3 dB max. 10 cps to 20 kc / −3 dB @ 30 kc / −25 dB @ 100 kc |
| **GAIN** | |
| 1 kc input @ 0 vu | 0 dB ±.2 dB |
| **HARMONIC DISTORTION** | |
| Input +10 vu, 20 cps to 10 kc, phono, sensitivity max. | .2% max. |
| **INTERNAL NOISE** | |
| 20 cps to 20 kc | −80 vu |
| **MODE SWITCH** | |
| PHONO 78, PHONO, TAPE, MATRIX<br>MATRIX position uses common bandwidth control | |
| **SENSITIVITY SWITCH** | −15 to +15 dB in 3 dB steps |
| **IN-OUT SWITCH** | |
| Bypasses entire system | |
| **INDICATORS** | |
| Wideband | Green LED |
| Noise Suppression | Red LED |
| **POWER INPUT** | 115 or 230 V ±10% / 50 to 60 cps, 12 W/2 channels |
| **MECHANICAL** | |
| Size | 9½" W x 3½" H x 18" D |
| Depth Behind Panel | 16¾" |
| Panel Color | Black with gold lettering |
| Rack Mounting | Adapters available for mounting 1 or 2 units in 3½" panel space |
| Input Connector | D3F Switchcraft |
| Mating Connector | A3M Switchcraft or XLR3-12C Cannon |
| Output Connector | D3M Switchcraft |
| Mating Connector | A3F Switchcraft or XLR3-11C Cannon |
| Pin Connections | 1, shield and shell / 2, common / 3, high |
| **RACK ADAPTERS** | |
| Single Unit, pair | Order separately RA1 |
| Two Units Side by Side, pair | Order separately RA2 |

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