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## NTE1801 Integrated Circuit TV dbx Noise Reduction System

**Description:**

The NTE1801 Multiplexed Sound dbx Noise Reduction Decoder is a single-chip linear IC in a 28-Lead DIP type package suitable for US NTSC System use. The device incorporates two RMS-level sensors and VCA circuits, as well as five operational amplifiers and two buffer circuits.

A complete multiplexed sound system for US NTSC System television sets can be built by interfacing the NTE1801 with the NTE1800 Multiplexed Sound Decoder.

**Features:**

- Low Distortion Ratio, Low Interference
- Low Power Supply Current
- Single, 8V to 15V Power Supply
- 100mV<sub>rms</sub> (300Hz, 0dB) Input Voltage (Pin4)
- Easily Interfaced to the NTE1800

**Functions:**

- On-Chip dbx Noise Reduction Decoder and VCA Circuits
- On-Chip RMS Level Sensor
- L + R Signal Buffer Amplifier

**Absolute Maximum Ratings:** (T<sub>A</sub> = +25°C unless otherwise specified)

Supply Voltage, V<sub>CCmax</sub> ..... 15V  
 Power Dissipation (T<sub>A</sub> = +75°C), P<sub>D</sub> ..... 580mW  
 Operating Temperature Range, T<sub>opr</sub> ..... -20° to +75°C  
 Storage Temperature Range, T<sub>stg</sub> ..... -40° to +125°C

**Recommended Operating Conditions:** (T<sub>A</sub> = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Power Supply Voltage	V <sub>CC</sub>		8.0	12.0	13.5	V
Input Signal Voltage	V <sub>IN</sub>	f = 300Hz, Pin4	-	100	-	mV <sub>rms</sub>
Amp 1 Gain	AV1		0	10.3	30.0	dB
Amp 2 Gain	AV2		0	-	20	dB

**Operating Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 12\text{V}$ ,  $0\text{dB} = 100\text{mV}_{\text{rms}}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Notes	Min	Typ	Max	Unit
Circuit Current	$I_{CC}$	No Signal	–	8.0	12.5	17.0	mA
Output Voltage	$V_{O1}$	$f = 300\text{Hz}$ , $V_{IN} = +10\text{dB}$	(L–R)	+17	+20	+23	dB
	$V_{O2}$	$f = 300\text{Hz}$ , $V_{IN} = 0\text{dB}$	(L–R)	–3	0	+3	dB
	$V_{O3}$	$f = 300\text{Hz}$ , $V_{IN} = -20\text{dB}$	(L–R)	–43	–40	–37	dB
	$V_{O4}$	$f = 8\text{kHz}$ , $V_{IN} = +17\text{dB}$	(L–R)	+12.1	+15.1	+18.1	dB
	$V_{O5}$	$f = 8\text{kHz}$ , $V_{IN} = +7\text{dB}$	(L–R)	–14.6	–11.6	–8.6	dB
	$V_{O6}$	$f = 8\text{kHz}$ , $V_{IN} = -3\text{dB}$	(L–R)	–43.6	–40.6	–37.6	dB
	$V_{O7}$	$f = 1\text{kHz}$ , $V_{IN} = 215\text{mV}$	(L+R)	–0.5	0	+0.5	dB
Maximum Output Voltage	$V_{OM}$	$f = 1\text{kHz}$ , THD = 1%, (400 to 300kHz using BPF)	(L–R)	4.0	8.6	–	$V_{P-P}$
Total Harmonic Distortion	THD1	$V_O = 0\text{dB}$ , $f = 1\text{kHz}$ , (400 to 300kHz using BPF)	(L–R)	–	0.1	0.5	%
	THD2	$V_O = 215\text{mV}$ , $f = 1\text{kHz}$ , (400 to 300kHz using BPF)	(L+R)	–	0.1	0.3	%
Output Noise Voltage	NL1	$R_g = 0$ , 400 to 30kHz using BPF	(L–R)	–	–96	–90	dBV
	NL2		(L+R)	–	–90	–70	dBV
Reference Voltage	$V_{ref}$	$V_{CC} = 12\text{V}$	–	5.8	6.0	6.2	V

**Caution:** Static Electricity can impair the performance of this device.



