



ELECTRONICS, INC.  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089  
<http://www.nteinc.com>

## NTE986 Integrated Circuit–Linear Single Chip TV Chroma Processor/Demodulator

**Description:**

The NTE986 is a monolithic silicon integrated circuit in a 24–Lead DIP type package that performs the complete chroma processor and demodulating functions for color TV. This simple chip contains all the features of the NTE797 chroma processor and the NTE1176 chroma demodulator.

**Features:**

- Phase Locked Subcarrier Regeneration Utilizing Sample and Hold Techniques.
- All Chroma Processing and Demodulating Circuitry on a Single Chip
- Supplementary ACC with Overload Detector to Prevent Over Saturation of the Picture Tube
- Linear DC Controls for Chroma Gain and Tint
- Dynamic “Flesh Correction” – Corrects Green and Purple Flesh Colors Without Affecting Primary Colors.
- Balanced Chroma Demodulators with Low Output Impedance for Direct Coupling
- Internal RF Filtering
- Requires Few External Components
- Low System Dissipation – 0.5W Nominal

**Absolute Maximum Ratings:**

DC Supply Voltage (Between Pin18 and Pin17) ..... 13.2V  
 Device Dissipation ( $T_A \leq +55^\circ\text{C}$ ) ..... 825mW  
     Derate Linearly Above  $T_A = +55^\circ\text{C}$  ..... 8.7mW/ $^\circ\text{C}$   
 Operating Ambient Temperature Range,  $T_{opr}$  .....  $-40^\circ$  to  $+85^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-65^\circ$  to  $+150^\circ\text{C}$   
 Lead Temperature (During Soldering, 1/16” (1.59mm) from case, 10s max),  $T_L$  .....  $+265^\circ\text{C}$

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_+ = 11.6\text{V}$  unless otherwise specified)

Parameter	Symbol	Test Conditions						Typ	Unit
		S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	Chroma In	Burst In	V <sub>4</sub>		
<b>Static Characteristics</b>									
Supply Current	$I_T$							42	mA
R–Y, G–Y, B–Y Outputs	$V_8, V_9, V_{10}$							5.3	V
OSC Reference Inputs	$V_{11}, V_{12}$							3.7	V
Chroma Demodulator Input	$V_{13}$							2.9	V
Chroma Processor Input	$V_1$							2.2	V

**Electrical Characteristics (Cont'd):** ( $T_A = +25^\circ\text{C}$ ,  $V_+ = 11.6\text{V}$  unless otherwise specified)

Parameter	Symbol	Test Conditions						Typ	Unit		
		S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	Chroma In	Burst In	V <sub>4</sub>			V <sub>17</sub>	
<b>Dynamic Characteristics</b>											
Minimum OSC Pull-In Range (Note 1)	V <sub>12</sub>	2	1	1	273mV <sub>P-P</sub>		1.5V	7V	±300	Hz	
OSC Level	V <sub>12</sub>	2	1	1						0.6	V <sub>P-P</sub>
100 Percent ACC	V <sub>13</sub>	1	1	1					1.0	V <sub>P-P</sub>	
Minimum Gain Control	V <sub>13</sub>	1	1	1			11.6V		20	mV <sub>P-P</sub>	
50 Percent Gain Control	V <sub>13</sub>	1	1	1			6.0V		50	% of	
200 Percent ACC	V <sub>13</sub>	1	1	1	546mV <sub>P-P</sub>		1.5V		100	100%	
20 Percent ACC	V <sub>13</sub>	1	1	1	54.6V <sub>P-P</sub>				100	ACC	
Maximum Kill Output	V <sub>13</sub>	1	1	1	54.6mV <sub>P-P</sub>	4mV <sub>P-P</sub>			20	mV <sub>P-P</sub>	
Minimum Unkill Output	V <sub>13</sub>	1	1	1		30mV <sub>P-P</sub>			400	mV <sub>P-P</sub>	
Overload Detector (OLD)	V <sub>13</sub>	1	1	2	546mV <sub>P-P</sub>	273mV <sub>P-P</sub>			1.0	V <sub>P-P</sub>	
R-Y Sensitivity (E <sub>g</sub> = 282mV <sub>P-P</sub> , 3.53MHz)	V <sub>10</sub>	1	2	1	0				0.8	V <sub>P-P</sub>	
R-Y Ratio B-Y/R-Y (Note 2)	V <sub>8</sub>	1	2	1						120	%
G-Y Ratio G-Y/R-Y (Note 2)	V <sub>9</sub>	1	2	1						33	%
Maximum R-Y Output (E <sub>g</sub> = 2V <sub>P-P</sub> , 3.53MHz)	V <sub>10</sub>	1	2	1						3.0	V <sub>P-P</sub>
Minimum Tint Control Range	φ <sub>13</sub>	1	1	1		273mV <sub>P-P</sub>			0V to 11.6V	80	Degrees

Note 1. Tune C<sub>2</sub> to 3,579,845Hz with S<sub>1</sub> in position 2. Put S<sub>1</sub> in position 1, and check for pull-in. Repeat for frequency tuned to 3,579,245Hz. For other tests, frequency tuned to 3,579,545Hz ±10Hz.

Note 2. All input levels up to 2V<sub>P-P</sub>.



