

## NTE856 Integrated Circuit TV Video Modulation Circuit

**Description:**

The NTE856 is an RF oscillator and dual-input modulator in an 8-Lead DIP type package designed to generate a TV signal from baseband video inputs. Typical applications include video games, home computer display, video recorders, and test equipment.

The very low level of intermodulation products, compact package and small external component count make this device superior to simple discrete circuits.

**Features:**

- Single 5V Supply
- Channel 3 or 4 Operation
- Excellent Oscillator Stability to 100MHz
- Color and Sound Compatibility
- Dual Input Modulator for Ease of Signal
- Low Intermodulation (-50dB 920kHz Beat)
- Overmodulation Protection

**Absolute Maximum Ratings:**

Supply Voltage .....	8V
Power Dissipation Package .....	1.25W
Derate above 25°C .....	13mW/°C
Junction Temperature .....	+150°C
Operating Ambient Temperature Range .....	0° to +70°C
Storage Temperature Range .....	-65° to +150°C

**Recommended Operating Conditions:**

Supply Voltage .....	5V
Luma Input Voltage	
Sync Tip .....	1V
Peak White .....	0.35V

**Electrical Characteristics:** ( $V_{CC} = 5V$ ,  $T_A = +25^\circ C$  unless otherwise specified)

Parameter	Test Conditions	Min	Typ	Max	Unit
Operating Supply Voltage		4.75	5.0	5.25	V
Supply Current		–	12	–	mA
<b>RF Modulator</b>					
Luma Input Dynamic Range (Pin4)		0	–	1.5	V
RF Output Voltage	$f = 67.25MHz$ , $V_4 = 1V$	–	15	–	$mV_{rms}$
Luma Conversion Gain	$\Delta V_7/\Delta V_4$ , $V_4 = 0.1V$ to $1V$	–	0.8	–	V/V
Chroma Conversion Gain	$\Delta V_7/\Delta V_5$ , $V_5 = 1.5V_{P-P}$ , $V_4 = 1V$	–	0.95	–	V/V
Chroma Linearity (Pin7)	$V_5 = 1.5V_{P-P}$	–	1.0	–	%
Luma Linearity (Pin7)	$V_4 = 0$ to $1.5V$	–	2.0	–	%
Input Current (Pin4)		–	–	–20	$\mu A$
Input Resistance (Pin5)		–	800	–	$\Omega$
Input Resistance (Pin4)		100	–	–	$k\Omega$
Input Capacitance (Pin4, Pin5)		–	–	5.0	pF
Residual 920kHz	Measured at Pin7, Note 1	–	60	–	dB
Output Current (Pin7)	$V_4 = 0$	–	1.5	–	mA
<b>Temperature Characteristics</b> ( $V_{CC} = 7V$ , $T_A = 0^\circ$ to $+70^\circ C$ , IC only)					
RF Oscillator Deviation	$f_o = 67.265MHz$				

Note 1. RF Reference Level = 6.0mV at Pin7. Load Impedance = 75 $\Omega$ .  
 RF + 4.5MHz = –13dB.  
 RF + 3.58MHz = –20dB.



