

NTE1654 Integrated Circuit FM/AM IF System (Low Supply Voltage Use)

Features:

- FM IF Amplifier
- FM Quadrature Detector
- AM Mixer
- AM Local Oscillator
- AM IF Amplifier
- AM Detector
- Signal Meter Driver
- Low Supply Voltage Use: $V_{CC} = 3V$ to $8V$
- Very Few External Parts

Absolute Maximum Ratings: ($T_A = +25^\circ C$ unless otherwise specified)

Supply Voltage, V_{CC}	8V
Power Dissipation, P_D	750mW
Derated Above $25^\circ C$	6mW/ $^\circ C$
Operating Temperature Range, T_{opr}	-25° to $+75^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ C$

Electrical Characteristics: ($T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
FM						
Supply Current	I_{CC}	$V_{IN} = 0$ at FM	–	17	31	mA
		$V_{IN} = 0$ at AM	–	15	31	mA
Input Limiting Voltage	$V_{IN(lim)}$	–3dB Limiting	–	34	40	dB μV
Recovered Output Voltage	$V_{OD(1)}$	$\Delta f = \pm 22.5kHz$, $V_{IN} = 60dB\mu V$	40	60	80	mV _{rms}
Signal to Noise Ratio	S/N(1)	$V_{IN} = 80dB\mu V$	–	70	–	dB
Total Harmonic Distortion	THD(1)	$V_{IN} = 80dB\mu V$	–	0.3	–	%
AM Rejection Ratio	AMR	AM: 1kHz, 30%, FM: $\Delta f = \pm 22.5kHz$ $V_{IN} = 80dB\mu V$	–	50	–	dB
Meter Driver Voltage	$V_{2(FM)}$	$V_{IN} = 80dB\mu V$	0.8	1.0	1.2	V _(DC)
AM						
Recovered Output Voltage	$V_{OD(AM)}$	$V_{IN} = 60dB\mu V$	90	130	180	mV _{rms}
Gain	GAIN	$f_{IN} = 455kHz$, $V_{IN} = 20dB\mu V$	10	24	52	mV _{rms}
Meter Driver Voltage	$V_{2(AM)}$	$V_{IN} = 60dB\mu V$	–	1.0	–	V _{DC}
Total Harmonic Distortion	THD(AM)	$V_{IN} = 60dB\mu V$	–	1.0	–	%
Signal to Noise Ratio	S/N(AM)	$V_{IN} = 60dB$	–	40	–	dB
Local OSC. Stop Voltage	V_{stop}		–	1.5	–	V _{DC}

Pin Connection Diagram

GND	1	16	AM OSC
AM Output	2	15	Mixer Output
V _{CC} 2	3	14	V _{CC} 1
FM Output 2 (AFC)	4	13	AM Mixer Input
Quad	5	12	IF 1 Input
AGC	6	11	AM/FM Switch
	7	10	IF 1 Output
IF 2 Input	8	9	Bypass

