

NTE1475 Integrated Circuit CMOS, Phase-Locked Loop (PLL) Frequency Synthesizer for CB

Features:

- Built-in high speed programmable divider for direct PLL system
- PLL out-of-lock output available to inhibit transmission.
- Instantaneous call capability of channel 9 and 19.
- Built-in detecting circuit of mis-program
- Built-in amplifier for crystal oscillator
- Built-in amplifier for active low-pass filter.
- BCD code channel selection. (Pull-down resistors included)

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

Maximum Supply Voltage, $V_{DD\text{max}}$	-0.3 to +8.0V
Maximum Input Voltage, $V_{IN\text{max}}$	-0.3 to $V_{DD} + 0.3\text{V}$
Maximum Output Voltage (\overline{MC} , \overline{LM} , A_{OUT} , Output Off), $V_{OUT(1)}$	-0.3 to +10.0V
Maximum Output Voltage (PD_{OUT} , Output Off), $V_{OUT(2)}$	-0.3 to $V_{DD} + 0.3\text{V}$
Maximum Output Current (\overline{MC} , \overline{LM}), $I_{OUT(1)}$	0 to 15mA
Maximum Output Current (A_{OUT}), $I_{OUT(2)}$	0 to 2.5mA
Allowable Power Dissipation, $P_{D\text{max}}$ ($T_A = +70^\circ\text{C}$)	300mW
Operating Temperature Range, T_{opg}	-30° to +70°C
Storage Temperature Range, T_{stg}	-40° to +125°C

Allowable Operating Ranges: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{DD}	$T_A = -30^\circ$ to $+70^\circ\text{C}$	5.0	6.0	7.0	V
Output Voltage	V_{OUT}	\overline{MC} , \overline{LM} , A_{OUT} , Output Off	0	-	9.0	V
Input Amplitude	$V_{IN(1)}$	X_{IN} , $f_{IN(1)} = 10.25\text{MHz}$, Note 1	1.0	-	$0.9V_{DD}$	V_{p-p}
	$V_{IN(2)}$	P_{IN} , $f_{IN(2)} = 20\text{MHz}$, Note 1	1.0	-	$0.9V_{DD}$	V_{p-p}
Input Frequency	$f_{IN(1)}$	X_{IN} , $V_{IN(1)} = 1.0V_{p-p}$, Note 1	1.0	-	10.25	MHz
	$f_{IN(2)}$	P_{IN} , $V_{IN(2)} = 1.0V_{p-p}$, Note 1	1.0	-	20	MHz
Input "H" Level Voltage	V_{IH}	D1 to D6, $\overline{T/R}$, CH9, CH19	$V_{DD}-0.8$	-	-	V
Input "L" Level Voltage	V_{IL}	D1 to D6, $\overline{T/R}$, CH9, CH19	-	-	0.8	V

Note 1. Sinusoidal wave, capacitive coupling, $T_A = -30^\circ$ to $+70^\circ\text{C}$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{DD} = 5\text{V}$ to 7V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input "H" Level Current	$I_{IH(1)}$	$X_{IN}, P_{IN}, V_{IN} = V_{DD}$	–	–	8.0	μA
Input "L" Level Current	$I_{IL(1)}$	$X_{IN}, P_{IN}, V_{IN} = V_{SS}$	–	–	8.0	μA
Feedback Resistance	R_F	X_{IN}, P_{IN}	–	3.0	–	$\text{M}\Omega$
Input Threshold Voltage	V_{th}	X_{IN}, P_{IN}	–	$1/2 V_{DD}$	–	V
Input "H" Level Current	$I_{IH(2)}$	D1 to D6, CH9, CH19, $V_{IN} = V_{DD}$	60	180	500	μA
Input Floating Voltage	$V_{IF(1)}$	D1 to D6, CH9, CH19, Input pins open	–	–	0.2	V
Input "L" Level Current	$I_{IL(2)}$	$\bar{T}/R, V_{IN} = V_{SS}$	40	140	400	μA
Input Floating Voltage	$V_{IF(2)}$	\bar{T}/R , Input pin open	$V_{DD}-0.2$	–	–	V
Input "H" Level Current	$I_{IH(3)}$	$A_{IN}, V_{IN} = V_{DD}$	–	0.01	–	nA
Input "L" Level Current	$I_{IL(3)}$	$A_{IN}, V_{IN} = V_{SS}$	–	0.01	–	nA
"H" Level 3–State Leak Current	I_{OFFH}	$PD_{OUT}, V_{OUT} = V_{DD}$	–	0.01	–	nA
"L" Level 3–State Leak Current	I_{OFFL}	$PD_{OUT}, V_{OUT} = V_{SS}$	–	0.01	–	nA
Output "H" Level Voltage	$V_{OH(1)}$	$PD_{OUT}, I_{OUT} = 0.3\text{mA}$	$V_{DD}-1.0$	–	–	V
Output "L" Level Voltage	$V_{OL(1)}$	$PD_{OUT}, I_{OUT} = 0.3\text{mA}$	–	–	1.0	V
Output "H" Level Voltage	$V_{OH(2)}$	$X_{OUT}, I_{OUT} = 0.5\text{mA}$	–	$V_{DD}-0.35$	–	V
Output "L" Level Voltage	$V_{OL(2)}$	$X_{OUT}, I_{OUT} = 0.5\text{mA}$	–	0.35	–	V
Output "L" Level Voltage	$V_{OL(3)}$	$A_{OUT}, I_{OUT} = 0.5\text{mA}$	–	–	0.3	V
Output Off Leak Current	$I_{OFF(1)}$	$A_{OUT}, V_{OUT} = 9\text{V}$	–	–	3.0	μA
Output "L" Level Voltage	$V_{OL(4)}$	$\bar{M}\bar{C}, \bar{L}\bar{M}, I_{OUT} = 15\text{mA}$	–	–	1.1	V
Output Off Leak Current	$I_{OFF(2)}$	$\bar{M}\bar{C}, \bar{L}\bar{M}, V_{OUT} = 9\text{V}$	–	–	5.0	μA
Current Dissipation	I_{DD}	$f_{IN(1)} = 10.25\text{MHz}, f_{IN(2)} = 20\text{MHz},$ $V_{IN(1)} = V_{IN(2)} = 1.0\text{V}_{p-p},$ $A_{IN} = V_{SS}, D1 = V_{DD},$ Other pins open, Number of frequency	–	10	20	mA

Pin Connection Diagram

