

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, $V_{DD\max}$		-0.3 to +8.0V
Maximum Input Voltage, $V_{IN\max}$		-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, $P_{D\max}$ ($T_A = +70^\circ\text{C}$)		300mW
Operating Temperature Range, T_{opg}		-30° to $+70^\circ\text{C}$
Storage Temperature Range, T_{stg}		-40° to $+125^\circ\text{C}$

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	$I_{IL(2)}$	$\overline{T}/R, V_{IN} = V_{SS}$	40	140	400	μA
Input Floating Voltage	$V_{IF(2)}$	$\overline{T}/R$, 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	$V_{OL(4)}$	$\overline{MC}, \overline{LM}, I_{OUT} = 15\text{mA}$	–	–	1.1	V
Output Off Leak Current	$I_{OFF(2)}$	$\overline{MC}, \overline{LM}, V_{OUT} = 9\text{V}$	–	–	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

