

semitone multipli Cent multiplier					1,059463094 1,00057779					61156,10293 126,5481134					Cap (uF) Res (Ohm) Vmax Vmax = (Vmax-C)*R1 Vmax-C*R Res Step_volts					0.001 5 0.0005 16 0,000078293945					3200000 8000000 Timer freq Timer bits Prcalculator Timer period (uS) Steps Minimal change					16 2 0.125 6536 8192					0.25 6.5 0.5 32768					NCO const					0,0655359375				
Min freq	Max freq	7902,13262	7902,13262	126,5481134	61156,10293	126,5481134	0.001	5	0.0005	16	0,000078293945	3200000	8000000	Timer freq	Timer bits	Prcalculator	Timer period (uS)	Steps	Minimal change	16	2	0.125	6.5	0.5	32768	NCO	const	0,0655359375																					
Perceivable change																																																	
		Frequency (Hz)	Period (uS)	Expected percenLow (Hz)	High (Hz)	Required charge Real volt 16bit di Real Vmax					Closest freq															inc val																							
Note	Oct	Frequency (Hz)	Period (uS)	Expected percenLow (Hz)	High (Hz)	Real Volt	16bit di	Real Vmax																																									
C#	0	16,35159173	61,156,10293	16,351551	16,3610451	0,00817579891	0,00816345214	4,9																																									
C	0	17,32391443	57,723,62602	17,31391064	17,33392101	0,00866195211	0,00869750976	5,0																																									
D#	0	18,35404799	54,483,8937	18,3434934	18,3645277	0,00917702399	0,00915527348	4,9																																									
D	0	19,44543686	51,425,9927	19,4342076	19,4567185	0,00972271824	0,009689331055	4,9																																									
E	0	20,6172231	48,539,63106	20,6136277	20,6196277	0,0103006115	0,0102996822	5,0																																									
F	0	21,82794461	45,155,31091	21,81416047	21,83393754	0,0109339223	0,01091003418	5,0																																									
F#	0	23,12465412	43,243,89509	23,1129795	23,1380126	0,0115823281	0,01156867969	5,0																																									
G	0	24,4971475	40,816,80176	24,4855725	24,5130743	0,01224985737	0,012233257	5,0																																									
G#	0	25,9654536	38,525,9307	25,94155484	25,97154102	0,012928718	0,012926970	5,0																																									
A	0	27,5	36,363,63636	27,48411996	27,5588921	0,01375	0,01373291016	4,9																																									
A#	0	29,1325290	34,322,7002	29,11841078	29,1506913	0,0145671755	0,01457214355	5,0																																									
B	0	30,86770633	32,396,31702	30,84988159	30,8854137	0,01543385316	0,01541137695	4,9																																									
C	1	32,7031026	30,578,0546	32,68431101	32,72031023	0,01635159783	0,0163269043	4,9																																									
C#	1	34,64782887	28,861,83751	34,62782128	34,66780244	0,0173291444	0,0173187259	5,0																																									
D	1	36,70809999	27,241,94681	36,6889868	36,73930554	0,01835404799	0,0183488402	5,0																																									
D#	1	38,8907297	25,712,97396	38,868152	38,9133447	0,01944549848	0,01944595905	5,0																																									
E	1	41,20344461	24,059,81553	41,17965144	41,22725153	0,02060172231	0,02059635523	5,0																																									
F	1	43,65329638	22,907,65245	43,62832094	43,67875148	0,02182676446	0,0218200836	5,0																																									
F#	1	46,24930284	21,621,94755	46,2229591	46,2702952	0,02312465142	0,02311706543	5,0																																									
G	1	48,9994295	20,408,4008	48,97113449	49,02774085	0,0244991475	0,02449035645	5,0																																									
G#	1	51,9130872	19,282,96535	51,88310968	51,94382023	0,0259656436	0,02593944431	4,9																																									
A	1	55	18,181,81818	54,96823993	55,03177842	0,0275	0,02746852101	4,9																																									
A#	1	58,27047019	17,161,35114	58,23682157	58,30418326	0,02913523509	0,02914248117	5,0																																									
B	1	61,73541266	16,198,15811	61,69976318	61,77108273	0,0308670633	0,0308904785	5,0																																									
C	2	65,40639133	15,289,02573	65,36826202	65,44418245	0,03270319566	0,03273010254	5,0																																									
C#	2	69,29567774	14,430,91875	69,25564256	69,33596905	0,0346782887	0,03465743117	5,0																																									
D	2	73,41916186	13,620,97343	73,37379737	73,4588707	0,0367906989	0,0367906989	5,0																																									
D#	2	77,78174503	12,856,48693	77,73852041	77,82688714	0,0390890787	0,0390901211	5,0																																									
E	2	82,40688923	12,134,90777	82,3593289	82,45453036	0,0412044461	0,0411983047	5,0																																									
F	2	87,30758786	11,453,82773	87,2566189	87,35750296	0,0436532893	0,04364013672	5,0																																									
F#	2	92,49806508	10,810,91977	92,44519182	92,5520504	0,04624930284	0,0462341209	5,0																																									
G	2	97,998859	10,204,20044	97,9428868	98,05548171	0,0489994295	0,04898071289	5,0																																									
G#	2	103,621744	9,631,482676	103,7662194	103,8861641	0,0519130872	0,05187988281	5,0																																									
A	2	110	9,090,909091	109,9364799	110,063568	0,055	0,05500793457	5,0																																									
A#	2	116,5406404	8,580,67567	116,6082765	116,7360719	0,05827047019	0,0582885422	5,0																																									
B	2	123,4706253	8,099,07926	123,395624	123,541655	0,06173541286	0,06172180176	5,0																																									
C	3	130,8127827	7,644,512986	130,7373244	130,8883649	0,06540639133	0,0653931113	5,0																																									
C#	3	139,5915165	7,215,59327	139,5132651	139,6719261	0,06922480524	0,06921498234	5,0																																									
D	3	146,832284	6,810,486713	146,7475947	146,9172222	0,07341619108	0,0733947539	5,0																																									
D#	3	155,953919	6,428,24583	155,8736908	156,0533748	0,0778174593	0,07781802247	5,0																																									
E	3	164,8137785	6,067,453883	164,718058	164,900061	0,0824088923	0,0823704904	4,9																																									
F	3	174,6141157	5,726,913863	174,5132838	174,7150059	0,0873075786	0,0873027344	5,0																																									
F#	3	184,972114	5,405,488886	184,8903836	185,1001008	0,0924980658	0,0924882178	5,0																																									
G	3	195,997718	5,102,10022	195,884538	196,1109634	0,097998859	0,0979614257	5,0																																									
G#	3	207,6523488	4,815,741338	207,5324387	207,7723281	0,1038261744	0,1038260596	5,0																																									
A	3	220	4,545,454545	219,8729597	220,1127137	0,11	0,1100158691	5,0																																									
A#	3	233,0818806	4,290,337785	232,941653	233,218553	0,1165400901	0,1165771404	5,0																																									
B	3	246,9416506	4,049,539628	246,7995277	247,0843309	0,1234708253	0,1234693355	5,0																																									
C	4	261,8269635	3,820,99949	261,6744081	261,9737029	0,1309137827	0,1309411162	5,0																																									
C#	4	277,182631	3,607,729564	277,025702	277,3427842	0,1385913155	0,1386200986	5,0																																									
D	4	293,6647679	3,405,234387	293,4951895	293,844443	0,1468332384	0,146855647	5,0																																									
D#	4	311,2269837	3,214,1217																																														