

A MIDI controller can have up to 128 unique MIDI messages to send (0 – 127). A frequency is analyzed and it is named according to a MIDI number instead of the pitch we refer to as musicians. For example, instead of naming a note middle C, it receives a MIDI note number name of Note #60, or, as it appears C5. The 60 refers to the number assigned at the 5th octave of C. this means that the lowest note possible is C, which is numbered at 0. Some software does not consider octave 0 to be the lowest and starts numbering at octave -2. The standard that I've come across most frequently begins the octave at note 0.

Standard Pitch to MIDI Note Number Conversion

Octave	Note Numbers											
	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
0	0	1	2	3	4	5	6	7	8	9	10	11
1	12	13	14	15	16	17	18	19	20	21	22	23
2	24	25	26	27	28	29	30	31	32	33	34	35
3	36	37	38	39	40	41	42	43	44	45	46	47
4	48	49	50	51	52	53	54	55	56	57	58	59
5	60	61	62	63	64	65	66	67	68	69	70	71
6	72	73	74	75	76	77	78	79	80	81	82	83
7	84	85	86	87	88	89	90	91	92	93	94	95
8	96	97	98	99	100	101	102	103	104	105	106	107
9	108	109	110	111	112	113	114	115	116	117	118	119
10	120	121	122	123	124	125	126	127				

As you can see, the range of a standard MIDI controller is C0 to G10 (these are notes zero to note 127). The circuit that measures the waveform to determine its pitch length operates according to this chart. The circuit identifies the frequency and assigns it to a MIDI note number. Please note that A C# is a few cents higher than a Db. A cellist can certainly make these adjustments, but a MIDI system quantizes the pitch upon conversion. A conversion chart is listed below.

MIDI Note Number to Frequency Conversion

chart shows MIDI Note Name/Number and equivalent frequency in all 10 octaves

Octave 0			Octave 3			Octave 6			Octave 9		
C	0	8.175798916	C	36	65.40639133	C	72	523.2511306	C	108	4186.009045
Db	1	8.661957218	Db	37	69.29565774	Db	73	554.365262	Db	109	4434.922096
D	2	9.177023997	D	38	73.41619198	D	74	587.3295358	D	110	4698.636287
Eb	3	9.722718241	Eb	39	77.78174593	Eb	75	622.2539674	Eb	111	4978.03174
E	4	10.30086115	E	40	82.40688923	E	76	659.2551138	E	112	5274.040911
F	5	10.91338223	F	41	87.30705786	F	77	698.4564629	F	113	5587.651703
Gb	6	11.56232571	Gb	42	92.49860568	Gb	78	739.9888454	Gb	114	5919.910763
G	7	12.24985737	G	43	97.998859	G	79	783.990872	G	115	6271.926976
Ab	8	12.9782718	Ab	44	103.8261744	Ab	80	830.6093952	Ab	116	6644.875161
A	9	13.75	A	45	110	A	81	880	A	117	7040
Bb	10	14.56761755	Bb	46	116.5409404	Bb	82	932.327523	Bb	118	7458.620235
B	11	15.43385316	B	47	123.4708253	B	83	987.7666025	B	119	7902.132835
Octave 1			Octave 4			Octave 7			Octave 10		
C	12	16.35159783	C	48	130.8127827	C	84	1046.502261	C	120	8372.01809
Db	13	17.32391444	Db	49	138.5913155	Db	85	1108.730524	Db	121	8869.844191
D	14	18.35404799	D	50	146.832384	D	86	1174.659072	D	122	9397.272573
Eb	15	19.44543648	Eb	51	155.5634919	Eb	87	1244.507935	Eb	123	9956.063479
E	16	20.60172231	E	52	164.8137785	E	88	1318.510228	E	124	10548.08182
F	17	21.82676446	F	53	174.6141157	F	89	1396.912926	F	125	11175.30341
Gb	18	23.12465142	Gb	54	184.9972114	Gb	90	1479.977691	Gb	126	11839.82153
G	19	24.49971475	G	55	195.997718	G	91	1567.981744	G	127	12543.85395
Ab	20	25.9565436	Ab	56	207.6523488	Ab	92	1661.21879			
A	21	27.5	A	57	220	A	93	1760			
Bb	22	29.13523509	Bb	58	233.0818808	Bb	94	1864.655046			
B	23	30.86770633	B	59	246.9416506	B	95	1975.533205			
Octave 2			Octave 5			Octave 8					
C	24	32.70319566	C	60	261.6255653	C	96	2093.004522			
Db	25	34.64782887	Db	61	277.182631	Db	97	2217.461048			
D	26	36.70809599	D	62	293.6647679	D	98	2349.318143			
Eb	27	38.89087297	Eb	63	311.1269837	Eb	99	2489.01587			
E	28	41.20344461	E	64	329.6275569	E	100	2637.020455			
F	29	43.65352893	F	65	349.2282314	F	101	2793.825851			
Gb	30	46.24930284	Gb	66	369.9944227	Gb	102	2959.955382			
G	31	48.9994295	G	67	391.995436	G	103	3135.963488			
Ab	32	51.9130872	Ab	68	415.3046976	Ab	104	3322.437581			
A	33	55	A	69	440	A	105	3520			
Bb	34	58.27047019	Bb	70	466.1637615	Bb	106	3729.310092			
B	35	61.73541266	B	71	493.8833013	B	107	3951.06641			