

$$bit_{out} = \left(\left(\frac{bit_{in}}{bit_{out,max}} \right)^{gamma} \cdot (bit_{out,max} - bit_{out,threshold}) \right) + bit_{out,threshold} \quad (1)$$

bit_{out} : Output value (e.g. PWM output to driver)

$bit_{out,max}$: Output maximum value (e.g. 8-bit $\mu C = 255$)

bit_{in} : Input value, $bit_{in,max} = bit_{out,max}$

$gamma$: Gamma factor (1,5 to 3)

$bit_{out,threshold}$:

[c]	Output value			
Input value	Gamma 1,5	Gamma 2	Custom Gamma 2	Custom Gamma 1,5
0	0	0	0	0
1	0,062622429	0,003921569	0	0
2	0,177122977	0,015686275	0	0
3	0,325395687	0,035294118	0	0
4	0,500979433	0,062745098	18,05831603	18,46561618
5	0,700140042	0,098039216	18,0911188	18,65071839
6	0,920357987	0,141176471	18,13121107	18,85539154
7	1,159783617	0,192156863	18,17859285	19,07791654
8	1,416983817	0,250980392	18,23326413	19,31696143
9	1,690805586	0,317647059	18,29522491	19,5714546
10	1,980295086	0,392156863	18,3644752	19,84050955
11	2,284646109	0,474509804	18,44101499	20,12337697
12	2,603165494	0,564705882	18,52484429	20,41941264
13	2,935248929	0,662745098	18,61596309	20,72805489
14	3,280363442	0,768627451	18,7143714	21,04880838
15	3,638034376	0,882352941	18,8200692	21,38123195
16	4,007835463	1,003921569	18,93305652	21,72492943
17	4,389381126	1,133333333	19,05333333	22,07954246
18	4,782320382	1,270588235	19,18089965	22,44474483
19	5,186331962	1,415686275	19,31575548	22,82023794
20	5,601120336	1,568627451	19,45790081	23,20574714
21	6,026412453	1,729411765	19,60733564	23,60101863
22	6,461955025	1,898039216	19,76405998	24,00581702
23	6,90751225	2,074509804	19,92807382	24,41992315
24	7,362863893	2,258823529	20,09937716	24,84313232
25	7,827803639	2,450980392	20,27797001	25,27525279
26	8,302137688	2,650980392	20,46385236	25,71610444
27	8,785683542	2,858823529	20,65702422	26,16551764
28	9,278268939	3,074509804	20,85748558	26,62333231
29	9,77973094	3,298039216	21,06523645	27,08939699
30	10,28991511	3,529411765	21,28027682	27,56356816
31	10,8086748	3,768627451	21,50260669	28,04570952
32	11,33587053	4,015686275	21,73222607	28,53569144
33	11,87136941	4,270588235	21,96913495	29,0333904
34	12,41504464	4,533333333	22,21333333	29,53868854
35	12,96677504	4,803921569	22,46482122	30,05147327
36	13,52644469	5,082352941	22,72359862	30,57163683
37	14,09394252	5,368627451	22,98966551	31,09907599
38	14,669162	5,662745098	23,26302191	31,63369174
39	15,25200083	5,964705882	23,54366782	32,17538901
40	15,84236069	6,274509804	23,83160323	32,7240764

41	16,44014694	6,592156863	24,12682814	33,27966598
42	17,04526845	6,917647059	24,42934256	33,84207303
43	17,65763735	7,250980392	24,73914648	34,41121589
44	18,27716887	7,592156863	25,05623991	34,98701577
45	18,90378113	7,941176471	25,38062284	35,56939658
46	19,53739501	8,298039216	25,71229527	36,15828478
47	20,17793398	8,662745098	26,05125721	36,75360923
48	20,82532395	9,035294118	26,39750865	37,35530108
49	21,47949318	9,415686275	26,7510496	37,96329367
50	22,14037214	9,803921569	27,11188005	38,57752234
51	22,80789337	10,2	27,48	39,19792443
52	23,48199143	10,60392157	27,85540946	39,82443909
53	24,16260277	11,01568627	28,23810842	40,45700728
54	24,84966564	11,43529412	28,62809689	41,09557159
55	25,54312002	11,8627451	29,02537486	41,74007625
56	26,24290754	12,29803922	29,42994233	42,39046701
57	26,94897139	12,74117647	29,84179931	43,04669105
58	27,66125626	13,19215686	30,26094579	43,708697
59	28,3797083	13,65098039	30,68738178	44,37643477
60	29,104275	14,11764706	31,12110727	45,04985559
61	29,83490521	14,59215686	31,56212226	45,7289119
62	30,57154899	15,0745098	32,01042676	46,4135573
63	31,31415767	15,56470588	32,46602076	47,10374654
64	32,0626837	16,0627451	32,92890427	47,79943544
65	32,81708068	16,56862745	33,39907728	48,50058087
66	33,57730326	17,08235294	33,87653979	49,20714068
67	34,34330714	17,60392157	34,36129181	49,91907369
68	35,11504901	18,13333333	34,85333333	50,63633966
69	35,89248652	18,67058824	35,35266436	51,35889923
70	36,67557824	19,21568627	35,85928489	52,08671389
71	37,46428364	19,76862745	36,37319493	52,81974598
72	38,25856306	20,32941176	36,89439446	53,5579586
73	39,05837763	20,89803922	37,42288351	54,30131568
74	39,86368931	21,4745098	37,95866205	55,04978183
75	40,67446084	22,05882353	38,5017301	55,80332243
76	41,49065569	22,65098039	39,05208766	56,56190353
77	42,31223807	23,25098039	39,60973472	57,32549185
78	43,13917286	23,85882353	40,17467128	58,09405478
79	43,97142566	24,4745098	40,74689735	58,86756032
80	44,80896269	25,09803922	41,32641292	59,64597709
81	45,65175082	25,72941176	41,91321799	60,42927429
82	46,49975754	26,36862745	42,50731257	61,21742171
83	47,35295092	27,01568627	43,10869666	62,01038968
84	48,21129963	27,67058824	43,71737024	62,80814907

85	49,07477288	28,33333333	44,33333333	63,61067127
86	49,94334045	29,00392157	44,95658593	64,41792818
87	50,81697262	29,68235294	45,58712803	65,2298922
88	51,6956402	30,36862745	46,22495963	66,04653619
89	52,5793145	31,0627451	46,87008074	66,86783348
90	53,46796732	31,76470588	47,52249135	67,69375786
91	54,36157091	32,4745098	48,18219146	68,52428355
92	55,260098	33,19215686	48,84918108	69,3593852
93	56,16352176	33,91764706	49,52346021	70,19903787
94	57,07181578	34,65098039	50,20502884	71,04321702
95	57,9849541	35,39215686	50,89388697	71,89189852
96	58,90291114	36,14117647	51,5900346	72,74505859
97	59,82566175	36,89803922	52,29347174	73,60267386
98	60,75318115	37,6627451	53,00419839	74,4647213
99	61,68544494	38,43529412	53,72221453	75,33117824
100	62,62242911	39,21568627	54,44752018	76,20202235
101	63,56410999	40,00392157	55,18011534	77,07723163
102	64,51046427	40,8	55,92	77,95678444
103	65,46146898	41,60392157	56,66717416	78,84065941
104	66,41710151	42,41568627	57,42163783	79,72883552
105	67,37733953	43,23529412	58,183391	80,62129204
106	68,34216107	44,0627451	58,95243368	81,51800853
107	69,31154446	44,89803922	59,72876586	82,41896486
108	70,28546833	45,74117647	60,51238754	83,32414116
109	71,26391161	46,59215686	61,30329873	84,23351785
110	72,24685352	47,45098039	62,10149942	85,14707562
111	73,23427356	48,31764706	62,90698962	86,06479542
112	74,22615151	49,19215686	63,71976932	86,98665847
113	75,22246744	50,0745098	64,53983852	87,91264621
114	76,22320166	50,96470588	65,36719723	88,84274036
115	77,22833474	51,8627451	66,20184544	89,77692287
116	78,23784752	52,76862745	67,04378316	90,71517593
117	79,25172108	53,68235294	67,89301038	91,65748194
118	80,26993675	54,60392157	68,7495271	92,60382356
119	81,29247608	55,53333333	69,61333333	93,55418365
120	82,31932087	56,47058824	70,48442907	94,50854528
121	83,35045314	57,41568627	71,3628143	95,46689175
122	84,38585515	58,36862745	72,24848904	96,42920655
123	85,42550935	59,32941176	73,14145329	97,39547339
124	86,46939842	60,29803922	74,04170704	98,36567618
125	87,51750525	61,2745098	74,94925029	99,339799
126	88,56981294	62,25882353	75,86408304	100,3178261
127	89,62630479	63,25098039	76,78620531	101,2997421
128	90,68696428	64,25098039	77,71561707	102,2855315

129	91,75177511	65,25882353	78,65231834	103,2751792
130	92,82072115	66,2745098	79,59630911	104,2686702
131	93,89378647	67,29803922	80,54758939	105,2659898
132	94,97095531	68,32941176	81,50615917	106,2671232
133	96,05221211	69,36862745	82,47201845	107,272056
134	97,13754146	70,41568627	83,44516724	108,2807738
135	98,22692814	71,47058824	84,42560554	109,2932626
136	99,32035709	72,53333333	85,41333333	110,3095084
137	100,4178134	73,60392157	86,40835063	111,3294972
138	101,5192824	74,68235294	87,41065744	112,3532154
139	102,6247495	75,76862745	88,42025375	113,3806496
140	103,7342003	76,8627451	89,43713956	114,4117862
141	104,8476205	77,96470588	90,46131488	115,446612
142	105,9649961	79,0745098	91,4927797	116,485114
143	107,086313	80,19215686	92,53153403	117,5272791
144	108,2115575	81,31764706	93,57757785	118,5730946
145	109,3407159	82,45098039	94,63091119	119,6225477
146	110,4737747	83,59215686	95,69153403	120,6756259
147	111,6107205	84,74117647	96,75944637	121,7323167
148	112,7515401	85,89803922	97,83464821	122,7926079
149	113,8962204	87,0627451	98,91713956	123,8564872
150	115,0447483	88,23529412	100,0069204	124,9239426
151	116,1971111	89,41568627	101,1039908	125,9949621
152	117,353296	90,60392157	102,2083506	127,0695339
153	118,5132904	91,8	103,32	128,1476464
154	119,6770819	93,00392157	104,4389389	129,2292878
155	120,844658	94,21568627	105,5651672	130,3144469
156	122,0160067	95,43529412	106,6986851	131,4031121
157	123,1911157	96,6627451	107,8394925	132,4952722
158	124,369973	97,89803922	108,9875894	133,5909161
159	125,5525669	99,14117647	110,1429758	134,6900328
160	126,7388855	100,3921569	111,3056517	135,7926112
161	127,9289171	101,6509804	112,4756171	136,8986406
162	129,1226503	102,9176471	113,652872	138,0081103
163	130,3200735	104,1921569	114,8374164	139,1210095
164	131,5211755	105,4745098	116,0292503	140,2373278
165	132,725945	106,7647059	117,2283737	141,3570547
166	133,9343708	108,0627451	118,4347866	142,4801799
167	135,146442	109,3686275	119,648489	143,6066931
168	136,3621476	110,6823529	120,869481	144,7365842
169	137,5814768	112,0039216	122,0977624	145,8698431
170	138,8044188	113,3333333	123,3333333	147,0064598
171	140,030963	114,6705882	124,5761938	148,1464244
172	141,2610988	116,0156863	125,8263437	149,2897271

173	142,4948159	117,3686275	127,0837832	150,4363583
174	143,7321037	118,7294118	128,3485121	151,5863082
175	144,9729522	120,0980392	129,6205306	152,7395673
176	146,217351	121,4745098	130,8998385	153,8961262
177	147,46529	122,8588235	132,186436	155,0559754
178	148,7167593	124,2509804	133,480323	156,2191057
179	149,971749	125,6509804	134,7814994	157,3855079
180	151,2302491	127,0588235	136,0899654	158,5551727
181	152,4922499	128,4745098	137,4057209	159,7280911
182	153,7577417	129,8980392	138,7287659	160,9042541
183	155,026715	131,3294118	140,0591003	162,0836527
184	156,2991601	132,7686275	141,3967243	163,2662782
185	157,5750677	134,2156863	142,7416378	164,4521217
186	158,8544284	135,6705882	144,0938408	165,6411746
187	160,1372328	137,1333333	145,4533333	166,8334281
188	161,4234718	138,6039216	146,8201153	168,0288738
189	162,7131362	140,0823529	148,1941869	169,2275031
190	164,006217	141,5686275	149,5755479	170,4293076
191	165,3027051	143,0627451	150,9641984	171,6342789
192	166,6025916	144,5647059	152,3601384	172,8424087
193	167,9058677	146,0745098	153,7633679	174,0536888
194	169,2125245	147,5921569	155,173887	175,268111
195	170,5225533	149,1176471	156,5916955	176,4856672
196	171,8359455	150,6509804	158,0167935	177,7063493
197	173,1526924	152,1921569	159,4491811	178,9301495
198	174,4727857	153,7411765	160,8888581	180,1570596
199	175,7962167	155,2980392	162,3358247	181,387072
200	177,1229771	156,8627451	163,7900807	182,6201787
201	178,4530586	158,4352941	165,2516263	183,8563721
202	179,7864528	160,0156863	166,7204614	185,0956444
203	181,1231517	161,6039216	168,1965859	186,337988
204	182,463147	163,2	169,68	187,5833954
205	183,8064306	164,8039216	171,1707036	188,831859
206	185,1529945	166,4156863	172,6686967	190,0833714
207	186,5028308	168,0352941	174,1739792	191,3379251
208	187,8559314	169,6627451	175,6865513	192,5955128
209	189,2122887	171,2980392	177,2064129	193,8561271
210	190,5718947	172,9411765	178,733564	195,119761
211	191,9347418	174,5921569	180,2680046	196,3864071
212	193,3008221	176,2509804	181,8097347	197,6560582
213	194,6701282	177,9176471	183,3587543	198,9287074
214	196,0426524	179,5921569	184,9150634	200,2043475
215	197,4183872	181,2745098	186,4786621	201,4829716
216	198,7973251	182,9647059	188,0495502	202,7645727

217	200,1794587	184,6627451	189,6277278	204,049144
218	201,5647806	186,3686275	191,2131949	205,3366785
219	202,9532835	188,0823529	192,8059516	206,6271694
220	204,3449602	189,8039216	194,4059977	207,92061
221	205,7398033	191,5333333	196,0133333	209,2169937
222	207,1378058	193,2705882	197,6279585	210,5163136
223	208,5389605	195,0156863	199,2498731	211,8185633
224	209,9432603	196,7686275	200,8790773	213,1237361
225	211,3506982	198,5294118	202,5155709	214,4318254
226	212,7612673	200,2980392	204,1593541	215,7428249
227	214,1749605	202,0745098	205,8104268	217,056728
228	215,5917711	203,8588235	207,4687889	218,3735284
229	217,0116921	205,6509804	209,1344406	219,6932197
230	218,4347168	207,4509804	210,8073818	221,0157956
231	219,8608383	209,2588235	212,4876125	222,3412498
232	221,2900501	211,0745098	214,1751326	223,669576
233	222,7223454	212,8980392	215,8699423	225,0007681
234	224,1577176	214,7294118	217,5720415	226,3348199
235	225,5961601	216,5686275	219,2814302	227,6717253
236	227,0376664	218,4156863	220,9981084	229,0114782
237	228,48223	220,2705882	222,7220761	230,3540726
238	229,9298444	222,1333333	224,4533333	231,6995024
239	231,3805032	224,0039216	226,19188	233,0477618
240	232,8342	225,8823529	227,9377163	234,3988447
241	234,2909286	227,7686275	229,690842	235,7527454
242	235,7506825	229,6627451	231,4512572	237,1094579
243	237,2134556	231,5647059	233,2189619	238,4689764
244	238,6792416	233,4745098	234,9939562	239,8312952
245	240,1480344	235,3921569	236,7762399	241,1964085
246	241,6198278	237,3176471	238,5658131	242,5643105
247	243,0946156	239,2509804	240,3626759	243,9349957
248	244,5723919	241,1921569	242,1668281	245,3084584
249	246,0531506	243,1411765	243,9782699	246,684693
250	247,5368857	245,0980392	245,7970012	248,0636938
251	249,0235913	247,0627451	247,6230219	249,4454554
252	250,5132614	249,0352941	249,4563322	250,8299723
253	252,0058901	251,0156863	251,2969319	252,217239
254	253,5014716	253,0039216	253,1448212	253,60725
255	255	255	255	255