WLS Pro IO-Link Data Reference Guide

Instruction Manual

Original Instructions
212231 Rev. B
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212231

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1 IO-Link Data Map

This document refers to the following IODD file: Banner_Engineering-WLS-20210412-IODD1.1.xml. The IODD file and support files can be found on www.bannerengineering.com under the download section of the product family page.

1.1 Communication Parameters

The following communication parameters are used.

Parameter	Value
IO-Link revision	V1.1
Process Data In length	N/A
Process Data Out length	32-bytes
Bit Rate	38400 bps
Minimum cycle time	11.2 ms

Parameter	Value
Port class	A
SIO mode	No
Smart sensor profile	N/A
Block parameterization	Yes
Data Storage	Yes

1.2 IO-Link Process Data In (Device to Master)

Not applicable.

1.3 IO-Link Process Data Out (Master to Device)

1.3.1 Segment Mode

Segment Mode			
Subindex	**Name**	**Number of Bits**	**Data Values**
1	Segment 1	16	0 = Off 1 = On 2 = Flash 3 = Animation
2	Segment 2	16	
..	..		
10	Segment 10	16	

Segment Mode Example Process Data Out								
Octet 0								
Bit offset	255	254	253	252	251	250	249	248
Subindex	-	-	-	-	-	-	-	-
Octet 1								
Bit offset	247	246	245	244	243	242	241	240
Subindex	-	-	-	-	-	-	-	-
Octet 2								
Bit offset	239	238	237	236	235	234	233	232
Subindex	-	-	-	-	-	-	-	-

Octet 3								
Bit offset	231	230	229	228	227	226	225	224
Subindex	-	-	-	-	-	-	-	-

Octet 4								
Bit offset	223	222	221	220	219	218	217	216
Subindex	-	-	-	-	-	-	-	-

Octet 5								
Bit offset	215	214	213	212	211	210	209	208
Subindex	-	-	-	-	-	-	-	-

Octet 6								
Bit offset	207	206	205	204	203	202	201	200
Subindex	-	-	-	-	-	-	-	-

Octet 7								
Bit offset	199	198	197	196	195	194	193	192
Subindex	-	-	-	-	-	-	-	-

Octet 8								
Bit offset	191	190	189	188	187	186	185	184
Subindex	-	-	-	-	-	-	-	-

Octet 9								
Bit offset	183	182	181	180	179	178	177	176
Subindex	-	-	-	-	-	-	-	-

Octet 10								
Bit offset	175	174	173	172	171	170	169	168
Subindex	-	-	-	-	-	-	-	-

Octet 11								
Bit offset	167	166	165	164	163	162	161	160
Subindex	-	-	-	-	-	-	-	-

Octet 12								
Bit offset	159	158	157	156	155	154	153	152
Subindex	10							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 10: Off							

Octet 13								
Bit offset	151	150	149	148	147	146	145	144
Subindex	10							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 10: Off							

Octet 14								
Bit offset	143	142	141	140	139	138	137	136
Subindex	9							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 9: On							

Octet 15								
Bit offset	135	134	133	132	131	130	129	128
Subindex	9							
Value	0	0	0	0	0	0	0	1
Example	Segment Mode Segment 9: On							

Octet 16								
Bit offset	127	126	125	124	123	122	121	120
Subindex	8							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 8: Flash							

Octet 17								
Bit offset	119	118	117	116	115	114	113	112
Subindex	8							
Value	0	0	0	0	0	0	1	0
Example	Segment Mode Segment 8: Flash							

Octet 18								
Bit offset	111	110	109	108	107	106	105	104
Subindex	7							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 7: Animation							

Octet 19								
Bit offset	103	102	101	100	99	98	97	96
Subindex	7							
Value	0	0	0	0	0	0	1	1
Example	Segment Mode Segment 7: Animation							

Octet 20								
Bit offset	95	94	93	92	91	90	89	88
Subindex	6							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 6: Off							

Octet 21								
Bit offset	87	86	85	84	83	82	81	80
Subindex	6							
Value	0	0	0	0	0	0	0	0

Octet 21								
Example	Segment Mode Segment 6: Off							

Octet 22								
Bit offset	79	78	77	76	75	74	73	72
Subindex	5							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 5: Off							

Octet 23								
Bit offset	71	70	69	68	67	66	65	64
Subindex	5							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 5: Off							

Octet 24								
Bit offset	63	62	61	60	59	58	57	56
Subindex	4							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 4: Animation							

Octet 25								
Bit offset	55	54	53	52	51	50	49	48
Subindex	4							
Value	0	0	0	0	0	0	1	1
Example	Segment Mode Segment 4: Animation							

Octet 26								
Bit offset	47	46	45	44	43	42	41	40
Subindex	3							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 3: Flash							

Octet 27								
Bit offset	39	38	37	36	35	34	33	32
Subindex	3							
Value	0	0	0	0	0	0	1	0
Example	Segment Mode Segment 3: Flash							

Octet 28								
Bit offset	31	30	29	28	27	26	25	24
Subindex	2							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 2: On							

Octet 29								
Bit offset	23	22	21	20	19	18	17	16

Octet 29								
Subindex	2							
Value	0	0	0	0	0	0	0	1
Example	Segment Mode Segment 2: On							

Octet 30								
Bit offset	15	14	13	12	11	10	9	8
Subindex	1							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 1: Off							

Octet 31								
Bit offset	7	6	5	4	3	2	1	0
Subindex	1							
Value	0	0	0	0	0	0	0	0
Example	Segment Mode Segment 1: Off							

1.3.2 Run Mode

Run Mode			
Subindex	**Name**	**Number of Bits**	**Data Values**
1	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum
2	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)
3	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom
4	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate
5	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random
6	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)
7	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom
8	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple
9	Percent Width of Color 1	8	1–100 = Percent Width of Color 1
10	Direction	8	0 = Up, 1 = Down

Run Mode Example Process Data Out								
Octet 0								
Bit offset	255	254	253	252	251	250	249	248
Subindex	-	-	-	-	-	-	-	-

Octet 1								
Bit offset	247	246	245	244	243	242	241	240
Subindex	-	-	-	-	-	-	-	-

Octet 2								
Bit offset	239	238	237	236	235	234	233	232
Subindex	-	-	-	-	-	-	-	-

Octet 3								
Bit offset	231	230	229	228	227	226	225	224
Subindex	-	-	-	-	-	-	-	-

Octet 4								
Bit offset	223	222	221	220	219	218	217	216
Subindex	-	-	-	-	-	-	-	-

Octet 5								
Bit offset	215	214	213	212	211	210	209	208
Subindex	-	-	-	-	-	-	-	-

Octet 6								
Bit offset	207	206	205	204	203	202	201	200
Subindex	-	-	-	-	-	-	-	-

Octet 7								
Bit offset	199	198	197	196	195	194	193	192
Subindex	-	-	-	-	-	-	-	-

Octet 8								
Bit offset	191	190	189	188	187	186	185	184
Subindex	-	-	-	-	-	-	-	-

Octet 9								
Bit offset	183	182	181	180	179	178	177	176
Subindex	-	-	-	-	-	-	-	-

Octet 10								
Bit offset	175	174	173	172	171	170	169	168
Subindex	-	-	-	-	-	-	-	-

Octet 11								
Bit offset	167	166	165	164	163	162	161	160
Subindex	-	-	-	-	-	-	-	-

Octet 12								
Bit offset	159	158	157	156	155	154	153	152
Subindex	-	-	-	-	-	-	-	-

Octet 13								
Bit offset	151	150	149	148	147	146	145	144

Octet 13								
Subindex	10							
Value	0	0	0	0	0	0	0	1
Example	Run Mode Direction: Down							

Octet 14								
Bit offset	143	142	141	140	139	138	137	136
Subindex	-	-	-	-	-	-	-	-

Octet 15								
Bit offset	135	134	133	132	131	130	129	128
Subindex	9							
Value	0	0	0	1	0	1	0	0
Example	Run Mode Percent Width of Color 1: 20%							

Octet 16								
Bit offset	127	126	125	124	123	122	121	120
Subindex	-	-	-	-	-	-	-	-

Octet 17								
Bit offset	119	118	117	116	115	114	113	112
Subindex	8							
Value	0	0	0	0	0	0	1	0
Example	Run Mode Scroll/Bounce Style: Ripple							

Octet 18								
Bit offset	111	110	109	108	107	106	105	104
Subindex	-	-	-	-	-	-	-	-

Octet 19								
Bit offset	103	102	101	100	99	98	97	96
Subindex	7							
Value	0	0	0	0	0	0	0	1
Example	Run Mode Color 2 Intensity: Low							

Octet 20								
Bit offset	95	94	93	92	91	90	89	88
Subindex	-	-	-	-	-	-	-	-

Octet 21								
Bit offset	87	86	85	84	83	82	81	80
Subindex	6							
Value	0	0	0	0	1	1	0	0
Example	Run Mode Color 2 Color: Rose							

Octet 22								
Bit offset	79	78	77	76	75	74	73	72
Subindex	-	-	-	-	-	-	-	-

Octet 23								
Bit offset	71	70	69	68	67	66	65	64
Subindex	5							
Value	0	0	0	0	0	0	0	0
Example	Run Mode Pulse Pattern: Normal							

Octet 24								
Bit offset	63	62	61	60	59	58	57	56
Subindex	-	-	-	-	-	-	-	-

Octet 25								
Bit offset	55	54	53	52	51	50	49	48
Subindex	4							
Value	0	0	0	0	0	0	1	0
Example	Run Mode Speed: Slow							

Octet 26								
Bit offset	47	46	45	44	43	42	41	40
Subindex	-	-	-	-	-	-	-	-

Octet 27								
Bit offset	39	38	37	36	35	34	33	32
Subindex	3							
Value	0	0	0	0	0	0	0	0
Example	Run Mode Color 1 Intensity: High							

Octet 28								
Bit offset	31	30	29	28	27	26	25	24
Subindex	-	-	-	-	-	-	-	-

Octet 29								
Bit offset	23	22	21	20	19	18	17	16
Subindex	2							
Value	0	0	0	1	0	1	0	0
Example	Run Mode Color 1: Cool White							

Octet 30								
Bit offset	15	14	13	12	11	10	9	8
Subindex	-	-	-	-	-	-	-	-

Octet 31								
Bit offset	7	6	5	4	3	2	1	0
Subindex	1							
Value	0	0	0	0	1	0	0	1
Example	Run Mode Animation: Bounce							

1.3.3 Level Mode

Level Mode			
Subindex	**Name**	**Number of Bits**	**Data Values**
1	Level Mode Value	16	0-65535

Level Mode Example Process Data Out								
Octet 0								
Bit offset	255	254	253	252	251	250	249	248
Subindex	-	-	-	-	-	-	-	-
Octet 1								
Bit offset	247	246	245	244	243	242	241	240
Subindex	-	-	-	-	-	-	-	-
Octet 2								
Bit offset	239	238	237	236	235	234	233	232
Subindex	-	-	-	-	-	-	-	-
Octet 3								
Bit offset	231	230	229	228	227	226	225	224
Subindex	-	-	-	-	-	-	-	-
Octet 4								
Bit offset	223	222	221	220	219	218	217	216
Subindex	-	-	-	-	-	-	-	-
Octet 5								
Bit offset	215	214	213	212	211	210	209	208
Subindex	-	-	-	-	-	-	-	-
Octet 6								
Bit offset	207	206	205	204	203	202	201	200
Subindex	-	-	-	-	-	-	-	-
Octet 7								
Bit offset	199	198	197	196	195	194	193	192
Subindex	-	-	-	-	-	-	-	-
Octet 8								
Bit offset	191	190	189	188	187	186	185	184
Subindex	-	-	-	-	-	-	-	-
Octet 9								
Bit offset	183	182	181	180	179	178	177	176
Subindex	-	-	-	-	-	-	-	-
Octet 10								
Bit offset	175	174	173	172	171	170	169	168

Octet 10								
Subindex	-	-	-	-	-	-	-	-

Octet 11								
Bit offset	167	166	165	164	163	162	161	160
Subindex	-	-	-	-	-	-	-	-

Octet 12								
Bit offset	159	158	157	156	155	154	153	152
Subindex	-	-	-	-	-	-	-	-

Octet 13								
Bit offset	151	150	149	148	147	146	145	144
Subindex	-	-	-	-	-	-	-	-

Octet 14								
Bit offset	143	142	141	140	139	138	137	136
Subindex	-	-	-	-	-	-	-	-

Octet 15								
Bit offset	135	134	133	132	131	130	129	128
Subindex	-	-	-	-	-	-	-	-

Octet 16								
Bit offset	127	126	125	124	123	122	121	120
Subindex	-	-	-	-	-	-	-	-

Octet 17								
Bit offset	119	118	117	116	115	114	113	112
Subindex	-	-	-	-	-	-	-	-

Octet 18								
Bit offset	111	110	109	108	107	106	105	104
Subindex	-	-	-	-	-	-	-	-

Octet 19								
Bit offset	103	102	101	100	99	98	97	96
Subindex	-	-	-	-	-	-	-	-

Octet 20								
Bit offset	95	94	93	92	91	90	89	88
Subindex	-	-	-	-	-	-	-	-

Octet 21								
Bit offset	87	86	85	84	83	82	81	80
Subindex	-	-	-	-	-	-	-	-

Octet 22								
Bit offset	79	78	77	76	75	74	73	72
Subindex	-	-	-	-	-	-	-	-

Octet 23								
Bit offset	71	70	69	68	67	66	65	64
Subindex	-	-	-	-	-	-	-	-

Octet 24								
Bit offset	63	62	61	60	59	58	57	56
Subindex	-	-	-	-	-	-	-	-

Octet 25								
Bit offset	55	54	53	52	51	50	49	48
Subindex	-	-	-	-	-	-	-	-

Octet 26								
Bit offset	47	46	45	44	43	42	41	40
Subindex	-	-	-	-	-	-	-	-

Octet 27								
Bit offset	39	38	37	36	35	34	33	32
Subindex	-	-	-	-	-	-	-	-

Octet 28								
Bit offset	31	30	29	28	27	26	25	24
Subindex	-	-	-	-	-	-	-	-

Octet 29								
Bit offset	23	22	21	20	19	18	17	16
Subindex	-	-	-	-	-	-	-	-

Octet 30								
Bit offset	15	14	13	12	11	10	9	8
Subindex	1							
Value	0	0	0	0	0	0	0	0
Example	Level Mode Level Mode Value: 50							

Octet 31								
Bit offset	7	6	5	4	3	2	1	0
Subindex	1							
Value	0	0	1	1	0	0	1	0
Example	Level Mode Level Mode Value: 50							

1.3.4 Dim and Blend Mode

Dim and Blend Mode			
Subindex	**Name**	**Number of Bits**	**Data Values**
1	Dim and Blend Mode Value	16	0–65535

Dim and Blend Mode Example Process Data Out								
Octet 0								
Bit offset	255	254	253	252	251	250	249	248
Subindex	-	-	-	-	-	-	-	-
Octet 1								
Bit offset	247	246	245	244	243	242	241	240
Subindex	-	-	-	-	-	-	-	-
Octet 2								
Bit offset	239	238	237	236	235	234	233	232
Subindex	-	-	-	-	-	-	-	-
Octet 3								
Bit offset	231	230	229	228	227	226	225	224
Subindex	-	-	-	-	-	-	-	-
Octet 4								
Bit offset	223	222	221	220	219	218	217	216
Subindex	-	-	-	-	-	-	-	-
Octet 5								
Bit offset	215	214	213	212	211	210	209	208
Subindex	-	-	-	-	-	-	-	-
Octet 6								
Bit offset	207	206	205	204	203	202	201	200
Subindex	-	-	-	-	-	-	-	-
Octet 7								
Bit offset	199	198	197	196	195	194	193	192
Subindex	-	-	-	-	-	-	-	-
Octet 8								
Bit offset	191	190	189	188	187	186	185	184
Subindex	-	-	-	-	-	-	-	-
Octet 9								
Bit offset	183	182	181	180	179	178	177	176
Subindex	-	-	-	-	-	-	-	-
Octet 10								
Bit offset	175	174	173	172	171	170	169	168
Subindex	-	-	-	-	-	-	-	-
Octet 11								
Bit offset	167	166	165	164	163	162	161	160
Subindex	-	-	-	-	-	-	-	-

Octet 12								
Bit offset	159	158	157	156	155	154	153	152
Subindex	-	-	-	-	-	-	-	-

Octet 13								
Bit offset	151	150	149	148	147	146	145	144
Subindex	-	-	-	-	-	-	-	-

Octet 14								
Bit offset	143	142	141	140	139	138	137	136
Subindex	-	-	-	-	-	-	-	-

Octet 15								
Bit offset	135	134	133	132	131	130	129	128
Subindex	-	-	-	-	-	-	-	-

Octet 16								
Bit offset	127	126	125	124	123	122	121	120
Subindex	-	-	-	-	-	-	-	-

Octet 17								
Bit offset	119	118	117	116	115	114	113	112
Subindex	-	-	-	-	-	-	-	-

Octet 18								
Bit offset	111	110	109	108	107	106	105	104
Subindex	-	-	-	-	-	-	-	-

Octet 19								
Bit offset	103	102	101	100	99	98	97	96
Subindex	-	-	-	-	-	-	-	-

Octet 20								
Bit offset	95	94	93	92	91	90	89	88
Subindex	-	-	-	-	-	-	-	-

Octet 21								
Bit offset	87	86	85	84	83	82	81	80
Subindex	-	-	-	-	-	-	-	-

Octet 22								
Bit offset	79	78	77	76	75	74	73	72
Subindex	-	-	-	-	-	-	-	-

Octet 23								
Bit offset	71	70	69	68	67	66	65	64
Subindex	-	-	-	-	-	-	-	-

Octet 24								
Bit offset	63	62	61	60	59	58	57	56

Octet 24								
Subindex	-	-	-	-	-	-	-	-

Octet 25								
Bit offset	55	54	53	52	51	50	49	48
Subindex	-	-	-	-	-	-	-	-

Octet 26								
Bit offset	47	46	45	44	43	42	41	40
Subindex	-	-	-	-	-	-	-	-

Octet 27								
Bit offset	39	38	37	36	35	34	33	32
Subindex	-	-	-	-	-	-	-	-

Octet 28								
Bit offset	31	30	29	28	27	26	25	24
Subindex	-	-	-	-	-	-	-	-

Octet 29								
Bit offset	23	22	21	20	19	18	17	16
Subindex	-	-	-	-	-	-	-	-

Octet 30								
Bit offset	15	14	13	12	11	10	9	8
Subindex	1							
Value	0	0	0	0	0	1	1	1
Example	Dim and Blend Mode Dim and Blend Mode Value: 2000							

Octet 31								
Bit offset	7	6	5	4	3	2	1	0
Subindex	1							
Value	1	1	0	1	0	0	0	0
Example	Dim and Blend Mode Dim and Blend Mode Value: 2000							

1.3.5 Gauge Mode

Gauge Mode			
Subindex	**Name**	**Number of Bits**	**Data Values**
1	Gauge Mode Value	16	0-65535

Gauge Mode Example Process Data Out								
Octet 0								
Bit offset	255	254	253	252	251	250	249	248
Subindex	-	-	-	-	-	-	-	-

Octet 1								
Bit offset	247	246	245	244	243	242	241	240
Subindex	-	-	-	-	-	-	-	-

Octet 2								
Bit offset	239	238	237	236	235	234	233	232
Subindex	-	-	-	-	-	-	-	-

Octet 3								
Bit offset	231	230	229	228	227	226	225	224
Subindex	-	-	-	-	-	-	-	-

Octet 4								
Bit offset	223	222	221	220	219	218	217	216
Subindex	-	-	-	-	-	-	-	-

Octet 5								
Bit offset	215	214	213	212	211	210	209	208
Subindex	-	-	-	-	-	-	-	-

Octet 6								
Bit offset	207	206	205	204	203	202	201	200
Subindex	-	-	-	-	-	-	-	-

Octet 7								
Bit offset	199	198	197	196	195	194	193	192
Subindex	-	-	-	-	-	-	-	-

Octet 8								
Bit offset	191	190	189	188	187	186	185	184
Subindex	-	-	-	-	-	-	-	-

Octet 9								
Bit offset	183	182	181	180	179	178	177	176
Subindex	-	-	-	-	-	-	-	-

Octet 10								
Bit offset	175	174	173	172	171	170	169	168
Subindex	-	-	-	-	-	-	-	-

Octet 11								
Bit offset	167	166	165	164	163	162	161	160
Subindex	-	-	-	-	-	-	-	-

Octet 12								
Bit offset	159	158	157	156	155	154	153	152
Subindex	-	-	-	-	-	-	-	-

Octet 13								
Bit offset	151	150	149	148	147	146	145	144

Octet 13								
Subindex	-	-	-	-	-	-	-	-

Octet 14								
Bit offset	143	142	141	140	139	138	137	136
Subindex	-	-	-	-	-	-	-	-

Octet 15								
Bit offset	135	134	133	132	131	130	129	128
Subindex	-	-	-	-	-	-	-	-

Octet 16								
Bit offset	127	126	125	124	123	122	121	120
Subindex	-	-	-	-	-	-	-	-

Octet 17								
Bit offset	119	118	117	116	115	114	113	112
Subindex	-	-	-	-	-	-	-	-

Octet 18								
Bit offset	111	110	109	108	107	106	105	104
Subindex	-	-	-	-	-	-	-	-

Octet 19								
Bit offset	103	102	101	100	99	98	97	96
Subindex	-	-	-	-	-	-	-	-

Octet 20								
Bit offset	95	94	93	92	91	90	89	88
Subindex	-	-	-	-	-	-	-	-

Octet 21								
Bit offset	87	86	85	84	83	82	81	80
Subindex	-	-	-	-	-	-	-	-

Octet 22								
Bit offset	79	78	77	76	75	74	73	72
Subindex	-	-	-	-	-	-	-	-

Octet 23								
Bit offset	71	70	69	68	67	66	65	64
Subindex	-	-	-	-	-	-	-	-

Octet 24								
Bit offset	63	62	61	60	59	58	57	56
Subindex	-	-	-	-	-	-	-	-

Octet 25								
Bit offset	55	54	53	52	51	50	49	48
Subindex	-	-	-	-	-	-	-	-

Octet 26								
Bit offset	47	46	45	44	43	42	41	40
Subindex	-	-	-	-	-	-	-	-

Octet 27								
Bit offset	39	38	37	36	35	34	33	32
Subindex	-	-	-	-	-	-	-	-

Octet 28								
Bit offset	31	30	29	28	27	26	25	24
Subindex	-	-	-	-	-	-	-	-

Octet 29								
Bit offset	23	22	21	20	19	18	17	16
Subindex	-	-	-	-	-	-	-	-

Octet 30								
Bit offset	15	14	13	12	11	10	9	8
Subindex	1							
Value	0	0	0	0	0	0	0	0
Example	Gauge Mode Gauge Mode Value: 1							

Octet 31								
Bit offset	7	6	5	4	3	2	1	0
Subindex	1							
Value	0	0	0	0	0	0	0	1
Example	Gauge Mode Gauge Mode Value: 1							

1.3.6 LED Mode

LED Mode			
Subindex	**Name**	**Number of Bits**	**Data Values**
1	LED 1 Color	4	0 = Off 1 = Green 2 = Red 3 = Orange 4 = Amber 5 = Yellow 6 = Lime Green 7 = Spring Green 8 = Cyan 9 = Sky Blue 10 = Blue 11 = Violet 12 = Magenta 13 = Rose 14 = Daylight White (5000K) 15 = Custom 1
2	LED 2 Color	4	
3	LED 3 Color	4	
4	LED 4 Color	4	
5	LED 5 Color	4	
6	LED 6 Color	4	
7	LED 7 Color	4	
8	LED 8 Color	4	
9	LED 9 Color	4	
10	LED 10 Color	4	
..	..		
64	LED 64 Color	4	

LED Mode Example Process Data Out								
Octet 0								
Bit offset	255	254	253	252	251	250	249	248
Subindex	64				63			
Value	0	0	0	0	0	0	0	1
Example	LED Mode LED 64 Color: Off				LED Mode LED 63 Color: Green			
Octet 1								
Bit offset	247	246	245	244	243	242	241	240
Subindex	62				61			
Value	0	0	1	0	0	0	1	1
Example	LED Mode LED 62 Color: Red				LED Mode LED 61 Color: Orange			
Octet 2								
Bit offset	239	238	237	236	235	234	233	232
Subindex	60				59			
Value	0	1	0	0	0	1	0	1
Example	LED Mode LED 60 Color: Amber				LED Mode LED 59 Color: Yellow			
Octet 3								
Bit offset	231	230	229	228	227	226	225	224
Subindex	58				57			
Value	0	1	1	0	0	1	1	1
Example	LED Mode LED 58 Color: Lime Green				LED Mode LED 57 Color: Spring Green			
Octet 4								
Bit offset	223	222	221	220	219	218	217	216
Subindex	56				55			
Value	1	0	0	0	1	0	0	1
Example	LED Mode LED 56 Color: Cyan				LED Mode LED 55 Color: Sky Blue			
Octet 5								
Bit offset	215	214	213	212	211	210	209	208
Subindex	54				53			
Value	1	0	1	0	1	0	1	1
Example	LED Mode LED 54 Color: Blue				LED Mode LED 53 Color: Violet			
Octet 6								
Bit offset	207	206	205	204	203	202	201	200
Subindex	52				51			
Value	1	1	0	0	1	1	0	1
Example	LED Mode LED 52 Color: Magenta				LED Mode LED 51 Color: Rose			
Octet 7								
Bit offset	199	198	197	196	195	194	193	192
Subindex	50				49			

Octet 7								
Value	1	1	1	0	1	1	1	1
Example	LED Mode LED 50 Color: Daylight White (5000K)				LED Mode LED 49 Color: Custom 1			

Octet 8								
Bit offset	191	190	189	188	187	186	185	184
Subindex	48				47			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 48 Color: Off				LED Mode LED 47 Color: Off			

Octet 9								
Bit offset	183	182	181	180	179	178	177	176
Subindex	46				45			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 46 Color: Off				LED Mode LED 45 Color: Off			

Octet 10								
Bit offset	175	174	173	172	171	170	169	168
Subindex	44				43			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 44 Color: Off				LED Mode LED 43 Color: Off			

Octet 11								
Bit offset	167	166	165	164	163	162	161	160
Subindex	42				41			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 42 Color: Off				LED Mode LED 41 Color: Off			

Octet 12								
Bit offset	159	158	157	156	155	154	153	152
Subindex	40				39			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 40 Color: Off				LED Mode LED 39 Color: Off			

Octet 13								
Bit offset	151	150	149	148	147	146	145	144
Subindex	38				37			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 38 Color: Off				LED Mode LED 37 Color: Off			

Octet 14								
Bit offset	143	142	141	140	139	138	137	136
Subindex	36				35			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 36 Color: Off				LED Mode LED 35 Color: Off			

Octet 15								
Bit offset	135	134	133	132	131	130	129	128
Subindex	34				33			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 34 Color: Off				LED Mode LED 33 Color: Off			

Octet 16								
Bit offset	127	126	125	124	123	122	121	120
Subindex	32				31			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 32 Color: Off				LED Mode LED 31 Color: Off			

Octet 17								
Bit offset	119	118	117	116	115	114	113	112
Subindex	30				29			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 30 Color: Off				LED Mode LED 29 Color: Off			

Octet 18								
Bit offset	111	110	109	108	107	106	105	104
Subindex	28				27			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 28 Color: Off				LED Mode LED 27 Color: Off			

Octet 19								
Bit offset	103	102	101	100	99	98	97	96
Subindex	26				25			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 26 Color: Off				LED Mode LED 25 Color: Off			

Octet 20								
Bit offset	95	94	93	92	91	90	89	88
Subindex	24				23			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 24 Color: Off				LED Mode LED 23 Color: Off			

Octet 21								
Bit offset	87	86	85	84	83	82	81	80
Subindex	22				21			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 22 Color: Off				LED Mode LED 21 Color: Off			

Octet 22								
Bit offset	79	78	77	76	75	74	73	72
Subindex	20				19			
Value	0	0	0	0	0	0	0	0

Octet 22								
Example	LED Mode LED 20 Color: Off				LED Mode LED 19 Color: Off			

Octet 23								
Bit offset	71	70	69	68	67	66	65	64
Subindex	18				17			
Value	0	0	0	0	0	0	0	0
Example	LED Mode LED 18 Color: Off				LED Mode LED 17 Color: Off			

Octet 24								
Bit offset	63	62	61	60	59	58	57	56
Subindex	16				15			
Value	1	1	1	1	1	1	1	0
Example	LED Mode LED 16 Color: Custom 1				LED Mode LED 15 Color: Daylight White (5000K)			

Octet 25								
Bit offset	55	54	53	52	51	50	49	48
Subindex	14				13			
Value	1	1	0	1	1	1	0	0
Example	LED Mode LED 14 Color: Rose				LED Mode LED 13 Color: Magenta			

Octet 26								
Bit offset	47	46	45	44	43	42	41	40
Subindex	12				11			
Value	1	0	1	1	1	0	1	0
Example	LED Mode LED 12 Color: Violet				LED Mode LED 11 Color: Blue			

Octet 27								
Bit offset	39	38	37	36	35	34	33	32
Subindex	10				9			
Value	1	0	0	1	1	0	0	0
Example	LED Mode LED 10 Color: Sky Blue				LED Mode LED 9 Color: Cyan			

Octet 28								
Bit offset	31	30	29	28	27	26	25	24
Subindex	8				7			
Value	0	1	1	1	0	1	1	0
Example	LED Mode LED 8 Color: Spring Green				LED Mode LED 7 Color: Lime Green			

Octet 29								
Bit offset	23	22	21	20	19	18	17	16
Subindex	6				5			
Value	0	1	0	1	0	1	0	0
Example	LED Mode LED 6 Color: Yellow				LED Mode LED 5 Color: Amber			

Octet 30								
Bit offset	15	14	13	12	11	10	9	8

Octet 30								
Subindex	4				3			
Value	0	0	1	1	0	0	1	0
Example	LED Mode LED 4 Color: Orange				LED Mode LED 3 Color: Red			

Octet 31								
Bit offset	7	6	5	4	3	2	1	0
Subindex	2				1			
Value	0	0	0	1	0	0	0	0
Example	LED Mode LED 2 Color: Green				LED Mode LED 1 Color: Off			

1.3.7 Demo Mode

Demo Mode			
Subindex	**Name**	**Number of Bits**	**Data Values**
1	Reserved	8	0

Demo Mode Example Process Data Out								
Octet 0								
Bit offset	255	254	253	252	251	250	249	248
Subindex	-	-	-	-	-	-	-	-

Octet 1								
Bit offset	247	246	245	244	243	242	241	240
Subindex	-	-	-	-	-	-	-	-

Octet 2								
Bit offset	239	238	237	236	235	234	233	232
Subindex	-	-	-	-	-	-	-	-

Octet 3								
Bit offset	231	230	229	228	227	226	225	224
Subindex	-	-	-	-	-	-	-	-

Octet 4								
Bit offset	223	222	221	220	219	218	217	216
Subindex	-	-	-	-	-	-	-	-

Octet 5								
Bit offset	215	214	213	212	211	210	209	208
Subindex	-	-	-	-	-	-	-	-

Octet 6								
Bit offset	207	206	205	204	203	202	201	200
Subindex	-	-	-	-	-	-	-	-

Octet 7								
Bit offset	199	198	197	196	195	194	193	192
Subindex	-	-	-	-	-	-	-	-

Octet 8								
Bit offset	191	190	189	188	187	186	185	184
Subindex	-	-	-	-	-	-	-	-

Octet 9								
Bit offset	183	182	181	180	179	178	177	176
Subindex	-	-	-	-	-	-	-	-

Octet 10								
Bit offset	175	174	173	172	171	170	169	168
Subindex	-	-	-	-	-	-	-	-

Octet 11								
Bit offset	167	166	165	164	163	162	161	160
Subindex	-	-	-	-	-	-	-	-

Octet 12								
Bit offset	159	158	157	156	155	154	153	152
Subindex	-	-	-	-	-	-	-	-

Octet 13								
Bit offset	151	150	149	148	147	146	145	144
Subindex	-	-	-	-	-	-	-	-

Octet 14								
Bit offset	143	142	141	140	139	138	137	136
Subindex	-	-	-	-	-	-	-	-

Octet 15								
Bit offset	135	134	133	132	131	130	129	128
Subindex	-	-	-	-	-	-	-	-

Octet 16								
Bit offset	127	126	125	124	123	122	121	120
Subindex	-	-	-	-	-	-	-	-

Octet 17								
Bit offset	119	118	117	116	115	114	113	112
Subindex	-	-	-	-	-	-	-	-

Octet 18								
Bit offset	111	110	109	108	107	106	105	104
Subindex	-	-	-	-	-	-	-	-

Octet 19								
Bit offset	103	102	101	100	99	98	97	96

Octet 19								
Subindex	-	-	-	-	-	-	-	-

Octet 20								
Bit offset	95	94	93	92	91	90	89	88
Subindex	-	-	-	-	-	-	-	-

Octet 21								
Bit offset	87	86	85	84	83	82	81	80
Subindex	-	-	-	-	-	-	-	-

Octet 22								
Bit offset	79	78	77	76	75	74	73	72
Subindex	-	-	-	-	-	-	-	-

Octet 23								
Bit offset	71	70	69	68	67	66	65	64
Subindex	-	-	-	-	-	-	-	-

Octet 24								
Bit offset	63	62	61	60	59	58	57	56
Subindex	-	-	-	-	-	-	-	-

Octet 25								
Bit offset	55	54	53	52	51	50	49	48
Subindex	-	-	-	-	-	-	-	-

Octet 26								
Bit offset	47	46	45	44	43	42	41	40
Subindex	-	-	-	-	-	-	-	-

Octet 27								
Bit offset	39	38	37	36	35	34	33	32
Subindex	-	-	-	-	-	-	-	-

Octet 28								
Bit offset	31	30	29	28	27	26	25	24
Subindex	-	-	-	-	-	-	-	-

Octet 29								
Bit offset	23	22	21	20	19	18	17	16
Subindex	-	-	-	-	-	-	-	-

Octet 30								
Bit offset	15	14	13	12	11	10	9	8
Subindex	-	-	-	-	-	-	-	-

Octet 31								
Bit offset	7	6	5	4	3	2	1	0
Subindex	1							

Octet 31								
Value	0	0	0	0	0	0	0	0
Example	Demo Mode Reserved: n/a							

1.4 Parameters Set Using IO-Link

Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?	AOI
0	1-16	Direct Parameter Page 1 (incl. Vendor ID & Device ID)	128			rw		
1	1-16	Direct Parameters Page 2	128			rw		
2		Standard Command	8	130 = Restore Factory Settings		wo		
3-11								
12		**Device Access Locks**	16					
	1	Parameter (write) Access Lock	1	0 = off, 1 = on	0	rw	y	
	2	Data Storage Lock	1	0 = off, 1 = on	0	rw	y	
	3	Local Parameterization Lock	1	0 = off, 1 = on		rw	y	
	4	Local User Interface Lock	1	0 = off, 1 = on		rw	y	
13-15								
16		Vendor Name string	512	Banner Engineering Corporation		ro		
17		Vendor Text string	512	More Sensors. More Solutions.		ro		
18		Product Name string	512	WLS Pro		ro		
19		Product ID string	512	WLS27PXRGBW145DSKQ WLS27PXRGBW145HSKQ WLS27PXRGBW285DSKQ WLS27PXRGBW285HSKQ WLS27PXRGBW430DSKQ WLS27PXRGBW430HSKQ WLS27PXRGBW570DSKQ WLS27PXRGBW570HSKQ WLS27PXRGBW850DSKQ WLS27PXRGBW850HSKQ WLS27PXRGBW1130DSKQ WLS27PXRGBW1130HSKQ WLS28PXRGBW145XKQ WLS28PXRGBW145DXKQ WLS28PXRGBW285XKQ WLS28PXRGBW285DXKQ WLS28PXRGBW430XKQ WLS28PXRGBW430DXKQ WLS28PXRGBW570XKQ WLS28PXRGBW570DXKQ WLS28PXRGBW850XKQ WLS28PXRGBW850DXKQ WLS28PXRGBW1130XKQ WLS28PXRGBW1130DXKQ WLS28PXRGBW285L25XKQ WLS28PXRGBW570L25XKQ WLS28PXRGBW285L25DXKQ WLS28PXRGBW570L25DXKQ		ro		
20		Product Text string	512	WLS Pro		ro		
21		Serial Number	128			ro		

Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?	AOI
22								
23		Firmware Version	512			ro		
24		App Specific Tag (user defined)	256			rw	y	
25-35								
36		Device Status	8	0 = Device is OK 1 = Maintenance required 2 = Out of specification 3 = Functional check 4 = Failure 5–255 = Reserved		ro		
37	6-Jan	Detailed Device Status	Array[6] of 3octet			ro		
38-63								
64		Operating Mode Selection	8	0 = Segment Mode 1 = Run Mode 2 = Level Mode 3 = Dim and Blend Mode 4 = Gauge Mode 5 = LED Mode 6 = Demo Mode	1	rw	y	
65		**Segment Configuration**						
	1	Segment Mode	8	0 = Manual Segment Configuration, 1 = 1 Segment, 2 = 2 Segments, 3 = 3 Segments, 4 = 4 Segments, 5 = 5 Segments, 6 = 6 Segments, 7 = 7 Segments, 8 = 8 Segments, 9 = 9 Segments, 10 = 10 Segments	3	rw	y	
	2	Background Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	13	rw	y	
	3	Background Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	3	rw	y	
	4	Animation Synchronization	8	0 = Animation Sync Disabled, 1 = Animation Sync Enabled	1	rw	y	
66		**Segment 1 Config**						
	1	Basic Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	2	Basic Flash Rate	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	

Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?	AOI
	3	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	4	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	5	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	6	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	7	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	8	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	9	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	10	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	11	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	12	Direction	8	0 = Up, 1 = Down	0	rw	y	
	13	Manual Segment Offset	8	0–64 = Manual Offset	0	rw	y	
	14	Manual Segment Width	8	0–64 = Manual Width	0	rw	y	
67		**Segment 2 Config**						
	1	Basic Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	4	rw	y	
	2	Basic Flash Rate	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	3	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	

Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?	AOI
	4	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	4	rw	y	
	5	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	6	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	7	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	8	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	9	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	10	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	11	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	12	Direction	8	0 = Up, 1 = Down	0	rw	y	
	13	Manual Segment Offset	8	0–64 = Manual Offset	0	rw	y	
	14	Manual Segment Width	8	0–64 = Manual Width	0	rw	y	
68		**Segment 3 Config**						
	1	Basic Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	0	rw	y	
	2	Basic Flash Rate	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	3	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	4	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	0	rw	y	
	5	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	

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	6	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	7	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	8	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	9	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	10	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	11	Percent Width of Color 1	8	1..100 = Percent Width of Color 1	50	rw	y	
	12	Direction	8	0 = Up, 1 = Down	0	rw	y	
	13	Manual Segment Offset	8	0..64 = Manual Offset	0	rw	y	
	14	Manual Segment Width	8	0..64 = Manual Width	0	rw	y	
69		**Segment 4 Config**						
	1	Basic Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	9	rw	y	
	2	Basic Flash Rate	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	3	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	4	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	9	rw	y	
	5	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	6	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	7	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	

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	8	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	9	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	10	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	11	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	12	Direction	8	0 = Up, 1 = Down	0	rw	y	
	13	Manual Segment Offset	8	0–64 = Manual Offset	0	rw	y	
	14	Manual Segment Width	8	0–64 = Manual Width	0	rw	y	
70		**Segment 5 Config**						
	1	Basic Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	13	rw	y	
	2	Basic Flash Rate	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	3	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	4	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	13	rw	y	
	5	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	6	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	7	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	8	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	9	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	

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	10	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	11	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	12	Direction	8	0 = Up, 1 = Down	0	rw	y	
	13	Manual Segment Offset	8	0–64 = Manual Offset	0	rw	y	
	14	Manual Segment Width	8	0–64 = Manual Width	0	rw	y	
71		**Segment 6 Config**						
	1	Basic Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	2	rw	y	
	2	Basic Flash Rate	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	3	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	4	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	2	rw	y	
	5	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	6	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	7	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	8	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	9	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	10	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	11	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	12	Direction	8	0 = Up, 1 = Down	0	rw	y	
	13	Manual Segment Offset	8	0–64 = Manual Offset	0	rw	y	
	14	Manual Segment Width	8	0–64 = Manual Width	0	rw	y	
72		**Segment 7 Config**						

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	1	Basic Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	11	rw	y	
	2	Basic Flash Rate	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	3	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	11	rw	y	
	4	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	5	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	6	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	7	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	8	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	9	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	10	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	11	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	12	Direction	8	0 = Up, 1 = Down	0	rw	y	
	13	Manual Segment Offset	8	0–64 = Manual Offset	0	rw	y	
	14	Manual Segment Width	8	0–64 = Manual Width	0	rw	y	
73		**Segment 8 Config**						
	1	Basic Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	8	rw	y	
	2	Basic Flash Rate	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	

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	3	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	4	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	8	rw	y	
	5	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	6	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	7	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	8	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	9	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	10	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	11	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	12	Direction	8	0 = Up, 1 = Down	0	rw	y	
	13	Manual Segment Offset	8	0–64 = Manual Offset	0	rw	y	
	14	Manual Segment Width	8	0–64 = Manual Width	0	rw	y	
74		**Segment 9 Config**						
	1	Basic Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	3	rw	y	
	2	Basic Flash Rate	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	3	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	

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	4	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	3	rw	y	
	5	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	6	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	7	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	8	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	9	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	10	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	11	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	12	Direction	8	0 = Up, 1 = Down	0	rw	y	
	13	Manual Segment Offset	8	0–64 = Manual Offset	0	rw	y	
	14	Manual Segment Width	8	0–64 = Manual Width	0	rw	y	
75		**Segment 10 Config**						
	1	Basic Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	10	rw	y	
	2	Basic Flash Rate	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	3	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	4	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	10	rw	y	
	5	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	

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	6	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	7	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	8	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	9	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	10	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	11	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	12	Direction	8	0 = Up, 1 = Down	0	rw	y	
	13	Manual Segment Offset	8	0–64 = Manual Offset	0	rw	y	
	14	Manual Segment Width	8	0–64 = Manual Width	0	rw	y	
76		**General Level Configuration**						
	1	Background Color	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	13	rw	y	
	2	Background Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	1	rw	y	
	3	Dominance	8	0 = Non-Dominant, 1 = Dominant	0	rw	y	
	4	Sub-Segment Style	8	0 = Solid, 1 = Analog	1	rw	y	
	5	Filtering	8	0 = None, 1 = Low, 2 = Medium, 3 = High	0	rw	y	
	6	Hysteresis	8	0 = None, 1 = Low, 2 = Medium, 3 = High	0	rw	y	
	7	Full Scale Value	16	0–65535	100	rw	y	
77		**Level Base Configuration**						
	1	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	2	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	0	rw	y	
	3	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	

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	4	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	5	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	6	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	7	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	8	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	9	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	10	Direction	8	0 = Up, 1 = Down	0	rw	y	
78		**Level Threshold 1 Configuration**						
	1	Threshold Enable	8	0 = Threshold Disabled, 1 = Threshold Enabled	1	rw	y	
	2	Threshold Value (Percent)	8	0–100 = Threshold (Percent)	33	rw	y	
	3	Threshold Comparison	8	0 = Less Than or Equal To, 1 = Greater Than or Equal To	1	rw	y	
	4	Threshold Override	8	0 = Override Not Enabled, 1 = Override Enabled	0	rw	y	
	5	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	6	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	4	rw	y	
	7	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	8	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	9	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	10	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	11	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	12	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	

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	13	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	14	Direction	8	0 = Up, 1 = Down	0	rw	y	
79		**Level Threshold 2 Configuration**						
	1	Threshold Enable	8	0 = Threshold Disabled, 1 = Threshold Enabled	1	rw	y	
	2	Threshold Value (Percent)	8	0–100 = Threshold (Percent)	66	rw	y	
	3	Threshold Comparison	8	0 = Less Than or Equal To, 1 = Greater Than or Equal To	1	rw	y	
	4	Threshold Override	8	0 = Override Not Enabled, 1 = Override Enabled	0	rw	y	
	5	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	6	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	7	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	8	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	9	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	10	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	11	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	12	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	13	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	14	Direction	8	0 = Up, 1 = Down	0	rw	y	
80		**Level Threshold 3 Configuration**						
	1	Threshold Enable	8	0 = Threshold Disabled, 1 = Threshold Enabled	0	rw	y	
	2	Threshold Value (Percent)	8	0–100 = Threshold (Percent)	77	rw	y	
	3	Threshold Comparison	8	0 = Less Than or Equal To, 1 = Greater Than or Equal To	1	rw	y	
	4	Threshold Override	8	0 = Override Not Enabled, 1 = Override Enabled	0	rw	y	
	5	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	

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	6	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	13	rw	y	
	7	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	8	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	9	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	10	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	11	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	12	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	13	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	14	Direction	8	0 = Up, 1 = Down	0	rw	y	
81		**Level Threshold 4 Configuration**						
	1	Threshold Enable	8	0 = Threshold Disabled, 1 = Threshold Enabled	0	rw	y	
	2	Threshold Value (Percent)	8	0–100 = Threshold (Percent)	88	rw	y	
	3	Threshold Comparison	8	0 = Less Than or Equal To, 1 = Greater Than or Equal To	1	rw	y	
	4	Threshold Override	8	0 = Override Not Enabled, 1 = Override Enabled	0	rw	y	
	5	Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	6	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	9	rw	y	
	7	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	8	Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	9	Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	

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	10	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	11	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	12	Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	13	Percent Width of Color 1	8	1–100 = Percent Width of Color 1	50	rw	y	
	14	Direction	8	0 = Up, 1 = Down	0	rw	y	
82		**Custom Colors**						
	1	Custom 1 Red	8	0–255 = RGB	255	rw	y	
	2	Custom 1 Green	8	0–255 = RGB	255	rw	y	
	3	Custom 1 Blue	8	0–255 = RGB	255	rw	y	
	4	Custom 2 Red	8	0–255 = RGB	255	rw	y	
	5	Custom 2 Green	8	0–255 = RGB	255	rw	y	
	6	Custom 2 Blue	8	0–255 = RGB	255	rw	y	
83		**Settings**						
	1	LED Mode Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	2	Orientation	8	0 = Standard, 1 = Inverted	0	rw	y	
	3	Custom Intensity	8	0–100 = Custom Intensity	100	rw	y	
	4	Custom Frequency	8	0–255 = Custom Frequency	10	rw	y	
84		**Variable Configuration**						
	1	Number of Colors	8	0 = 1 Color, 1 = 2 Colors, 2 = 3 Colors	0	rw	y	
	2	Full Scale Value	16	0–65535	100	rw	y	
	3	Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	13	rw	y	
	4	Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	5	Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	0	rw	y	
	6	Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	

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	7	Color 3	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	8	Color 3 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	9	Filtering	8	0 = None, 1 = Low, 2 = Medium, 3 = High	0	rw	y	
85		**Gauge Mode Configuration**						
	2	Filtering	8	0 = None, 1 = Low, 2 = Medium, 3 = High	0	rw	y	
	3	Hysteresis	8	0 = None, 1 = Low, 2 = Medium, 3 = High	0	rw	y	
	4	Full Scale Value	16	0–65535	100	rw	y	
86		Gauge Mode Center Settings						
	1	Percent Width of Main Segment	8	1..100 = Percent Width of Color 1	20	rw	y	
	2	Main Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	3	Main Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	0	rw	y	
	4	Main Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	5	Main Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	6	Main Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	7	Main Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	8	Main Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	9	Main Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	10	Main Percent Width of Color 1	8	1..100 = Percent Width of Color 1	50	rw	y	
	11	Main Direction	8	0 = Up, 1 = Down	0	rw	y	

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	12	Background Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	13	Background Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	13	rw	y	
	14	Background Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	1	rw	y	
	15	Background Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	16	Background Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	17	Background Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	9	rw	y	
	18	Background Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	1	rw	y	
	19	Background Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	20	Background Percent Width of Color 1	8	1..100 = Percent Width of Color 1	50	rw	y	
	21	Background Direction	8	0 = Up, 1 = Down	0	rw	y	
87		**Gauge Mode Threshold 1 Settings**						
	1	Threshold Enable	8	0 = Threshold Disabled, 1 = Threshold Enabled	1	rw	y	
	2	Threshold Value (Percent)	8	0..100 = Threshold (Percent)	20	rw	y	
	3	Threshold Comparison	8	0 = Less Than or Equal To, 1 = Greater Than or Equal To	0	rw	y	
	4	Percent Width of Main Segment	8	1..100 = Percent Width of Color 1	20	rw	y	
	5	Main Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	6	Main Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	7	Main Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	

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	8	Main Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	9	Main Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	10	Main Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	4	rw	y	
	11	Main Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	12	Main Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	13	Main Percent Width of Color 1	8	1..100 = Percent Width of Color 1	50	rw	y	
	14	Main Direction	8	0 = Up, 1 = Down	0	rw	y	
	15	Background Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	16	Background Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	13	rw	y	
	17	Background Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	1	rw	y	
	18	Background Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	19	Background Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	20	Background Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	9	rw	y	
	21	Background Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	22	Background Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	23	Background Percent Width of Color 1	8	1..100 = Percent Width of Color 1	50	rw	y	
	24	Background Direction	8	0 = Up, 1 = Down	0	rw	y	
88		**Gauge Mode Threshold 2 Settings**						
	1	Threshold Enable	8	0 = Threshold Disabled, 1 = Threshold Enabled	1	rw	y	
	2	Threshold Value (Percent)	8	0..100 = Threshold (Percent)	80	rw	y	

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	3	Threshold Comparison	8	0 = Less Than or Equal To, 1 = Greater Than or Equal To	1	rw	y	
	4	Percent Width of Main Segment	8	1..100 = Percent Width of Color 1	20	rw	y	
	5	Main Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	6	Main Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	1	rw	y	
	7	Main Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	8	Main Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	9	Main Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	
	10	Main Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	4	rw	y	
	11	Main Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	12	Main Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	13	Main Percent Width of Color 1	8	1..100 = Percent Width of Color 1	50	rw	y	
	14	Main Direction	8	0 = Up, 1 = Down	0	rw	y	
	15	Background Animation	8	0 = Off, 1 = Steady, 2 = Flash, 3 = Two Color Flash, 4 = Two Color Shift, 5 = Ends Steady, 6 = Ends Flash, 7 = Scroll, 8 = Center Scroll, 9 = Bounce, 10 = Center Bounce, 11 = Intensity Sweep, 12 = Two Color Sweep, 13 = Spectrum	1	rw	y	
	16	Background Color 1	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	13	rw	y	
	17	Background Color 1 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	18	Background Speed	8	0 = Medium, 1 = Fast, 2 = Slow, 3 = Custom Flash Rate	0	rw	y	
	19	Background Pulse Pattern	8	0 = Normal, 1 = Strobe, 2 = Three Pulse, 3 = SOS, 4 = Random	0	rw	y	

Index	Subindex	Name	Length	Value Range	Default	Access Rights	Data Storage?	AOI
	20	Background Color 2	8	0 = Green, 1 = Red, 2 = Orange, 3 = Amber, 4 = Yellow, 5 = Lime Green, 6 = Spring Green, 7 = Cyan, 8 = Sky Blue, 9 = Blue, 10 = Violet, 11 = Magenta, 12 = Rose, 13 = Daylight White (5000K), 14 = Custom 1, 15 = Custom 2, 16 = Incandescent White (2700K), 17 = Warm White (3000K), 18 = Fluorescent White (4100K), 19 = Neutral White (5700K), 20 = Cool White (6500K)	9	rw	y	
	21	Background Color 2 Intensity	8	0 = High, 1 = Low, 2 = Medium, 3 = Off, 4 = Custom	0	rw	y	
	22	Background Scroll/Bounce Style	8	0 = Solid, 1 = Tail, 2 = Ripple	0	rw	y	
	23	Background Percent Width of Color 1	8	1..100 = Percent Width of Color 1	50	rw	y	
	24	Background Direction	8	0 = Up, 1 = Down	0	rw	y	

1.5 IO-Link Events

Events and Error Types are acyclic transmissions from the IO-Link device to the IO-Link master. Events can be error messages and/or warning or maintenance data.

Event Types		
Code	**Type**	**Description**
0 (0x0000)	Notification	No malfunction
20480 (0x5000)	Error	Device hardware fault/Device exchange

Error Types			
Code	**Additional Code**	**Name**	**Description**
128 (0x80)	0 (0x00)	Device application error - no details	Service has been refused by the device application and no detailed information of the incident is available
	17 (0x11)	Index not available	Access occurs to a not existing device
	18 (0x12)	Subindex not available	Access occurs to a not existing subindex
	32 (0x20)	Service temporarily not available	Parameter is not accessible because of the current state of the device application
	35 (0x23)	Access denied	Write access on a read-only parameter
	48 (0x30)	Parameter value out of range	Written parameter value is outside its permitted value range
	49 (0x31)	Parameter value above limit	Written parameter value is above its specific value limit
	51 (0x33)	Parameter length overrun	Written parameter length is above its predefined length
	52 (0x34)	Parameter length underrun	Written parameter length is below its predefined length
	53 (0x35)	Function not available	Written command is not supported by the device application
	54 (0x36)	Function temporarily unavailable	Written command is not available because of the current state of the device application
	65 (0x41)	Inconsistent parameter set	Parameter inconsistencies were found at the end of the block parameter transfer, device plausibility check failed