

# DMX Protocol

## Studio Spot®575Z

Chan#	Parameter	Description	Value (dec.)	Value (%)	Value (hex)
1	Pan Coarse	Coarse-adjusts pan to approximately 2 degrees of desired position	0-255	0-100	00-FF
2	Pan Fine	Fine-adjusts pan position in increments less than 1 degree	0-255	0-100	00-FF
3	Tilt Coarse	Coarse-adjusts tilt to approximately 2 degrees of desired position	0-255	0-100	00-FF
4	Tilt Fine	Fine-adjusts tilt position in increments less than 1 degree	0-255	0-100	00-FF
5	Color Wheel 1 Function	<b>Full Speeds</b>			
		Indexed	0-31	0-12	00-1F
		Forward spin	32-47	13-18	2D-2F
		Reverse spin	48-63	16-24	30-3F
		Continuous	64-79	25-30	40-4F
		Fast scan	80-87	31-33	50-57
		Slow scan	88-95	34-37	58-5F
		Random	96-111	37-43	60-6F
		Blink-indexed	112-127	44-49	70-7F
		<b>MSpeed Controlled</b>			
		Indexed	128-159	50-62	80-9F
		Forward spin	160-175	63-68	A0-AF
		Reverse spin	176-191	69-74	B0-BF
		Continuous	192-207	75-80	C0-CF
		Fast scan	208-215	81-83	D0-D7
		Slow scan	216-223	84-87	D8-DF
Random	224-239	88-93	E0-EF		
Blink-indexed	240-255	94-100	F0-FF		
6	Color Wheel 1 Position	<b>Indexed Mode</b>			
		Color 1	0-19	0-7	0-13
		Color 1 and 2	20-39	8-15	14-27
		Color 2	40-59	16-23	28-3B
		Color 2 and 3	60-78	24-30	3C-4E
		Color 3	79-98	31-38	4F-62
		Color 3 and 4	99-118	39-46	63-76
		Color 4	119-137	47-53	77-89
		Color 4 and 5	138-157	54-61	8A-9D
		Color 5	158-177	62-69	9E-B1
		Color 5 and 6	178-196	70-76	B2-C4
		Color 6	197-216	77-84	C5-D8
		Color 6 and 1	217-236	85-92	D9-EC
		Color 1	237-255	93-100	ED-FF

Chan#	Parameter	Description	Value (dec.)	Value (%)	Value (hex)
6	Color Wheel 1 Position, cont.	<b>Continuously Variable Mode</b>			
		Color 1	0	0	0
		Color 2	43	16	2B
		Color 3	85	33	55
		Color 4	128	50	80
		Color 5	170	66	AA
		Color 6	213	83	D5
		Color 1	255	100	FF
		<b>Continuously Variable Forward Spin Mode</b>			
		Spin stop	0-3	0-1	0-3
		Spin forward slowest	4	2	4
		Spin forward fastest	255	100	FF
		<b>Continuously Variable Reverse Spin Mode</b>			
		Spin stop	0-3	0-1	0-3
		Spin reverse slowest	4	2	4
		Spin reverse fastest	255	100	FF
		<b>Random Mode</b>			
		Random stop	0-3	0-1	0-3
		Random slowest	4	2	4
		Random fastest	255	100	FF
		<b>Combined Mode*</b>			
		Color 1, Open	0-6	0-2	0-6
		Color 2, Yellow	7-13	3-5	7-0D
		Color 3, CTO	14-20	6-7	0E-14
		Color 4, Aqua	21-27	8-10	15-1B
		Color 5, Pink	28-34	11-13	1C-22
		Color 6, Magenta	35-41	14-16	23-29
		Color 7, Cyan	42-47	17-18	2A-2F
		Color 8, Dark Green	48-54	19-21	30-36
		Color 9, Moonlight Blue	55-61	22-23	37-3D
		Color 10, Primary Green	62-68	24-26	3E-44
		Color 11, Medium Blue	69-75	27-29	45-4B
		Color 12, Indigo	76-82	30-32	4C-52
Color 13, Light Cyan	83-89	33-34	53-59		
Color 14, Dark Yellow Green	90-96	35-37	5A-60		
Color 15, BlueGreen	97-103	38-40	61-67		
Color 16, Indigo	104-110	41-42	68-6E		
Color 17, Congo Blue	111-117	43-45	6F-75		
Color 18, Rose Indigo	118-124	46-48	76-7C		
Color 19, Indigo	125-130	49-50	7D-82		
Color 20, Indigo	131-137	51-53	83-89		
Color 21, Does Not Mix	138-144	54-56	8A-90		
Color 22, Dark Indigo	145-151	57-58	91-97		
Color 23, Does Not Mix	152-158	59-61	98-9E		

Chan#	Parameter	Description	Value (dec.)	Value (%)	Value (hex)		
6	Color Wheel 1 Position, cont.	Color 24, Indigo	159-165	61-64	9F-A5		
		Color 25, Magenta	166-172	65-67	A6-AC		
		Color 26, Orange	173-179	68-69	AD-B3		
		Color 27, Cherry Rose	180-186	70-72	B4-BA		
		Color 28, Does Not Mix	187-193	73-75	BB-C1		
		Color 29, Pink	194-200	76-78	C2-C8		
		Color 30, Broadwayway Pink	201-207	79-80	C9-CF		
		Color 31, Magenta	208-213	81-83	D0-D2		
		Color 32, Red	214-220	84-85	D3-D9		
		Color 33, Red Rose	221-227	86-88	DA-E3		
		Color 34, Does Not Mix	228-234	89-91	E4-EA		
		Color 35, Broadway Pink	235-241	92-94	EB-F1		
		Color 36, Magenta	242-248	95-96	F2-F8		
		Color 1, Open	249-255	97-100	F9-FF		
		<b>Combined Continuous Mode*</b>					
				Color 1, Open	0	0	0
				Color 2, Yellow	8	3	8
				Color 3, CTO	15	5	0F
				Color 4, Aqua	22	8	16
				Color 5, Pink	29	11	1D
				Color 6, Magenta	36	14	24
				Color 7, Cyan	43	16	2B
				Color 8, Dark Green	50	19	32
				Color 9, Moonlight Blue	57	22	39
				Color 10, Primary Green	64	25	40
				Color 11, Medium Blue	72	28	48
				Color 12, Indigo	79	30	4F
				Color 13, Light Cyan	86	33	56
				Color 14, Dark Yellow Green	93	36	5D
				Color 15, Blue Green	100	39	64
				Color 16, Indigo	107	41	6B
				Color 17, Congo Blue	114	44	72
				Color 18, Rose Indigo	121	47	79
				Color 19, Indigo	128	50	80
				Color 20, Indigo	136	53	88
				Color 21, Does Not Mix	143	55	8F
		Color 22, Dark Indigo	150	58	96		
		Color 23, Does Not Mix	157	61	9D		
		Color 24, Indigo	164	64	A4		
		Color 25, Magenta	171	66	AB		
		Color 26, Orange	178	69	B2		
		Color 27, Cherry Rose	185	72	B9		
		Color 28, Does Not Mix	193	75	C1		
		Color 29, Pink	200	78	C8		
		Color 30, Broadwayway Pink	207	80	CF		
		Color 31, Magenta	214	83	D3		
		Color 32, Red	221	86	DA		
		Color 33, Red Rose	228	89	E4		
		Color 34, Does Not Mix	235	91	EB		
		Color 35, Broadway Pink	242	94	F2		
		Color 36, Magenta	249	97	F9		
		Color 1, Open	255	100	FF		

Chan#	Parameter	Description	Value (dec.)	Value (%)	Value (hex)
7	Color Wheel 2 Function	<b>Full Speed</b>			
		Combined Operation	0-15	0-5	0-f
		Indexed	16-31	6-12	10-1F
		Forward spin	32-47	13-18	2D-2F
		Reverse spin	48-63	16-24	30-3F
		Continuous	64-79	25-30	40-4F
		Fast scan	80-87	31-33	50-57
		Slow scan	88-95	34-37	58-5F
		Random	96-111	37-43	60-6F
		Blink-indexed	112-127	44-49	70-7F
		<b>MSpeed Controlled</b>			
		Indexed	128-159	50-62	80-9F
		Forward spin	160-175	63-68	A0-AF
		Reverse spin	176-191	69-74	B0-BF
		Continuous	192-207	75-80	C0-CF
		Fast scan	208-215	81-83	D0-D7
		Slow scan	216-223	84-87	D8-DF
		Random	224-239	88-93	E0-EF
Blink-indexed	240-255	94-100	F0-FF		
8	Color Wheel 2 Position	<b>Indexed Mode</b>			
		Color 1	0-19	0-7	0-13
		Color 1 and 2	20-39	8-15	14-27
		Color 2	40-59	16-23	28-3B
		Color 2 and 3	60-78	24-30	3C-4E
		Color 3	79-98	31-38	4F-62
		Color 3 and 4	99-118	39-46	63-76
		Color 4	119-137	47-53	77-89
		Color 4 and 5	138-157	54-61	8A-9D
		Color 5	158-177	62-69	9E-B1
		Color 5 and 6	178-196	70-76	B2-C4
		Color 6	197-216	77-84	C5-D8
		Color 6 and 1	217-236	85-92	D9-EC
		Color 1	237-255	93-100	ED-FF
		<b>Continuously Variable Mode</b>			
		Color 1	0	0	0
		Color 2	43	16	2B
		Color 3	85	33	55
		Color 4	128	50	80
		Color 5	170	66	AA
		Color 6	213	83	D5
		Color 1	255	100	FF
		<b>Continuously Variable Forward Spin Mode</b>			
		Spin stop	0-3	0-1	0-3
		Spin forward slowest	4	2	4
		Spin forward fastest	255	100	FF
		<b>Continuously Variable Reverse Spin Mode</b>			
		Spin stop	0-3	0-1	0-3
		Spin reverse slowest	4	2	4
		Spin reverse fastest	255	100	FF
		<b>Random Mode</b>			
		Random stop	0-3	0-1	0-3
		Random slowest	4	2	4

Chan#	Parameter	Description	Value (dec.)	Value (%)	Value (hex)
		Random fastest	255	100	FF
9	Litho Wheel 1 Function	<b>Full Speed</b>			
		Indexed	0-15	0-5	0-f
		Forward rotate	16-31	6-12	10-1F
		Reverse rotate	32-47	13-18	2D-2F
		Wheel Spin	48-63	16-24	30-3F
		Scan	64-79	25-30	40-4F
		Random	80-95	31-37	50-6F
		Blink wheel (Indexed)	96-111	38-43	60-6F
		Blink aperture (Indexed)	112-127	44-49	70-7F
		<b>MSpeed Controlled</b>			
		Indexed	128-143	50-55	80-8F
		Forward rotate	144-159	56-62	90-9F
		Reverse rotate	160-175	63-68	A0-AF
		Wheel Spin	176-191	69-74	B0-BF
		Scan	192-207	75-80	C0-CF
Random	208-223	81-83	D0-D7		
Blink wheel (Indexed)	224-239	88-93	E0-EF		
Blink aperture (Indexed)	240-255	94-100	F0-FF		
10	Litho Wheel 1 Posiiton	Position 0	0-36	0-14	0-24
		Position 1	37-73	15-28	25-49
		Position 2	74-109	29-42	4A-6D
		Position 3	110-146	43-57	6E-92
		Position 4	147-182	58-71	93-B6
		Position 5	183-219	72-85	B7-D8
		Position 6	220-255	86-100	D9-FF
11	Litho Wheel 1 Coarse Rotation	Indexed Mode	0-255	0-100	00-FF
		Variable Forward Rotate Mode			
		Rotate stop	0-3	0-1	0-3
		Rotate forward slowest	4-255	2-100	04-FF
		Variable Reverse Rotate Mode			
		Reotate stop	0-3	0-1	0-3
		Reverse rotate slowest to fastest	4-255	2-100	04-FF
		Continuously Variable Wheel Spin Mode			
		Forward spin slowest to fastest	0-127	0-49	0-7F
		Reverse spin, slowest to fastest	128-255	50-100	80-FF
		Scan Mode			
		Scan slowest to fastest	0-255	0-100	00-FF
		Random Mode			
Random stop	0-3	0-1	0-3		
Random slowest to fastest	4-255	2-100	04-FF		
12	Litho Wheel 1 Fine Rotation	Indexed Mode	0-255	0-100	00-FF

Chan#	Parameter	Description	Value (dec.)	Value (%)	Value (hex)
13	Litho Wheel 2 Function	<b>Full Speed</b>			
		Indexed	0-15	0-5	0-f
		Forward rotate	16-31	6-12	10-1F
		Reverse rotate	32-47	13-18	2D-2F
		Wheel Spin	48-63	16-24	30-3F
		Scan	64-79	25-30	40-4F
		Random	80-95	31-37	50-6F
		Blink wheel (Indexed)	96-111	38-43	60-6F
		Blink aperture (Indexed)	112-127	44-49	70-7F
		<b>MSpeed Controlled</b>			
		Indexed	128-143	50-55	80-8F
		Forward rotate	144-159	56-62	90-9F
		Reverse rotate	160-175	63-68	A0-AF
		Wheel Spin	176-191	69-74	B0-BF
		Scan	192-207	75-80	C0-CF
		Random	208-223	81-83	D0-D7
Blink wheel (Indexed)	224-239	88-93	E0-EF		
Blink aperture (Indexed)	240-255	94-100	F0-FF		
14	Litho Wheel 2 Posiiton	Position 0	0-36	0-14	0-24
		Position 1	37-73	15-28	25-49
		Position 2	74-109	29-42	4A-6D
		Position 3	110-146	43-57	6E-92
		Position 4	147-182	58-71	93-B6
		Position 5	183-219	72-85	B7-D8
		Position 6	220-255	86-100	D9-FF
15	Litho Wheel 2 Coarse Rotation	Indexed Mode	0-255	0-100	00-FF
		Variable Forward Rotate Mode			
		Rotate stop	0-3	0-1	0-3
		Rotate forward slowest	4-255	2-100	04-FF
		Variable Reverse Rotate Mode			
		Reotate stop	0-3	0-1	0-3
		Reverse rotate slowest to fastest	4-255	2-100	04-FF
		Continuously Variable Wheel Spin Mode			
		Forward spin slowest to fastest	0-127	0-49	0-7F
		Reverse spin, slowest to fastest	128-255	50-100	80-FF
		Scan Mode			
		Scan slowest to fastest	0-255	0-100	00-FF
		Random Mode			
Random stop	0-3	0-1	0-3		
Random slowest to fastest	4-255	2-100	04-FF		
16	Litho Wheel 2 Fine Rotation	Indexed Mode	0-255	0-100	00-FF
17	Zoom	Variable zoom from 18° - 30°	0-255	0-100	00-FF
18	Focus	Focus image from closer to farther	0-255	0-100	0-FF

Chan#	Parameter	Description	Value (dec.)	Value (%)	Value (hex)
19	Iris	Closed	0	0	0
		Variable	1-127	1-49	1-7F
		Open	128-143	50-55	80-8F
		Periodic strobes	144-159	56-62	90-9F
		Random strobes	160-175	63-68	A0-AF
		Ramp open/ snap shut	176-191	69-74	B0-BF
		Snap open/ ramp shut	192-207	75-80	C0-CF
		Random ramp/ snap	208-223	81-87	D0-DF
		Random snap/ ramp	224-239	88-93	E0-EF
		Open	240-255	94-100	FO-FF
20	Shutter	Closed	0-31	0-12	0-1F
		Periodic strobes	32-63	13-24	20-3F
		Random strobes	64-95	25-37	40-5F
		Ramp open/ snap shut	96-127	38-49	60-7F
		Snap open/ ramp shut	128-159	50-62	80-9F
		Random ramp open/ snap shut	160-191	63-74	A0-BF
		Random snap open/ ramp shut	192-223	75-87	C0-DF
		Open	224-255	88-100	E0-FF
21	Dim	Closed to open	0-255	0-100	00-FF
22	MSpeed (See Appendix B)	Controller Crossfade	0-3	0-1	0-3
		Longest to shortest MSpeed	4-255	2-100	4-FF
23	Factory Macros	No macro	0-7	0-2	0-7
		Macro 1	8-15	3-5	8-0F
		Macro 2	16-23	6-9	10-17
		Macro 3	24-31	10-12	18-1F
		Macro 4	32-39	13-15	20-27
		Macro 5	40-47	16-18	28-2F
		Macro 6	48-55	19-21	30-37
		Macro 7	56-63	22-24	38-3F
		Macro 8	64-71	25-27	40-47
		Reserved	72-215	28-84	48-D4
		Variable speed random macros	216-247	85-96	D5-F7
		No macro	248-255	97-100	F8-FF
24	Control	Safe	0-9	0-3	0-9
		Disable MSpeed for pan and tilt	10-19	4-7	0A-13
		Display off	20-28	8-11	14-1C
		Display dim	30-38	12-14	1E-26
		Display bright	40-48	15-18	28-30
		Home	60-68	23-26	3C-44
		Lamp on	80-88	31-34	50-58
		Lamp off	90-98	35-38	5A-62
		Shutdown	120-130	46-50	78-82
		Reserved	131-255	51-100	83-FF

