

i-6

DMX protocol

Protocol rev. 1.00



| Mode |
|---------------|
| 3 Channel RGB |

| Valid from firmware version |
|-----------------------------|
| 1.11 |

| Channel | Name | DMX value | | DMX percentage | | Description | Info | Default DMX value | Fader type |
|---------|-------|-----------|-----|----------------|--------|-----------------|------|-------------------|------------|
| 1 | Red | 0 | 255 | 0,0% | 100,0% | 0% → 100% Red | | 0 (0%) | Fade |
| 2 | Green | 0 | 255 | 0,0% | 100,0% | 0% → 100% Green | | 0 (0%) | Fade |
| 3 | Blue | 0 | 255 | 0,0% | 100,0% | 0% → 100% Blue | | 0 (0%) | Fade |

| Mode |
|---------------|
| 4 Channel RAW |

| Channel | Name | DMX value | | DMX percentage | | Description | Info | Default DMX value | Fader type |
|---------|-------|-----------|-----|----------------|--------|-----------------|------|-------------------|------------|
| 1 | Red | 0 | 255 | 0,0% | 100,0% | 0% → 100% Red | | 0 (0%) | Fade |
| 2 | Green | 0 | 255 | 0,0% | 100,0% | 0% → 100% Green | | 0 (0%) | Fade |
| 3 | Blue | 0 | 255 | 0,0% | 100,0% | 0% → 100% Blue | | 0 (0%) | Fade |
| 4 | White | 0 | 255 | 0,0% | 100,0% | 0% → 100% White | | 0 (0%) | Fade |

| Mode |
|---------------------------------|
| 6 Channel CTC (Default Mode) |

| Channel | Name | DMX value | | DMX percentage | | Description | Info | Default DMX value | Fader type |
|---------|-----------|-----------|-----|----------------|--------|---------------------|----------------------------|-------------------|------------|
| 1 | Shutter | 0 | 7 | 0,0% | 2,7% | Closed | Fast → Slow Slow → Fast | 8 (3,1%) | Snap |
| | | 8 | 15 | 3,1% | 5,9% | Open | | | |
| | | 16 | 151 | 6,3% | 59,2% | Strobe | | | |
| | | 152 | 175 | 59,6% | 68,6% | Pulse Up | | | |
| | | 176 | 199 | 69,0% | 78,0% | Pulse Down | | | |
| | | 200 | 244 | 78,4% | 95,7% | Random | | | |
| | | 245 | 255 | 96,1% | 100,0% | Open | | | |
| 2 | Intensity | 0 | 255 | 0,0% | 100,0% | 0% → 100% Intensity | | 0 (0%) | Fade |
| 3 | CTC | 0 | 0 | 0,0% | 0,0% | 5600K | See CTC chart | 0 (0%) | Fade |
| | | 1 | 4 | 0,4% | 1,6% | RAW | | | |
| | | 5 | 255 | 2,0% | 100,0% | 2000K → 10000K | | | |
| 4 | Red | 0 | 255 | 0,0% | 100,0% | 0% → 100% Red | | 255 (100%) | Fade |
| 5 | Green | 0 | 255 | 0,0% | 100,0% | 0% → 100% Green | | 255 (100%) | Fade |
| 6 | Blue | 0 | 255 | 0,0% | 100,0% | 0% → 100% Blue | | 255 (100%) | Fade |

| Mode |
|---------------|
| 8 Channel RAW |

| Channel | Name | DMX value | | DMX percentage | | Description | Info | Default DMX value | Fader type |
|---------|-------|-----------|-------|----------------|--------|-----------------|------|-------------------|------------|
| 1 | Red | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Red | | 0 (0%) | Fade |
| 2 | Green | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Green | | 0 (0%) | Fade |
| 3 | Blue | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Blue | | 0 (0%) | Fade |
| 4 | White | 0 | 65535 | 0,0% | 100,0% | 0% → 100% White | | 0 (0%) | Fade |

| |
|----------------|
| Mode |
| 10 Channel CTC |

| Channel | Name | DMX value | | DMX percentage | | Description | Info | Default DMX value | Fader type |
|---------|-----------|-----------|--------|----------------|--------|---------------------|---------------|-------------------|------------|
| 1 | Shutter | 0 | 7 | 0,0% | 2,7% | Closed | | 8 (3,1%) | Snap |
| | | 8 | 15 | 3,1% | 5,9% | Open | | | |
| | | 16 | 151 | 6,3% | 59,2% | Strobe | Fast → Slow | | |
| | | 152 | 175 | 59,6% | 68,6% | Pulse Up | Slow → Fast | | |
| | | 176 | 199 | 69,0% | 78,0% | Pulse Down | | | |
| | | 200 | 244 | 78,4% | 95,7% | Random | | | |
| 245 | 255 | 96,1% | 100,0% | Open | | | | | |
| 2 3 | Intensity | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Intensity | | 0 (0%) | Fade |
| 4 | CTC | 0 | 0 | 0,0% | 0,0% | 5600K | | 0 (0%) | Fade |
| | | 1 | 4 | 0,4% | 1,6% | RAW | | | |
| | | 5 | 255 | 2,0% | 100,0% | 2000K → 10000K | See CTC chart | | |
| 5 6 | Red | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Red | | 0 (0%) | Fade |
| 7 8 | Green | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Green | | 0 (0%) | Fade |
| 9 10 | Blue | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Blue | | 0 (0%) | Fade |

| |
|-------------------|
| Mode |
| 22 Channel Studio |

| Channel | Name | DMX value | | DMX percentage | | Description | Info | Default DMX value | Fader type |
|---------|------------------|-----------|--------|----------------|--------|---------------------------------|--|-------------------|------------|
| 1 | Intensity | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Intensity | | 0 (0%) | Fade |
| 2 | | 0 | 255 | 0,0% | 100,0% | Short → Long | | 0 (0%) | Fade |
| 3 | Duration | 0 | 255 | 0,0% | 100,0% | Short → Long | | 0 (0%) | Fade |
| 4 | Rate | 0 | 255 | 0,0% | 100,0% | Slow → Fast | | 0 (0%) | Fade |
| 5 | Effect | 0 | 5 | 0,0% | 2,0% | No Effect | Compatible with Q-8, P-6, P-10 & Q-10 Requires Rate higher than 0 | 0 (0%) | Snap |
| | | 6 | 10 | 2,4% | 3,9% | Flicker | | | |
| | | 11 | 20 | 4,3% | 7,8% | Random | | | |
| | | 21 | 25 | 8,2% | 9,8% | Flicker Individual Color | | | |
| | | 26 | 30 | 10,2% | 11,8% | Random Strobe Color | | | |
| | | 31 | 35 | 12,2% | 13,7% | Random Spike Color | | | |
| | | 36 | 40 | 14,1% | 15,7% | Reserved | | | |
| | | 41 | 45 | 16,1% | 17,6% | Pre-Red | | | |
| | | 46 | 50 | 18,0% | 19,6% | Pre-Green | | | |
| | | 51 | 55 | 20,0% | 21,6% | Pre-Blue | | | |
| | | 56 | 60 | 22,0% | 23,5% | RGB Flicker | | | |
| | | 61 | 65 | 23,9% | 25,5% | Lightning | | | |
| | | 66 | 70 | 25,9% | 27,5% | Reserved | | | |
| | | 71 | 75 | 27,8% | 29,4% | Fire | | | |
| | | 76 | 80 | 29,8% | 31,4% | Ice | | | |
| | | 81 | 85 | 31,8% | 33,3% | Magenta-Red-Blue | | | |
| | | 86 | 250 | 33,7% | 98,0% | Reserved | | | |
| 251 | 255 | 98,4% | 100,0% | No Effect | | | | | |
| 6 | Macro | 0 | 4 | 0,0% | 1,6% | Open | Compatible with G-1, Q-8, P-6, P-10, Q-10, S-4 & G-4 | 0 (0%) | Snap |
| | | 5 | 9 | 2,0% | 3,5% | Congo/Color 1 | | | |
| | | 10 | 14 | 3,9% | 5,5% | Red/Color 2 | | | |
| | | 15 | 19 | 5,9% | 7,5% | Green/Color 3 | | | |
| | | 20 | 24 | 7,8% | 9,4% | Blue/Color 4 | | | |
| | | 25 | 29 | 9,8% | 11,4% | Orange/Color 5 | | | |
| | | 30 | 34 | 11,8% | 13,3% | Light Green/Color 6 | | | |
| | | 35 | 39 | 13,7% | 15,3% | Pink/Color 7 | | | |
| | | 40 | 44 | 15,7% | 17,3% | Light Blue/Color 8 | | | |
| | | 45 | 49 | 17,6% | 19,2% | Purple/Color 9 | | | |
| | | 50 | 54 | 19,6% | 21,2% | Neon Green/Color 10 | | | |
| | | 55 | 59 | 21,6% | 23,1% | Magenta/Color 11 | | | |
| | | 60 | 64 | 23,5% | 25,1% | Cyan/Color 12 | | | |
| | | 65 | 69 | 25,5% | 27,1% | Yellow/Color 13 | | | |
| | | 70 | 74 | 27,5% | 29,0% | CTC/Color 14 | | | |
| | | 75 | 79 | 29,4% | 31,0% | Colors Scroll (CCW Fast → Slow) | | | |
| | | 80 | 84 | 31,4% | 32,9% | Colors Scroll (CW Slow → Fast) | | | |
| | | 85 | 89 | 33,3% | 34,9% | Random Color | | | |
| | | 90 | 180 | 35,3% | 70,6% | Color Filter Emulation | See Color Filter Emulation chart | | |
| | | 181 | 254 | 71,0% | 99,6% | Reserved | | | |
| 255 | 255 | 100,0% | 100,0% | Open | | | | | |
| 7 | Color Mode | 0 | 4 | 0,0% | 1,6% | CTC RGB | See note ① | 0 (0%) | Snap |
| | | 5 | 9 | 2,0% | 3,5% | xy (CIE 1931) | | | |
| | | 10 | 14 | 3,9% | 5,5% | CTC RGBW | | | |
| | | 15 | 19 | 5,9% | 7,5% | HSI | | | |
| | | 20 | 24 | 7,8% | 9,4% | CMY | | | |
| | | 25 | 29 | 9,8% | 11,4% | CTC RGB+W | | | |
| 30 | 255 | 11,8% | 100,0% | Reserved | | | | | |
| 8 | Plus/Minus Green | 0 | 4 | 0,0% | 1,6% | Neutral | Max → Min Min → Max | 0 (0%) | Fade |
| | | 5 | 125 | 2,0% | 49,0% | Minus Green | | | |
| | | 126 | 134 | 49,4% | 52,5% | Neutral | | | |
| | | 135 | 255 | 52,9% | 100,0% | Plus Green | | | |

| Channel | Name | DMX value | DMX percentage | Description | Info | Default DMX value | Fader type | | |
|---------|---------------|-----------|----------------|-------------|----------|--|------------------|--------------|------|
| 9 | Dimming Curve | 0 | 4 | 0,0% | 1,6% | Smooth Gamma Corrected | See note ② | 0 (0%) | Snap |
| | | 5 | 9 | 2,0% | 3,5% | Smooth Linear | | | |
| | | 10 | 14 | 3,9% | 5,5% | Halogen Gamma Corrected | | | |
| | | 15 | 19 | 5,9% | 7,5% | Halogen Linear | | | |
| | | 20 | 24 | 7,8% | 9,4% | Fast Response Gamma Corrected | | | |
| | | 25 | 29 | 9,8% | 11,4% | Fast Response Linear | | | |
| | | 30 | 34 | 11,8% | 13,3% | Extended Range - Smooth Gamma Corrected | | | |
| | | 35 | 39 | 13,7% | 15,3% | Extended Range - Smooth Linear | | | |
| | | 40 | 44 | 15,7% | 17,3% | Extended Range - Halogen Gamma Corrected | | | |
| | | 45 | 49 | 17,6% | 19,2% | Extended Range - Halogen Linear | | | |
| | | 50 | 54 | 19,6% | 21,2% | Extended Range - Fast Response Gamma Corrected | | | |
| | | 55 | 59 | 21,6% | 23,1% | Extended Range - Fast Response Linear | | | |
| | 60 | 255 | 23,5% | 100,0% | Reserved | | | | |
| 10 | CTC | 0 | 0 | 0,0% | 0,0% | 5600K | See CTC chart | 0 (0%) | Fade |
| | | 1 | 4 | 0,4% | 1,6% | RAW | | | |
| | | 5 | 255 | 2,0% | 100,0% | 2000K → 10000K | | | |
| 11 | Color Path | 0 | 127 | 0,0% | 49,8% | SGM Standard | See note ③ | 0 (0%) | Snap |
| | | 128 | 255 | 50,2% | 100,0% | SGM VersaPath™ | | | |
| 12 | Red | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Red | | 65535 (100%) | Fade |
| 13 | | | | | | | | | |
| 14 | Green | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Green | | 65535 (100%) | Fade |
| 15 | | | | | | | | | |
| 16 | Blue | 0 | 65535 | 0,0% | 100,0% | 0% → 100% Blue | | 65535 (100%) | Fade |
| 17 | | | | | | | | | |
| 18 | White | 0 | 65535 | 0,0% | 100,0% | 0% → 100% White | | 65535 (100%) | Fade |
| 19 | | | | | | | | | |
| 20 | Frequency | 0 | 1024 | 0,0% | 1,6% | Default | 3.294Hz → 30 kHz | 0 (0%) | Fade |
| 21 | | 1024 | 65535 | 1,6% | 100,0% | Min → Max | | | |
| 22 | Fan Control | 0 | 4 | 0,0% | 1,6% | Default | | 0 (0%) | Fade |
| | | 5 | 255 | 2,0% | 100,0% | Min → Max | | | |

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Notes



- ❶ - CTC RGB allows RGBW mixing with CTC control over white on the Red, Green and Blue channels (5500K White LED is controlled via RGB color engine).
- CTC RGBW allows RGBW mixing with CTC control over white on the Red, Green, Blue and White channels (5500K White LED is controlled via RGBW color engine).
- CTC RGB+W allows RGB mixing with CTC control over white on the Red, Green and Blue channels, plus independent control over 5500K White LED on the White channel (5500K White LED is not part of the color engine).
- HSI and CMY modes use the Red, Green and Blue channels for the color mix.
- xy mode does not allow CTC control.

CTC RGB, CTC RGBW, CTC RGB+W, HSI, and CMY modes can be combined with the CTC, Color Path, Macro, and Plus/Minus Green channels.

- ❷ - Smooth Gamma Corrected is compatible with previous SGM products.
- Halogen creates an organic delay, similar to tungsten-lamp performance when filament is heated up.
- Extended Range creates a low-end dimming that ignores the SGM recommended minimum level to achieve a wider threshold.

- ❸ With the Color Path set to VersaPath™, the color emulation reacts in the same way as a physical filter over a specific native color temperature (from 2000K to 10000K), editable via the CTC channel.
When Dimming Curve channel is set to Halogen, a “tungsten-lamp with color filter” look can be achieved.
When the Color Path is set to VersaPath™, the CTC channel can be used to move the RGB color mix over the black-body curve. In order to achieve this, at least 2 primary colors need to have values above 000.
When the Color Path is set to Standard, the color mixing is compatible with all SGM RGB-based products since 2009. CTC channel can only affect the RGB color mix when at least 3 primary colors have values above 000.

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Color Filter Emulation chart

| Macro | DMX value | | DMX percentage | | Color name | Color number |
|------------------------|-----------|-------|----------------|-------------------|-----------------|--------------|
| Color Filter Emulation | 90 | 90 | 35,3% | 35,3% | Med Bast Amber | LEE 004 |
| | 91 | 91 | 35,7% | 35,7% | Med Yellow | LEE 010 |
| | 92 | 92 | 36,1% | 36,1% | Straw Tint | LEE 013 |
| | 93 | 93 | 36,5% | 36,5% | Surprise Peach | LEE 017 |
| | 94 | 94 | 36,9% | 36,9% | Fire | LEE 019 |
| | 95 | 95 | 37,3% | 37,3% | Med Amber | LEE 020 |
| | 96 | 96 | 37,6% | 37,6% | Gold Amber | LEE 021 |
| | 97 | 97 | 38,0% | 38,0% | Dark Amber | LEE 022 |
| | 98 | 98 | 38,4% | 38,4% | Sunset red | LEE 025 |
| | 99 | 99 | 38,8% | 38,8% | Bright red | LEE 026 |
| | 100 | 100 | 39,2% | 39,2% | Light Pink | LEE 035 |
| | 101 | 101 | 39,6% | 39,6% | Med Pink | LEE 036 |
| | 102 | 102 | 40,0% | 40,0% | Medium Purple | LEE 049 |
| | 103 | 103 | 40,4% | 40,4% | Lt Lavender | LEE 052 |
| | 104 | 104 | 40,8% | 40,8% | Lavender | LEE 058 |
| | 105 | 105 | 41,2% | 41,2% | Sky Blue | LEE 068 |
| | 106 | 106 | 41,6% | 41,6% | Tokyo Blue | LEE 071 |
| | 107 | 107 | 42,0% | 42,0% | Just Blue | LEE 079 |
| | 108 | 108 | 42,4% | 42,4% | Lime Green | LEE 088 |
| | 109 | 109 | 42,7% | 42,7% | Moss Green | LEE 089 |
| | 110 | 110 | 43,1% | 43,1% | Dk Yellow/Green | LEE 090 |
| | 111 | 110 | 43,5% | 43,1% | Spring Yellow | LEE 100 |
| | 112 | 112 | 43,9% | 43,9% | Lt Amber | LEE 102 |
| | 113 | 113 | 44,3% | 44,3% | Straw | LEE 103 |
| | 114 | 114 | 44,7% | 44,7% | Deep Amber | LEE 104 |
| | 115 | 115 | 45,1% | 45,1% | Orange | LEE 105 |
| | 116 | 116 | 45,5% | 45,5% | Primary Red | LEE 106 |
| | 117 | 117 | 45,9% | 45,9% | Lt. Rose | LEE 107 |
| | 118 | 118 | 46,3% | 46,3% | English Rose | LEE 108 |
| | 119 | 119 | 46,7% | 46,7% | Lt. Salmon | LEE 109 |
| | 120 | 120 | 47,1% | 47,1% | Middle Rose | LEE 110 |
| | 121 | 121 | 47,5% | 47,5% | Dark Pink | LEE 111 |
| | 122 | 122 | 47,8% | 47,8% | Magenta | LEE 113 |
| | 123 | 123 | 48,2% | 48,2% | Peacock Blue | LEE 115 |
| | 124 | 124 | 48,6% | 48,6% | Med Blue-Green | LEE 116 |
| | 125 | 125 | 49,0% | 49,0% | Steel Blue | LEE 117 |
| | 126 | 126 | 49,4% | 49,4% | Light Blue | LEE 118 |
| | 127 | 127 | 49,8% | 49,8% | Dark Blue | LEE 119 |
| | 128 | 128 | 50,2% | 50,2% | Deep Blue | LEE 120 |
| | 129 | 129 | 50,6% | 50,6% | Lee Green | LEE 121 |
| | 130 | 130 | 51,0% | 51,0% | Fern Green | LEE 122 |
| | 131 | 131 | 51,4% | 51,4% | Dark Green | LEE 124 |
| | 132 | 132 | 51,8% | 51,8% | Mauve | LEE 126 |
| | 133 | 133 | 52,2% | 52,2% | Bright Pink | LEE 128 |
| | 134 | 134 | 52,5% | 52,5% | Marine Blue | LEE 131 |
| | 135 | 135 | 52,9% | 52,9% | Med Blue | LEE 132 |
| | 136 | 136 | 53,3% | 53,3% | Golden Amber | LEE 134 |
| 137 | 137 | 53,7% | 53,7% | Deep Golden Amber | LEE 135 | |
| 138 | 138 | 54,1% | 54,1% | Pale Lavender | LEE 136 | |
| 139 | 139 | 54,5% | 54,5% | Spec Lavender | LEE 137 | |
| 140 | 140 | 54,9% | 54,9% | Pale Green | LEE 138 | |
| 141 | 141 | 55,3% | 55,3% | Primary Green | LEE 139 | |
| 142 | 142 | 55,7% | 55,7% | Summer Blue | LEE 140 | |
| 143 | 143 | 56,1% | 56,1% | Bright Blue | LEE 141 | |
| 144 | 144 | 56,5% | 56,5% | Pale Navy Blue | LEE 143 | |
| 145 | 145 | 56,9% | 56,9% | Apricot | LEE 147 | |
| 146 | 146 | 57,3% | 57,3% | Bright Rose | LEE 148 | |
| 147 | 147 | 57,6% | 57,6% | Pale Gold | LEE 152 | |

| Macro | DMX value | | DMX percentage | | Color name | Color number |
|------------------------|-----------|-------|----------------|--------------|-------------------|--------------|
| Color Filter Emulation | 148 | 148 | 58,0% | 58,0% | Pale Rose | LEE 154 |
| | 149 | 149 | 58,4% | 58,4% | Pink | LEE 157 |
| | 150 | 150 | 58,8% | 58,8% | Deep Orange | LEE 158 |
| | 151 | 151 | 59,2% | 59,2% | Slate Blue | LEE 161 |
| | 152 | 152 | 59,6% | 59,6% | Bastard Amber | LEE 162 |
| | 153 | 153 | 60,0% | 60,0% | Flame Red | LEE 164 |
| | 154 | 154 | 60,4% | 60,4% | Daylight Blue | LEE 165 |
| | 155 | 155 | 60,8% | 60,8% | Lilac Tint | LEE 169 |
| | 156 | 156 | 61,2% | 61,2% | Deep Lavender | LEE 170 |
| | 157 | 157 | 61,6% | 61,6% | Lagoon Blue | LEE 172 |
| | 158 | 158 | 62,0% | 62,0% | Dk Steel Blue | LEE 174 |
| | 159 | 159 | 62,4% | 62,4% | Chrome Orange | LEE 179 |
| | 160 | 160 | 62,7% | 62,7% | Dark Lavendar | LEE 180 |
| | 161 | 161 | 63,1% | 63,1% | Congo Blue | LEE 181 |
| | 162 | 162 | 63,5% | 63,5% | Light Red | LEE 182 |
| | 163 | 163 | 63,9% | 63,9% | Surprise Pink | LEE 194 |
| | 164 | 164 | 64,3% | 64,3% | Alice Blue | LEE 197 |
| | 165 | 165 | 64,7% | 64,7% | Double C.T. Blue | LEE 200 |
| | 166 | 166 | 65,1% | 65,1% | Full C.T. Blue | LEE 201 |
| | 167 | 167 | 65,5% | 65,5% | 1/2 C.T. Blue | LEE 202 |
| | 168 | 168 | 65,9% | 65,9% | 1/4 C.T. Blue | LEE 203 |
| | 169 | 169 | 66,3% | 66,3% | Full C.T. Orange | LEE 204 |
| | 170 | 170 | 66,7% | 66,7% | 1/4 C.T. Orange | LEE 206 |
| | 171 | 171 | 67,1% | 67,1% | Fluorescent Green | LEE 219 |
| | 172 | 172 | 67,5% | 67,5% | Lee Minus Green | LEE 247 |
| | 173 | 173 | 67,8% | 67,8% | 1/2 Minus Green | LEE 248 |
| | 174 | 174 | 68,2% | 68,2% | 3/4 C.T. Blue | LEE 281 |
| | 175 | 175 | 68,6% | 68,6% | 3/4 C.T. Orange | LEE 285 |
| | 176 | 176 | 69,0% | 69,0% | Follies Pink | LEE 328 |
| | 177 | 177 | 69,4% | 69,4% | S Spec Rose Pink | LEE 332 |
| | 178 | 178 | 69,8% | 69,8% | Fuchsia Pink | LEE 345 |
| | 179 | 179 | 70,2% | 70,2% | Glacier Blue | LEE 352 |
| 180 | 180 | 70,6% | 70,6% | Lighter Blue | LEE 353 | |

i-6 CTC chart

