

## Standards - ISP-DMX

DMX-512 is a lighting communications standard. It was created in 1986 as a standardized method for connecting lighting consoles to dimmer packs and was revised in 1990 to allow more flexibility. Since that time, it has become the most common communication standard used by lighting equipment.

Up to 512 "channels" can be transmitted. Each of these channels were originally intended to control lamp dimmer levels. You can think of it as 512 sliders on a lighting console, connected to 512 light bulbs. The slider position is conveyed as a number between 0 and 255.

To enable laserists to use standard DMX equipment such as lighting consoles and DMX-to-analog converters, this same "single channel controls a single function" philosophy applies.

Examples of things that fit the "single channel controls a single function" philosophy are:

- Beam actuators that can fade beam positions on a beam table (or pop into the beam);
- Shutters and filters that can gradually occlude the beam (or pop into the beam);
- Lumia motor speed; and
- Scan-through device selection and speed.

Even though all 512 channels can be used, it is more common to use fewer channels. The ISP-DMX standard defines the use of 32 channels, and reserves 34 channels for future ILDA standardization.

The DMX-512 specification (also called the USITT DMX512/1990 standard) is available from the following address:

USITT  
10 West 19th Street, Suite 5A  
New York, NY 10011-4206  
Phone: (212) 924-9088  
Fax: (212) 924-9343

### DMX-512 Channel Assignments

The following channel assignments apply to the ILDA Standard Projector:

<b>Channel Number</b>	<b>Assigned Effect</b>
<b>1</b>	Effects fader, (controls beams and non-scan through effects)
<b>2</b>	Effect/beam red fader
<b>3</b>	Effect/beam green fader
<b>4</b>	Effect/beam blue fader
<b>5</b>	Lumia fader
<b>6</b>	Lumia speed
<b>7</b>	Scan through effect #1 engage, diffraction grating
<b>8</b>	Scan through effect #1 coarse speed control
<b>9</b>	Scan through effect #1 fine speed control
<b>10</b>	Scan through effect #2 engage, fuzz
<b>11</b>	Scan through effect #2 coarse speed control
<b>12</b>	Scan through effect #2 fine speed control
<b>13</b>	House lights
<b>14</b>	Fog
<b>15</b>	Strobe
<b>16</b>	Laser control (start or current up)
<b>17</b>	User 1
<b>18</b>	User 2
<b>19</b>	User 3
<b>20</b>	Graphics Shutter - DMX-512 version of the analogue shutter signal found on the ISP-DB25
<b>21</b>	Beam diffraction effect 1
<b>22</b>	Beam diffraction effect 2
<b>23</b>	Beam actuator 1
<b>24</b>	Beam actuator 2
<b>25</b>	Beam actuator 3
<b>26</b>	Beam actuator 4
<b>27</b>	Beam actuator 5
<b>28</b>	Beam actuator 6
<b>29</b>	Beam actuator 7
<b>30</b>	Beam actuator 8
<b>31</b>	Beam actuator 9
<b>32</b>	Beam actuator 10
<b>33 - 66</b>	Reserved for future ILDA assignment

## DMX-512 Connector and Pinouts

The DMX-512 connector is a 5-pin XLR with the following pinout:

Pin	Signal Name
1	Cable shield
2	Data complement (-) to projector
3	Data true (+) to projector
4	Optional data complement (-) from projector
5	Optional data true (+) from projector

- Signal sources such as computers or tape playback devices shall use a female connector.
- Projectors shall use a male connector but may also have a female connector for DMX-512 pass-through.

**NOTE:** This is NOT an official ILDA document - contact ILDA for further information