DMX SPI

Introduction

The DMX SPI is a compact DMX-to-SPI converter for LED lighting and LED strip control. It operates as an autonomous LED Driver: it converts a DMX512 input into SPI pixel data, with no computer required during operation.

It is compatible with most of SPI ICs (WS2812, APA102, SK6812 and more) and drives up to 170 RGB or 128 RGBW pixels from 512 DMX-RDM channels.

The DMX SPI is the LED Driver version of the CLUB SPI. It is upgradable on site with DeviceTool to unlock the complete CLUB SPI feature set.

DMX SPI

KEY FEATURES

LED Driver device	Stand-alone DMX-to-SPI converter -- no computer required during operation
DMX to SPI	512 ch. DMX-RDM input converted to 170 RGB or 128 RGBW pixels or up to 3072 SPI channels
SPI ICs	WS2812/2811/2813/2815, SK6812, APA102, LPD8806, UCS, TM series and more
Driver options	Pixel grouping, pixel repeating, start DMX address, RDM
Configuration	DeviceTool by USB -- mode setting, firmware, upgrade
Upgradable on site	DMX SPI, via DeviceTool, CLUB SPI, FULL, UxU for Art-Net/sACN, On site
Compatible Fixtures	Addressable pixel LEDs (WS2811, WS2812, SK6812, UCS1903, etc.) & LED strips, bars and matrices

SAFETY INSTRUCTIONS

Intended use	This device is intended solely for controlling lighting fixtures and effects via compatible software or hardware triggers. Any other use may result in personal injury or property damage. Chromateq accepts no liability for damage resulting from improper use.
Do not use in	Direct sunlight | Extreme temperature or humidity conditions | Dusty or wet environments | Areas near strong magnetic fields | Any situation where the unit is or may become damaged
General handling	Never use force when installing connectors. Do not immerse in water. Clean only with a dry cloth -- do not use solvents, benzene, thinners or flammable cleaning agents.
Electrical safety	Verify supply voltage before connection (5 V USB-C or 9-24 V DC). Ensure proper strain relief on all wiring. Do not exceed maximum current ratings listed in specifications.
Children	Keep packaging materials out of reach of children -- choking hazard. Small components may detach; ensure children cannot access them.
Disclaimer	Read all documentation before use. Retain this guide for future reference. If transferring the product to a third party, include this document.

WARNING: Installation and wiring must be carried out by qualified personnel, in strict accordance with the instructions provided and with applicable electrical standards. The manufacturer's warranty does not cover any damage resulting from incorrect wiring, improper installation, misuse or unauthorized modification. To the fullest extent permitted by law, The manufacturer accepts no liability for any damage or injury arising therefrom.

Technical information

Interface, Output, Input

DMX In	1 x 512 channels, RDM
RDM	Yes, Via DMX port
DMX Pixels	Up to 170 RGB or 128 RGBW
SPI output	3,072 channels (with pixel grouping)
SPI Pixels	170 px RGB or 128 px RGBW
USB-C	USB-C power compliant
LED Driver	Yes, 512 channels input, 170 RGB pixels
Memory	256 Mb, Not used (for CLUB SPI)
Upgrade	Yes, CLUB SPI, FULL or UxU for Art-Net / sACN
Triggers	x3 Dry contacts, Infrared, Not used (for CLUB SPI)

Specifications

Power input	5 V USB-C (0. A) or 9-24 V DC
Power consumption	0.7 W
DMX isolation	3 kV / 0.12 A (fuses & diodes)
DC isolation	1.5 kV / 0.3 A
Dimensions	103 x 50 x 37.5 mm (4 x 2 x 1.5 in)
Net / Gross weight	0.10 kg / 0.16 kg (0.22 / 0.35 lbs)
Housing	Solid aluminium | IP40
Operating temperature	-45 °C to +85 °C
Mounting	Desktop or screw-fix (no DIN rail)

Supported SPI IC's

Voltage	5 V, 12 V, 5-12 V, 5-24 V, 5-32 V (per IC)
RGBW	SK6805/6812, TM1814, WS2814, SM16703/16704, UCS2904B
RGBWAL	FW1906
RGB	WS2811, 2812, 2812B, 2813, 2815, 2815B, 2818, APA102, SK9822, LPD6803, 8803, 8806, 1101 UCS1903, 1909, 1912, 2903, 2909, 2912, 6909, 6912, TM1804, 1809, 1903, 1914, 1934, CS8812, GS8206, 8208, D705, HD107S, SM16703P, WS2801, 2803

Options & Upgrade

SPI driver	DMX to SPI, 512 ch. input to 170 RGB px
SPI driver options	Pixel grouping, pixel repeating, start DMX address, RDM
Configuration	DeviceTool + software
Upgrade	CLUB SPI, FULL, UxU for Art-Net/sACN, On site
Art-Net / sACN Out	Up to 64 U. (Pro DMX 2), 512 U. (Pixxem)
Art-Net / sACN In	Up to 16 U. (PC)
DVI resolution	Up to 1920 x 1080 via PIXXEM
Timeline	Up to 24H, need FULL Upgrade

Tools and Accessories

DIN mounting	Not supported, via DIN rail mounting unit
Power supply	Not included
USB cable	x1 Included
DMX cable	Not included

Warranty & Certifications

International warranty	1 year
Certifications	CE, FCC, RoHS, UKCA
HS customs code	8537.10.91
HTS/TARIC/UKGT/CN	8537.10.91

Software, App & OS

DeviceTool	Setting, firmware, upgrade
USB drivers	For Intel, ADM, Qualcomm cpu
Windows	Windows 10 / 11 (64-bit)
MacOS	MacOS 10.14 and latest

Not Available on DMX SPI

Stand-Alone	No scene in memory or playback
Triggers	No dry contacts and Infrared remote
DMX output	No DMX-RDM output, need Upgrade

Protocols & Communication

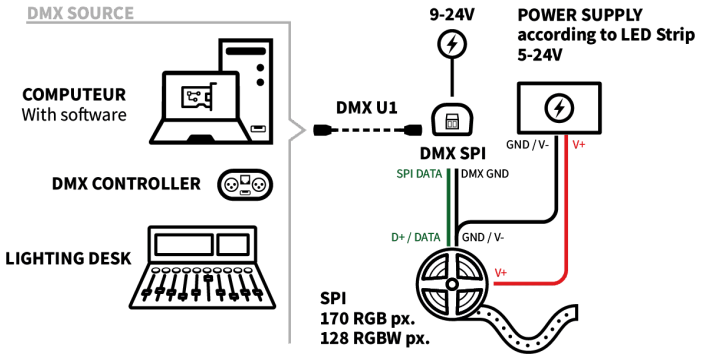
DMX 512 / RDM	USITT E1.11-2008. All DMX512 / RDM device
SPI	Data + Clock | 3,072 channels + CLUB SPI
USB	USB-C, device setting and upgrade
RS232	Via RS232 port (PC + SA) + CLUB SPI
UDP (SA)	Triggers & commands via Ethernet devices
UDP (PC)	Via Prod DMX 2 or Pixxem software + CLUB SPI
SMPTE	Need FULL upgrade, via software (PC) + CLUB SPI
MIDI / MTC	Devices (PC), Time Clock (need FULL upgrade)
Art-Net / sACN	In/Out, up to 64 U. (Pro DMX 2) or 512 U. (Pixxem)
RDM Art-Net / sACN	Via software and Upgrades + CLUB SPI
Calendar / Clock / Time	Via software (FULL Upgrade) or via device RTC
SPI	Data + Clock | 3,072 channels + CLUB SPI
DALI	Via CLUB DALI
Wi-Light APP	Via software (PC) + CLUB SPI
Audio BEAT & BPM	Via software (PC) + CLUB SPI
Keyboard	Via software (PC) + CLUB SPI
Hyperlinks	Via software (PC) + CLUB SPI

Driver Mode

* LED DRIVER (DMX to SPI)

1. Open the DeviceTool (included in the software directory)
2. Connect the DMX SPI and open it from the DeviceTool
3. In the MODE tab, select DMX-SPI mode and apply
4. Close, red LED flash fast: DMX to SPI converter mode is active
   Note: no PC needed during operation
5. Power the unit via USB-C (5V) or terminal block (9-24V DC)

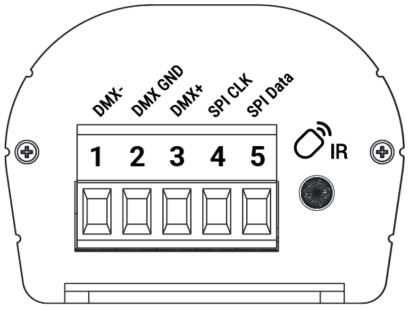
IMPORTANT NOTE: For a stable communication and a proper Data transmission, it is necessary to connect the GND or V- pin of the LED strip's external power supply with the DMX GND of the SPI interface.



LED Driver wiring

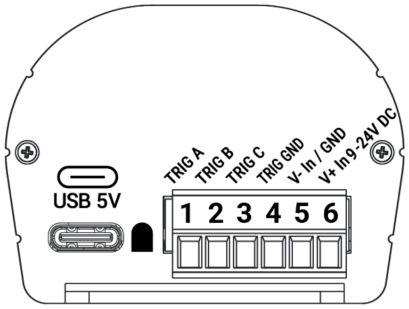
Connections

FRONT PANEL (SPI & DMX)



Terminal Block -- 5 pins	1. DMX- 2. GND 3. DMX+ 4. SPI Clock 5. SPI Data
IR receiver LED	Front-facing, 1 x IR LED -- Not used (for CLUB SPI)

REAR PANEL (USB & TRIGGERS)



USB-C	Data + 5 V DC input (0.3 A)
Status LED	Green / Red, Powered | Bootloader | USB communication | SPI Driver | Error
Terminal Block -- 6 pins	1. Trig A 2. Trig B 3. Trig C 4. GND 5. V- 6. V+ (9-24 V DC)
Trigger contacts	Trig A / B / C. Not used (for CLUB SPI)

STATUS LED STATES (G = Green | R = Red)

Green OFF + Red OFF	Interface not connected
Green ON + Red OFF	Powered, no scene is stored
Green ON -- 3x flash	Bootloader preparation
Green / Red alternating	Bootloader mode active
Green fast flash + Red OFF	Active USB communication
Green + Red fast flash	Blacklist active
Red fast flash	SPI Driver mode, DMX-to-SPI conversion active

TECHNICAL SUPPORT & RESOURCES
Download Software: chromateq.com/dmx-software-downloads/
Technical Support and commercial: chromateq.com/contact/
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