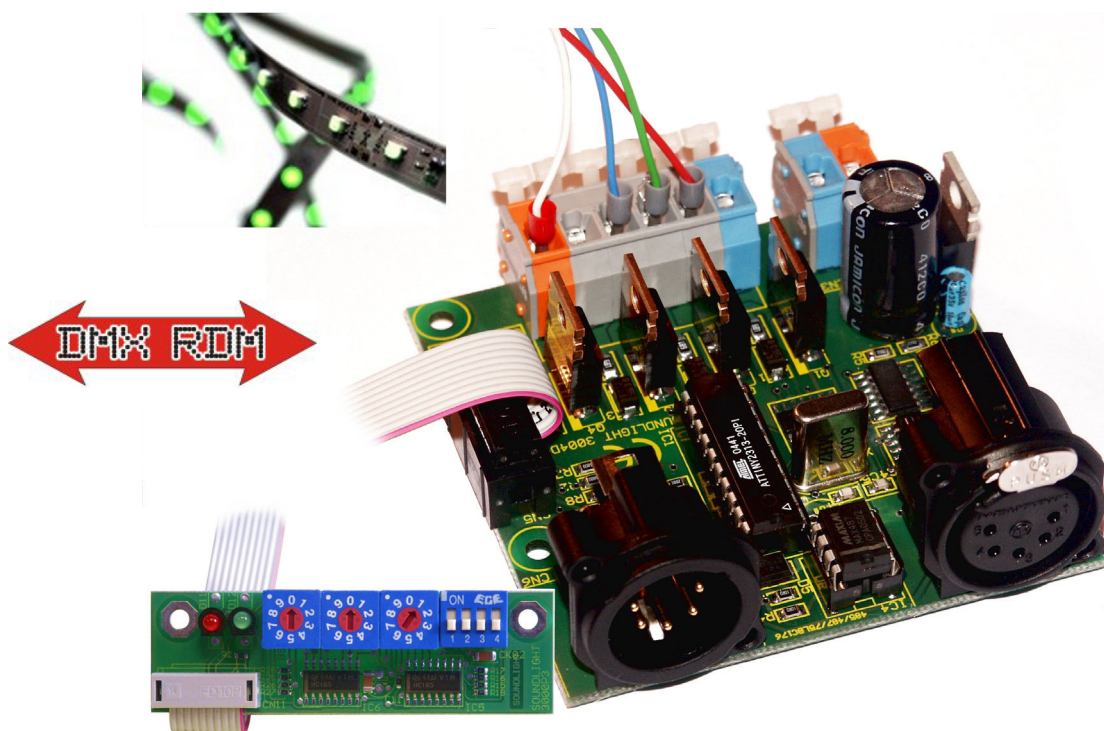


OPERATING MANUAL

DMX / PWM Decoder 3644PWM RDM Mk1



RoHS
compliant

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Thank you for choosing a SOUNDLIGHT device.

The SOUNDLIGHT DMX PWM Converter 3644PWM is an intelligent converter accepting drive signals according to USITT DMX-512/1990, DIN 56930-2, ANSI E1-11 DMX512A and ANSI E1-20 DMX RDM. The DMX signal is converted to a PWM output signal to drive low voltage incandescent lamps, proportional valves or voltage driven LED arrays. 4 individual outputs are driven by 4 DMX addresses. The interface can be used with all standard light control systems. Its special advantages include:

- **universal protocol decoding**
Recognizes all variants of the protocol as defined by USITT / ESTA / ANSI/DIN
- **future-proof**
The unit is software controlled and can easily be adapted to any change in protocol definition.
- **high linearity**
As the unit accepts and outputs data in digital format, excellent linearity characteristics result.
- **simple supply**
The power supply is 12...24V DC
- **signal loss**
In the case of a loss of the drive signal the last setting will remain intact.
- **cost-effective**
The SOUNDLIGHT 3644PWM-EP is a cost-effective solution for many purposes.

APPLICATIONS

The converter 3644PWM-EP is intended for all control applications to drive voltage controlled loads, e.g. low voltage incandescent lamps, proportional valves or constant-voltage driven LEDs using high-resolution PWM.

Each output can be loaded with 24V / 2 A / 50W@24VDC (maximum rated values).

The unit is well suited for all applications on stage, for TV background lighting, or for architectural lighting purposes. The dimming range is 0% to 100%.

The 3644PWM-EP is best suited to drive OSRAM LINEARLIGHT FLEX LED tapes..

UNPACKING

Please unpack carefully and check that all items are intact. When leaving our factory, the card has been in good condition. In case of damage during transport please notify the carrier immediately.

When unpacking, you should identify these items:

- * the interface card 3644PWM-EP
- * the start address board 3000P
- * this manual

CONNECTORS

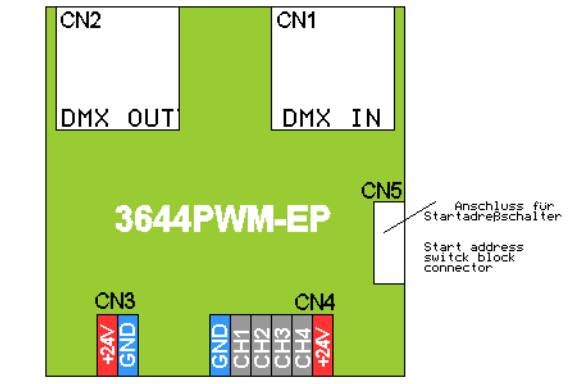
The decoder 3644PWM comprises of these connectors:

CN1 DMX Data Input XLR 5-pin

- 1 GND, Screen
- 2 DMX Drive Signal -
- 3 DMX Drive Signal +
- 4 to pin 4 DMX Output
- 5 to pin 5 DMX Output

CN2 DMX Data Output XLR 5-pin

- 1 GND, Screen
- 2 DMX Drive Signal -
- 3 DMX Drive Signal +
- 4 from pin 4 DMX Input
- 5 from pin 5 DMX Input



CN3 POWER SUPPLY 12-24VDC

- orange +12V DC...+24V DC
- blue 0 V DC (GND)

CN4 PWM OUTPUT

- 1 GND, 0V
- 2 OUTPUT1: LED CATHODE, switches to GND
- 3 OUTPUT 2
- 4 OUTPUT 3
- 5 OUTPUT 4
- 6 + 12...24V DC, COMMON ANODE

Refer to the drawing for the location of the connectors. To open clamp, press lever. Insert wire, then release lever.

SIGNAL INDICATORS

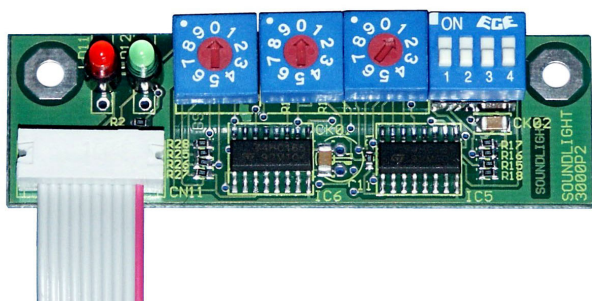
Status signalling is with LED indicators:

- green: DMX data reception OK
- red: ERROR
- normally off
- blinks at transmission errors or at loss of signal

Red and green LEDs blink alternatively four times ("programming cycle") when programming data into the 3644PWM-EP (e.g. start address, HOLD mode, change of DMX personality). No action will be taken when start address setting is locked from RDM. See next chapter how to re-enable address and DIP switches.

100 10 1

DMX START ADDRESS



To program a DMX start address, simply set the desired start address. Wait some seconds until the unit recognizes and programs the address setting. The programming cycle will be indicated by the the red and green LED flashing alternatively four times.

IMPORTANT NOTE:

When programming a DMX start address, changing the DMX personality, the HOLD mode or other properties **via RDM access**, the external address switches are getting *disabled*. To re-enable the DMX start address switches, temporarily set any address from 900 ... 999 (simply set the "hundreds" selector to "9"). This will re-enable the address switches and override RDM settings.

DIP-SWITCHES

The DMX personality (mode of operation) and the output behaviour is set using the four DIP-switches of the start address board 3000P (or functions F1...F4 using the start address board 3003P):

DIP-Switch 1

DMX HOLD

OFF= see DIP switch 2
ON = DMX HOLD at data loss

DIP-Switch 2

OUTPUT LEVEL AT NON-HOLD

OFF= all outputs set to OFF at data loss
ON = all outputs set to ON at data loss

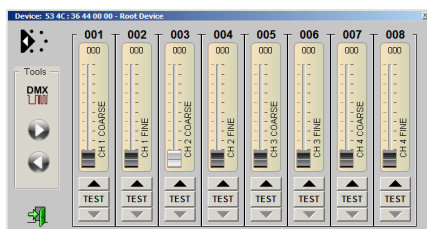
DIP-Switch 3/4

DMX PERSONALITY

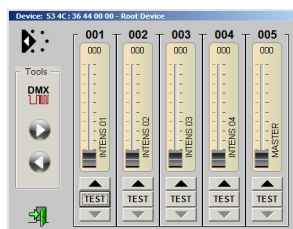
default: off/off = Personality 1

DIP3	DIP4	Personality
off	off	1: 16-Bit Mode HI/LO
off	on	2: 16-Bit Mode LO/HI
on	off	3: 8-Bit Mode
on	on	4: 8-Bit Mode w/ master fader

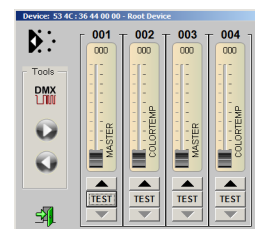
Additionally, personality 5 can be set using DMX RDM configuration. Personality 5 is a crossfade wramwhite/coldwhite crossfade mode to create a smooth color temperature crossfade. Input control is 8 Bit while output control is interpolated 16 bit resolution. Intensity uses a a quasi-logarithmic curve while color temperature crossfade follows a linear characteristic.



Fader in Personality 1



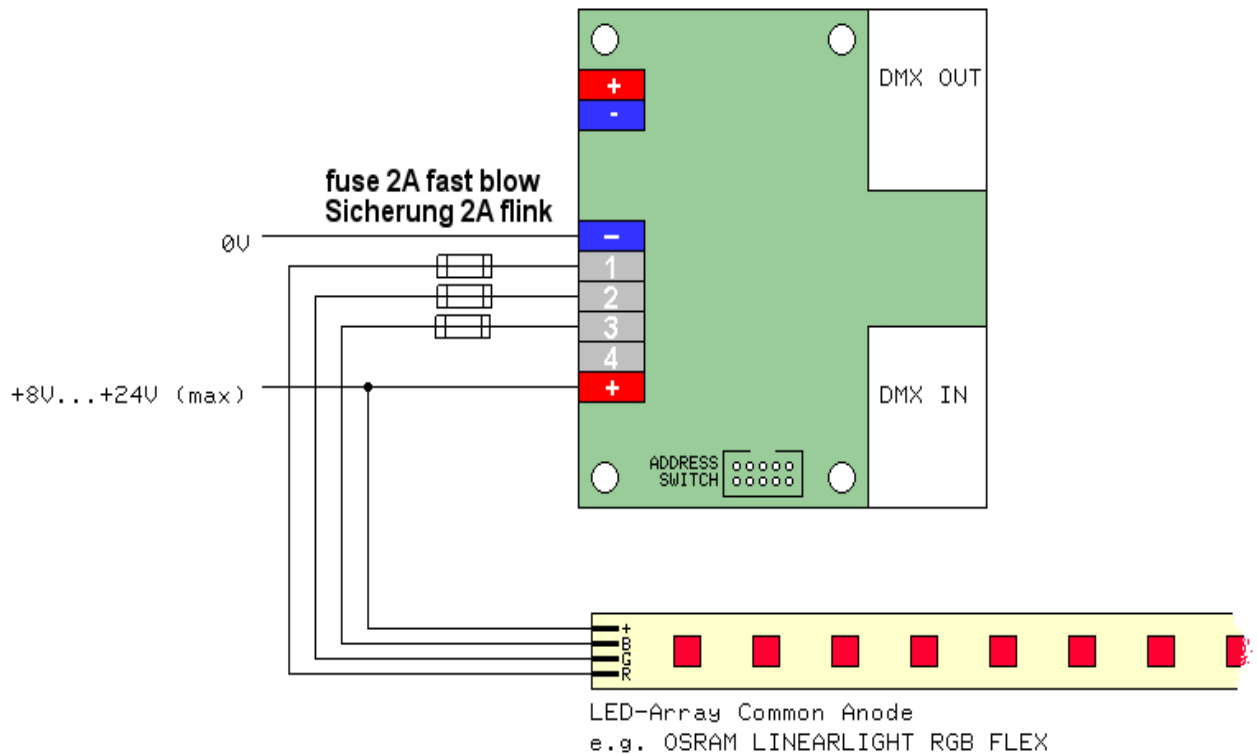
Fader in Personality 4



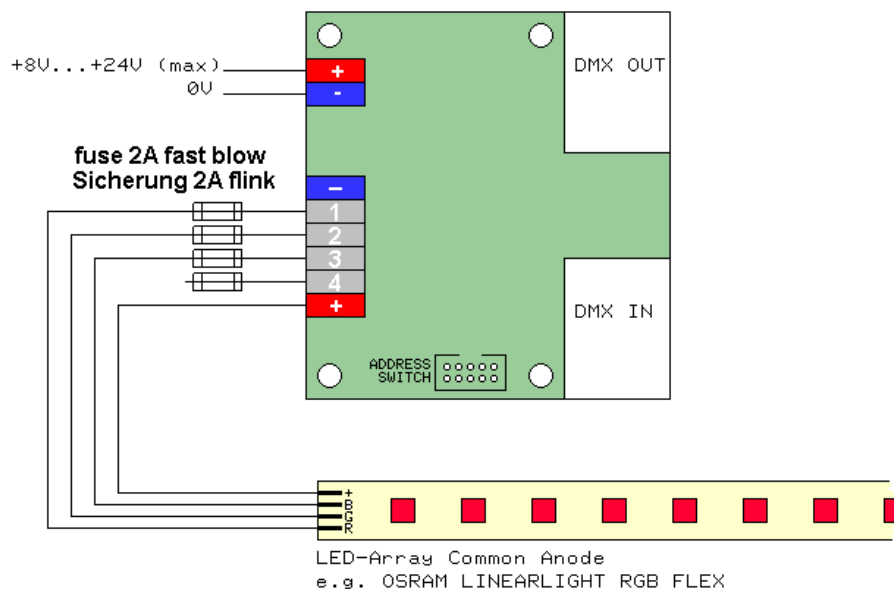
Fader in Personality 5

LED CONNECTION

the 3644PWM-EP can drive *voltage controlled* LEDs directly. Voltage controlled LEDs can be identified as LEDs, which can be driven from a voltage source, e.g. 12V DC, 24V DC). Examples for such LEDs are TRIDONIC LED-Strips, OSRAM LIENARLIGHT and LINEARLIGHT FLEX. LEDs requiring a *current control* (LUXEON, OSRAM DRAGON etc.) must be fitted with an additional external current limiting device (see examples below).



Common connection of LEDs (ANODE) is the *positive terminal* (red) of the output connector. When powering from the LED side, extra power supply of the 3604PWM-EP is not required. Alternatively, the 3644PWM-EP could be powered and LED power derived from the decoder. Then, of course, the total supply current must be provided from the decoder supply. (orange [+] and blue [-] terminals are internally connected in parallel).



To drive current controlled LEDs (e.g. LUXEON LumiLeds, OSRAM Dragon, TRIDONIC powerLED EOS) use a separate current limiter with the 3644PWM-EP.

Driving voltage controlled LEDs using LED supply. Outputs must be fused externally 2A fast blow.

DMX RDM

The decoder accepts DMX RDM (see ANSI E1-20:2006 V1.0). Using RDM, you may change the DMX start address, the DMX personality and several parameters.

Start address setting using DMX RDM::

Please note that the start address switches get locked as soon as settings have been changed using DMX RDM. This prevents the decoder from reading start address switch data again.

To unlock the switches, set the hundreds position to "9" temporarily. This will unlock the switches, and re-enable address and DIP-switch settings.

Additional RDM functions allow to:

- read the DMX slot labels
- read and modify the device label
- identify the decoder
- set output frequency and output behaviour
- read device hours and device initializations
- read, activate or deactivate the DMX HOLD mode
- monitor DC supply voltage
(automatic status messages are generated when leaving the allowed voltage range)

For more information regarding DMX RDM and its options pls refer to our DMX RDM website:

www.rdm.soundlight.de

TECHNICAL DATA

Dimensions:	70 mm x 70 mm
Power supply:	12VDC (min.) to 24VDC (max.)
DMX IN:	XLR 5-pin male, 1 Unit Load
DMX OUT:	XLR 5-pin female, fed-thru
DMX data slots:	4-8 depending on DMX personality selected
PWM Out:	12-24V pulsed signal 0%-100% (level dependent on power supply voltage)
PWM resolution:	16 Bit max
PWM characteristic:	linear / aushi-logarithmic/ user curve
max. output current:	2 A per output (ext. fuses 2A fast blow required for output protection)
Output frequency:	245 Hz (default) , 488Hz, 976 Hz, 1,9 kHz, 3,9 kHz, 15,6 kHz*
Order code.:	3644PWM-EP

*= output resolution 16Bit...10Bit depending on frequency setting

DISTURBANCES

If a trouble-free operation cannot be guaranteed, disconnect the decoder interface and secure it against unwanted operation. This is especially necessary, when

- the unit has visible damages;
- the unit does not operate;
- internal parts are loose;
- connection cables show visible damages.

CE MARKING



The unit has been tested in our lab and has been marked to comply with CE requirements. To ensure compliance, use grounded power leads only and make sure that properly shielded data lines (CAT5, DMX data cable or Digital Audio cable to AES/EBU specifications) are used. Any modifications not approved by the manufacturer may void CE compliance.

LIMITED WARRANTY

This instrument is warranted against defects in materials and workmanship for a period of 12 months, beginning with the date of purchase. The warranty is limited to repair or exchange of the hardware product; no further liability is assumed. SOUNDLIGHT is not responsible for damages or for loss of data, sales or profit which arise from usage or breakdown of the hardware product. In Germany, SOUNDLIGHT will repair or replace established defects in hardware, provided that the defective part is sent in, freight paid, through the responsible dealer along with warranty card and/or sales receipt prior to expiration of warranty.

Warranty is void:

- when modifying or trying to repair the unit without authorisation;
- modification of the circuitry;
- damages by interference of other persons;
- operation which is not in accordance with the manual;
- connection to wrong voltage or current;
- misuse.

SERVICE

There are no parts within the DMX decoder 3644PWM-EP which require the user's attention. Should your unit require servicing, please send it to the factory, freight paid.

END OF LIFETIME



When the useful lifetime of this product has been reached, it must be disposed of properly. Electronic devices must not be placed in domestic waste. Consult your local authorities to find the nearest collection point of used electric and electronic devices. SOUNDLIGHT is a WEEE registered company (Reg No. DE58883929).