# OPERATING MANUAL

## DMX Booster/Splitter 3405A-FGR
## DMX Booster/Splitter 3410A-FGR

**Jumper Setting Instructions**

**SOUNDLIGHT   Bennigser Strasse 1   D-30974 Wennigsen-Steinkrug   Tel. +49-(0)5045-91293-11**

**Thank you for choosing a SOUNDLIGHT device.**

The SOUNDLIGHT DMX Splitter/Booster 3405A / 3410A is a highly sophisticated device, which was designed to buffer and distribute DMX light control signals complying with USITT standard DMX-512 or DIN 56930/2, respectively. The unit 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/DIN and displays the number of DMX data slots received;

- **future-proof**
  The unit is software controlled an can be adapted to any change in protocol definition;

- **unlimited channel count**
  The number of DMX channels sent or received does not affect the operation of the DMX splitter/ booster 3405A/3410A, since the unit can handle all transmission lengths.

- **other protocols available**
  Besides DMX512, the unit can handle all RS-485 based transmission protocols, such as AVAB, MARTIN, HIGH END SYSTEMS et al. When using other protocols as DMX512, the channel display, however, will not work.

- **cost-effective**
  The SOUNDLIGHT 3405A / 3410A is a cosst-effective solution for many purposes.

## VERSIONS

The booster / splitter is available as pcb (printed circuit board) or as 19inch rack mount unit. There are several versions available:

| | | | |
|---|---|---|---|
| 3405A-FG | 1x DMX IN, 1x DMX THRU, 5x DMX OUT | XLR 5pin connectors |
| 3405A-FGR | 1x DMX IN, 1x DMX THRU, 5x DMX OUT | RJ45 (EtherCon) connectors |
| 3410A-FG | 1x DMX IN, 1x DMX THRU, 10x DMX OUT | XLR 5pin connectors |
| 3410A-FGR | 1x DMX IN, 1x DMX THRU, 10x DMX OUT | RJ45 (EtherCon) connectors |

## CONNECTORS   RJ-45

Booster/Splitter of -FGR series are equipped with RJ45 style connectors as input as output connectors. (This connector is not standardized in USITT DMX512/1990 or DIN56930-2 and is being used with different, manufacturer-specific pin assignments. As the commonly used CAT5 / CAT5E / CAT6 / CAT7 network cable features four data pairs, two pairs can be used to transmit one DMX universe. Change internal jumper settings to match the required pinout.

This is the factory pinout:

Pin 1   DMX - (inverted, complement)
Pin 2   DMX + (true)
Pin 3   Screen/GND/Common
Pin 4   nc
Pin 5   nc
Pin 6   nc
Pin 7   nc
Pin 8   nc

The iput signal is fed thru to the THRU socket galvanically, 1:1. All other outputs are galvanically isolated, and thus are potential-free:

**NOTES:**
The DMX signal is routed on pair 1 (pins 1,2). The splitter automatically detects the input signal polarity and adjusts the output polarity automatically. Thus output polarity always matches the input polarity, making the unit fully transparent.

The standard pinout reflects the common SOUNDLIGHT and e:cue pinout, that is: 1= DMX-, 2=DMX+, 3=GND. This comlies with RJ45 DMX decoders 3004T, 3014T, LW3004-xx and more.).
A new pin assignment proposal issued by ESTA is: 1=DMX+, 2=DMX-, 7,8=GND. Der 34xxA-FGR is compatible with this scheme as well.

# RELEASED VERSIONS

3405A-FGR and 3410A-FGR DMX splitter/booster have been manufactured for several years. There are some differences between versions, which have been introduced to improve performance and the possibility to adapt to new pinout schemes. Versions will be described in more detail in the following paragraphs.

# PINOUT CHANGES

To change the connector pinout, disconnect the unit from mains and open the top cover (remove four self-tapping screws). Locate the version number imprint on the pcb, the jumper fields and re-arrange the jumpers as needed. Close the cover, replace the screws (turn gently) and power up the unit.

# VERSION MK4
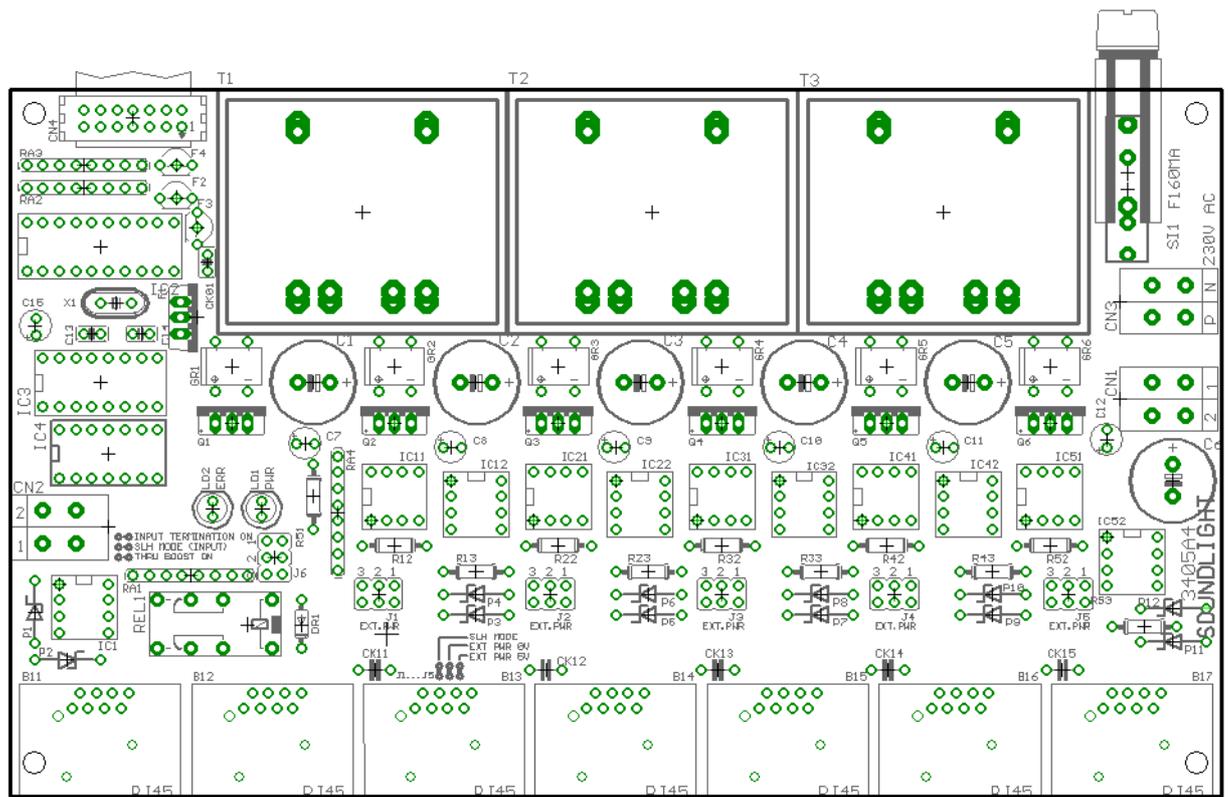
Version MK4 was the first issue of the 34xxA-FGR series. Additional GND pin assignment can be jumpered, as well as feeding 5V power supply to the output connectors. DMX data input (pins 1, 2 -DMX-, DMX+) <u>cannot be changed</u>.

This is the standard pinout:

Pin 1   DMX - (inverted, complement signal)
Pin 2   DMX + (true signal)
Pin 3   Common, GND, detachable
Pin 4   nc, Common, GND attachable
Pin 5   nc, +5V attachable
Pin 6   nc
Pin 7   Common, GND
Pin 8   Common, GND

## INPUT PIN ASSIGNMENT

When needed, pin 3 can be disconnected from GND. Then data pair 2 (pins 3,6) can be used for external data transfer. Mostly, this will not be necassary since no second DMX universe will be transmitted on the same data cable. To disconnect pin 3 from GND, remove jumper J6_2 labelled "SLH MODE".
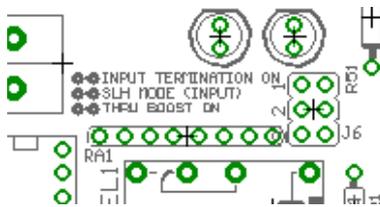


**JUMPER J6**
1:  Input Termination
    Set this jumper to activate internal line termination 120 Ohms
2:  SLH MODE
    Set this jumper to connect input pin 3 to GND
3:  THRU BOOST ON
    Set this jumper to activate DMX signal amplification for the THRU output

Pins 4,5,6 are directly routed from the INPUT to the THRU connector. There are no means to change this pin assignment.
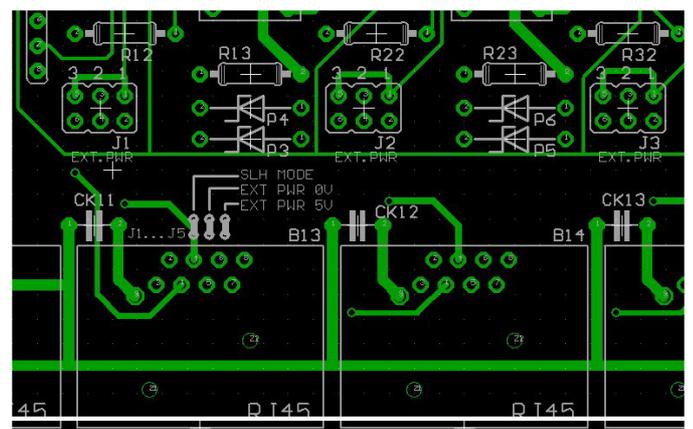


## OUTPUT PIN ASSIGNMENT

Similar to the input pin assignment pin 3 of the output connector can be connected or disconnected from GND. (Note: Output GND contacts are isolated to Input GND). Use the output jumper field, which offers these selections:

**JUMPER J1...J5 "XT PWR"**
1:  EXT PWR 5V
    Set this jumper to connect +5V to pin 5
2:  EXT PWR GND
    Set this jumper to connect 0V to pin 4
3:  SLH MODE
    Set this jumper to conect pin 3 to GND

Pins 4 and 5 are normally not connected since many installations run ISDN signals on this pair. ISDN uses high voltages which may damage DMX I/Os. Option is to feed TTL supply voltages on this pair to drive optical transceivers.

# VERSION MK5

Version MK5 is the second release of the 34xxA-FGR splitters. Input and output socket pin assignment can individually be routed pin by pin. Default setting is SOUNDLIGHT pinout as defined earlier:
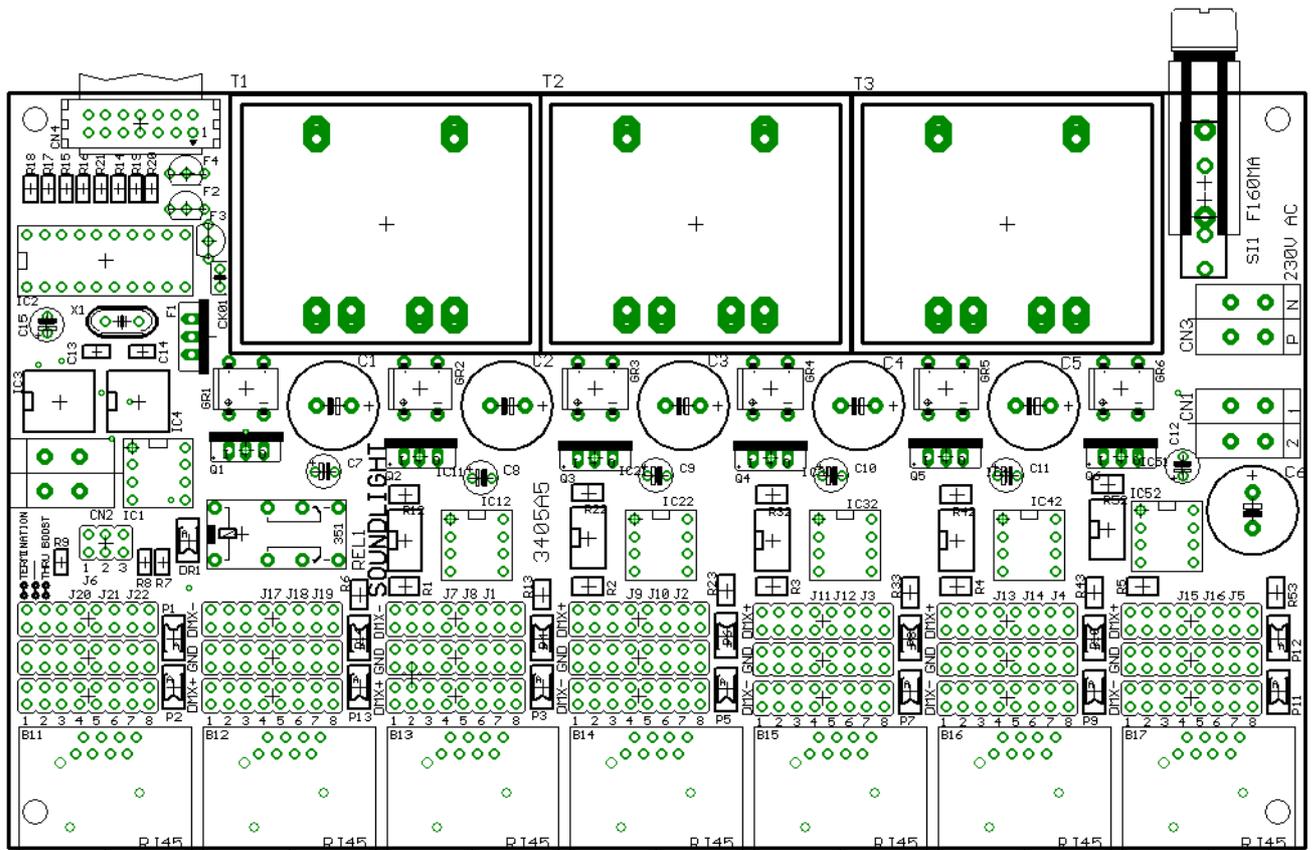


Standard pinout is:

Pin 1   DMX - (complement)
Pin 2   DMX + (true)
Pin 3   Common, GND
Pin 4   nc
Pin 5   nc
Pin 6   nc
Pin 7   nc
Pin 8   nc   (nc = not connected)

## INPUT CONFIGURATION

The input configuration is still defined with Jumper J6.



**JUMPER J6**
1:   Input Termination
     Set this jumper to terminate the input with 120 Ohms
2:   nc
3:   THRU BOOST ON
     Set this jumper to activate DMX signal amplification on the DMX THRU port.
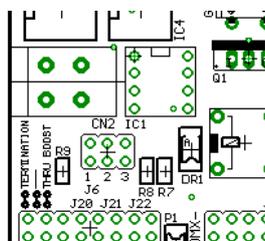
The input connector pin assignment uses four jumper rows, 8 pin pairs each. These are assigned to pins 1...8 of the RJ45 connector. The jumper rows are connected with signals DMX+, DMX- and GND, which can be assigned to the respective contacts then.
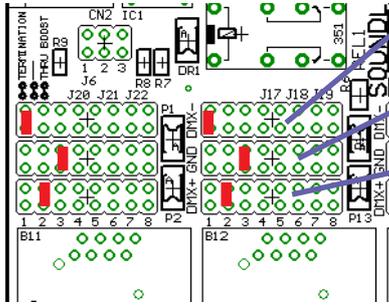


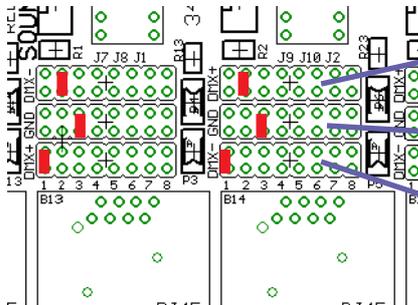The upper jumper row connects to **DMX-**

The middle jumper row connects to GND

The lower jumper row connects to **DMX+**

It is possible to connect multiple contact pins to one signal. When patching signals, make sure each column carries only one jumper. Placing multiple jumpers in one column will short-circuit signals.

## OUTPUT CONFIGURATION

The output pin configuration uses a similar layout using jumper fields. Note that jumper assignments differ!



The upper jumper row connects to **DMX+**

The middle jumper row connects to GND

The lower jumper row connects to **DMX-**

It is possible to connect multiple contact pins to one signal. When patching signals, make sure each column carries only one jumper. Placing multiple jumpers in one column will short-circuit signals. Compared to onboard printing, these manual instructions prevail.

# VERSION MK6
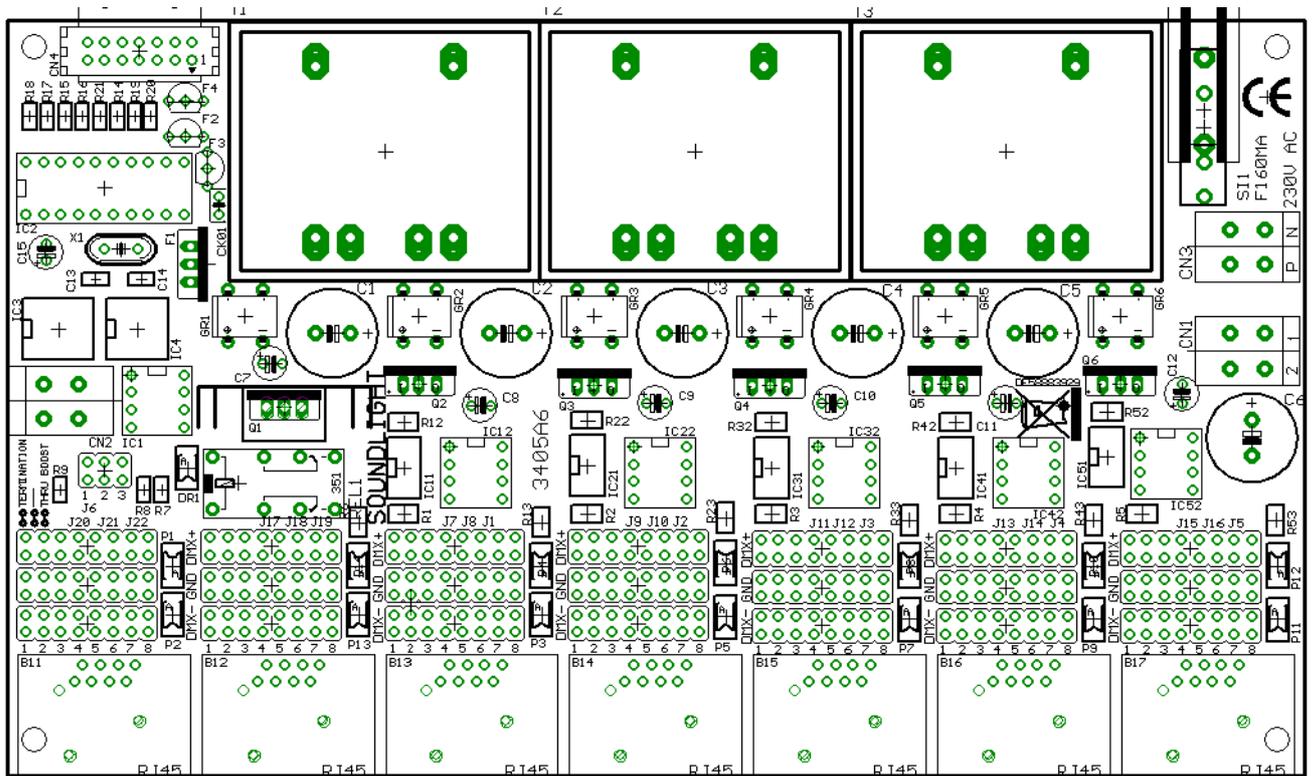
Version MK6 is the latest release of the 34xxA-FGR DMX splitter series. Connector pinout is individually adaptable as was with Mk5 already. Jumper panel layout has been modified slightly to ensure the same layout for signal input and output sockets.

Standard pinout is:

Pin 1   DMX - (complement)
Pin 2   DMX + (true)
Pin 3   Common, GND
Pin 4   nc
Pin 5   nc
Pin 6   nc
Pin 7   nc
Pin 8   nc   (nc = not connected)

## INPUT  CONFIGURATION

The input configuration is still defined with Jumper J6.
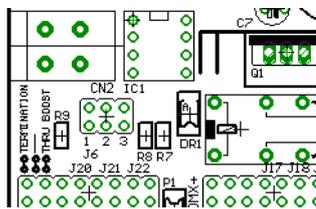
**JUMPER J6**
1:   Input Termination
Set this jumper to terminate the input with 120 Ohms
2:   nc
3:   THRU BOOST ON
Set this jumper to activate DMX signal amplification on the DMX THRU port.

## INPUT  AND  OUTPUT  CONFIGURATION

The input pin configuration and the output pin configuration uses the same  layout using jumper fields. The jumper fields are connected with signals DMX+, DMX- and GND, which can be assigned to the respective contacts then.
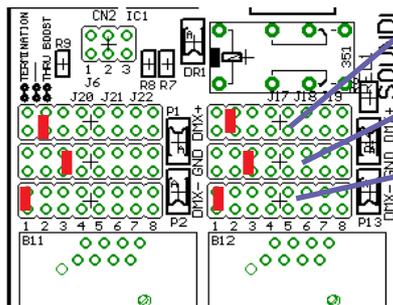
The upper jumper row connects to **DMX+**

The middle jumper row connects to GND

The lower jumper row connects to **DMX-**

It is possible to connect multiple contact pins to one signal. When patching signals, make sure each column carries only one jumper. Placing multiple jumpers in one column will short-circuit signals.

## SIGNAL INDICATORS

The state of the booster/splitter card is signalled by a 3-digit LED display.

Err                ERROR: no reception, or non-standard signal (e.g. other RS-485 protocol)
CHANNELS    reception o.k., number of channels received is being displayed

## TECHNICAL DATA

Dimensions    19 inch  (481mm) W x 165 mm D x 1U (44mm) H
Supply:       230V AC 50&60 Hz approx. 9...14W
DMX IN:       1 Unit Load
DMX OUT:      >10 unit load, buffered, optically isolated, SRL driver
Order No.:    34xxA-FG    xx = 05 / 10

## INTERNET-HOTLINE

Please check our internet domain http://www.soundlight.de for new versions, updates etc. If you have any comments which may be worth considering, please send a message to info@soundlight.de.

## DISTURBANCES

If a trouble-free operation cannot be guaranteed, disconnect the booster/splitter 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.

## LIMITED WARRANTY

This instrument ist warranted against defects in metarials and workmanship for a period of 12 month, 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 arccordance with the manual;
- connection to wrong voltage or current;
- misuse.

## END-OF-LIFETIME

If the end of lifetime of this product has been reached, ist must be disposed of properly. Electronic devices are NOT domestic waste. SOUNDLIGHT is registered in the electronic materials collection and recycling system (WEEE DE 58883929).

## SERVICE

There are no parts within the booster/splitter 34xxA which require the user's attention. Should your unit require servicing, please send it to the factory, freight paid.