

V1.0

# KU BDA 230250 – 25 A - SMA



## Manual

Directors: Ian Duke/Gustav Wenhold  
Reg no: HRB 3350 Hof, VAT-ID-No: DE 813343044, WEEEReg.-Nr. DE34186665

Kuhne electronic GmbH  
Scheibenacker 3, 95180 Berg  
Germany

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**ALARIS**  
THE RF TECHNOLOGY GROUP



## Specification

Specifications (Ta = 25 °C, DC Voltage = 28 V):

**Type** KU BDA 230250 – 25 A – SMA

Frequency range 2300 ... 2500 MHz  
 Supply voltage +27 ... 30 V DC  
 Quiescent current RX/TX typ. 50 mA / typ. 390 mA  
 TX/RX switching time typ. 600 ns, max. 1 us

### TX specifications

P1dB typ. 44 dBm, min. 43 dBm (CW)  
 Input power for P1dB typ. 20 dBm  
 P3dB min. 44 dBm (CW)  
 COFDM min. 37 dBm  
 (Single carrier, 64 QAM, 8MSPS; EVM=2%)  
 Small Signal Gain typ. 25 dB  
 Gain Flatness typ. +/-1.5 dB  
 Current consumption @ P1dB typ. 2.4 A  
 Input return loss (TX) typ. 15 dB

### RX specifications

Noise Figure @ 18°C typ. 1.7 dB, max. 2 dB  
 Small Signal Gain typ. 18 dB, min. 17 dB  
 Gain Flatness typ. +/-1 dB  
 OIP3 (Two tone test, Δf=1MHz) typ. 20 dBm  
 Input return loss (RX) typ. 15 dB

### Limits

Case temperature range -20 ... +55 °C  
 Input Power TX max. 25 dBm

### Mechanics

Radio connector / impedance SMA-female, 50 ohms  
 Antenna connector / impedance SMA-female, 50 ohms  
 Case milled aluminium  
 Dimensions (mm) 81.8 x 63.6 x 22  
 Weight typ. 250 g

The bidirectional amplifier KU BDA 230250 – 25 A – SMA is designed for operation with a wide variety of analogue and digital modulation types and signal forms in the 2.4 GHz ISM band. The transmitter makes use of LDMOS technology and has a P1dB point of at least 20 W. Switching between transmit and receive paths is automatic, depending on the power level at the input. The low-noise preamplifier integrated in the receiver improves the sensitivity of the receiver used due to its low noise figure and additional amplification.

### Features:

- LDMOS technology
- RX/TX switching depending on input power level
- Circulator for protection against high VSWR
- Status LED for RX/TX indication
- Remote power supply via „Radio“ Terminal
- Additional pin for direct connection of supply voltage

### Applications:

- Digital broadcast systems (DVB-T, DVB-S)
- COFDM systems using modulation types QPSK, QAM
- WLAN applications according to IEEE 802.11b/g
- Analog & digital transmission systems

### Recommended Accessoires:

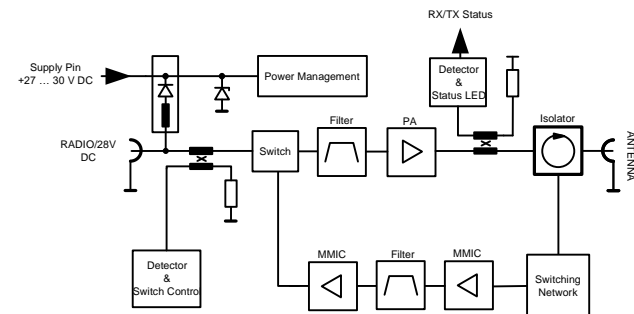
- Heat sink: SK 120 – 75 (max. 10 W COFDM, 50 % RX / 50 % TX)
- BiasTee: KU BT 6000 N

### CE Conformity:

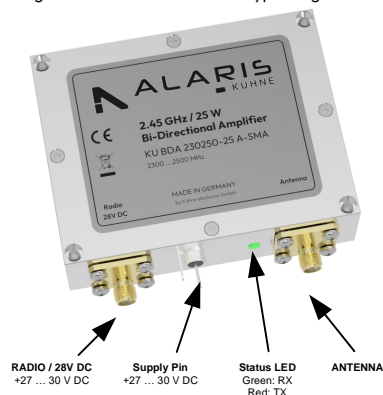
- EMC directive 2014/30/EU
- Low voltage directive 2014/35/EU
- RoHS directive 2011/65/EU



### Block diagram:



Use an external 3A fuse in your supply line



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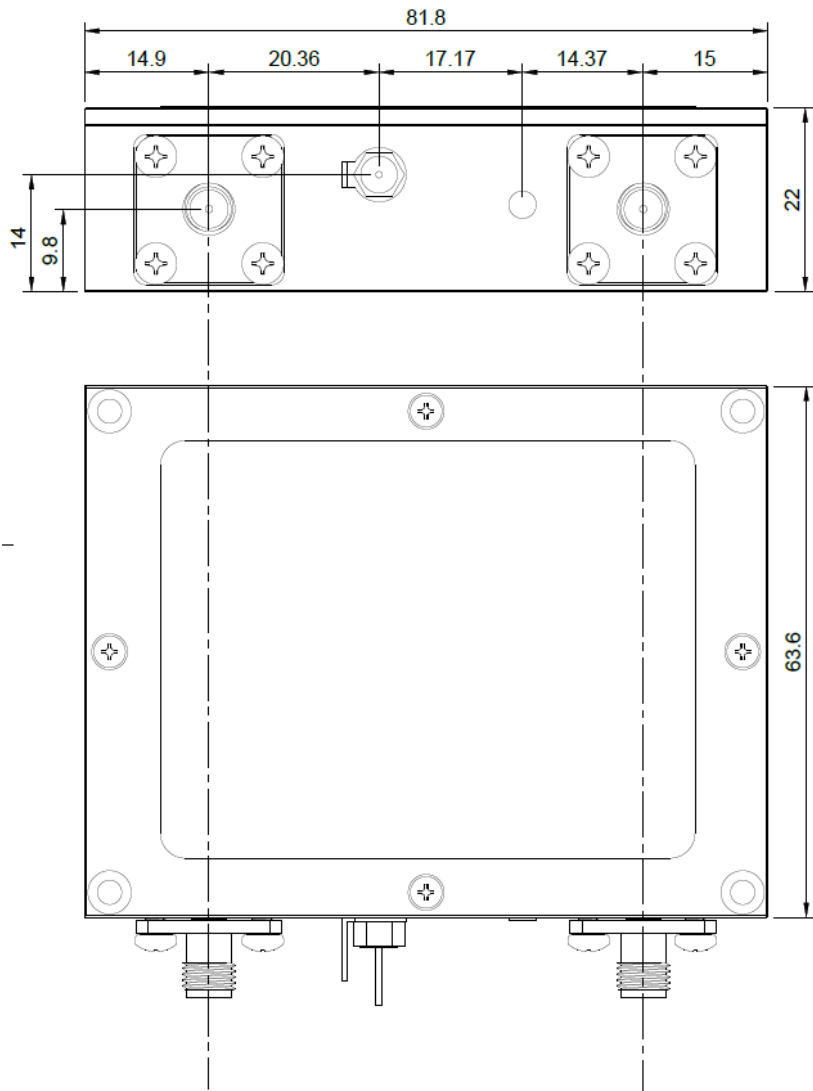


**ALARIS**  
KUHNE

INSPIRING THE NEXT RF SOLUTION

+49 (0) 9293 - 800 640  
sales@kuhne.alaris.tech  
www.kuhne.alaris.tech  
Kuhne electronic GmbH  
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Germany

## Dimensions / Mounting holes



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## Important Note on the Warranty

The amplifier does not contain an active protection circuit. It has to be installed and run by qualified technical personnel or radio amateurs.

Within the warranty period of three years, in case of a notification of defects, repairing is free of charge. This is NOT valid for the replacement of semiconductor devices like MOSFETs or GaAs FETs. Otherwise, repairing must be paid.

The amplifier must only be run within the specifications.

- The maximum input power must not be exceeded
- The amplifier must only be run within the specified frequency range
- While the amplifier is being run, the load VSWR has to be better than 1.8:1 (better than 10 dB) in case of no built-in isolator
- Depending on the application, the use of a sequence controller is recommended

Too high input power, even for a short time period, can lead to destruction or damage of transistors. Especially MOSFETs are very sensitive to overdrive! MOSFET amplifiers must never be driven into saturation!

All power amplifiers require good cooling. The case temperature must not exceed 75 °C. The amplifier must not be run with opened case!

Already the opening or destroying of the warranty seal has the exclusion of the warranty as result.

## Notes