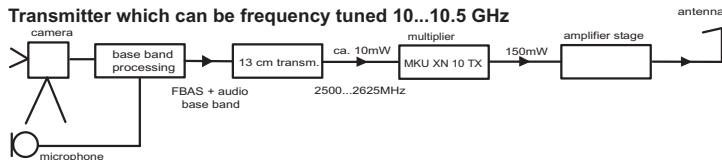


Transmitter Modules for Amateur Television (ATV)

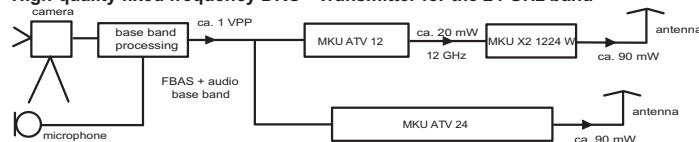
Type	Frequency Range RF	Tuning Range	Output Power	Remarks
MKU ATV 10 B	10000 ... 10500 MHz	+/- 50 MHz	200 mW	Please specify desired frequency in your order!
MKU ATV 10 H	10000 ... 10500 MHz	+/- 50 MHz	1 W	Please specify desired frequency in your order !
MKU ATV 12	12000 ... 12125 MHz	125 MHz	20 mW	Please specify desired frequency in your order!
MKU ATV 24	24000 ... 24250 MHz	250 MHz	100 mW	
MKU ATV 24-2	24000 ... 24250 MHz	250 MHz	300 mW	

ATV - TRANSMITTER

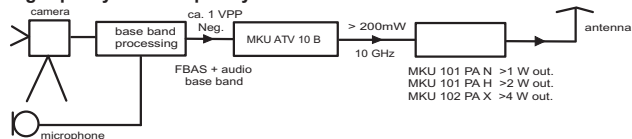
Transmitter which can be frequency tuned 10...10.5 GHz



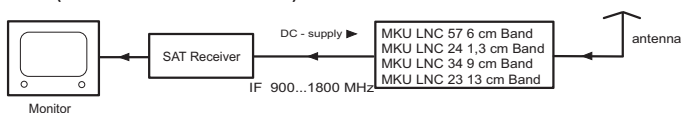
High-quality fixed frequency DRO - Transmitter for the 24 GHz band



High-quality fixed frequency DRO - Transmitter for the 10 GHz band



LNC (LOW NOISE CONVERTER) for the 6 and 1.3 cm Band



ATV Transmitter Modules for 10 GHz

MKU ATV 10 B - MKU ATV 10 H

The ATV transmitter module can be used to build a high quality ATV station for 10 GHz. In addition, a baseband processor unit (for video and audio signal) and a suitable antenna are needed. The output power can be increased with an additional power amplifier.

- Small size
- Milled aluminium case
- Direct base-band video input
- The module is adjusted to the desired center frequency optimised for best linearity.
- The frequency can be changed by tuning the gold plated precision screw - tuning range +/- 50 MHz
- Internal DRO (dielectric resonator oscillator)



Specifications

Type	MKU ATV 10 B	MKU ATV 10 H
Frequency range	10...10,5 GHz please specify your desired frequency	10...10,5 GHz please specify your desired frequency
Tuning range	+/- 50 MHz	+/- 50 MHz
Input	Base band max. 1 Vss	Base band max. 1 Vss
Output power	min. 200 mW	typ. 1 W
Supply voltage	12...14 V DC	12...14 V DC
Current consumption	typ. 200 mA	typ. 600 mA
Dimensions (mm)	76 x 30 x 20	100 x 30 x 20
Weight	typ. 60 g	typ. 100 g
Input connector	SMC-female(invert.neg) / 50 ohms	SMC-female(invert.neg) / 50 ohms
Output connector	SMA-female / 50 ohms	SMA-female / 50 ohms
Case	milled aluminium	milled aluminium
SMC-connector for 3.2 mm cable available		

Versions for other frequencies available on request.

ATV Transmitter Modules for 24 GHz

MKU ATV 24 100 mW - MKU ATV 24-2 300 mW

Using these modules together with a baseband processor unit and a suitable antenna, a high-quality 24 GHz ATV-Transmitter can be constructed. You only need the baseband signal and +12 V supply.

- Small size
- Milled aluminium case
- Direct base-band input
- Can be adjusted over the complete 24 GHz amateur radio band
- Will be adjusted according to frequency specification and optimized for high linearity
- Built-in directional coupler with detector for monitoring the output power - MON -



Specifications

	MKU ATV 24	MKU ATV 24-2
Type	24,1 GHz	24,1 GHz
Output frequency	24 - 24.25 GHz	24 - 24.25 GHz
Frequency range	typ. 100 mW	typ. 300 mW,
Output power	+12...14 V DC	+12...14 V DC
Supply voltage	typ. 230 mA	typ. 300 mA
Current consumption	124 x 45 x 30 incl. heat sink	
Dimensions (mm)	typ. 220 g	
Weight	gefrästes Aluminium	
Case	Basisband <1 Vss SMC- Buchse (invert. neg.)	
Input	R220 / WR 42 / WG 20	
Waveguide	(SMA-out available on request)	

Versions for other frequencies on request.

24 GHz ATV

MKU ATV 12

ATV oscillator module for 12 GHz

- Small size
- Milled aluminium case, professional construction
- Direct base-band video input
- Frequency adjustment with tuning screw
- For applications on 24 GHz ATV, the frequency doubler MKU X2 1224 can be used

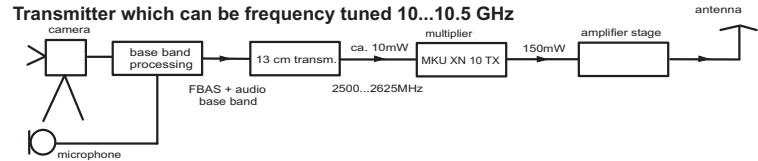


Specifications

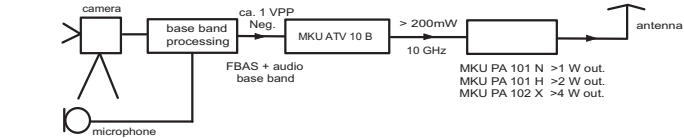
Type	MKU ATV 12
Frequency range	12 - 12.125 GHz
<i>Frequency specification is required - adjustment to the desired amateur radio frequency</i>	
Input	CVBS - baseband <1 Vpp
Output	min. 20 mW
Output connector	SMA-female / 50 ohms
Input connector	SMC-male / 50 ohms
Baseband	max. 20 MHz
Supply voltage	+12...14 V DC
Current consumption	typ. 80 mA
Dimensions mm	50 x 30 x 20
Weight	typ. 40 g
Case	milled aluminium case
Option 01	without CVBS input

ATV - TRANSMITTER

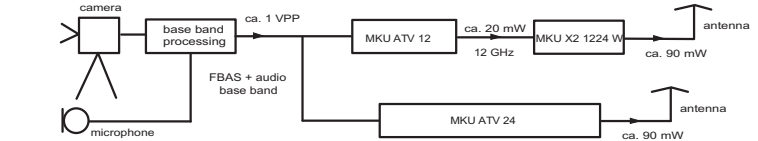
Transmitter which can be frequency tuned 10...10.5 GHz



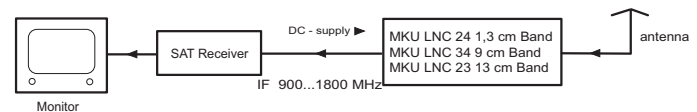
High-quality fixed frequency DRO - Transmitter for the 10 GHz band



High-quality fixed frequency DRO - Transmitter for the 24 GHz band



LNC (LOW NOISE CONVERTER) for the 6 and 1.3 cm Band



Versions for other frequencies on request.

Frequency multipliers

MKU XN 34 TX - MKU XN 57 TX - MKU XN 10 TX

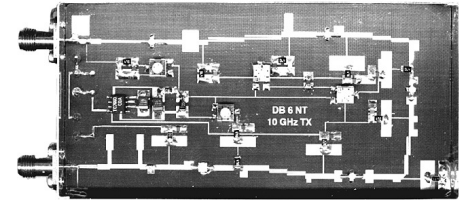
- The modules can be used over complete amateur bands without additional fine tuning
- Modern circuit design with high spurious suppression

MKU XN 34 TX

- Wide band frequency multiplier x 3 for generation of 3.4 GHz ATV signal

MKU XN 57 TX - MKU XN 10 TX

- Wide band frequency multiplier x 4 for generation of 5.7 or 10 GHz ATV signal



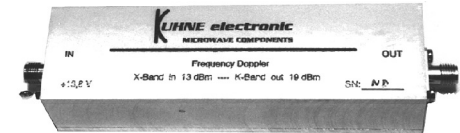
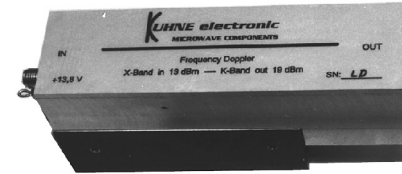
Specifications

	MKU XN 34 TX	MKU XN 57 TX	MKU XN 10 TX
Type	MKU XN 34 TX	MKU XN 57 TX	MKU XN 10 TX
Output frequency	3.4...3.475 GHz	5.65...5.85 GHz	10...10.5 GHz
Input frequency	1.13...1.16 GHz	1.412...1.462 GHz	2.5 - 2.625 GHz
Input power	typ. 20 mW	3...10 mW	3...10 mW
Dimensions (mm)	30 x 37 x 111	30 x 56 x 111	30 x 56 x 111
Weight	typ. 100 g	typ. 120 g	typ. 140 g
Output	typ. 200 mW	typ. 200 mW	typ. 200 mW
Supply voltage	+12...15 V DC		
Current consumption	typ. 250 mA		
Case	German silver case		
Coaxial connectors	SMA-female / 50 ohms		

Frequency Doublers

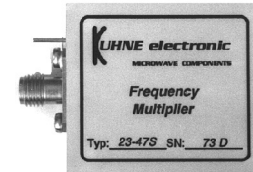
Specifications

	MKU X2 1224	MKU X2 1224 W
Type	12 GHz Band; 20...40 mW	23.544 / 24.192 / 24.048
Input frequency	23.544 / 24.192 / 24.048	23.544 / 24.192 / 24.048
Output frequency (GHz)	typ. 80...100 mW	typ. 80...100 mW
Output	typ. 300 MHz	typ. 300 MHz
Bandwidth	+11...14 V DC	+11...14 V DC
Supply voltage	typ. 0,4 A	typ. 0,4 A
Current consumption	30 x 116 x 24	30 x 116 x 24
Dimensions (mm)	typ. 130 g	250 g
Weight	milled aluminium	milled aluminium incl. heatsink
Case	SMA-female / 50 ohms	SMA-female / 50 ohms
In- and Output connector	Option W with waveguide output R220/WR42 for ATV or Beacon transmitter	
Option W with waveguide output R220/WR42 for ATV or Beacon transmitter	Please specify frequency!	

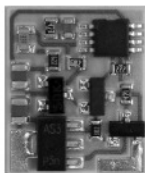


Specifications

	MKU X2 23-47 S
Type	23.544 GHz
Input frequency	100 mW
Input power	47.088 GHz
Output frequency	typ. 15 mW
Output power	33 x 30 x 17
Dimensions (mm)	typ. 40 g
Weight	milled aluminium
Case	SMA-male or female / 50 ohms
Input connector	Waveguide R500 / WG24 / WR19
Output	



Precision Crystal Heater



This precision crystal heater provides temperature compensation for crystals, usually found within crystal oscillators. The circuit, which is built on Al₂O₃ ceramic substrate, has to be mounted on the 40°C thermostat crystal using heat shrink tubing. The circuit heats the crystal to a temperature of 40.8 °C with an accuracy of better than 0.1 °C. This provides high frequency stability over the temperature range of -5 to +40 °C. This crystal heater is a good alternative to completely heated OCXOs, however, the values of an OCXO cannot be achieved.

Specifications

Type	QH 40 A
Adjustment tolerance	40.8° C +/- 2.5°
Regulation accuracy	better 0.1° C
Supply voltage	8...12 V
	used stabilize voltage
Inrush current	typ. 80 mA
Dimensions (mm)	10.5 x 14.0 x 3.5



Bias Tee

KU BT 271 N

Bias Tee for remote power supply of preamplifiers and converters via the coaxial cable. The Bias Tee contains a replaceable 1 Ampere fuse and it is protected against over voltage and reverse polarity.

Specifications

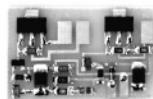
Type	KU BT 271 N
Frequency range	10 ... 3000 MHz
Insertion loss	typ. 0.1 dB @ 150 MHz typ. 0.5 dB @ 1300 MHz typ. 1.0 dB @ 3000 MHz
Voltage range	+ 0...15 V DC
Current	max. 1 A
DC connector	DC socket 2.1 mm
Input connector	N-female / 50 ohms
Output connector	N-female / 50 ohms
Case	German Silver
Dimensions (mm)	37 x 37 x 30
Weight	typ. 90 g

Sequence Controller

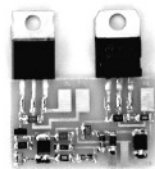
Many coaxial relays have a too low isolation between the ports while they are being switched. If the power amplifier (in a transmit receive system) is switched too early, this may lead to damage or destruction of the input transistor in the preamplifier or converter. With a sequence controller, this trouble can be avoided. The sequence controller provides a control signal for the coaxial relay and it switches the voltage supply for the power amplifier. There is a time delay between the two signals to guarantee safe switching.

Specifications

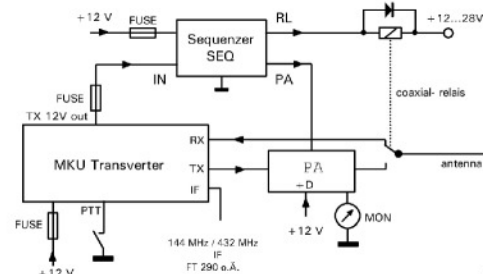
Type	Load current (max.)
SEQ 1	1 A
SEQ 2	4 A
SEQ 3	18 A



SEQ 1



SEQ 2/3



Bias Tees

KU BT 3000 N

Bias Tee for remote power supply of preamplifiers and converters via the coaxial cable.



Specifications

Type	KU BT 3000 N
Frequency range	10 ... 3000 MHz
Insertion loss	typ. 0.2 dB @ 150 MHz typ. 0.5 dB @ 1300 MHz typ. 0.9 dB @ 3000 MHz
Voltage range	0 ... +30 V DC
Current	max. 1 A
DC connector	BNC-female
Input connector (DC output)	N-female, 50 ohms
Output connector	N-male, 50 ohms
Case	milled aluminium
Dimensions (mm)	50 x 30 x 22
Weight	100 g

KU BT 3000 DIP

Bias Tee for remote power supply of preamplifiers and converters via the coaxial cable.

This module includes bias tee and a diplexer for the 10 MHz reference frequency in one case. It can be used to put the supply voltage and an external 10 MHz reference frequency on the IF cable.

Features

- Low insertion loss
- Large bandwidth

Applications

- Remote power supply of tower mounted low noise converters
- 10 MHz Reference frequency supply via IF cable



Specifications

Type	KU BT 3000 DIP
Frequency range	100 ... 3000 MHz
Insertion loss (Port 1 Port 2)	typ. 0.5 dB, max 1.0 dB @ 100 MHz typ. 0.8 dB, max 1.3 dB @ 2000 MHz typ. 1.5 dB, max 2.0 dB @ 3000 MHz
RF Input Power (Port 1 Port 2)	max. 1 W (+30 dBm)
Input Frequency Port 3	10 MHz
Voltage at DC Port	0 ... 30 V DC
Input current	max. 500 mA
	Protected with a 500 mA self resetting semiconductor fuse
Connector Port 1 / Impedance	N-female, 50 Ohms
Connector Port 2 / Impedance	N-female, 50 ohms
Connector Port 3 / Impedance	BNC-female, 50 Ohms
Case	Milled aluminium case
Dimensions (mm)	50 x 30 x 22
Weight	100 g

Low Pass Filter with Directional Coupler and Detector

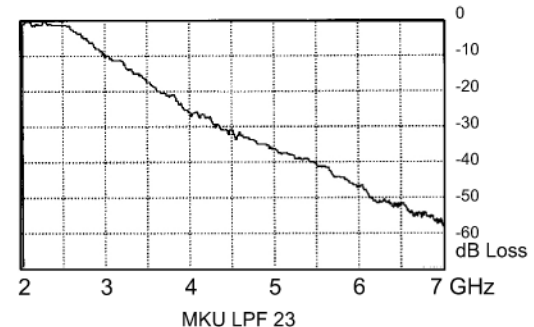
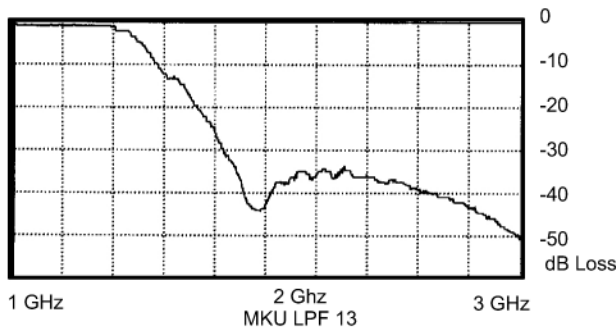
MKU LPF 13 for 1.3 GHz MKU LPF 23 for 2.3 GHz

- 5 pole microstrip low pass filter
- Integrated directional coupler with detector for monitoring the output power of transmitters
- Available with N-connectors or SMA-connectors



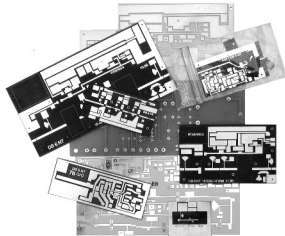
Specifications

Type	MKU LPF 13-SMA	MKU LPF 13-N	MKU LPF 23-SMA	MKU LPF 23-N
Frequency range	1240 ... 1300 MHz	1240 ... 1300 MHz	2300 ... 2450 MHz	2300 ... 2450 MHz
Max. RF power	max. 100 W (SSB / CW) max. 40 W (key down)	max. 100 W (SSB / CW) max. 40 W (key down)	40 W	40 W
Insertion Loss	typ. 0.25 dB	typ. 0.25 dB	typ. 0.4 dB	typ. 0.4 dB
Input connector	SMA-female / 50 ohms	N-female / 50 ohms	SMA-female / 50 ohms	N-female / 50 ohms
Output connector	SMA-female / 50 ohms	N-female / 50 ohms	SMA-female / 50 ohms	N-female / 50 ohms
Dimensions in mm	75 x 38 x 30	75 x 38 x 30	75 x 38 x 30	75 x 38 x 30
Case	German Silver	German Silver	German Silver	German Silver



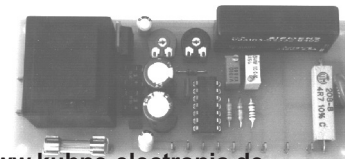
Printed Circuit Boards (PCBs)

01 - PCB broadband amplifier 0,5...2,5 GHz typ. 1 W..... UKW Ber. 2.97	
02 - PCB 12/24 GHz doubler..... DUBUS 1-2.92	
03 - PCB 5,7GHz 8 W PA..... DUBUS 3.92	
04 - PCB 10 GHz 4 W PA 2-stage..... DUBUS 4.91	
05 - PCB 10 GHz 4 W PA 1-stage.....	
06 - PCB 10 GHz 4 W PA 2-stage für Mitsubshi FET's..... DUBUS 12.98	
07 - PCB 10 GHz 8 W PA 2-stage.....	
08 - PCB 10 GHz HEMT-pre stage DK..... DUBUS 3.95	
09 - PCB 10 GHz beacon.....	
10 - PCB 12 GHz LO MK4..... RO4003 plated-through	
11 - PCB 24 GHz HEMT ampl. coaxial..... DUBUS 4.93	
12 - PCB 24 GHz HEMT ampl. waveguide..... DUBUS 4.93	
13 - PCB 24 GHz PA ampl. coaxial..... DUBUS 4.93	
14 - PCB 24 GHz PA ampl. waveguide..... DUBUS 4.93	
15 - PCB 24 GHz HEMT amp. coax. only for NE32584C DUBUS 3.96	
16 - PCB 24 GHz HEMT amp. waveguide only for "..... DUBUS 3.96	
17 - PCB 24 GHz PA Amp. wg in - coax out > beacon... DUBUS 3.96	
18 - PCB 24 GHz Amp. wg in - coax out..... DUBUS 2.97	
19 - PCB 24 GHz HEPA 4-stage amplifier waveguide..... Dorsten 2.97	
20 - PCB 24 GHz HEPA 4-stage amplifier coax..... Dorsten 2.97	
21 - PCB 24 GHz MK2 transverter..... DUBUS 1.93	
22 - PCB 24 GHz MK3 Transverter waveguide..... DUBUS 2.98	
23 - PCB 24 GHz MK3 Transverter coaxial..... DUBUS 2.98	
24 - PCB 24 GHz LO..... DUBUS 2.98	
25 - PCB 47 GHz mixer..... DUBUS 1.94	
26 - PCB 47 GHz IF..... DUBUS 1.94	
27 - PCB 76 GHz mixer x 4..... DUBUS 2.92	
28 - PCB 76 GHz IF..... DUBUS 1.94	
29 - PCB 76 GHz mixer x 2..... DUBUS 1.94	
30 - PCB 25.3/76 GHz tripler..... DUBUS 1.94	
31 - PCB 120 GHz multiplier by 3..... Dorsten 2005	
32 - PCB 120 GHz multiplier by 5..... Dorsten 2005	
33 - PCB 23/47 GHz doubler..... DUBUS 4.93	
34 - PCB 19/38 GHz doubler..... DUBUS 1.94	
35 - PCB 120 GHz RX mixer..... Dorsten 2005	
36 - PCB 145 GHz mixer..... DUBUS 2.94	
37 - PCB 241 GHz mixer..... DUBUS 2.94	
38 - PCB Speed control of KR400 Rotor series. UKW Berichte 2/99	
39 - PCB 30,5 - 61 GHz Multiplier..... DL2AM DUBUS 4.2006	
40 - PCB 120 GHz SHM-Mixer..... DL2AM DUBUS 4.2006	
41 - PCB 40 - 80 GHz multiplier.....	
42 - PCB 240 GHz, 80 GHz LO..... DL2AM DUBUS 1.2009	
43 - PCB 40 - 240 GHz mixer/multiplier, 40 GHz LO x 6 DL2AM DUBUS 1.2009	
44 - PCB 40 - 80 Multiplier WG.....	
45 - PCB 76 GHz SHM, input WR 28 waveguide, output 2.7 mm waveguide DL2AM CQDL 5.2008	
46 - PCB 40/80 GHz Doppler, input WR 28, output 3 mm waveguide DL2AM DUBUS 1.2009	
47 - PCB 40/120 GHz Tripler / Mixer, input WR 28, output 1,8 mm waveguide DL2AM CQDL 5.2008	
48 - PCB 47 GHz Mixer LO-R220 DL2AM DUBUS 1.2010	



Parts

- SMC-connector f. coaxcable 3,2 mm straight
- Diode BAT 15-03W
- Waterproof case for MKU 23 LNC / 34 LNC / 132A2..... incl. mastclip (not drilled)
- Replacement fuse for TR 144 / 432 H..... 50 mA quick
- Different Procom waveguide flanges available
- Precision crystal heater 40 °C QH40A



Speed control for KR400 Rotor series

Discribed in UKW Berichte magazine or on our homepage.
PCB available

More parts will you find on our website <http://www.kuhne-electronic.de>

Kits

KIT 13 G2B
KIT 13 G2B-28

KIT 23 G2
KIT 23 G2 OSCAR
KIT 23 G2 USA

KIT 34 G2
KIT 34 G2 USA

KIT 57 G2
KIT 57 G2, ext. OCXO
KIT 10 G2

KIT 10 G2, ext. OCXO

100 - KIT 24 GHz HEMT, Amp. Coax

101 - KIT 24 GHz HEMT, Amp. Waveguide

102 - KIT 24 GHz MK2, Transverter

103 - KIT 24 GHz MK3, Transverter Waveguide

104 - KIT 24 GHz MK3, Transverter Coax

Transverter (all parts you need, description)

Transverter (all parts you need, description) with 28 MHz IF
addition filter necessary

Transverter (all parts you need, description)

2400 MHz, Transverter (all parts you need, description)

2304 MHz, Transverter (all parts you need, description)

Transverter (all parts you need, description)

3456 MHz, Transverter (all parts you need, description)

Transverter (all parts you need, description)

Option für extern. OCXO (all parts you need, description)

Transverter (all parts you need, description)

Option für extern. OCXO (all parts you need, description)

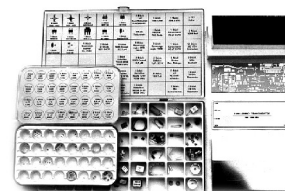
(3 x NE32584 C + 1 PCB + 1 x Drawing/circuit)

(3 x NE32584 C + 1 PCB + 1 x Drawing/circuit)

(1 x PCB + 2 x BAT 15-W3 + 1 pF)

(1 x PCB + 2 x BAT 15-W3 + 3 x BAR64-03W + 1 x BFP196)

(1 x PCB + 2 x BAT 15-W3 + 3 x BAR64-03W + 1 x BFP196)



• Important note:

The transverter KIT 1,3 GHz 13G28 needs an additional external band pass filter for 1296...1298 MHz, to achieve sufficient image rejection.

Specifications of the Transverters (KITS)

Type	KIT 1,3 GHz 13G2B	KIT 1,3 GHz 13G2B-28	KIT 2,3 GHz 23G2	KIT 3,4 GHz 34G2	KIT 5,7 GHz 57G2	KIT 10 GHz 10G2
Frequency range (RF)	1296 ... 1298 MHz	1296 ... 1298 MHz	2320 ... 2322 MHz	3400 ... 3402 MHz	5760 ... 5762 MHz	10368 ... 10370 MHz
Options			USA: 2304...2306 MHz OSCAR: 2400...2402 MHz	USA: 3456 ... 3458 MHz	ext. OCXO	ext. OCXO
IF range	144 ... 146 MHz	28 ... 30 MHz	144 ... 146 MHz	144 ... 146 MHz	144 ... 146 MHz	144 ... 146 MHz
Output power	min. 0.4 W	min. 0.4 W	min. 1 W	min. 200 mW	min. 200 mW	min. 200 mW
IF input power	max. 3 W, adjustable	max. 3 W, adjustable	max. 3 W, adjustable	max. 3 W, adjustable	max. 3 W, adjustable	max. 3 W, adjustable
Noise figure @ 18 °C	typ. 0.8 dB	typ. 0.8 dB	typ. 0.8 dB	typ. 0.9 dB	typ. 1 dB	typ. 1.2 dB
Receive gain	min. 20 dB, adjustable	min. 20 dB, adjustable	min. 20 dB, adjustable	min. 20 dB, adjustable	min. 20 dB, adjustable	min. 20 dB, adjustable
Supply voltage	+12 ... 14 V DC	+12 ... 14 V DC	+12 ... 14 V DC	+12 ... 14 V DC	+12 ... 14 V DC	+12 ... 14 V DC
Current consumption	typ. 350 mA (at transmit)	typ. 350 mA (at transmit)	typ. 0,6 A (at transmit)	typ. 0,4 A (at transmit)	typ. 0,35 A (at transmit)	typ. 0,35 A (at transmit)
PTT voltage (to the IF connector)	+3 ... 14 V DC	+3 ... 14 V DC	+3 ... 14 V DC	+3 ... 14 V DC	+3 ... 14 V DC	+3 ... 14 V DC
Coaxial connectors	SMA-female	SMA-female	SMA-female	SMA-female	SMA-female	SMA-female
Case	Tinplate	Tinplate	Tinplate	Tinplate	Tinplate	Tinplate

Kits

With the KIT MKU PA 1360 Kuhne electronic puts an power amplifier kit for the 23 cm band on the market. Because of it's high linearity this power amplifier is suitable for all amateur radio applications.

Important notes

- To achieve a successful construction of this Power Amplifier the builder has to have experiences in the use and handling of SMD-parts. Further more experiences with smaller projects in microwave circuits are valuable. The construction of this Power Amplifier KIT is NOT a beginners' project! ESD sensitive devices (for example FETs) must be handled carefully.

Accessories

- Ready milled and drilled aluminium case
- Recommended power supply unit: SP 150 W 27
- Recommended heatsink: SK 300 - 62 1)
- Recommended fan: 1x Fan 60x60 24 V 1)

For more information about the kits
please visit our website on
www.kuhne-electronic.de

Specifications

Type	KIT MKU PA 1360
Frequency range	1240 ... 1300 MHz adjustable
Input power	3.0 W
Maximum input power	4.0 W
Output power @ 50 Ohm	typ. 60 W
Input return loss (S11)	min. 10 dB
Maximum VSWR of load	1.8 : 1
Maximum case temperature	+55 °C
Monitor output	Ja
Supply voltage	+ 27 V
Quiescent current	0.4 A
ON voltage	+12 ... 14 V
Current consumption	max. 5 A
Input	SMA-female / 50 ohms
Output	SMA-female / 50 ohms
Dimensions (mm)	130 x 60 x 20



Imprint

KUHNE electronic

MICROWAVE COMPONENTS

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using advanced technology
for microwave communications**

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Email info@kuhne-electronic.de**

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WEEE-Reg.-Nr. DE 341 866 65**



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Bank code: 760 100 85
Account no.: 108 321 855
For bank transfer from abroad you have to use:
IBAN: DE51 7601 0085 0108 321 855
SWIFT-Code: PBNKDEFF

Kreis- und Stadtparkasse Hof

Bank code: 780 500 00
Account no.: 220 407 191
For bank transfer from abroad you have to use:
IBAN: DE27 7805 0000 0220 4071 91
SWIFT-Code: BYLADEM1HOF



Erfüllungsort ist / Place of performance and court of jurisdiction is Hof/Saale - Amtsgericht - HRB 3350
Geschäftsführerin / Manager: Jutta Kuhne

General Terms and Conditions of Business with Private Customers

Note: This is a translation of a German document into English language.
As we do business only under German Law, in cases of dispute only the German wording of the GTCs will apply.

1. Scope

The following general terms and conditions (GTCs) apply for all contracts, shipments, and other services between Kuhne electronic GmbH and private customers. Private customers in the sense of this document are natural persons which do or intend to do business with Kuhne electronic GmbH not practising a commercial or self-employed business thereby.

Kuhne electronic GmbH does not accept any conditions which are opposite to or deviating from these GTCs conflicting terms and conditions of a customer do not become valid unless the terms and conditions are explicitly and individually recognized in writing by Kuhne electronic GmbH.

2. Conclusion of Contract

The presentation of the products in the catalogue does not constitute a legally binding offer of Kuhne electronic GmbH but an invitation to order. By sending an order, customer enters into a legally binding offer for a respective contract. The contract will be concluded with our confirmation of the order within two weeks after dispatch of the order or by delivery of goods ordered.

3. Instruction on Right of Revocation:

Right of Revocation

You may declare the revocation of your contractual statement in text form (e.g. letter, fax, email) or by returning the merchandise within a period of two weeks. The revocation does not have to contain any grounds. The revocation period commences upon receipt of this declaration of revocation in text form but not before receipt of merchandise (in cases of recurrent deliveries of uniform goods not before receipt of first instalment) and also not before fulfilment of our information obligation upon § 312 c para 2 BGB (German commercial Code) in conj. with § 1 para 1,2, and 4 BGB-InfoV. The time-limit shall be deemed to be observed by the timely dispatch of the declaration of revocation or the return shipment.

The revocation is to be addressed to:

Kuhne electronic GmbH, Scheibenacker 3, D-95180 Berg
Telefax: + 49 (0)9293/800938
Email: info@kuhne-electronic.de

Consequences of revocation

In case of a valid revocation, all mutually received performances as well as emoluments taken, if applicable, are to be restituted by either side. If you are unable or partially unable to reconstitute the merchandise to us or can only reconstitute it in a deteriorated condition, then you have to insofar compensate for its value. This does not apply if the deterioration is exclusively due to examining the merchandise as for instance in a retail store. In addition you can avoid compensation for deterioration by having put merchandise to its intended use by not putting merchandise in its intended use as if it were your belongings and refrain from everything affecting its value. Things that can be shipped by parcel are to be returned on our risk. You are obliged to bear the costs of the return shipment if the merchandise delivered corresponds to the merchandise ordered, and if the price of merchandise to be sent back does not exceed an amount of 40 € or if, where the price is higher, you have at the date of the revocation not yet rendered consideration or given a part payment. In all other cases, the return shipment for you is free of charge. Things that cannot be shipped by parcel will be picked up.

All reimbursement obligations must be fulfilled within 30 days. For you, time limit starts with sending of the declaration of revocation or merchandise, for us with their receipt.

End of revocation instruction

4. Dispatch and Delivery

The delivery of goods ordered will be effected within one to three workdays. The compliance with our delivery obligation furthermore requires the due and orderly performance of the customer's obligations in due time. The defence of non-performance of the contract is reserved.

Delivery times for customized products and goods not in stock are not binding unless seller committed itself to a binding delivery date in written form.

In case we are not able to keep bidding delivery dates due to reasons we are not responsible for (impossibility of performance, e.g. because our suppliers fail to deliver) we shall inform the buyer without delay and determine a new delivery period which appears reasonable according to the circumstances.

If performance continues to be impossible also within the newly determined period, we shall be entitled to cancel the agreement completely or partly; we shall thereupon immediately reimburse any already provided counter-performance. Cases of impossibility of performance include cases of force majeure (e.g. strike, business interruptions/restraints, or transport difficulties).

5. Prices and Payment

The prices stated are EURO-prices (including VAT). Shipping cost are not included.

We offer delivery against payment in advance, against invoice, direct debit, or credit card. For delivery to new customers or customers from outside Germany, payment has to be effected in advance. In case of purchase on account (invoice), customer is obliged to settle invoice within 21 days after receipt of goods in full unless otherwise agreed. For payments with credit card or debit credit, collection takes place before the goods are dispatched.

The buyer shall not be entitled to offset payment against counterclaims unless such claims are undisputed or finally established by court. Further, buyer is only authorized to exercise the right of retention to the extent as his counter claim is based on the same contractual relationship.

If you use your right of revocation, you have to bear regular cost of return if the merchandise delivered corresponds to the merchandise ordered, and if the price of merchandise to be sent back does not exceed an amount of 40 € or if, where the price is higher, you have at the date of the revocation not yet rendered consideration or given a part payment. In all other cases, the return shipment for you is free of charge.

6. Warranty

Palpable defaults in material or production including transport damages should be notified to us in writing within two weeks upon receipt. Failure of timely complaint does not effect your legal claims.

Buyer has the choice if supplementary performance is to be executed by remedial action or substitute delivery. Whereas, we are authorized to refuse chosen alternative if this is only feasible under disproportional cost and the other alternative does not stay with any substantial disadvantages. During supplementary performance, a reduction of price or rescission of contract are excluded. Supplementary performance deems to be failed when performed twice without success if

General Terms and Conditions of Business with Private Customers

from the mod of article or failure any other result can be drawn.

In addition, statutory provisions apply.

7. Retention of Title

We reserve title of all goods delivered until complete settlement of all contractual receivables. Also, extended reservation of title applies.

Upon any levy of execution or other respective third party actions we have to be immediately informed to execute our rights under § 771 BGB.

8. Final Provisions

All disputes resulting from this contractual relationship are solely governed by German law. If any regulation in these terms and conditions or within the scope of further agreements should become ineffective the effectiveness of all remaining regulations or agreements is not touched. The stipulation which is invalid in whole or in part shall be replaced by an arrangement which comes as closely as possible to the invalid stipulation in terms of its economic effect.

In case of any dispute of these GTCs, the German version of the GTCs will prevail over the English version.