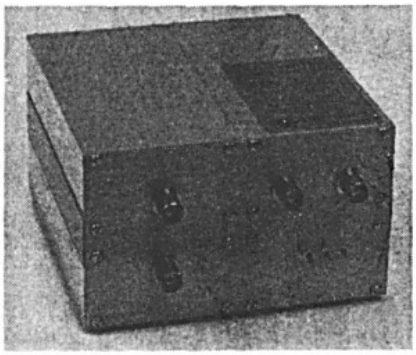
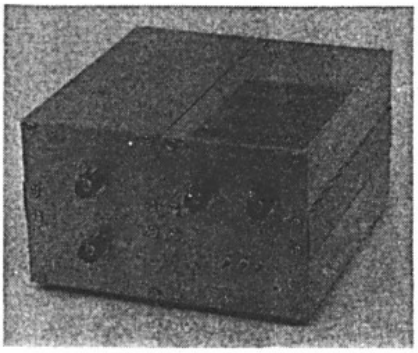
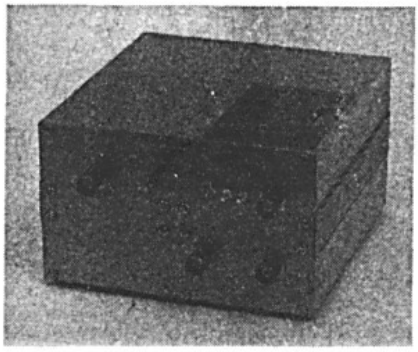
UHF UNITS TRANSVERTERS 1296 MHz



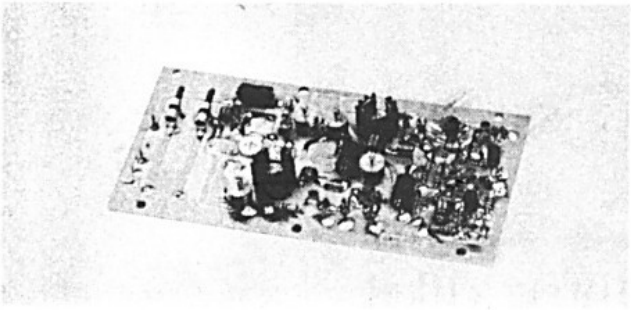
Version A



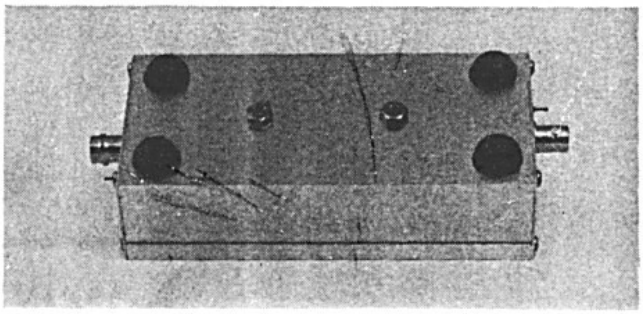
Version B



Version C



1080–1152 MHz
PCB > 1W OUTPUT
90–96 MHz INPUT
UNBOXED



3W POWER AMPLIFIER
MODULE, BOXED
(SHOWN UPSIDE DOWN)

PARABOLIC
P.O. BOX 10257
S-434 01 KUNGSBACKA SWEDEN

TRANSVERTER 1296 MHz

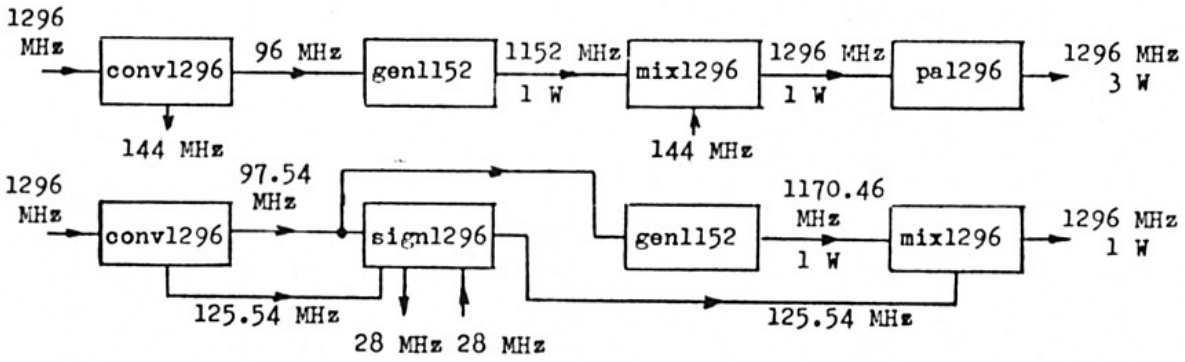
There are three versions of transverters for the amateur band 1296 MHz:

Version A: From 144 MHz with an output power of 3 W
Version B: From 144 MHz with an output power of 1 W
Version C: From 28 MHz with an output power of 1 W

Version A and B have the same mechanical design. The difference is that the low power version has no power amplifier. This power amplifier pa1296A can be delivered as an option to get a transverter similar to version A.

The transverter from 28 MHz is a double conversion transverter. To get 3 W output power it is possible to complete with a separate amplifier pa1296B.

The transverters consist of 3 to 4 p. c. boards according to the block diagrams.

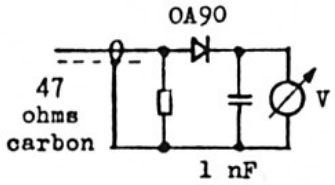


As the transmitter part generates some noise and also needs a lot of DC-current some stages ougth to be switched off in receiving mode. In transmitting mode these stages are switched on by connecting +A to +13.5 V.

To be as flexible as possible no RF switching function is built inside the transverter box. Thus it is possible to use the transverter together with transceiver or a transmitter and a receiver separated. It is also possible to use an extra power amplifier.

To get as good performance as possible it is important to have correct input level of the driving signal. If the input is overloaded splatter and spurious signals can occur. If the available driving power differs from 10 mW on 28 MHz or 100 mW on 144 MHz it is possible to adjust the potentiometer P (see circuit diagram) at the input terminal. However, if the driving power is more then 400 mW it is necessary to use an external attenuator.

A simple way to measure the correct input level is to use an RF-probe (see figure). With a high-ohmic voltmeter an indication of 0.7 V from 28 MHz or 2.3 V from 144 MHz will be approx. the correct value.



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The converter front-end pi-filter may be aligned to get the best signal to noise ratio. Alignment for max. gain differs from the alignment for optimum sensitivity. Align the pi-filter and listen to a weak and stable signal to get the best result.

The crystal oscillator is voltage stabilized with a zener diode. The NTC resistor in the circuit compensates the temperature drift. The best compensation can individually be found by changing the 100 ohms resistor in series with the NTC resistor. An average for many transverters is 100 ohms.

The transmitter part is aligned to a resistive load of 50 ohms. In the practical case it can be necessary to align the output circuit to obtain maximum output power and efficiency. These adjustments can be made with a hard plastic adjusting tool.

The transverters have the following typical data at 13.5 V supply voltage and environment temperature of 25°C.

	Version A	Version B	Version C
Current consumption	2.3 A	0.9 A	1.1 A
Output power	3.0 W	1.0 W	1.0 W
Nominal driving RF-power (adjustable)	100 mW	100 mW	10 mW
Noise figure, optimum	3.9 dB	3.9 dB	3.9 dB
Noise figure, at max. gain	5.2 dB	5.2 dB	5.2 dB
Gain, optimum	26 dB	26 dB	26 dB
Gain, at optimum noise figure	22 dB	22 dB	22 dB
LO rejection (1152 MHz, 1170.46 MHz)	50 dB	45 dB	45 dB
Rejection 9×144 MHz	40dB	40 dB	–
Spurious rejection	55 dB	55 dB	55 dB
Frequency drift after 5 minutes warm-up and normal CW or SSB operation	700 Hz	500 Hz	500 Hz
Frequency drift at a supply voltage shift of 1 V	100 Hz	100 Hz	100 Hz
Frequency error		adjustable to zero	

*The **UHF UNITS** transverters*
will be manufactured
by
LABE ELECTRONICS
from May 1st 1983

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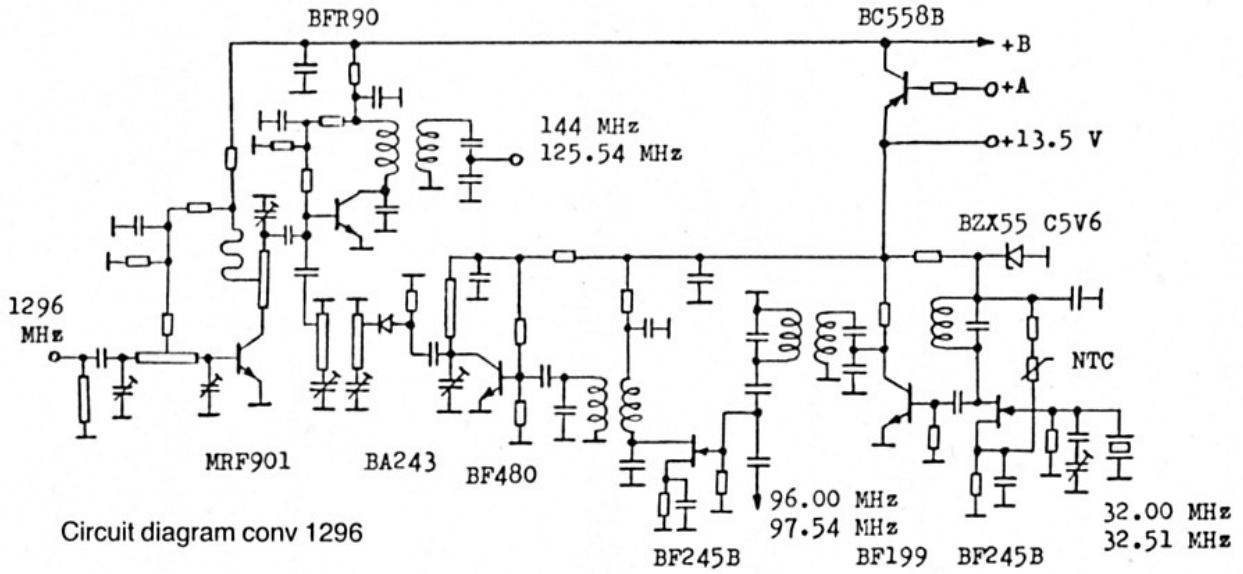
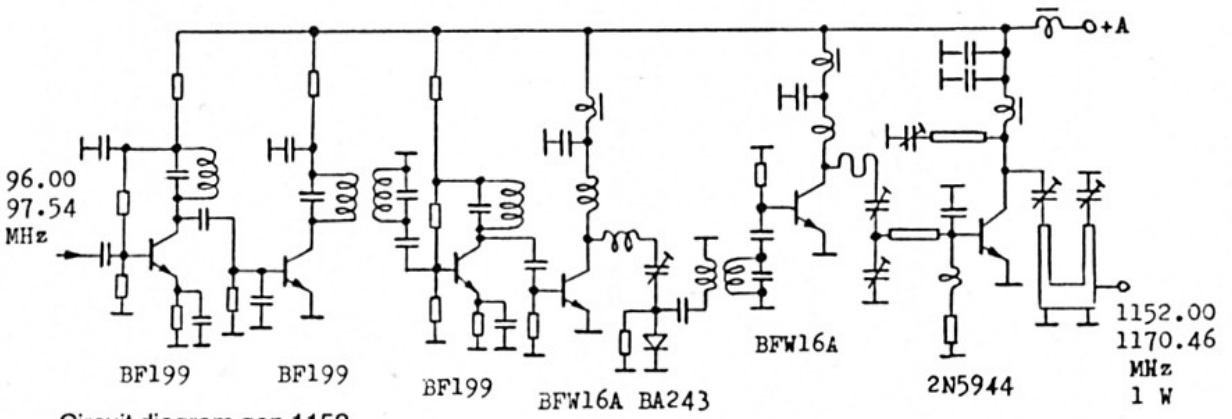
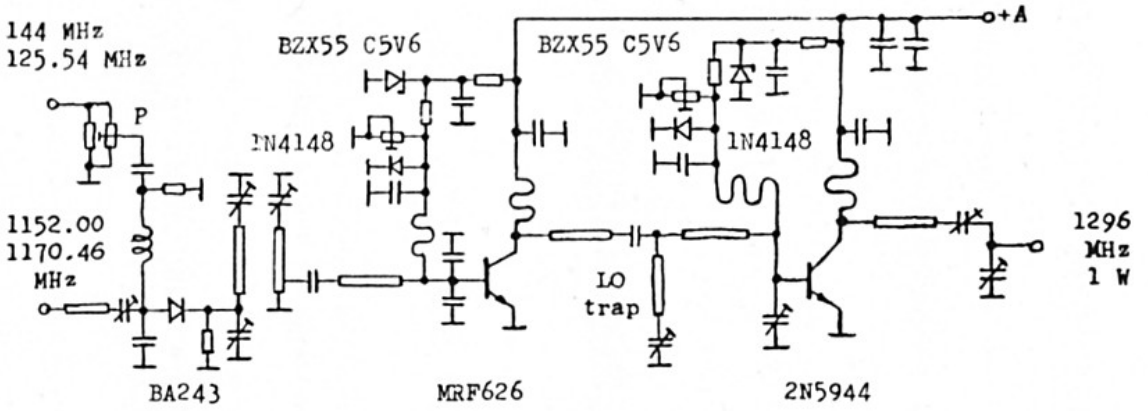


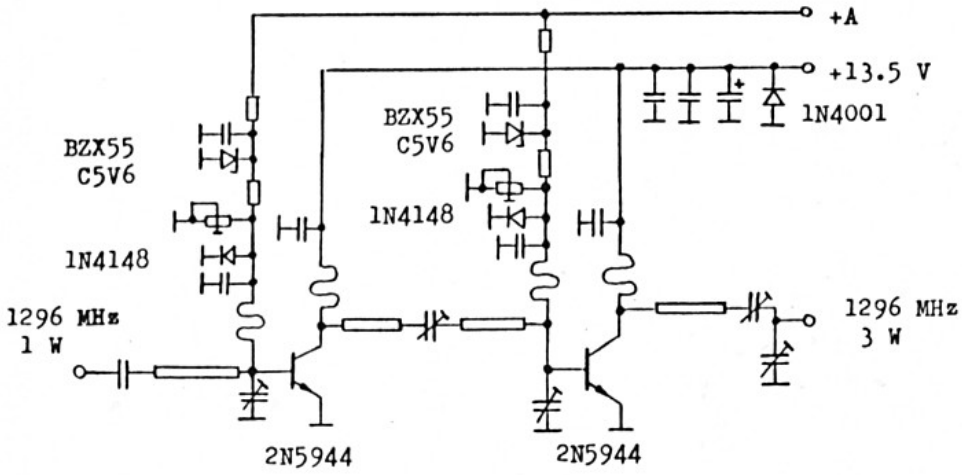
Circuit diagram conv 1296



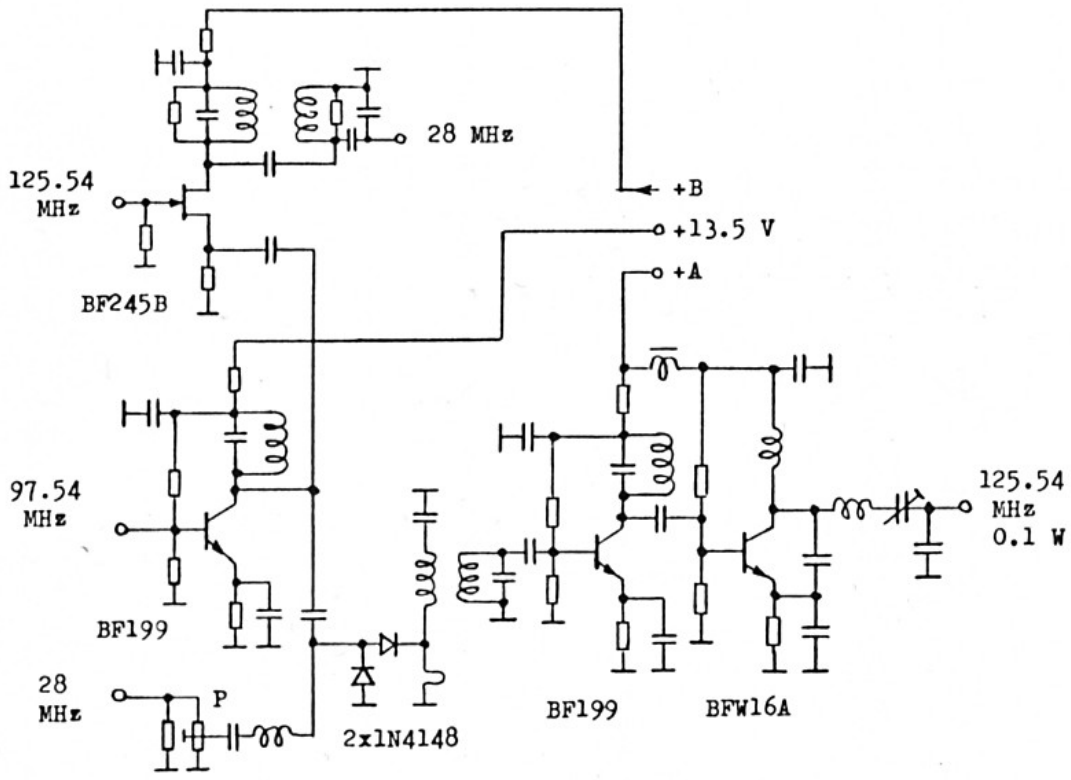
Circuit diagram gen 1152



Circuit diagram mix 1296



Circuit diagram pa 1296



Circuit diagram sign 1296