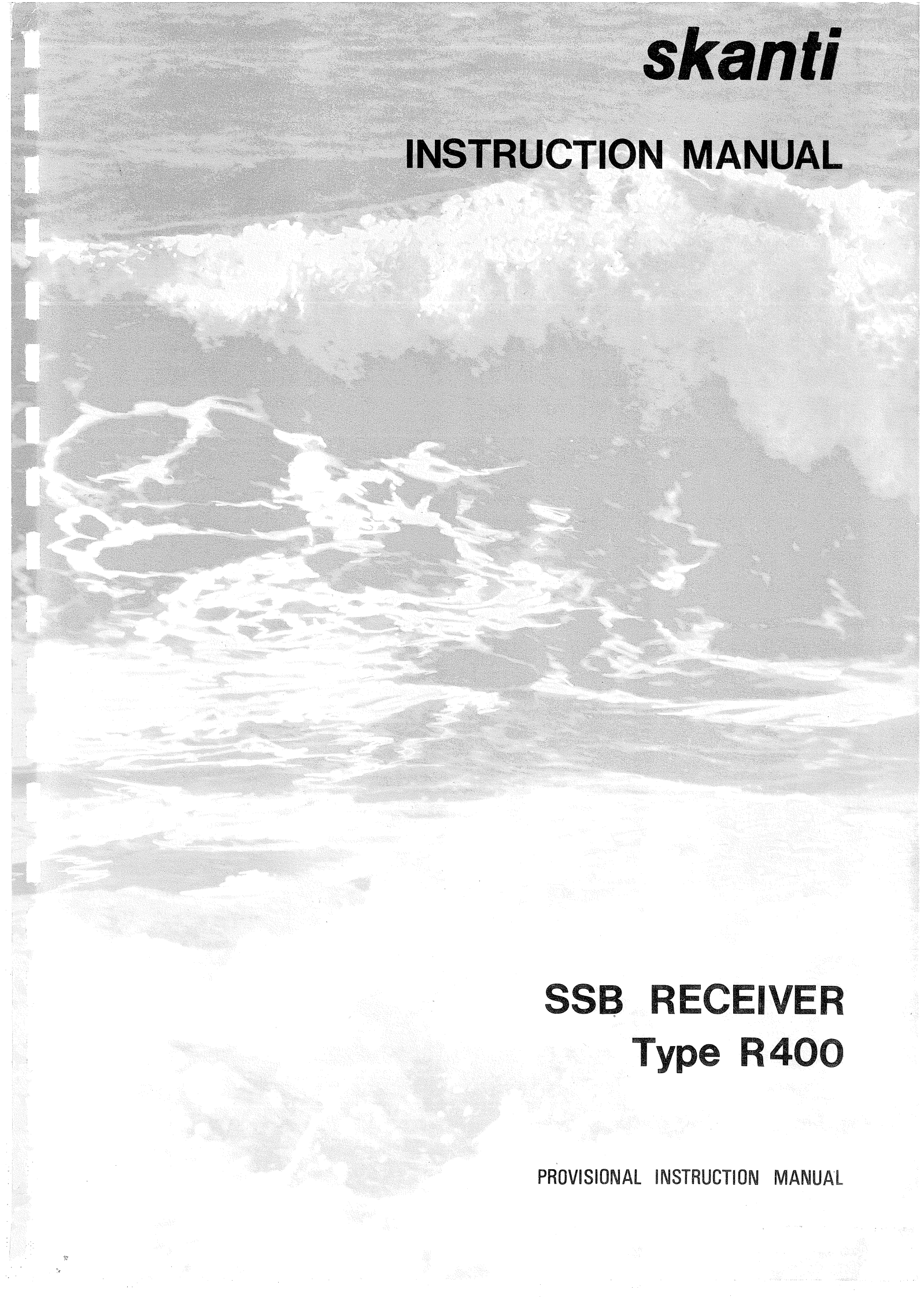


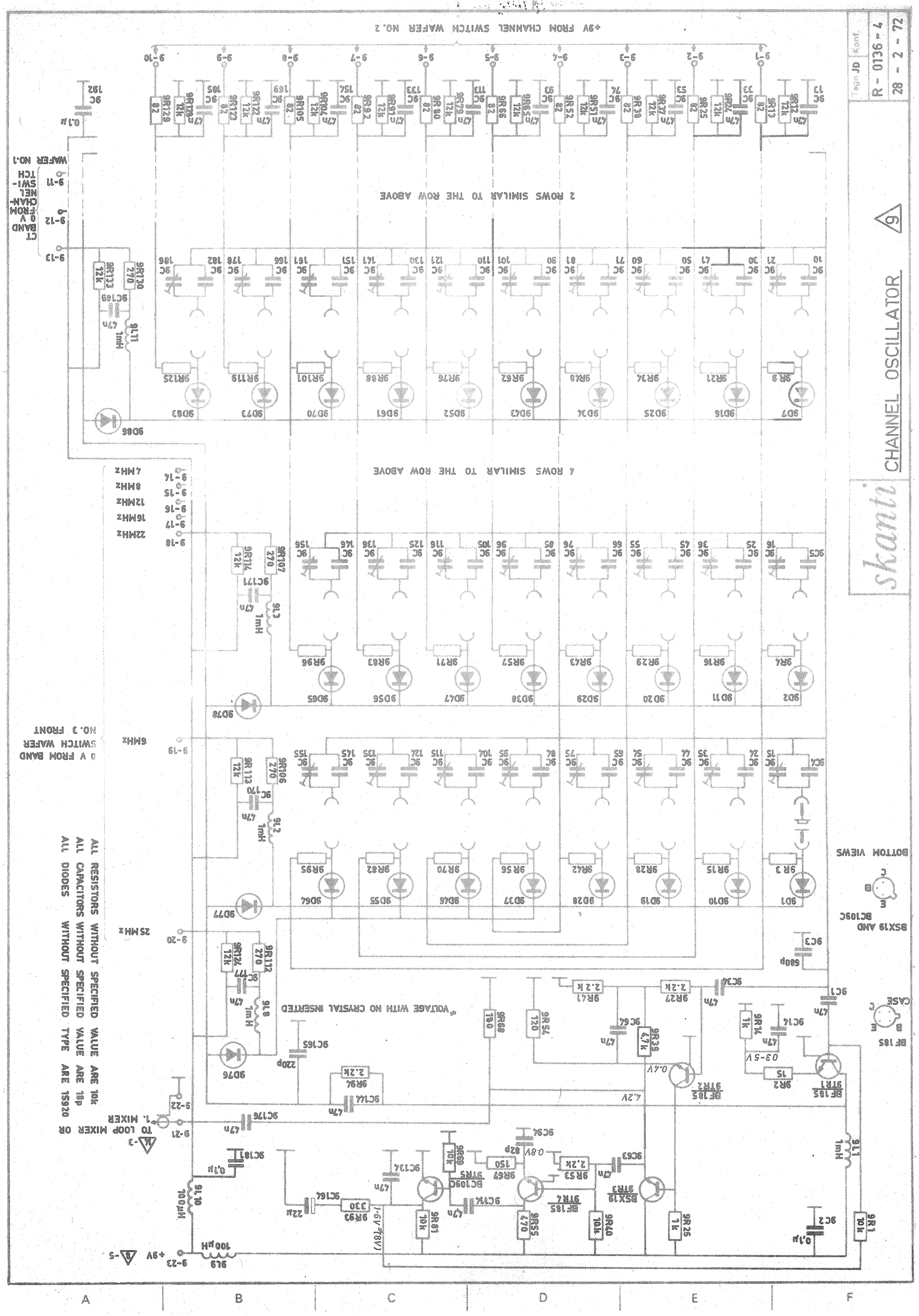
skanti

INSTRUCTION MANUAL

SSB RECEIVER
Type R400

PROVISIONAL INSTRUCTION MANUAL

GORM HELT-HANSEN


+9V FROM CHANNEL SWITCH WAFER NO.2
2 ROWS SIMILAR TO THE ROW ABOVE
4 ROWS SIMILAR TO THE ROW ABOVE
0 V FROM BAND SWITCH WAFER NO.1
0 V FROM BAND SWITCH WAFER NO.3 FRONT
TO LOOP MIXER OR 1. MIXER
ALL RESISTORS WITHOUT SPECIFIED VALUE ARE 10k
ALL CAPACITORS WITHOUT SPECIFIED VALUE ARE 10p
ALL DIODES WITHOUT SPECIFIED TYPE ARE 1S920
VOLTAGE WITH NO CRYSTAL INSERTED
BOTTOM VIEWS
BSX19 AND BC109C
BF185 CASE
Skantic
CHANNEL OSCILLATOR
R - 0136 - 4
28 - 2 - 72

R 400

INSTRUCTION MANUAL

CONTENTS

Gorm Frei-Hansen

Type R 400

SSB Maritime Radiotelephone Receiver

Data Sheet

Reception Modes

A3, A3H and A3A, A3J.

Operating Frequencies

30 spot frequencies in the coastal telephony band (CT) 1605-4000 kHz.
8 spot frequencies in each of the 7 HF bands between 4 and 27.5 MHz allocated to the Maritime Mobile Radiotelephony Service, except the 6 MHz and the 25 MHz bands where 4 spot frequencies are provided.

Frequency Accuracy

$\pm$100 Hz. (Ambient temperature: -15 to +55°C.)

Frequency Fine Tuning

Frequency error can be reduced to less than 10 Hz by means of a CLARIFIER control, the frequency variation of which is more than $\pm$200 Hz at less than 2 Hz per degree of rotation.

Frequency Stability

20 Hz in any 15-minute period.

Selectivity (Ambient Temperature: 0-40°C.)

A3A, A3J:
Less than 6 dB attenuation at 350 to 2700 Hz relative to carrier frequency.
More than 60 dB attenuation at -500 and +3400 Hz.

A3, A3H:
Less than 6 dB attenuation at -2.7 to +3.5 kHz.
More than 60 dB attenuation at + and -10 kHz.

Sensitivity

Better than

A3, A3H	: IF band	: 32 uV	for 20 dB SINAD
	HF bands	: 18 uV	for 20 dB SINAD
A3A,A3J	: IF band	: 6.3 uV	for 20 dB SINAD
	HF bands	: 3.5 uV	for 20 dB SINAD

Automatic Gain Control

A 70 dB increase in input signal level from nominal sensitivity levels does not increase the output by more than 10 dB.

Blocking

Undesired carrier 100 dB above 1 uV, 20 kHz off tune, does not change the output by more than 3 dB. Desired signal 60 dB above 1 uV.

Cross Modulation

Undesired signal 90 dB above 1 uV, 20 kHz off tune, does not cause any cross modulation component of more than 33 dB below the desired output. Desired signal 60 dB above 1 uV.

RF Intermodulation

Two undesired signals, both 80 dB above 1 uV, more than 30 kHz off tune, do not produce an output exceeding that of a desired signal of 30 dB above 1 uV.

Intermediate Frequency Rejection Ratio

Better than 90 dB in the bands below 5 MHz and
better than 60 dB in the bands above 5 MHz.

Image Rejection and Other Spurious Responses

Better than 60 dB.

Non Linear Distortion

Less than 10% at rated output power for any input level between 30 dB and 100 dB above 1 uV.

AF Intermodulation

Below -35 dB relative to each tone.

AF Response Characteristic

Within 6 dB, 350 Hz to 2700 Hz, below -15 dB at 100 Hz.

Audio Output Power

Built - in loudspeaker : 500 mW
Facility for connecting an external loudspeaker (4 ohms) is provided
External loudspeaker : 1 W (at nominal supply voltage)

Radiation

Less than 400 pW, RF voltage less than 90 uV measured at the aerial terminal.

Front End Protection

The receiver is capable of withstanding an e.m.f. of 30 V applied to its aerial terminals via the proper dummy aerial, at any frequency in the maritime mobile bands between 400 kHz and 27.5 MHz for 15 minutes without damage.

Temperature and Supply Voltage Variations

The above data are valid at
- ambient temperature : 0 - 40°C (CT band: -15 to +55°C)
- supply voltage variations, AC : ±10%
  DC : 10.6 - 33V
- vibration test (GPO)

The receiver will not be damaged under the following conditions:
- bump test (GPO)
- an increase in supply voltage to AC : +30% above nominal voltage (2 seconds)
  DC : 34V (sustained).

Controls

BAND switch
CHANNEL switch
CT-PRESELECTOR
SERVICE switch (MAINS OFF - simplex - semiduplex - duplex)
MODE switch (A3, A3H - A3A, A3J)
CLARIFIER
AF-GAIN control
RF-GAIN control combined with AGC ON-OFF switch
LOUDSPEAKER ON-OFF switch

Supply Voltage

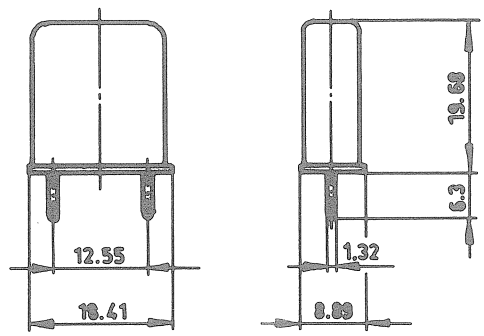
12/24V battery (built-in Power Pack: R-0290) or
110/220/380/440V AC, 50-60Hz (built-in Power Pack: R-0289)

Power Consumption

DC : 1.1A (10.6-33V)
AC : 22VA

Dimensions

Rack-mounted	: height	: 132.5mm	
	width	: 482 mm	
	depth - into rack	: 363 mm	(connectors incl.)
	depth - overall	: 406 mm	
	weight	: 9.7kg	
Cabinet-mounted	: height	: 165 mm	(shock absorbers incl.)
	width	: 490 mm	
	depth - overall	: 410 mm	(connectors incl.)
	weight	: 15.4kg	



Holder:	HC-6/U
Frequency:	1.6-6 MHz
Tolerance:	a) ±0.002% at 24°C
	b) ±0.001% variation from 24°C over temperature range
Temp. range:	-20 to +70°C
Circuit:	Parallel resonance, 30 pF
Drive:	1 mW
Activity:	DEF 5271 - A
Operation-mode:	Fundamental
Marking:	Case top: to be specified in the order
	Case side: R-0328 and nominal crystal frequency.

Materiale:	Overfladebeh.:	Tolerancer hvor intet andet er anført : mm	Målforhold 1:1
skanti	Channel crystal specification		Tegn JD / Konf.
			R - 0328 - 2
			1 - 12 - 70

TELEPHONY RECEIVER TYPE R400.

Calculation of channel crystal frequency f_x from receiving frequency f_r.

Observe that the receiving frequency always is the carrier frequency.

All frequencies are in kHz.

Band	f_x Channel crystal frequency
1605-4000 kHz	f_r + 500 kHz
4 MHz	f_r + 500 kHz
6 MHz	10700 kHz - f_r
8 MHz	10700 kHz - f_r
12 MHz	f_r - 10700 kHz
16 MHz	f_r - 14900 kHz
22 MHz	f_r - 20500 kHz
25 MHz	f_r - 23300 kHz

Channel crystals with specification according to SKANTI specification R-0328 are marked with f_r on the case top and with f_x on the case side.

1. INTRODUCTION

1.1 The R 400 is a single and double sideband radiotelephone receiver for telephony communication in the 1.6-4 MHz coastal telephony band and the 4-27.5 MHz maritime high-frequency telephony bands. The receiver is crystal controlled and has a total of 78 channel facilities distributed as follows: 30 channels in the coastal telephony band and 8 channels in each high-frequency band except the 6 and 25 MHz bands each of which has 4 channels.

The receiver is designed for reception of signals of type A3, A3H and upper-sideband A3A and A3J. It is fully transistorized, and integrated circuits are widely used. These features in connection with the fact that no crystal ovens are used cause the receiver to be ready for operation immediately after being switched on.

The receiver incorporates a monitoring loudspeaker, but an external loudspeaker may be connected if desired.

Depending on the power pack installed in it, the receiver can be powered from a 12 or 24 V battery or from AC voltages normally occurring in practice.

Adding new channels to the receiver is very simple. The only adjustment required is adjustment of the crystal frequency. The crystals are accessible after removal of the top cover plate of the receiver. Crystal trimmer capacitors permit making correction for the natural ageing of the crystals which might otherwise bring the frequencies outside the specification limits in a few years.

The dimensions match a 19 inch standard rack, and the receiver is intended for mounting in the same cabinet with the Type T 400 transmitter. When so mounted, the receiver and transmitter in conjunction with the transmitter power pack constitute the TRP 400 transmitter/receiver combination. The receiver is also available as a separate cabinet model.

Because we at Skanti are constantly processing the experience gained during the production and operation of our equipment, it is possible for minor modifications to occur relative to the information given in this instruction manual. If practically possible, however, any corrections will be listed on a correction sheet at the back of the front cover of this manual.

2. TECHNICAL DESCRIPTION

2.1 For technical data see Data Sheet which will be found on an early page of this manual.

2.2. Construction

The receiver is built on a rugged alodine treated aluminium chassis which is designed so that it also provides RF screening between the various receiver sections. The chassis has four outside cover plates. These provide internal screening in the receiver as well as protecting it from direct signal pick-up from outside.

The front panel is electrically insulated from the chassis. This feature permits connecting the chassis to a separate earth when the receiver is mounted in the same rack as the transmitter.

The receiver is divided into 18 modules most of which are built on printed circuit boards. All of these, except module No. /10\ become accessible when the cover plates are removed. Module No. /10\ the clarifier oscillator is housed in a special screen can in order to prevent oscillator radiation. The number of leads to the individual modules has been kept to a minimum, in part due to the use of diode switches.

The chassis divides the receiver into five sections. In the front compartment, behind the front panel, switches and potentiometers are located so as to be easily accessible when the front panel is removed. Here, too, is the power pack - AC or DC. The top compartment contains the channel crystal oscillator module /9\ , which has 78 crystal sockets. The left side compartment houses modules /4\ to /7\ inclusive; these are part of the signal path from the first mixer to the audio amplifier. The right side compartment encloses module /8\ , the 9 V voltage regulator, and modules /11\ to /15\ inclusive all of which are part of the frequency-generating functions. The lower part of the chassis is divided into two compartments. The larger compartment houses the CT front end, module No. /2\ , and the HF coil section, module No. /3\ . The smaller compartment contains RFI filters, module No. /16\ , and the clarifier oscillator, module No. /10\ .

2.3 Circuit Description, General

2.3.1. The circuit diagram is divided into a wiring diagram, R-0173, showing interconnections between the individual modules; and circuit diagrams of individual modules. Circuit diagrams of the integrated circuits are included in the interests of clearness. This does not apply to the digital circuits, where only the logical symbols are shown. The mode of operation follows from block diagrams R-0174 and R-0175, showing the signal path and the process of frequency generation, respectively.

2.3.2. The incoming signal is fed via the "SERVICE" switch and the "BAND" switch to the CT front end /2\ or the HF coil section /3\ . The HF coil section has two sets of input filters for each band, permanently tuned to the simplex and duplex channel frequencies in each of the high-frequency bands. With the "SERVICE" switch at "simplex", the incoming signal is fed to the simplex filters. In the "semi-duplex" or "duplex" position, the signal is fed to the duplex filters. With the "BAND" switch at "CT", the signal is fed to the CT front end in either case.

In the "simplex" position, a pair of clipper diodes are connected across the aerial input to protect the simplex input circuits against one's own transmitter.

Bandswitching between the input filters is carried out in the "BAND" switch, from where coaxial cables go to the respective inputs. The outputs are switched by diodes. Switching voltage, 9 V, is applied via the coaxial cables at the inputs.

From the output of the RF stages, the signal is fed to the 1st mixer module, /4\ , where it is converted to the intermediate frequency, 500 kHz (CT and 4 MHz bands) or 1o.7 MHz (other HF bands). The selectivity of the intermediate-frequency filters permits a double-sideband signal to pass through.

Module /5\ contains the 1st intermediate-frequency amplifier, 2nd mixer, and 2nd intermediate-frequency amplifier. The 2nd mixer converts the signal to 1.4 MHz, where a crystal filter determines the ultimate selectivity of the receiver. The "MODE" switch selects between a single and a double sideband filter.

From the 2nd intermediate-frequency amplifier, the signal is fed to module No. /6\ , which contains the signal and AGC detectors. The radio-frequency amplifiers and both intermediate-frequency amplifiers are AGC-controlled. Advancing the "RF GAIN" control will disable the AGC, and the gain is thereafter controlled by a DC voltage taken off across the "RF GAIN" potentiometer. The audio signal from the detector is fed via the "AF GAIN" potentiometer to module No. /7\ , the AF amplifier.

The output transistor of the AF amplifier receives its supply voltage directly from power pack /18\ or /19\ whereas all other circuits of the receiver are powered from a stabilized +9 V supply (voltage regulator, module No. /8\ ).

2.3.3. The injection frequencies for the 1st and 2nd mixers and for the product detector are generated on a basis of the frequencies supplied by channel oscillator /9\ , clarifier oscillator /1o\ and a highly stable temperature-compensated crystal oscillator, master oscillator /11\ .

In the CT, 4, 6, 8, and 12 MHz bands, the channel oscillator is connected directly to the 1st mixer. In these bands, the injection frequency is lower than 5 MHz. In the 16, 22, and 25 MHz bands, the injection frequency is higher; it is generated in a phase-locked loop composed of the voltage-controlled oscillator /13\ and loop mixer and phase detector /14\ . The output frequency of the voltage-controlled oscillator is equal to the sum of the channel oscillator frequency and an addition frequency derived from the highly stable master oscillator signal. In the three bands, the addition frequency is equal to the 3rd, 7th, and 9th harmonics, respectively, of 1.4 MHz, and the desired frequency is selected in module No. /15\ .

The output signal from the 2nd mixer is at 1.4 MHz. The injection frequency is 900 kHz in the CT and 4 MHz bands, where the 1st intermediate frequency is 500 kHz, and is supplied by the clarifier oscillator, /10\ .

The clarifier oscillator is crystal controlled but its frequency can be varied, with the "CLARIFIER" control, +/-200 Hz from the centre frequency so as to compensate for minor deviations between the transmitter and receiver frequencies. In the other bands, where the 1st intermediate frequency is 10.7 MHz, the injection signal is 12.1 MHz. It is generated by mixing the 900 kHz clarifier signal and an 11.2 MHz signal from the master oscillator. The 12.1 MHz mixer is module No. /12\ .

2.4. Circuit Description, Individual Modules

/2\ CT Front End

The coastal telephony band front end is tuned with a 3-gang capacitor, operated with the "CT PRESELECTOR" control on the front panel. The signal-frequency circuits constitute a double band-pass input filter. The neon lamp across the first tuned circuit and the diodes across the input of the integrated amplifier protects against high aerial voltages. The output signal is fed from the coupling winding of the output circuit to the 1st mixer via a diode switch in the HF coil section. Switching voltage is applied via the "BAND" switch through the coupling windings of the input and output circuits.

/3\ HF Coil Section

All circuits of the HF coil section are fixed tuned. The input filters have a bandwidth which covers all channels of each of the maritime frequency bands for simplex and duplex radio telephony communication, respectively. The duplex filters comprise three tuned circuits, and their selectivity is high to provide effective attenuation of one's own transmitter. Bandswitching is performed via the coaxial cables at the inputs. The inner conductor of the coaxial cable in use feeds a DC voltage to the diode switches at the filter output and in the intermediate tuned circuit of the corresponding band. The RF amplifier consists of an integrated circuit which has been developed specifically for this purpose and is remarkable for its ability to handle high signal levels.

④ 1st Mixer

The mixer stage is an integrated circuit containing a double balanced mixer. The mixer output is connected either by diode switching, to a four-pole LC filter tuned to 500 kHz or to a 10.7 MHz crystal filter. Switching is controlled from the band switch. The balanced mixer configuration provides a high order of intermediate-frequency rejection. At 500 kHz, additional intermediate-frequency rejection is provided by the series trap across the signal input. Also included in the input circuit are a 30 MHz lowpass filter and a series trap tuned to 11.74 MHz.

⑤ IF Amplifiers and 2nd Mixer

The 1st intermediate-frequency amplifier consists of integrated circuit 5 IC 1. Between the output of this integrated circuit and the 2nd mixer, 5 IC 3, are two series-tuned circuits at 500 kHz and 10.7 MHz, respectively. The mixer receives a balanced injection signal from 5 IC 2, which functions as an amplifier and amplitude limiter. The two 1.4 MHz filters between the mixer and the 2nd intermediate-frequency amplifier are a double-sideband and a lower-sideband crystal filter, respectively. The AGC control range in the 2nd intermediate-frequency amplifier is approx. 10 dB, and control is effected by varying the emitter bypass in the first stage.

⑥ Detectors and AGC Amplifiers

Switching between A3, A3H and A3A, A3J is performed via terminal 6-7, connected by the "MODE" switch to 0 volts or +9 volts, respectively. In both switch positions, the signal detector is the integrated circuit 6 IC 1, which contains a balanced mixer and a high-gain limiting amplifier.

A3, A3H:

Signal voltage from the 2nd intermediate-frequency amplifier is fed to the balanced mixer at terminal 7 of 6 IC 1. The signal is also fed via emitter follower 6 TR 2 to the limiting amplifier (terminal 14) which removes modulation from the signal by amplifying it and clipping it to constant amplitude. The amplifier output is internally connected to the other input of the balanced mixer, where the signal functions as injection signal and is mixed with the modulated signal. The audio signal is taken off at terminal 8 across the built-in collector resistor which combines with the capacitor across the output to form a lowpass filter which only permits the audio signal to pass through. This is thereafter fed via emitter follower 6 TR 4 to output terminal 6-8. AGC voltage is produced by rectifying the 1.4 MHz signal after amplification in 6 TR 3 and is taken off across emitter follower 6 TR 5.

A3A, A3J:

The signal detector functions in the same manner as in A3, A3H except that the 1.4 MHz injection signal is applied from the master oscillator. Transistors 6 TR 2 and 6 TR 3 are inoperative in this switch position.

AGC voltage is provided by the detected audio signal in the AGC generator, 6 IC 2. This circuit combines very short attack time and long hold-time (the AGC level is maintained during pauses in speech) with high immunity to noise pulses. In addition it will smoothly follow varying signal levels under conditions of fading. The circuit contains two detectors having short and long rise and fall time constants respectively, and a hold circuit which is triggered when the audio signal disappears suddenly. The audio signal will rapidly establish an AGC level via the detector having a short rise time constant. Meanwhile the output of the long time constant detector will rise and take over control after some time. In speech pauses, the AGC voltage from this detector will be kept constant by the hold circuit, which is triggered if the signal variation exceeds 20 dB/sec. The AGC voltage will not hang on brief noise pulses as these will only activate the detector having the short rise time constant. The short rise time constant is approx. 4 msec and the hold time is approx. 2 sec.

/7\ AF Amplifier

The input signal from the "AF GAIN" potentiometer is fed to integrated amplifier 7 IC 1 via capacitors 7 C 1 and 7 C 2, which are part of an active highpass filter which determines the lower cut off frequency of the amplifier.
The integrated amplifier is DC coupled to the output transistor, which operates in Class A. Zener diodes across the output transformer protect the transistor when the transformer is unloaded. Since the output transistor operates in Class A it will not burn out even if the AF output is short-circuited.

/8\ 9 V Voltage Regulator

This circuit contains a voltage regulator circuit and an over-current protection circuit. By means of resistors 8R7 and 8R8 a fraction (fine-adjusted by 8R8) of the output voltage is taken off and compared in 8TR2 with the reference voltage across 8D8. The collector of 8TR2 is connected to the series regulator composed of 17TR2 and 8TR1, a so-called PNP super Darlington stage.

In order to start the regulator, the base of 8TR2 must receive a starter current through capacitor 8C1. When the receiver is switched off, the capacitor discharges through a resistor in power pack /18\ or /19\ .

The current-limiting properties of this circuit are due to the fact that emitter resistors 8R5 and 8R6 determine the amount of current that can be drawn by 8TR2 before the zener voltage across 8D8 collapses. When the zener voltage collapses, the regulator will reduce the output voltage, thereby causing the voltage drop across the zener diode to become even smaller - in other words, the circuit is regenerative, and the output voltage will rapidly drop to 0. When the current limiter has operated it will be necessary to switch off the receiver for approx. 3 seconds so that 8C1 will have time to discharge. The variable emitter resistor, 8R6, permits adjustment of the current at which the limiter will operate. 8R6 is factory pre-set to cause limiting to occur at a load of approx. 2 amps.

9 Channel Oscillator

The crystals are switched in a diode matrix. To select a particular crystal, +9 V is fed by the "CHANNEL" switch to the appropriate column terminal and the "BAND" switch applies 0 V to the row terminal. The oscillator consists of field-effect transistor 9TR3 and transistors 9TR1 and 9TR2. The oscillator signal is applied to a buffer stage, 9TR4, followed by an emitter follower, 9TR5. From the emitter follower, the signal is fed to the output terminal and to an amplifier stage, 9TR6. The output of this amplifier stage is rectified in 9TR7, and the amplified DC signal is fed back to the gate of 9TR3, which controls the gain in the oscillator. This control means that the level is kept constant and that the content of harmonics of the crystal frequency will be low.

10 Clarifier Oscillator

The oscillator is crystal controlled and operates at 3.6 MHz. The frequency can be varied +/-800 Hz by means of the variable inductance in series with the crystal. The amplifier section consists of two series-connected NAND gates with negative DC feedback. The 3.6 MHz signal is fed to frequency divider 10IC2, which contains two series-connected flip-flops. The output frequency is 1/4 of the input frequency; that is, 900 kHz +/-200 Hz. The signal is fed to the output terminal via a series tuned circuit.

11 Master Oscillator

The master frequencies are generated from a highly stable temperature compensated crystal oscillator, TCXO, at 5.6 MHz. The term master frequency means signals which are harmonics or subharmonics of the TXCO frequency of 5.6 MHz. The sinusoidal output signal of the TCXO is amplified and clipped by transistors 11TR1 and 11TR2. The signal from the collector of 11TR2 is fed to a resonant circuit tuned to 11.2 MHz (2nd harmonic) and to frequency divider 11IC1. This integrated circuit, which divides the TCXO frequency by 4 to 1.4 MHz, consists of two series-connected flip-flops. From the output of the divider, a 1.4 MHz signal is fed to a BNC connector on the rear wall for connection to a SKANTI Type T 400 transmitter, to the product detector for carrier re-insertion, and to filters 15 . The module has two +9 V terminals so that it can be powered from the transmitter with the receiver turned off. Crystal oscillator ageing is very small (less that 10^{-6} per annum) and will be greatest during the first few years. Ageing will normally cause an increase in frequency, which can be compensated by introducing the connection indicated by the dotted line in the circuit diagram. This will reduce the frequency by approx. 2×10^{-6}.

12 12.1 MHz Mixer

In the mixer, the 900 kHz signal from the clarifier oscillator is added to the 11.2 MHz signal from the master oscillator. The sum signal is taken out across the 12.1 MHz output circuit. In the "CT" and "4 MHz" ranges, transistor 12TR1 conducts and thereby cuts off the 11.2 MHz amplifier; at the same time the balanced mixer is thrown out of balance and therefore acts as an amplifier for the 900 kHz signal. The output frequency in these ranges is consequently 900 kHz. The resonant frequencies of the two tuned circuits in the output are so widely spaced that one circuit acts as a short-circuit to a signal at the resonant frequency of the other circuit.

13 Voltage Controlled Oscillator

The oscillator receives supply voltage only when the band switch is set at 16,22 or 25 MHz. 13TR3 is the oscillator transistor whilst 13TR4 and 13TR5 constitute a buffer amplifier. 13TR6 rectifies the signal and feeds control voltage to the base of the oscillator transistor, thus keeping the signal level constant. Band switching is performed by switching one of the coils 13L4 or 13L7 in and out of circuit. In each band, the frequency can be altered stepwise by switching in and out one or more of the four capacitances across the resonant circuit connected to 13IC1. This circuit contains four NAND gates with "open" collectors which function as switches. These are controlled from a binary 16-counter, and capacitor values are matched so that the capacitance varies in 16 steps of equal size. Inside each step the frequency can be varied continuously with capacitance diodes 13D6 and 13D7.
When the input, terminal 13-7, which is connected to the phase detector, is connected to +9 V via a resistor, the hunting-oscillator will cause the frequency range to be scanned in the following manner: A charge will build up across capacitor 13C1, and this voltage is applied to the capacitance diodes. This will cause the oscillator frequency to alter continuously. When the voltage reaches approx. 7 V, the hunting-oscillator will be triggered because transistors 13TR1 and 13TR2 will begin to conduct, thereby rapidly discharging the capacitor. At the same time a pulse is fed to the 16-counter, causing it to take a step forward. This process will repeat itself until the oscillator reaches the correct frequency. The output voltage of the phase detector will then drop to a level below 7 V, with the result that the hunting-oscillator will not be triggered. The control voltage supplied by the phase detector to the capacitance diodes will keep the frequency phase-locked to the reference frequencies.

14 Loop Mixer and Phase Detector

In the loop mixer, the signal from the voltage-controlled oscillator is mixed with a harmonic of the 1.4 MHz signal from the master oscillator. The difference frequency is fed through the lowpass filter to the phase detector, which also receives a signal from the channel oscillator.

The phase detector compares the frequencies of the two signals, and when they coincide, 14TR5 will draw current and the collector voltage assume a value which depends on the phase difference between the two signals.
The module contains a switching arrangement which, in the 16, 22, and 25 MHz bands, feeds the channel oscillator signal into the amplifier stage associated with the phase detector, and in the other bands, to the 1st mixer via the switch on module No. 13 .

15 Filters for 4.2-9.8, and 12.6 MHz

The input signal is a 1.4 MHz square-wave signal from the master oscillator. With the "BAND" switch at "16 MHz", the signal is fed by diode switches through the 4.2 MHz bandpass filter, which therefore permits the 3rd harmonic of 1.4 MHz to pass through. On the 22 MHz band, the 7th harmonic is similarly taken out through the 9.8 MHz filter. On the 25 MHz band the 9th harmonic is used which is generated as the 3rd harmonic of 4.2 MHz, the signal from the output of the 4.2 MHz filter being fed to an amplifier and clipper, followed by a band-pass filter at 12.6 MHz.

16 RFI Filters

The RFI filters are inserted in the power supply and control wires to the receiver. They are composed of a number of lowpass filters which suppress noise and interference on these wires.

18 DC Power Pack

Contains fuses, a bypass capacitor, and a 20-watt 39-volt Zener diode which protects the receiver against transients on the supply mains and against the consequences of polarity reversal.

19 AC Power Pack

The mains transformer, which is switchable between 110, 220, 380, and 440 V, is equipped with a static screen. The bridge rectifier delivers approx. 14 V at nominal voltage and load.

3 INSTALLATION

It is of great importance for good results that the receiver is correctly installed. Pay careful attention to the aerial and earth wires, especially where duplex telephony is required.

3.1. Mounting the Cabinet

The R-0288 cabinet is intended for table-top mounting. It has four vibration dampers which should be secured to the table top as shown in Dwg. R-0376.

Concerning mounting of Type TRP 400 see instruction manual for Type T 400 transmitter.

3.2. Disassembling the Receiver

To open the receiver, remove the four front panel screws. Pull the chassis out of the cabinet and remove connectors.

3.3. Connecting the Installation

Check that the correct power pack is installed in the receiver and that the power pack (if for AC) is switched for the correct mains voltage.

Cable connections for the installation of the TRP 400 appear from Dwg. T-0346/T-0379, see instruction manual for type T400 transmitter.
Cable connections for installation in a separate cabinet appear from Dwg. R-0375. The aerial cable should then be connected directly to the aerial plug supplied.
NOTE: Cables should be long enough so that the receiver can be pulled out of the cabinet with the cables connected to it.

3.4. Earth Connection

From a good earth point, run a separate wire of not less than 2.5 sq. mm cross section and as short as possible to the earth contact at the back of the cabinet. The earth lead should not be common to the transmitter and receiver if the receiver is part of a DUPLEX installation.

3.5. Aerial

Length: 6-30 metres. Should be suspended as far from stays and wires as possible and brought in through a length of 50-ohms coaxial cable, which should be as short as possible, especially if the aerial is short.

3.6. Headphones and External Loudspeaker

Headphones should be connected to the audio output via a resistor as shown in Dwg. R-0375. The resistance value shown provides a convenient level in a 400-ohms telephone capsule. Other headphone impedances may be used if a series resistor of suitable value is inserted.

An external loudspeaker may be connected to the receiver. Its impedance should be 4 ohms, and it should be able to handle 1 watt or more. When the loudspeaker is disconnected, a resistor of the same impedance and power rating should be inserted instead. This will ensure that there will be no change in headphone level when the loudspeaker is disconnected.

3.7. Muting in Simplex and Semi-duplex Service

With the "SERVICE" switch at "simplex" or "semi-duplex" the receiver will be muted if multiwire connector terminals 3 and 6 are strapped together.

3.8. Use with Type T 400 Transmitter

When supplied with the Type T 400 transmitter, the receiver carries on its rear wall a BNC connector from which a stable 1.4 MHz signal from the receiver's master oscillator is supplied to the transmitter. The master oscillator can be powered from the transmitter while the receiver is switched off, via terminals 1 and 2 of the receiver multiwire connector. In the TRP 400, all connections between the transmitter and receiver are installed at the factory.

3.9. Replacing the Power Pack

Switching from DC to AC operation is done by replacing the built-in power pack. The power pack becomes accessible after removal of the top cover plate.
IMPORTANT: Switch off the supply voltage - for instance by removing the multiwire plug - before removing the cover plate.

Remove the four screws holding the power pack. The power pack may now be tilted out and released from the cable.

The Type R-0290 DC power pack △18 is used for 12 V or 24 V battery operation (no switching).

The Type R-0289 AC power pack △19 is used when the receiver is to be operated from 110/220/380 or 440 V AC. The voltage switching procedure appears from the plate on the power pack or from Dwg. R-0172, which also shows what value the fuse F1 should have at the supply voltage in question.
NOTE: Check that the power pack is set to the correct voltage and supplied with the correct fuses, before connecting the receiver to the mains.

3.1o. Installing Channel Crystals

Channel crystals should comply with Skanti Specification R-0328. Chart R-0327 shows how to calculate crystal frequency f_x on a basis of receiver frequency f_r.
The channel crystals become accessible after removal of the top cover plate. When installing a new crystal, proceed as follows:

3.1o.1. Locate the crystal socket corresponding to the desired channel number and band, and insert the crystal.

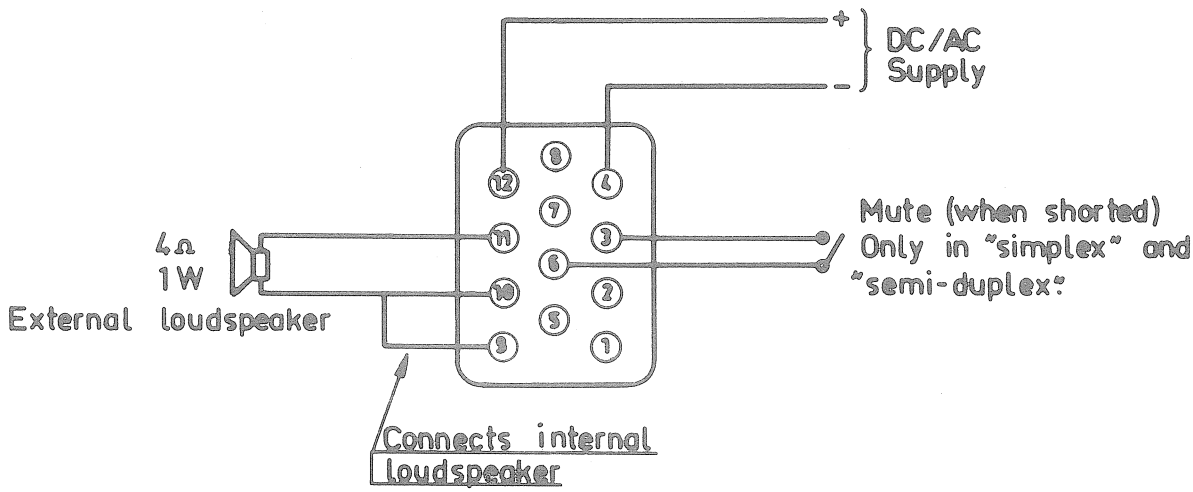
3.1o.2. Connect a frequency counter (resolution 1 Hz, accuracy $1o^{-7}$) to the crystal oscillator output, terminals 9-21 and 9-22 (common).
NOTE: In DC operation, voltage may be present between common and chassis.

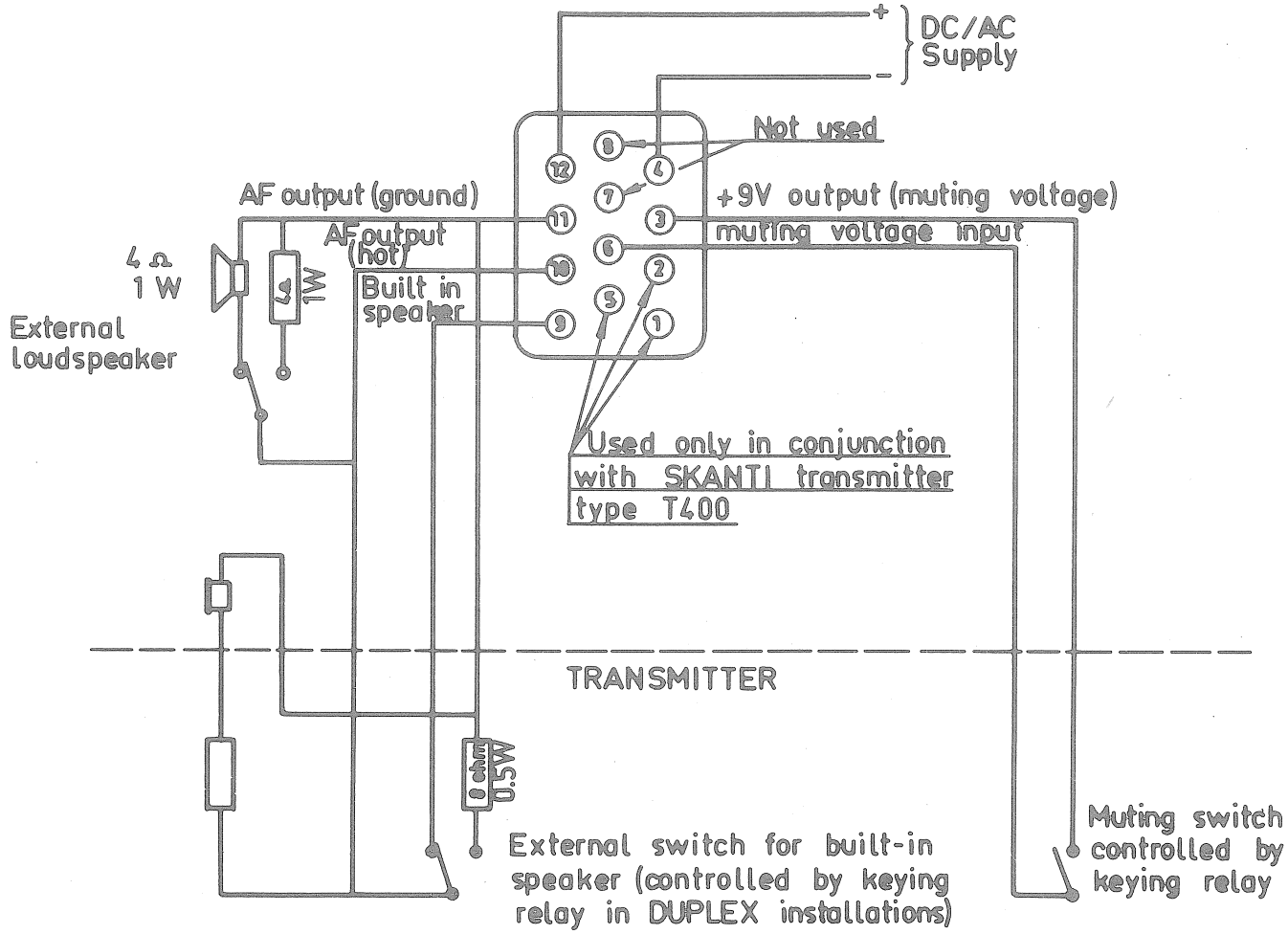
3.1o.3. Set the "BAND" and "CHANNEL" switches to the new channel and adjust if necessary the trimmer associated with the crystal position so that the frequency will be that specified on the side of the crystal holder (-0/+5 Hz).

3.1o.4. Take out the frequency chart on the front panel by tilting the Plexiglas plate out. Note the new receiver frequency - listed on the top of the crystal holder - in the frequency chart.
For HF channels: Put an "S" before the frequency if it is in the simplex band, and a "D" if it is in the duplex band.

For coastal telephony channels: Remove the aerial plug. Turn the "CT" PRESELECTOR" to its fully anti-clockwise position. Set "RF GAIN" to "AGC" and the "MODE" switch to "A3J, A3A". Set "AF GAIN" for convenient noise level. Now turn the "CT PRESELECTOR" clockwise and note when the noise level begins to increase. Adjust for maximum noise at the first noise peak. Read the nearest division line on the scale and note that figure in the space marked "PS" in the frequency chart, at the channel in question.

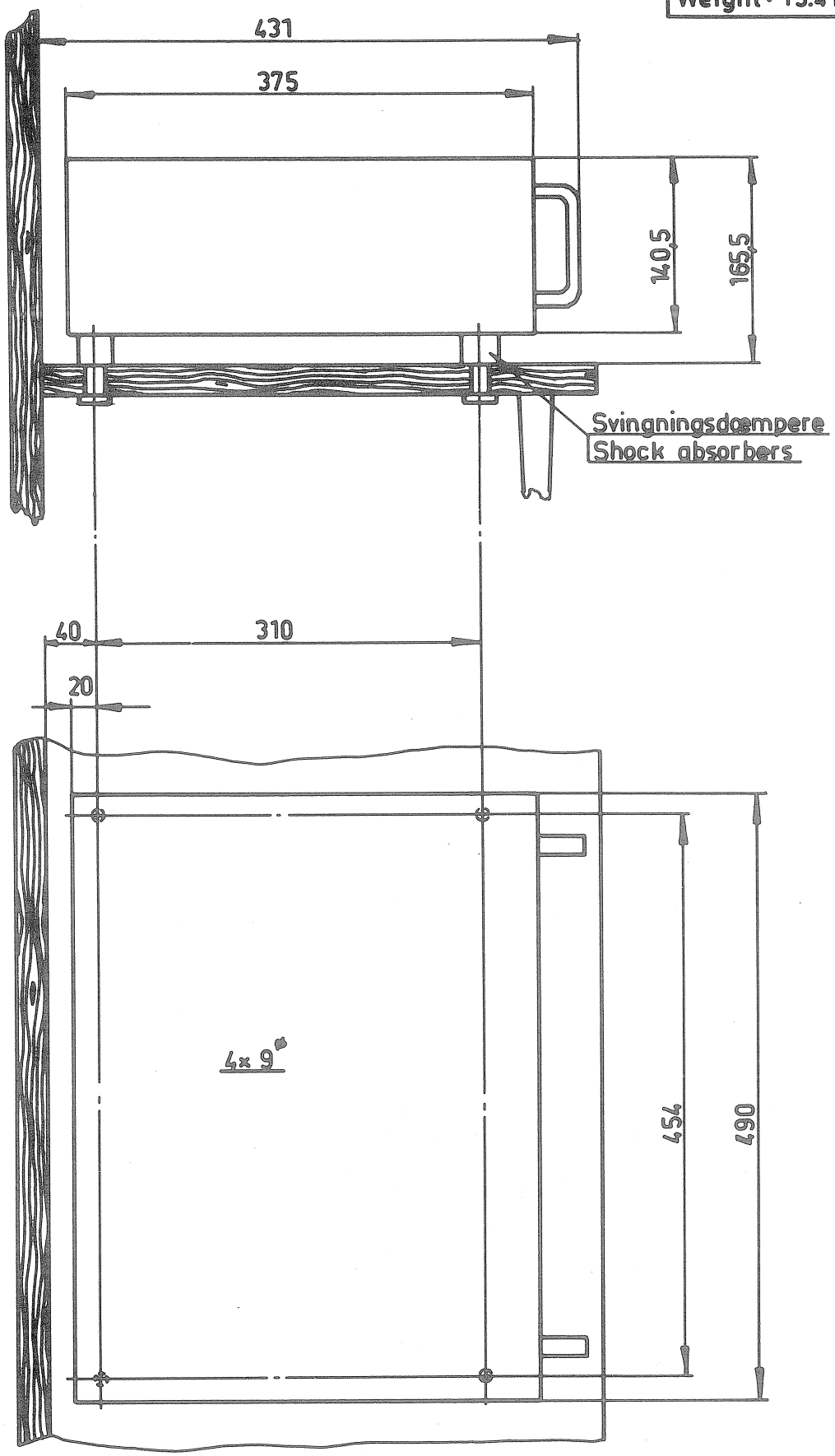
	Frequency Range, kHz	
Band \ Service	Simplex	Semi-duplex/duplex
CT	1605-4000	
4 MHz	4139.5	4361.6- 4434.9
6 MHz	6210.4- 6213.5	6515.4- 6521.8
8 MHz	8281.2- 8284.4	8729 - 8812
12 MHz	12421 -12428	13109 -13196.5
16 MHz	16565 -16572	17255 -17356.5
22 MHz	22094.5-22108.5	22625.5-22716.5
25 MHz	25010 -25180	25300 -25600





Materiale:	Overfladebeh.:	Tolerancer hvor intet andet er anført ± mm	Målforhold:
skanti	External connections		Tegn. JD / Konf.
			R - 0375 - 1
			4 - 3 - 71

Vægt:	15,4 Kg
Weight:	15.4 Kg



Tolerances: ± 0,5mm Dimensions are in mm

Materiale:	Overfladebeh.:	Tolerancer hvor intet andet er anført ± 0,5 mm	Målforhold: 1:
skanti	Montering af R400 på bord Fitting of R400 on tabletop		Tegn. JD / Konf. R-0376 - 1 3 - 11 - '

4. OPERATING INSTRUCTIONS

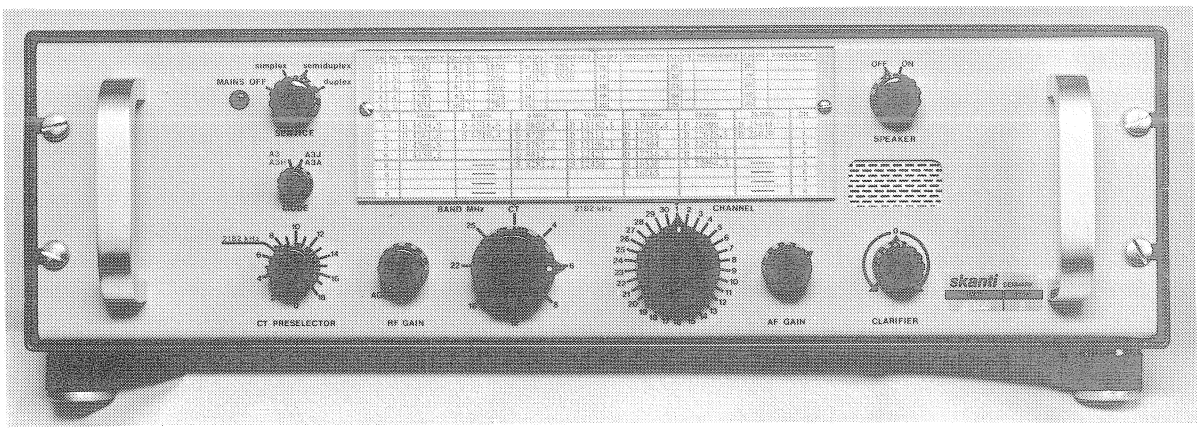


Fig. 4.1. Front panel and operating controls.

4.1. Operating Controls and Their Functions

The "SERVICE" switch has four positions:

"MAINS OFF" - receiver is switched off.

"simplex" - for simplex service.
The receiver is muted when transmitting. On the HF bands, the simplex filters are in operation.

"semi-duplex" - for semi-duplex service.
The receiver is muted when transmitting. On the HF bands, the duplex filters are in operation.

"duplex" - for duplex service.
The receiver is in operation while transmitting. The built-in speaker is disconnected when the transmitter starts up, leaving only the headphones connected to the receiver output. On the HF bands, the duplex filters are in operation.

The "MODE" switch has two positions:

"A3, A3H" - for reception of double and single sideband modulation with full carrier.

"A3J, A3A" - for reception of single sideband modulation with suppressed or reduced carrier.

"CT PRESELECTOR" - for tuning the front end circuits in the coastal telephony band. Approximate settings are indicated on the frequency chart on the front panel. Adjust for maximum volume around the setting indicated. A "click" marking permits rapid tuning to 2182 kHz.

"RF GAIN" has two functions: switching the AGC in and out, and manual adjustment of RF gain.
Will normally be used in the AGC setting, with the knob turned fully anti-clockwise, where a switch cuts in the automatic gain control.

"BAND", band switch with the following 8 positions: CT (coastal telephony band), 4-6-8-12-16-22-25 MHz.

"CHANNEL", channel selector with 30 positions.

"AF GAIN" - audio volume control.

"CLARIFIER" - for accurate tuning to frequency. Adjust for natural-sounding speech. For use in "A3J, A3A" mode only.

"SPEAKER" - switch which disconnects the built-in loudspeaker.

4.2. Tuning to 2182 kHz

Set:
(1) "SERVICE" switch to "simplex", "semi-duplex" or "duplex". Pilot lamp will come on.

(2) "MODE" switch to A3, A3H".

(3) "CT PRESELECTOR" to click at 2182 kHz marking.

(4) "RF GAIN" to "AGC".

(5) "BAND" switch to "CT".

(6) "CHANNEL" switch to "1".

(7) "SPEAKER" switch to "ON".

(8) "AF GAIN" for convenient volume.

4.3. Tuning to SSB Station in Coastal Telephony Band

(1) Set "SERVICE" switch to the desired service "simplex", "semi-duplex" or "duplex". Pilot lamp will come on.

(2) Set "MODE" switch to "A3J, A3A".

(3) Set "RF GAIN" to "AGC".

(4) Set "SPEAKER" switch to "ON".

(5) Set "AF GAIN" for convenient volume.

(6) Set "BAND" switch to "CT".

(7) Select the desired frequency on the frequency chart.

(8) Read channel number under "CH" on the frequency chart and set "CHANNEL" switch to that number.

(9) Read number under "PS" on the frequency chart and set "CT PRESELECTOR" for maximum level near division line in question.

(1o) Adjust "CLARIFIER" control for natural-sounding speech when the desired station is modulated.

4.4. Tuning to SSB Station in HF Band

(1) Set "SERVICE" switch to the desired service, "simplex", "semi-duplex" or "duplex".

(2) Set "MODE" switch to "A3J, A3A".

(3) Set "RF GAIN" to "AGC".

(4) Set "BAND" switch to the desired HF band.

(5) Select the desired frequency on the frequency chart.

(6) Read channel number under "CH" on the frequency chart and set "CHANNEL" switch to that number.

An S or a D before the HF frequencies on the chart indicates whether the frequency in question is in the simplex or duplex frequency range.

For S, the "SERVICE" switch should be at "simplex".

For D, the "SERVICE" switch should be at "semi-duplex" or "duplex".

(7) Set "SPEAKER" switch to "ON".

(8) Set "AF GAIN" for convenient volume.

(9) Adjust "CLARIFIER" control for natural-sounding speech when the desired station is modulated.

5. SIMPLE SERVICE

5.1. Incorrect Operation

If the receiver is not functioning normally a check should be made whether it is being operated correctly. It is suggested that adjustment procedures 4.2, 4.3 or 4.4 are performed.

5.2. Pilot Lamp Replacement

The pilot lamp may be replaced without opening the receiver. The lamp is defective if it shows no light and the receiver is functioning normally. Unscrew the lamp cover; this will cause the lamp to come out, and a new lamp may be inserted.

5.3. Fuse Replacement

If the pilot lamp does not come on when the receiver is switched on, and if the receiver is dead, the two fuses should be checked. These become accessible when the receiver is opened by removing the four front-panel screws and the chassis is pulled approx. 15 cm out of the cabinet.

For DC operation from 12 V or 24 V battery, the fuses should be rated at 1.6 A, quick-acting.

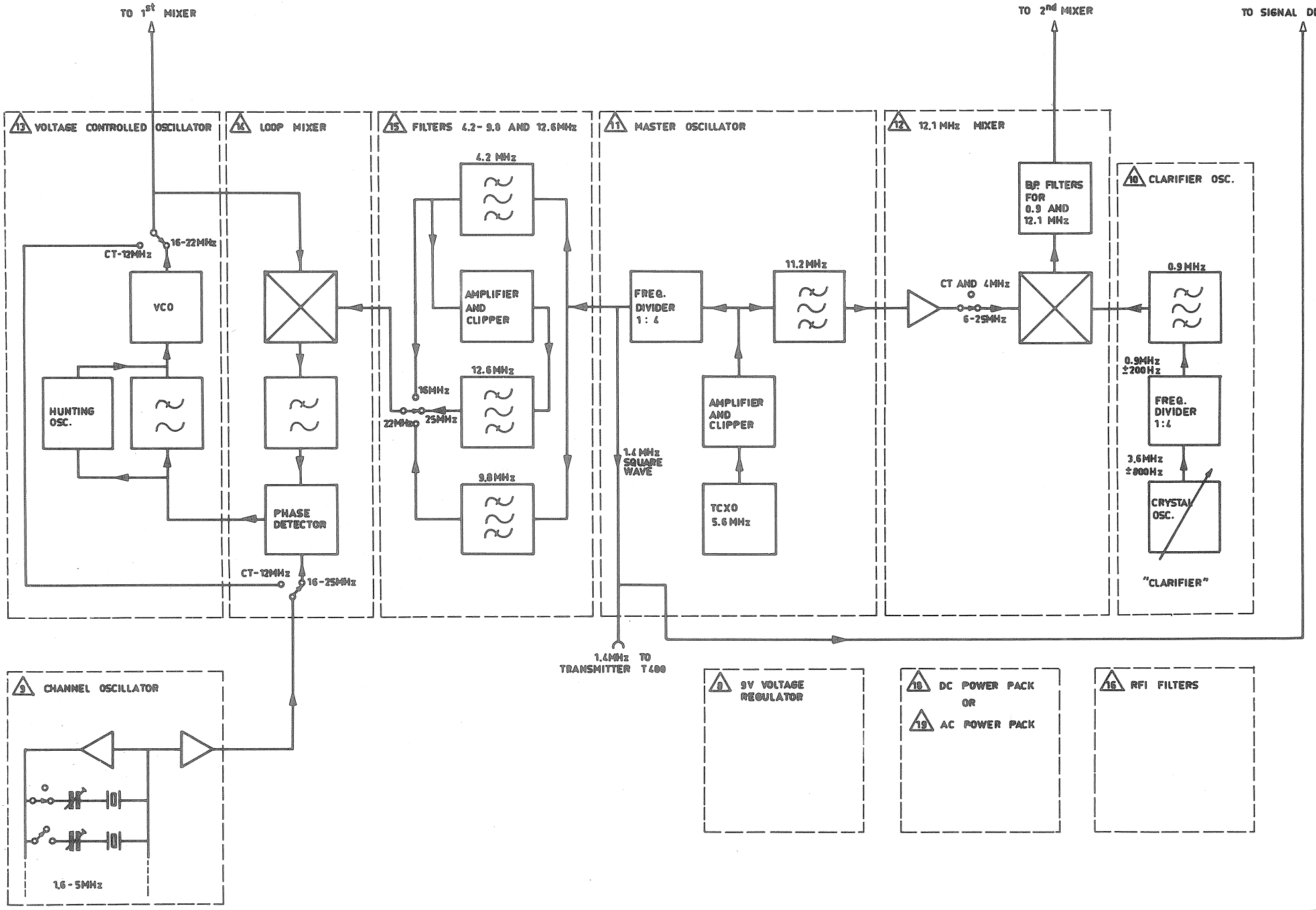
For AC operation, the fuse nearest the front panel should likewise be 1.6 A, quick-acting, whereas the rating of the other fuse depends on the mains voltage as follows:

110 V:	315 mA, slow-acting
220 V:	160 mA, slow-acting
380 V:	80 mA, slow-acting
440 V:	80 mA, slow-acting

Do not use fuses whose rated values exceed the values specified.

ABBREVIATIONS

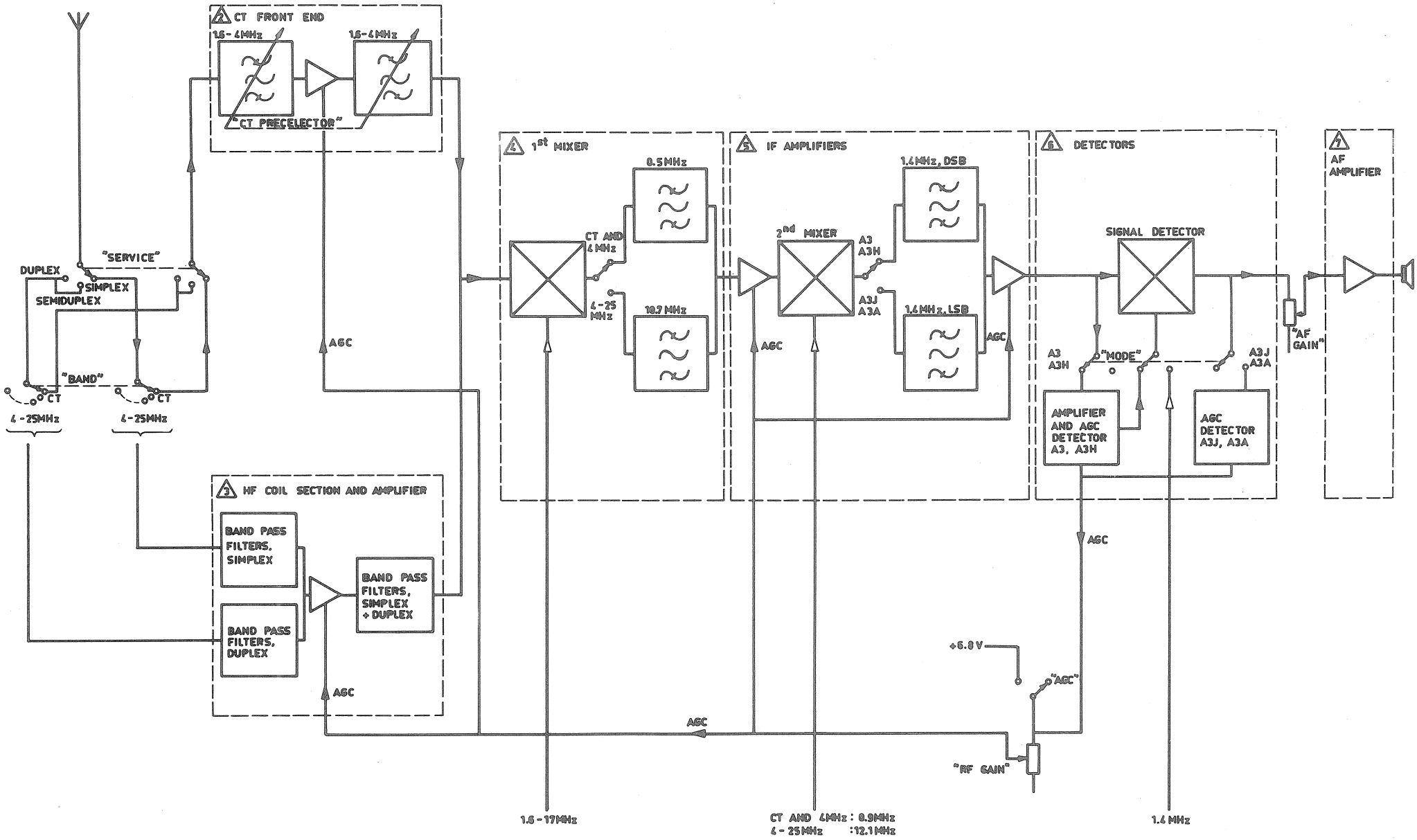
A = ampere
C = capacitor
Car. = carbon
Cer. = ceramic
D = diode
F = farad
FS = fuse
H = henry
IC = integrated circuit
k = kilo or 10^3
L = inductor
lin. = linear
log. = logaritmic
m = milli or 10^{-3}
M = mega or 10^6
Mi = mica
MP = metalized paper
µ = micro or 10^{-6}
n = nano or 10^{-9}
NTC = neg. temp. coefficient
p = pico or 10^{-12}
PL = plug
polyes. = polyester
polyst. = polystyrene
PTC = pos. temp. coefficient
R = resistor
RL = relay
S = switch
SK = socket
SL = lamp
T = transformer
Tan = tantal electrolytic
TR = transistor
V = working voltage DC
Vl... = valve
Vac. = working voltage AC
Var. = variable
Varicap = variable capacitance diode
ww = wire wound
W = watt
W.alum. = wet aluminium electrolytic
X = crystal, crystal osc. or crystal filters



skanti

BLOCK DIAGRAM, FREQUENCY GENERATION

Tegn. JD	Konf.
R-0175-2	
8-11-71	



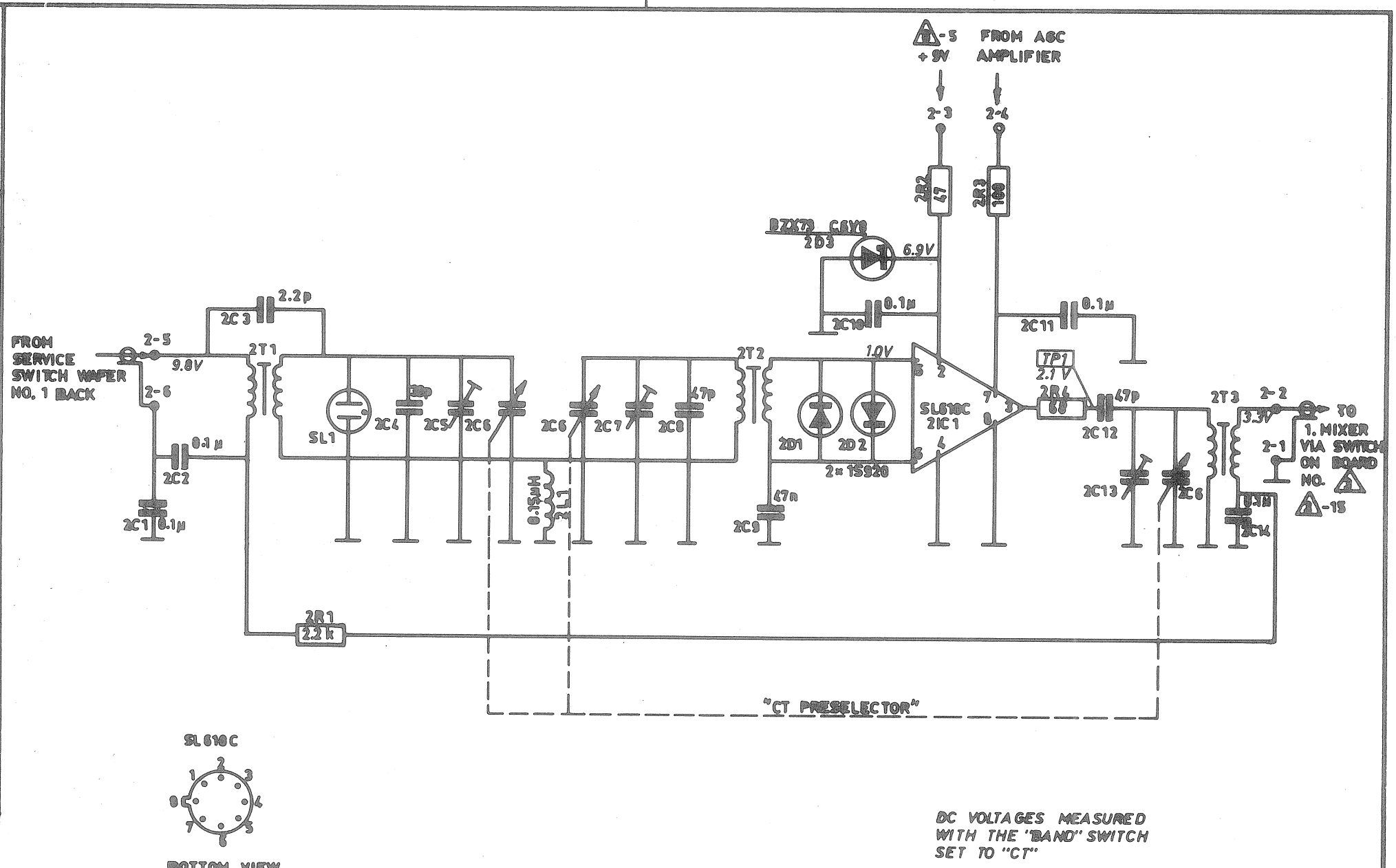
skanti

BLOCK DIAGRAM, SIGNAL PATH

Tegn. JD	Konf.
R - 0174 - 2	
8 - 11 - 71	

skanti

CT FRONT END



Tegn. JD	Kont.
R-0108-1	
6 - 8 - 70	

PARTS LIST
FOR
CT FRONT END

△2

2C 1	0.1 µF	±10%	250V	Polyes.
2C 2	0.1 µF	±10%	250V	Polyes.
2C 3	2.2 pF	±0.25pF	400V	Cer.NP0
2C 4	39 pF	±5%	400V	Cer.N150
2C 5	20 pF	Var.		Cer.
2C 6	3x518 pF	Var.	L.3G3.S	Air
2C 7	20 pF	Var.		Cer.
2C 8	47 pF	±5%	400V	Cer.N150
2C 9	47 nF	-20/+80%	12V	Cer.
2C10	0.1 µF	-20/+80%	12V	Cer.
2C11	0.1 µF	-20/+80%	12V	Cer.
2C12	47 pF	±5%	400V	Cer.N150
2C13	20 pF	Var.		Cer.
2C14	0.1 µF	-20/+80%	12V	Cer.

2D 1	1S920	
2D 2	1S920	
2D 3	BZX79 C6V8	Zener

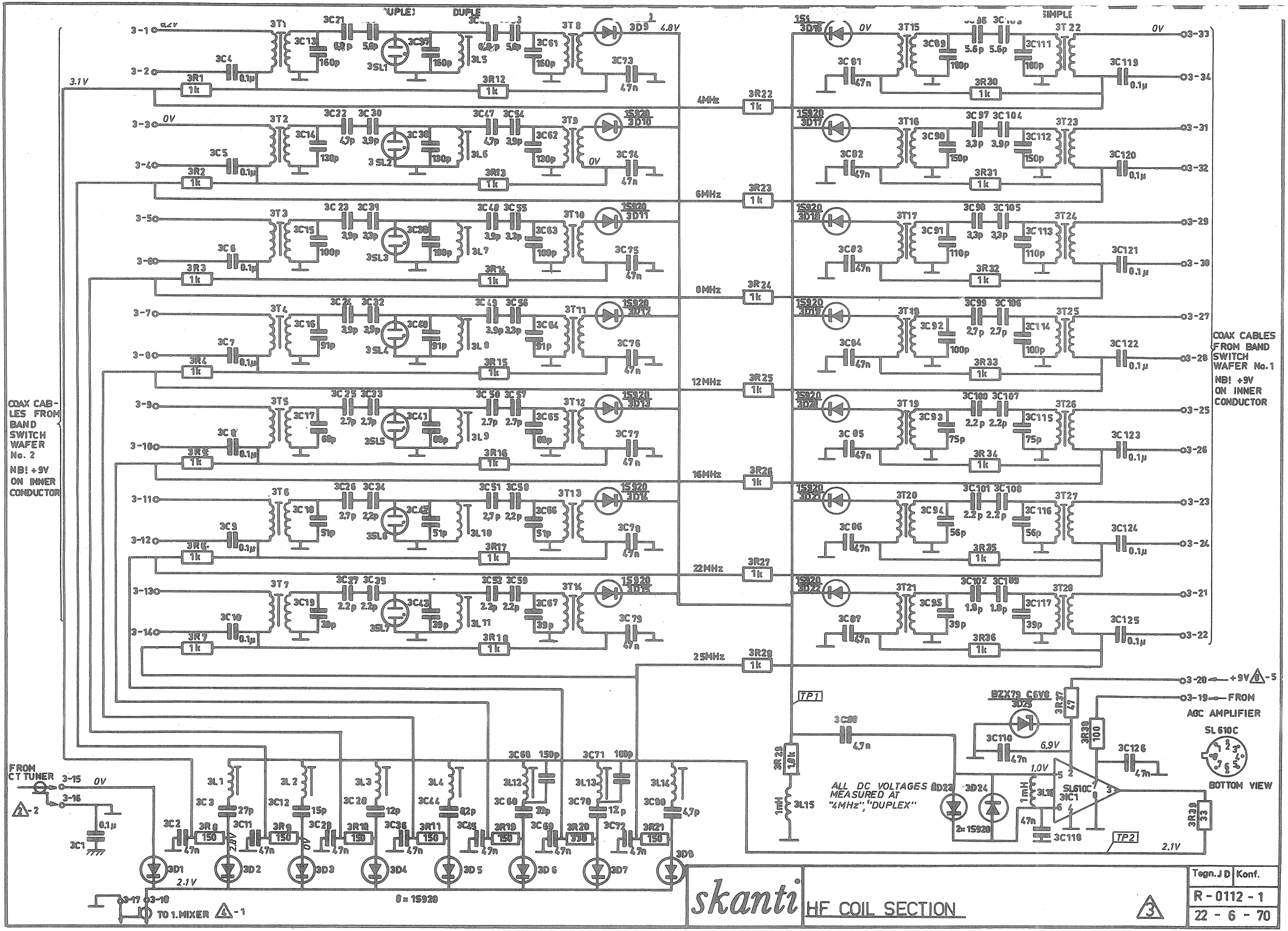
2IC 1	SL610C	

2L 1	COIL	SKANTI CODE: R-0240

2R 1	2.2 kohm	5%	1/8W	Car.
2R 2	47 ohm	5%	1/8W	Car.
2R 3	100 ohm	5%	1/8W	Car.
2R 4	68 ohm	5%	1/8W	Car.

2T 1	TRANSFORMER	SKANTI CODE: R-0237
2T 2	TRANSFORMER	SKANTI CODE: R-0238
2T 3	TRANSFORMER	SKANTI CODE: R-0239

2SL 1	LAMP	A9A-C


DUPLEX
SIMPLEX
4MHz
6MHz
8MHz
12MHz
16MHz
22MHz
25MHz
COAX CABLES FROM BAND SWITCH WAFER No. 2
NB! +9V ON INNER CONDUCTOR
COAX CABLES FROM BAND SWITCH WAFER No. 1
NB! +9V ON INNER CONDUCTOR
FROM CT TUNER
TO 1. MIXER
TP1
TP2
BZX79 C6V8
SL 610C
BOTTOM VIEW
FROM AGC AMPLIFIER
ALL DC VOLTAGES MEASURED AT "4MHz", "DUPLEX"
8 = 1S920
skanti
HF COIL SECTION
Tegn. J D
Konf.
R - 0112 - 1
22 - 6 - 70

PARTS LIST
FOR
HF COIL SECTION

△3

3C 1	0.1 µF	±10%	250V	Polyes.
3C 2	47 nF	-20/+80%	12V	Cer.
3C 3	27 pF	±5%	400V	Cer.N150
3C 4	0.1 µF	±10%	250V	Polyes.
3C 5	0.1 µF	±10%	250V	Polyes.
3C 6	0.1 µF	±10%	250V	Polyes.
3C 7	0.1 µF	±10%	250V	Polyes.
3C 8	0.1 µF	±10%	250V	Polyes.
3C 9	0.1 µF	±10%	250V	Polyes.
3C10	0.1 µF	±10%	250V	Polyes.
3C11	47 nF	-20/+80%	12V	Cer.
3C12	15 pF	±5%	400V	Cer.N150
3C13	160 pF	±5%	400V	Cer.N150
3C14	130 pF	±5%	400V	Cer.N150
3C15	100 pF	±5%	400V	Cer.N150
3C16	91 pF	±5%	400V	Cer.N150
3C17	68 pF	±5%	400V	Cer.N150
3C18	51 pF	±5%	400V	Cer.N150
3C19	39 pF	±5%	400V	Cer.N150
3C20	47 nF	-20/+80%	12V	Cer.
3C21	6.8 pF	±0.25pF	400V	Cer.N150
3C22	4.7 pF	±0.25pF	400V	Cer.N150
3C23	3.9 pF	±0.25pF	400V	Cer.N150
3C24	3.9 pF	±0.25pF	400V	Cer.N150
3C25	2.7 pF	±0.25pF	400V	Cer.NP0
3C26	2.7 pF	±0.25pF	400V	Cer.NP0
3C27	2.2 pF	±0.25pF	400V	Cer.NP0
3C28	12 pF	±5%	400V	Cer.N150
3C29	5.6 pF	±0.25pF	400V	Cer.N150
3C30	3.9 pF	±0.25pF	400V	Cer.N150
3C31	3.3 pF	±0.25pF	400V	Cer.N150
3C32	3.9 pF	±0.25pF	400V	Cer.N150
3C33	2.7 pF	±0.25pF	400V	Cer.NP0
3C34	2.2 pF	±0.25pF	400V	Cer.NP0
3C35	2.2 pF	±0.25pF	400V	Cer.NP0
3C36	47 nF	-20/+80%	12V	Cer.
3C37	160 pF	±5%	400V	Cer.N150
3C38	130 pF	±5%	400V	Cer.N150
3C39	100 pF	±5%	400V	Cer.N150
3C40	91 pF	±5%	400V	Cer.N150
3C41	68 pF	±5%	400V	Cer.N150
3C42	51 pF	±5%	400V	Cer.N150
3C43	39 pF	±5%	400V	Cer.N150
3C44	8.2 pF	±0.25pF	400V	Cer.N150
3C45	47 nF	-20/+80%	12V	Cer.
3C46	6.8 pF	±0.25pF	400V	Cer.N150
3C47	4.7 pF	±0.25pF	400V	Cer.N150
3C48	3.9 pF	±0.25pF	400V	Cer.N150
3C49	3.9 pF	±0.25pF	400V	Cer.N150
3C50	2.7 pF	±0.25pF	400V	Cer.NP0

3C51	2.7 pF	±0.25pF	400V	Cer.NP0
3C52	2.2 pF	±0.25pF	400V	Cer.NP0
3C53	5.6 pF	±0.25pF	400V	Cer.N150
3C54	3.9 pF	±0.25pF	400V	Cer.N150
3C55	3.3 pF	±0.25pF	400V	Cer.N150
3C56	3.3 pF	±0.25pF	400V	Cer.N150
3C57	2.7 pF	±0.25pF	400V	Cer.NP0
3C58	2.2 pF	±0.25pF	400V	Cer.NP0
3C59	2.2 pF	±0.25pF	400V	Cer.NP0
3C60	33 pF	±5%	400V	Cer.N150
3C61	160 pF	±5%	400V	Cer.N150
3C62	130 pF	±5%	400V	Cer.N150
3C63	100 pF	±5%	400V	Cer.N150
3C64	91 pF	±5%	400V	Cer.N150
3C65	68 pF	±5%	400V	Cer.N150
3C66	51 pF	±5%	400V	Cer.N150
3C67	39 pF	±5%	400V	Cer.N150
3C68	150 pF	±5%	400V	Cer.N150
3C69	47 nF	-20/+80%	12V	Cer.
3C70	12 pF	±5%	400V	Cer.N150
3C71	100 pF	±5%	400V	Cer.N150
3C72	47 nF	-20/+80%	12V	Cer.
3C73	47 nF	-20/+80%	12V	Cer.
3C74	47 nF	-20/+80%	12V	Cer.
3C75	47 nF	-20/+80%	12V	Cer.
3C76	47 nF	-20/+80%	12V	Cer.
3C77	47 nF	-20/+80%	12V	Cer.
3C78	47 nF	-20/+80%	12V	Cer.
3C79	47 nF	-20/+80%	12V	Cer.
3C80	4.7 pF	±0.25pF	400V	Cer.N150
3C81	47 nF	-20/+80%	12V	Cer.
3C82	47 nF	-20/+80%	12V	Cer.
3C83	47 nF	-20/+80%	12V	Cer.
3C84	47 nF	-20/+80%	12V	Cer.
3C85	47 nF	-20/+80%	12V	Cer.
3C86	47 nF	-20/+80%	12V	Cer.
3C87	47 nF	-20/+80%	12V	Cer.
3C88	4.7 nF	-20/+80%	30V	Cer.
3C89	180 pF	±5%	400V	Cer.N150
3C90	150 pF	±5%	400V	Cer.N150
3C91	110 pF	±5%	400V	Cer.N150
3C92	100 pF	±5%	400V	Cer.N150
3C93	75 pF	±5%	400V	Cer.N150
3C94	56 pF	±5%	400V	Cer.N150
3C95	39 pF	±5%	400V	Cer.N150
3C96	5.6 pF	±0.25pF	400V	Cer.N150
3C97	3.3 pF	±0.25pF	400V	Cer.N150
3C98	3.3 pF	±0.25pF	400V	Cer.N150
3C99	2.7 pF	±0.25pF	400V	Cer,NP0
3C100	2.2 pF	±0.25pF	400V	Cer.NP0

△3

3C101	2.2 pF	±0.25pF	400V	Cer.NP0
3C102	1.8 pF	±0.25pF	400V	Cer.NP0
3C103	5.6 pF	±0.25pF	400V	Cer.N150
3C104	3.9 pF	±0.25pF	400V	Cer.N150
3C105	3.3 pF	±0.25pF	400V	Cer.N150
3C106	2.7 pF	±0.25pF	400V	Cer.NP0
3C107	2.2 pF	±0.25pF	400V	Cer.NP0
3C108	2.2 pF	±0.25pF	400V	Cer.NP0
3C109	1.8 pF	±0.25pF	400V	Cer.NP0
3C110	47 nF	-20/+80%	12V	Cer.
3C111	180 pF	±5%	400V	Cer.N150
3C112	150 pF	±5%	400V	Cer.N150
3C113	110 pF	±5%	400V	Cer.N150
3C114	100 pF	±5%	400V	Cer.N150
3C115	.75 pF	±5%	400V	Cer.N150
3C116	56 pF	±5%	400V	Cer.N150
3C117	39 pF	±5%	400V	Cer.N150
3C118	47 nF	-20/+80%	12V	Cer.
3C119	0.1 µF	±10%	250V	Polyes.
3C120	0.1 µF	±10%	250V	Polyes.
3C121	0.1 µF	±10%	250V	Polyes.
3C122	0.1 µF	±10%	250V	Polyes.
3C123	0.1 µF	±10%	250V	Polyes.
3C124	0.1 µF	±10%	250V	Polyes.
3C125	0.1 µF	±10%	250V	Polyes.
3C126	47 nF	-20/+80%	12V	Cer.

3D 1	1S920
3D 2	1S920
3D 3	1S920
3D 4	1S920
3D 5	1S920
3D 6	1S920
3D 7	1S920
3D 8	1S920
3D 9	1S920
3D10	1S920
3D11	1S920
3D12	1S920
3D13	1S920
3D14	1S920
3D15	1S920
3D16	1S920
3D17	1S920
3D18	1S920
3D19	1S920
3D20	1S920
3D21	1S920
3D22	1S920
3D23	1S920
3D24	1S920
3D25	BZX79 C6V8 Zener

3IC 1	SL610C

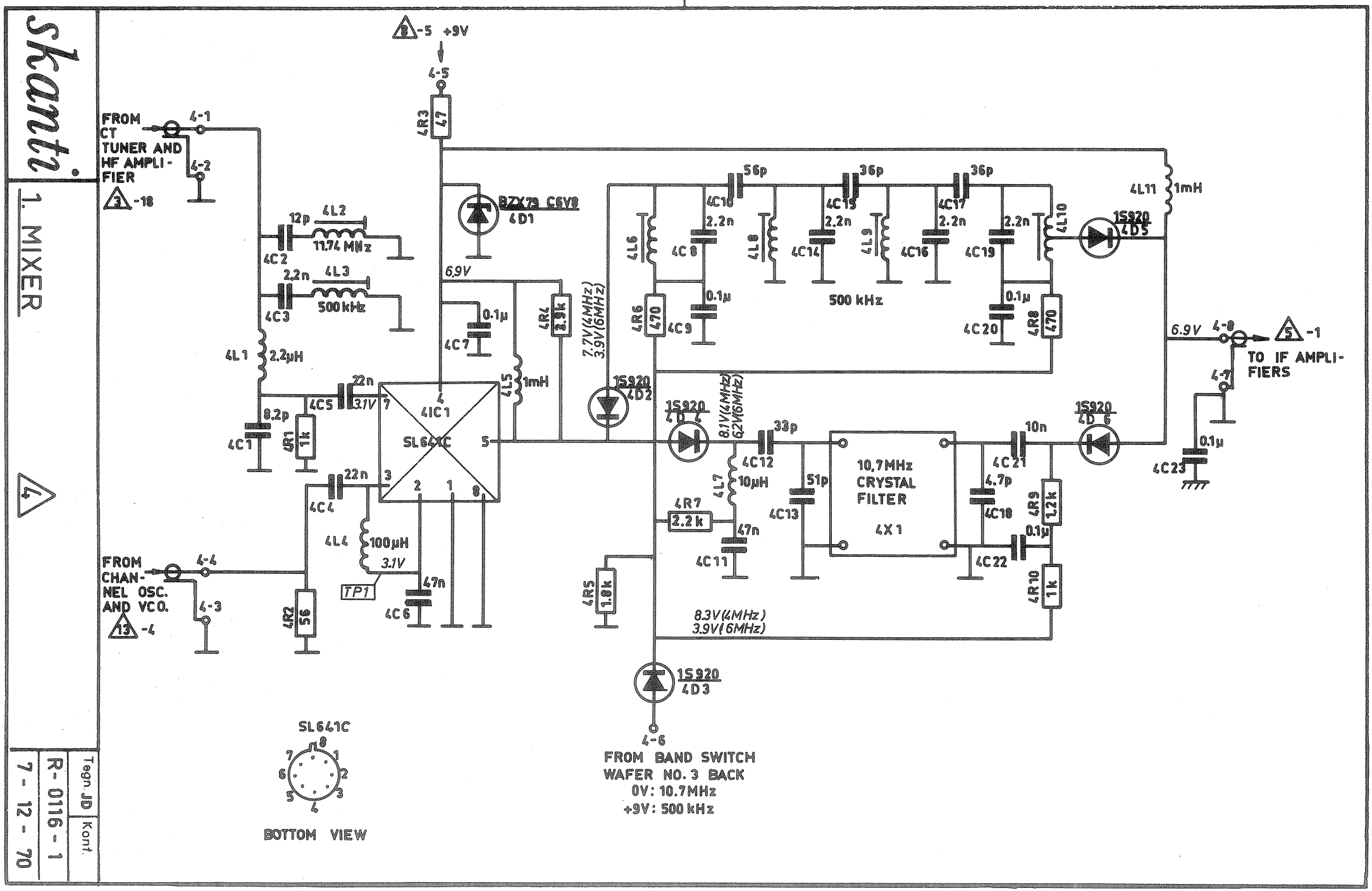
3L 1	COIL		SKANTI CODE: R-0204	
3L 2	COIL		SKANTI CODE: R-0205	
3L 3	COIL		SKANTI CODE: R-0206	
3L 4	COIL		SKANTI CODE: R-0207	
3L 5	COIL		SKANTI CODE: R-0182	
3L 6	COIL		SKANTI CODE: R-0183	
3L 7	COIL		SKANTI CODE: R-0184	
3L 8	COIL		SKANTI CODE: R-0185	
3L 9	COIL		SKANTI CODE: R-0186	
3L10	COIL		SKANTI CODE: R-0187	
3L11	COIL		SKANTI CODE: R-0187	
3L12	COIL		SKANTI CODE: R-0208	
3L13	COIL		SKANTI CODE: R-0208	
3L14	COIL		SKANTI CODE: R-0209	
3L15	1 mH	RF CHOKE	10%	
3L16	1 mH	RF CHOKE	10%	
3R 1	1.0 kohm	5%	1/8W	Car.
3R 2	1.0 kohm	5%	1/8W	Car.
3R 3	1.0 kohm	5%	1/8W	Car.
3R 4	1.0 kohm	5%	1/8W	Car.
3R 5	1.0 kohm	5%	1/8W	Car.
3R 6	1.0 kohm	5%	1/8W	Car.
3R 7	1.0 kohm	5%	1/8W	Car.
3R 8	150 ohm	5%	1/8W	Car.
3R 9	150 ohm	5%	1/8W	Car.
3R10	150 ohm	5%	1/8W	Car.
3R11	150 ohm	5%	1/8W	Car.
3R12	1.0 kohm	5%	1/8W	Car.
3R13	1.0 kohm	5%	1/8W	Car.
3R14	1.0 kohm	5%	1/8W	Car.
3R15	1.0 kohm	5%	1/8W	Car.
3R16	1.0 kohm	5%	1/8W	Car.
3R17	1.0 kohm	5%	1/8W	Car.
3R18	1,0 kohm	5%	1/8W	Car.
3R19	150 ohm	5%	1/8W	Car.
3R20	330 ohm	5%	1/8W	Car.
3R21	150 ohm	5%	1/8W	Car.
3R22	1.0 kohm	5%	1/8W	Car.
3R23	1.0 kohm	5%	1/8W	Car.
3R24	1.0 kohm	5%	1/8W	Car.
3R25	1.0 kohm	5%	1/8W	Car.
3R26	1.0 kohm	5%	1/8W	Car.
3R27	1.0 kohm	5%	1/8W	Car.
3R28	1.0 kohm	5%	1/8W	Car.
3R29	1.8 kohm	5%	1/8W	Car.
3R30	1.0 kohm	5%	1/8W	Car.
3R31	1.0 kohm	5%	1/8W	Car.
3R32	1.0 kohm	5%	1/8W	Car.
3R33	1.0 kohm	5%	1/8W	Car.
3R34	1.0 kohm	5%	1/8W	Car.
3R35	1.0 kohm	5%	1/8W	Car.
3R36	1.0 kohm	5%	1/8W	Car.
3R37	47 ohm	5%	1/8W	Car.

(3)

3R38	100 ohm	5%	1/8W	Car.
3R39	33 ohm	5%	1/8W	Car.

3SL 1	LAMP	A9A C
3SL 2	LAMP	A9A C
3SL 3	LAMP	A9A C
3SL 4	LAMP	A9A C
3SL 5	LAMP	A9A C
3SL 6	LAMP	A9A C
3SL 7	LAMP	A9A C

3T 1	TRNASFORMER	SKANTI CODE: R-0176
3T 2	TRANSFORMER	SKANTI CODE: R-0177
3T 3	TRANSFORMER	SKANTI CODE: R-0178
3T 4	TRANSFORMER	SKANTI CODE: R-0179
3T 5	TRANSFORMER	SKANTI CODE: R-0180
3T 6	TRANSFORMER	SKANTI CODE: R-0181
3T 7	TRANSFORMER	SKANTI CODE: R-0181
3T 8	TRANSFORMER	SKANTI CODE: R-0188
3T 9	TRANSFORMER	SKANTI CODE: R-0189
3T10	TRANSFORMER	SKANTI CODE: R-0190
3T11	TRANSFORMER	SKANTI CODE: R-0191
3T12	TRANSFORMER	SKANTI CODE: R-0192
3T13	TRANSFORMER	SKANTI CODE: R-0193
3T14	TRANSFORMER	SKANTI CODE: R-0193
3T15	TRANSFORMER	SKANTI CODE: R-0200
3T16	TRANSFORMER	SKANTI CODE: R-0201
3T17	TRANSFORMER	SKANTI CODE: R-0202
3T18	TRANSFORMER	SKANTI CODE: R-0191
3T19	TRANSFORMER	SKANTI CODE: R-0192
3T20	TRANSFORMER	SKANTI CODE: R-0203
3T21	TRANSFORMER	SKANTI CODE: R-0203
3T22	TRANSFORMER	SKANTI CODE: R-0194
3T23	TRANSFORMER	SKANTI CODE: R-0195
3T24	TRANSFORMER	SKANTI CODE: R-0196
3T25	TRANSFORMER	SKANTI CODE: R-0197
3T26	TRANSFORMER	SKANTI CODE: R-0198
3T27	TRANSFORMER	SKANTI CODE: R-0199
3T28	TRANSFORMER	SKANTI CODE: R-0199


skanti.
1. MIXER
4
R-0116-1
7-12-70
Tegn. JD
Kont.
FROM CT TUNER AND HF AMPLI-FIER
3 -18
4-1
4-2
FROM CHAN-NEL OSC. AND VCO.
13 -4
4-4
4-3
3 -5 +9V
4-5
4R3 47
BZX79 C6V8 4D1
6.9V
4C2 12p
4L2 11.74 MHz
4C3 2.2n
4L3 500 kHz
4L1 2.2µH
4C7 0.1µ
4R4 3.9k
4L5 1mH
4C1 8.2p
4R1 1k
4C5 22n 3.1V
4IC1
SL641C
4C4 22n
4L4 100µH 3.1V
TP1
4C6 47n
4R2 56
4R5 1.8k
7.7V(4MHz) 3.9V(6MHz)
1S920 4D2
1S920 4D4
8.1V(4MHz) 6.2V(6MHz)
33p 4C12
4L7 10µH
4R7 2.2k
47n 4C11
51p 4C13
10,7MHz CRYSTAL FILTER 4X1
10n 4C21
4.7p 4C18
0.1µ 4C22
4R9 1.2k
4R10 1k
1S920 4D6
8.3V(4MHz) 3.9V(6MHz)
1S920 4D3
4-6
FROM BAND SWITCH WAFER NO. 3 BACK
0V: 10.7MHz
+9V: 500 kHz
4L6
4C8 2.2n
4C10 56p
4L8
4C14 2.2n
4C15 36p
4L9
4C16
4C17 36p
4L10
4C19 2.2n
4C20 0.1µ
4R6 470
4C9 0.1µ
4R8 470
500 kHz
4L11 1mH
1S920 4D5
6.9V 4-8
5 -1
TO IF AMPLI-FIERS
4-7
0.1µ 4C23
SL641C
BOTTOM VIEW

PARTS LIST

FOR

1. MIXER

④

4C 1	8.2 pF	±0.25pF	400V	Cer.N150
4C 2	12 pF	±5%	400V	Cer.N150
4C 3	2.2 nF	±1%	125V	Polyst.
4C 4	22 nF	-20/+80%	30V	Cer.
4C 5	22 nF	-20/+80%	30V	Cer.
4C 6	47 nF	-20/+80%	12V	Cer.
4C 7	0.1 µF	-20/+80%	12V	Cer.
4C 8	2.2 nF	±1%	125V	Polyst.
4C 9	0.1 µF	-20/+80%	12V	Cer.
4C10	56 pF	±5%	400V	Cer.NP0
4C11	47 nF	-20/+80%	12V	Cer.
4C12	33 pF	±5%	400V	Cer.N150
4C13	51 pF	±5%	400V	Cer.N150
4C14	2.2 nF	±1%	125V	Polyst.
4C15	36 pF	±5%	400V	Cer.NP0
4C16	2.2 nF	±1%	125V	Polyst.
4C17	36 pF	±5%	400V	Cer.NP0
4C18	4.7 pF	±0.25pF	400V	Cer.N150
4C19	2.2 nF	±1%	125V	Polyst.
4C20	0.1 µF	-20/+80%	12V	Cer.
4C21	10 nF	-20/+80%	30V	Cer.
4C22	0.1 µF	-20/+80%	12V	Cer.
4C23	0.1 µF	10%	250V	Polyes.

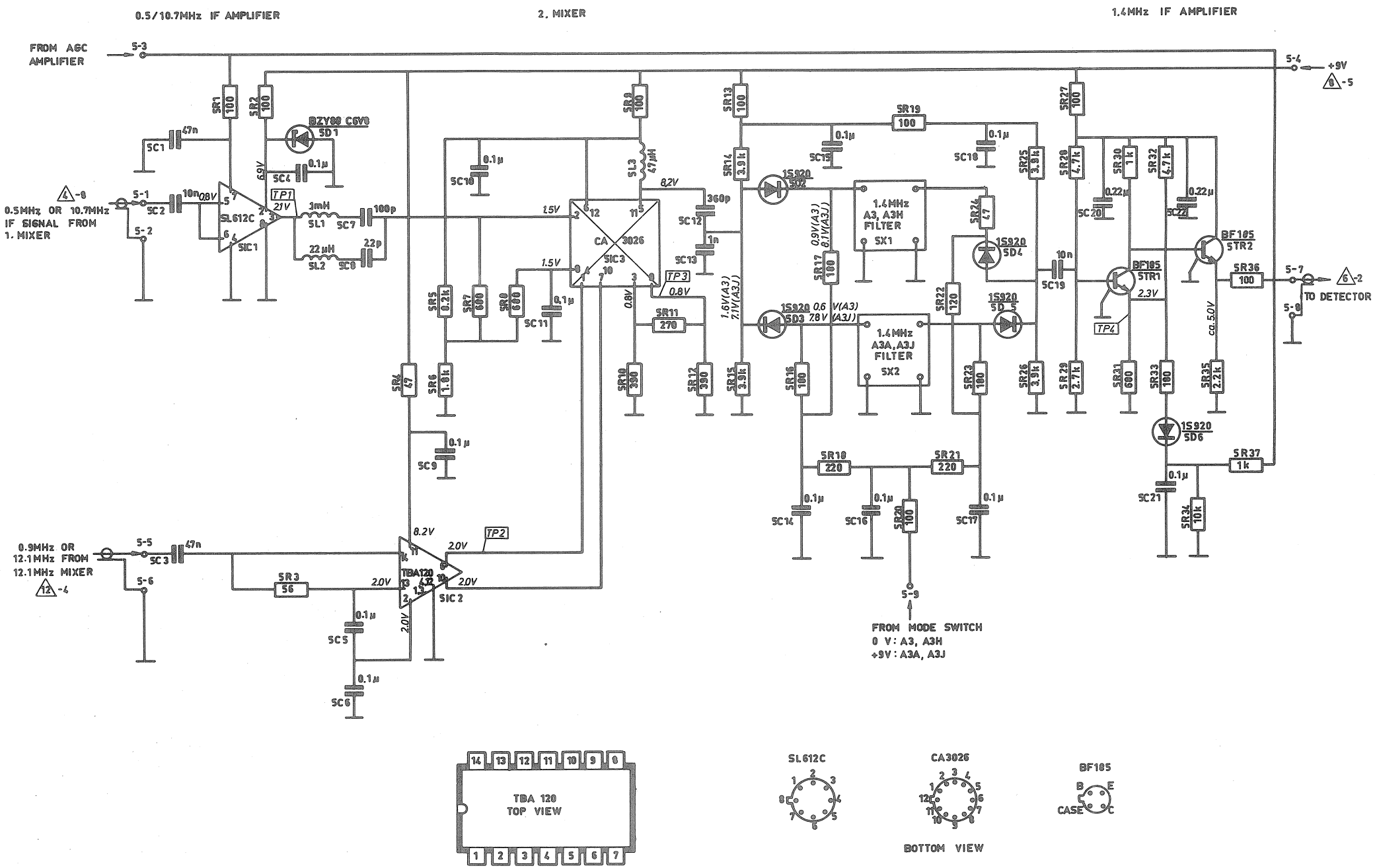
4D 1	BZX79 C6V8	Zener
4D 2	1S920	
4D 3	1S920	
4D 4	1S920	
4D 5	1S920	
4D 6	1S920	

4IC 1	SL641C

4L 1	2.2 µH	RF CHOKE	±10%
4L 2	COIL		SKANTI CODE: R-0312
4L 3	COIL		SKANTI CODE: R-0210
4L 4	100 µH	RF CHOKE	±10%
4L 5	1 mH	RF CHOKE	±10%
4L 6	FILTER COIL		SKANTI CODE: R-0218
4L 7	10 µH	RF CHOKE	±10%
4L 8	FILTER COIL		SKANTI CODE: R-0218
4L 9	FILTER COIL		SKANTI CODE: R-0218
4L10	FILTER COIL		SKANTI CODE: R-0313
4L11	1 mH	RF CHOKE	±10%

△4

4R 1	1 kohm	5%	1/8W	Car.
4R 2	56 ohm	5%	1/8W	Car.
4R 3	47 ohm	5%	1/8W	Car.
4R 4	3.9 kohm	5%	1/8W	Car.
4R 5	1.8 kohm	5%	1/8W	Car.
4R 6	470 ohm	5%	1/8W	Car.
4R 7	2.2 kohm	5%	1/8W	Car.
4R 8	470 ohm	5%	1/8W	Car.
4R 9	1.2 kohm	5%	1/8W	Car.
4R10	1 kohm	5%	1/8W	Car.
4X 1	FILTER	445LQU914EM	10.7MHz	


0.5/10.7MHz IF AMPLIFIER
2. MIXER
1.4MHz IF AMPLIFIER
FROM AGC AMPLIFIER
5-3
5-4
+9V
6-5
SR1 100
SR2 100
SR8 100
SR13 100
SR19 100
SR27 100
BZY88 C6V8 SD1
SC1 47n
SC4 0.1µ
SC10 0.1µ
SL3 47µH
8.2V
SR14 3.9k
SC15 0.1µ
SC18 0.1µ
SR25 3.9k
SR26 4.7k
SR30 1k
SR32 4.7k
SC20 0.22µ
SC22 0.22µ
4-8
0.5MHz OR 10.7MHz IF SIGNAL FROM 1. MIXER
5-1
5-2
SC2 10n
0.8V
SIC1 SL612C
TP1 2.1V
SL1 1mH
SC7 100p
SL2 22µH
SC8 22p
1.5V
SIC3 CA 3026
TP3
0.8V
SC12 360p
SC13 1n
1S920 SD2
1.4MHz A3, A3H FILTER SX1
SR24 47
SR17 100
0.9V(A3) 8.1V(A3J)
1S920 SD4
SC19 10n
BF105 STR2
BF105 STR1
2.3V
TP4
SR36 100
5-7
6-2
TO DETECTOR
5-8
ca.5.0V
SR5 0.2k
SR7 600
SR9 600
SC11 0.1µ
SR11 270
SR4 47
SR6 1.0k
SR10 390
SR12 390
SR15 3.9k
1.6V(A3) 7.1V(A3J)
1S920 SD3
0.6V(A3) 7.8V(A3J)
1.4MHz A3A, A3J FILTER SX2
SR22 120
1S920 SD5
SR16 100
SR23 100
SR26 3.9k
SR29 2.7k
SR31 680
SR33 180
SR35 2.2k
1S920 SD6
SC9 0.1µ
SR18 220
SR21 220
SC14 0.1µ
SC16 0.1µ
SR20 100
SC17 0.1µ
SC21 0.1µ
SR37 1k
SR34 10k
5-9
FROM MODE SWITCH
0 V: A3, A3H
+9V: A3A, A3J
0.9MHz OR 12.1MHz FROM 12.1MHz MIXER
12-4
5-5
5-6
SC3 47n
SR3 56
8.2V
2.0V
TP2
TBA120
SIC2
SC5 0.1µ
SC6 0.1µ
TBA 120 TOP VIEW
SL612C
CA3026
BOTTOM VIEW
BF185
CASE
skanti
IF AMPLIFIERS
5
Tegn. JC
Konf.
R - 0120 - 1
10 - 11 - 70

PARTS LIST
FOR
IF AMPLIFIERS

△5

5C 1	47 nF	-20/+80%	12V	Cer.
5C 2	10 nF	-20/+80%	30V	Cer.
5C 3	47 nF	-20/+80%	12V	Cer.
5C 4	0.1 µF	-20/+80%	12V	Cer.
5C 5	0.1 µF	-20/+80%	12V	Cer.
5C 6	0.1 µF	-20/+80%	12V	Cer.
5C 7	100 pF	±5%	400V	Cer.N150
5C 8	22 pF	±5%	400V	Cer.N150
5C 9	0.1 µF	-20/+80%	12V	Cer.
5C10	0.1 µF	-20/+80%	12V	Cer.
5C11	0.1 µF	-20/+80%	12V	Cer.
5C12	360 pF	1%	125V	Polyst.
5C13	1 nF	1%	125V	Polyst.
5C14	0.1 µF	-20/+80%	12V	Cer.
5C15	0.1 µF	-20/+80%	12V	Cer.
5C16	0.1 µF	-20/+80%	12V	Cer.
5C17	0.1 µF	-20/+80%	12V	Cer.
5C18	0.1 µF	-20/+80%	12V	Cer.
5C19	10 nF	-20/+80%	30V	Cer.
5C20	0.22 µF	-20/+80%	12V	Cer.
5C21	0.1 µF	-20/+80%	12V	Cer.
5C22	0.22 µF	-20/+80%	12V	Cer.

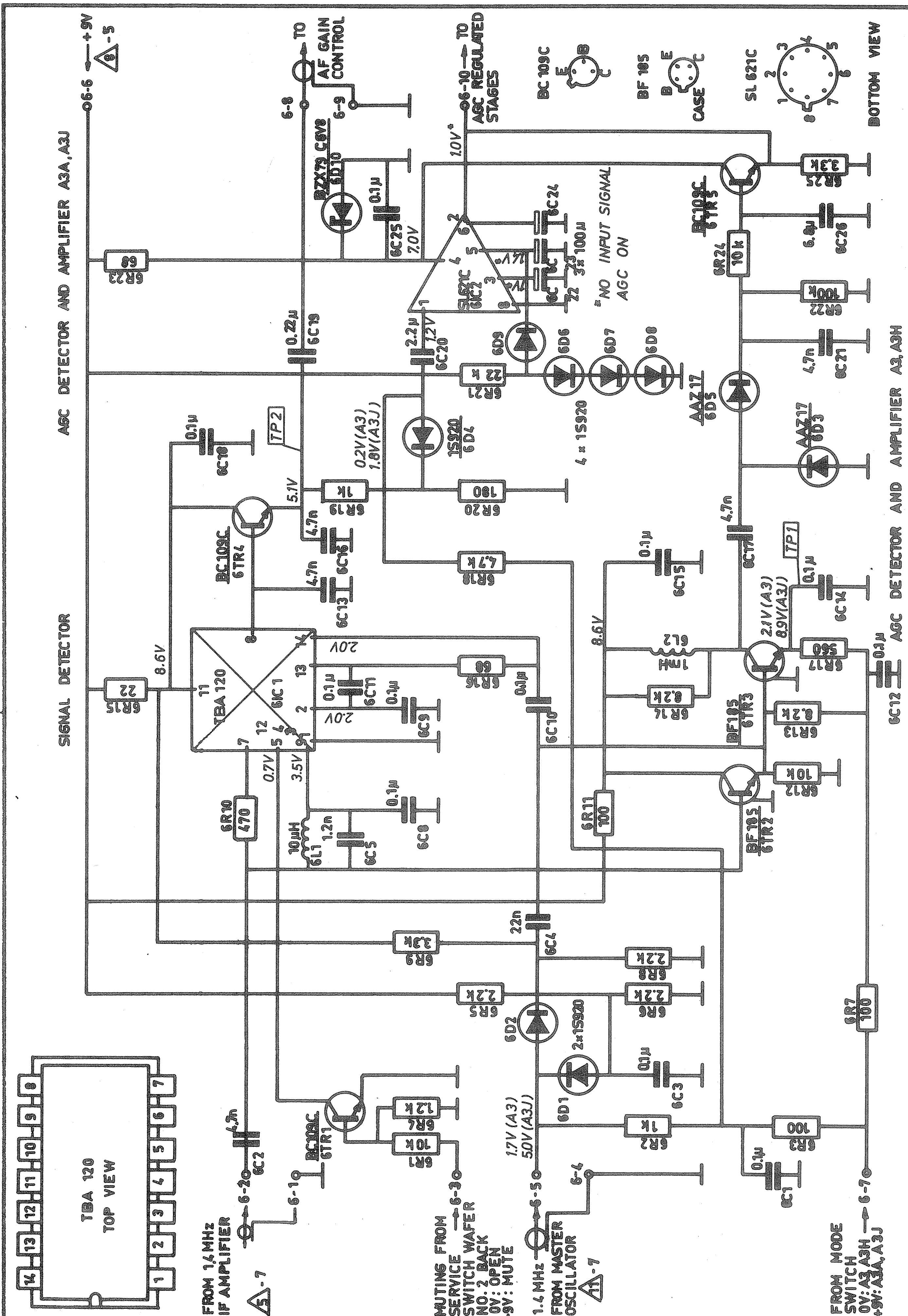
5D 1	BZY88 C6V8	Zener
5D 2	1S920	
5D 3	1S920	
5D 4	1S920	
5D 5	1S920	
5D 6	1S920	

5IC 1	SL612C
5IC 2	TBA120
5IC 3	CA3026

5L 1	1 mH	RF CHOKE	±10%
5L 2	22 µH	RF CHOKE	±10%
5L 3	47 µH	RF CHOKE	±10%

5R 1	100 ohm	5%	1/8W	Car.
5R 2	100 ohm	5%	1/8W	Car.
5R 3	56 ohm	5%	1/8W	Car.
5R 4	47 ohm	5%	1/8W	Car.
5R 5	8.2 kohm	5%	1/8W	Car.
5R 6	1.8 kohm	5%	1/8W	Car.
5R 7	680 ohm	5%	1/8W	Car.
5R 8	680 ohm	5%	1/8W	Car.
5R 9	100 ohm	5%	1/8W	Car.
5R10	390 ohm	5%	1/8W	Car.
5R11	270 ohm	5%	1/8W	Car.
5R12	390 ohm	5%	1/8W	Car.
5R13	100 ohm	5%	1/8W	Car.
5R14	3.9 kohm	5%	1/8W	Car.
5R15	3.9 kohm	5%	1/8W	Car.
5R16	180 ohm	5%	1/8W	Car.
5R17	180 ohm	5%	1/8W	Car.
5R18	220 ohm	5%	1/8W	Car.
5R19	100 ohm	5%	1/8W	Car.
5R20	100 ohm	5%	1/8W	Car.
5R21	220 ohm	5%	1/8W	Car.
5R22	120 ohm	5%	1/8W	Car.
5R23	180 ohm	5%	1/8W	Car.
5R24	47 ohm	5%	1/8W	Car.
5R25	3.9 kohm	5%	1/8W	Car.
5R26	3.9 kohm	5%	1/8W	Car.
5R27	100 ohm	5%	1/8W	Car.
5R28	4.7 kohm	5%	1/8W	Car.
5R29	2.7 kohm	5%	1/8W	Car.
5R30	1 kohm	5%	1/8W	Car.
5R31	680 ohm	5%	1/8W	Car.
5R32	4.7 kohm	5%	1/8W	Car.
5R33	180 ohm	5%	1/8W	Car.
5R34	10 kohm	5%	1/8W	Car.
5R35	2.2 kohm	5%	1/8W	Car.
5R36	100 ohm	5%	1/8W	Car.
5R37	1 kohm	5%	1/8W	Car.

5TR 1	BF185		
5TR 2	BF185		
5X 1	FILTER	BP4713/2	1.4MHz
5X 2	FILTER	BP4705/2	1.4MHz



skanti	DETECTORS AND AGC AMPLIFIERS	6	Tegn. JD	Konf.
			R - 0124 - 2	
			30 - 7 - 70	

PARTS LIST
FOR
DETECTORS

△6

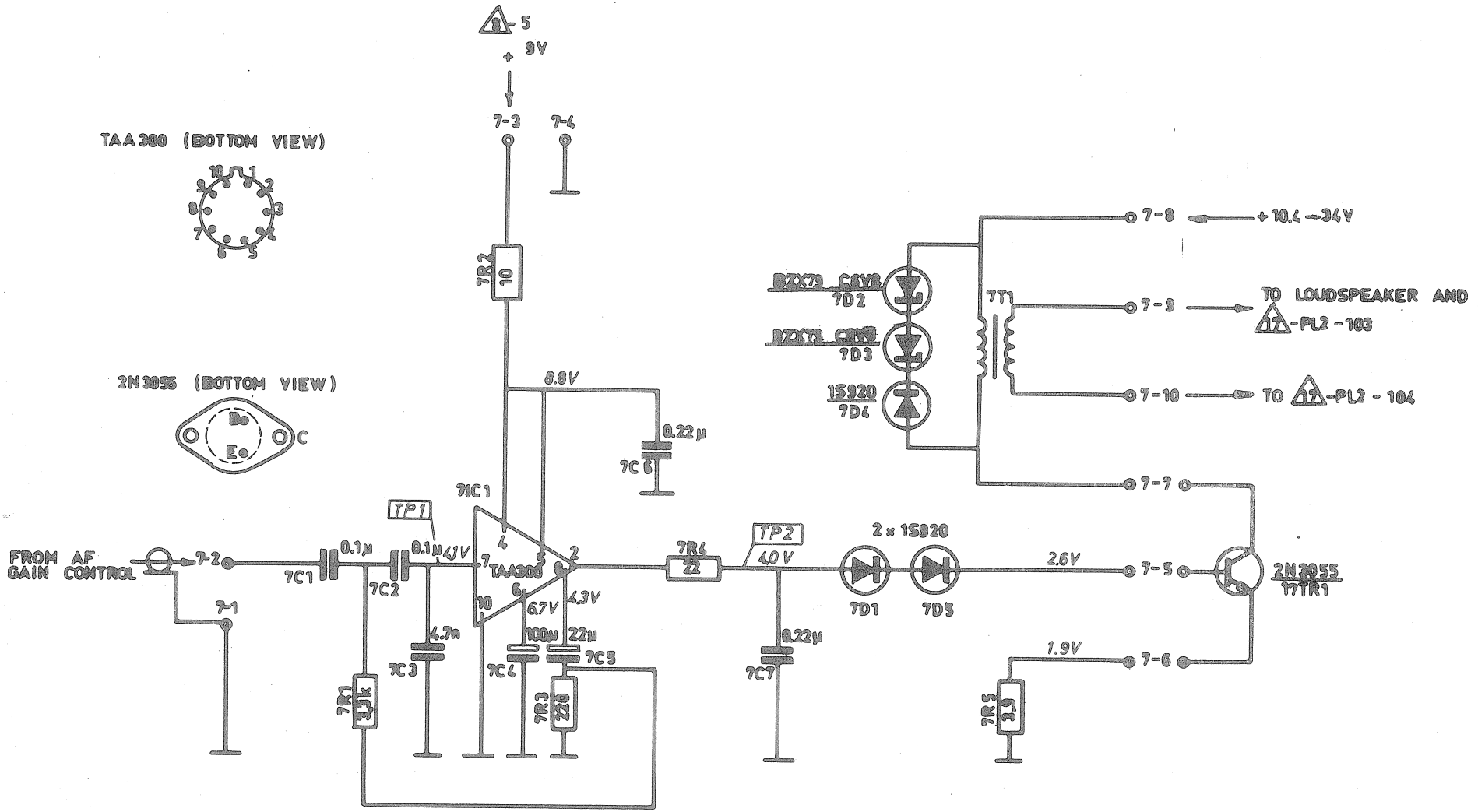
6C 1	0.1 µF	-20/+80%	12V	Cer.
6C 2	4.7 nF	-20/+80%	30V	Cer.
6C 3	0.1 µF	-20/+80%	12V	Cer.
6C 4	22 nF	-20/+80%	30V	Cer.
6C 5	1.2 nF	±1%	125V	Polyst.
6C 8	0.1 µF	-20/+80%	12V	Cer.
6C 9	0.1 µF	-20/+80%	12V	Cer.
6C10	0.1 µF	-20/+80%	12V	Cer.
6C11	0.1 µF	-20/+80%	12V	Cer.
6C12	0.1 µF	-20/+80%	12V	Cer.
6C13	4.7 nF	-20/+80%	30V	Cer.
6C14	0.1 µF	-20/+80%	12V	Cer.
6C15	0.1 µF	-20/+80%	12V	Cer.
6C16	4.7 nF	-20/+80%	30V	Cer.
6C17	4.7 nF	-20/+80%	30V	Cer.
6C18	0.1 µF	-20/+80%	12V	Cer.
6C19	0.22 µF	-20/+80%	12V	Cer.
6C20	2.2 µF	±10%	100V	Polyes.
6C21	4.7 nF	-20/+80%	30V	Cer.
6C22	100 µF		16V	W.alum.
6C23	100 µF		16V	W.alum.
6C24	100 µF		16V	W.alum.
6C25	0.1 µF	-20/+80%	12V	Cer.
6C26	6.8 µF	±10%	100V	Polyes.

6D 1	1S920	
6D 2	1S920	
6D 3	AAZ 17	
6D 4	1S920	
6D 5	AAZ 17	
6D 6	1S920	
6D 7	1S920	
6D 8	1S920	
6D 9	1S920	
6D10	BZX79 C6V8	Zener

6IC 1	TBA120
6IC 2	SL621C

6L 1	10 µH	RF CHOKE	±10%	
6L 2	1 mH	RF CHOKE	±10%	
6R 1	10 kohm	5%	1/8W	Car.
6R 2	1.0 kohm	5%	1/8W	Car.
6R 3	100 ohm	5%	1/8W	Car.
6R 4	1.2 kohm	5%	1/8W	Car.
6R 5	2.2 kohm	5%	1/8W	Car.
6R 6	2.2 kohm	5%	1/8W	Car.
6R 7	100 ohm	5%	1/8W	Car.
6R 8	2.2 kohm	5%	1/8W	Car.
6R 9	3.3 kohm	5%	1/8W	Car.
6R10	470 ohm	5%	1/8W	Car.
6R11	100 ohm	5%	1/8W	Car.
6R12	10 kohm	5%	1/8W	Car.
6R13	8.2 kohm	5%	1/8W	Car.
6R14	8.2 kohm	5%	1/8W	Car.
6R15	22 ohm	5%	1/8W	Car.
6R16	68 ohm	5%	1/8W	Car.
6R17	560 ohm	5%	1/8W	Car.
6R18	4.7 kohm	5%	1/8W	Car.
6R19	1.0 kohm	5%	1/8W	Car.
6R20	180 ohm	5%	1/8W	Car.
6R21	22 kohm	5%	1/8W	Car.
6R22	100 kohm	5%	1/8W	Car.
6R23	68 ohm	5%	1/8W	Car.
6R24	10 kohm	5%	1/8W	Car.
6R25	3.3 kohm	5%	1/8W	Car.

6TR 1	BC109C
6TR 2	BF185
6TR 3	BF185
6TR 4	BC109C
6TR 5	BC109C


skanti
AF AMPLIFIER
7
Tegn. JD
Kont.
R-0128-1
30-7-70
TAA 300 (BOTTOM VIEW)
2N 3055 (BOTTOM VIEW)
B
E
C
5
9V
7-3
7-4
7R2
10
8.8V
0.22µ
7C6
7C1
TP1
FROM AF GAIN CONTROL
7-2
7-1
0.1µ
7C1
0.1µ
7C2
4.7V
TAA300
4.7n
7C3
6.7V
4.3V
100µ
22µ
7C4
7C5
7R1
15k
7R3
220
TP2
4.0V
7R4
22
0.22µ
7C7
2 x 1S920
7D1
7D5
2.6V
7-5
2N3055
17TR1
1.9V
7-6
7R5
6k8
7-7
7-8
+ 10.4 – 34V
7T1
7-9
TO LOUDSPEAKER AND
17-PL2 - 103
7-10
TO 17-PL2 - 104
BZX79 C6V8
7D2
BZX79 C6V8
7D3
1S920
7D4

PARTS LIST
FOR
AF AMPLIFIER

△7

7C 1	0.1 µF	10%	100V	Polyes.
7C 2	0.1 µF	10%	100V	Polyes.
7C 3	4.7 nF	-20/+80%	30V	Cer.
7C 4	100 µF		16V	W.alum.
7C 5	22 µF	20%	15V	Tan.
7C 6	0.22 µF	-20/+80%	12V	Cer.
7C 7	0.22 µF	-20/+80%	12V	Cer.

7D 1	1S920	
7D 2	BZX79 C6V8	Zener
7D 3	BZX79 C6V8	Zener
7D 4	1S920	
7D 5	1S920	

7IC 1	TAA 300

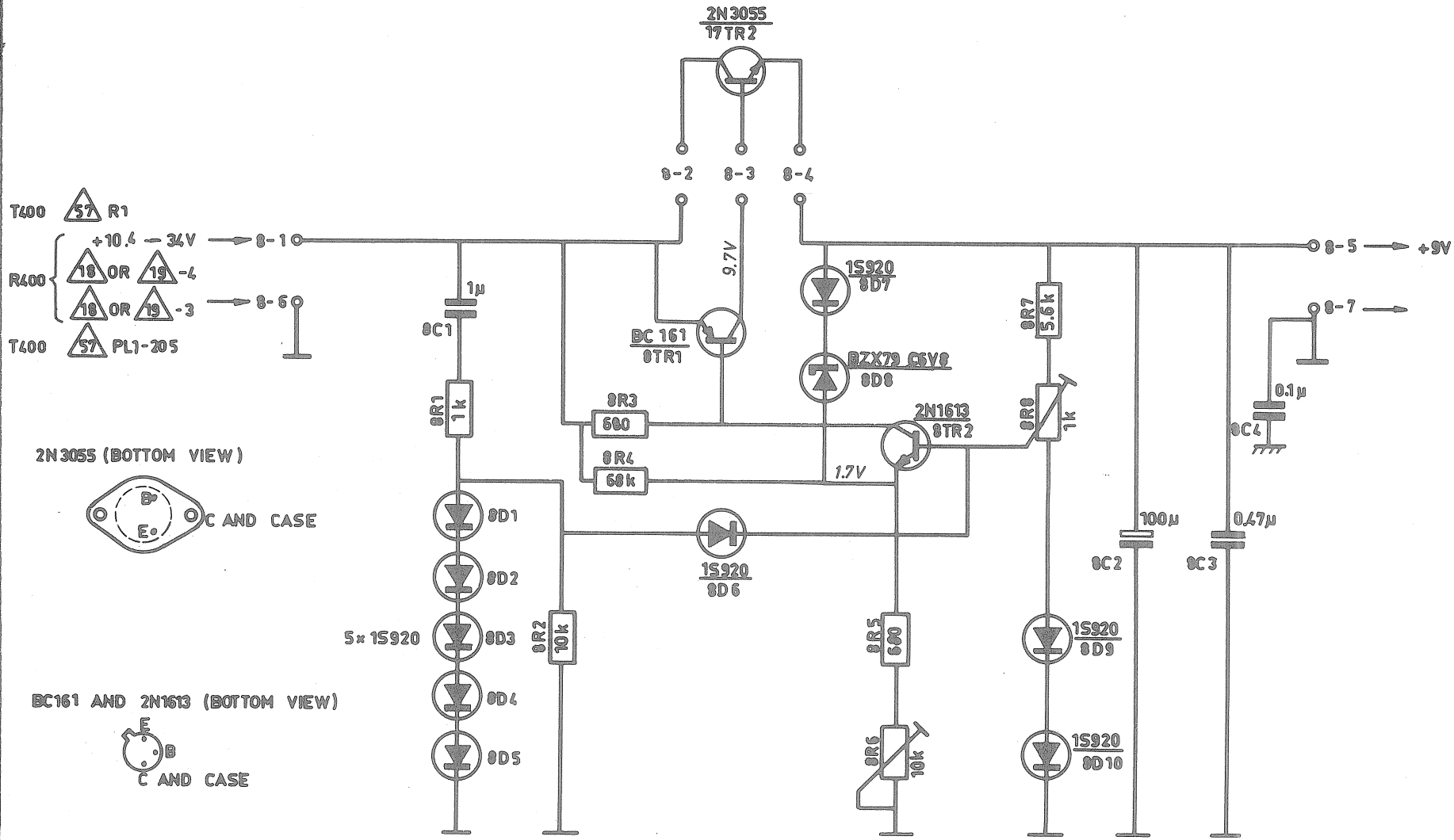
7R 1	3.3 kohm	5%	1/8W	Car.
7R 2	10 ohm	5%	1/8W	Car.
7R 3	220 ohm	5%	1/8W	Car.
7R 4	22 ohm	5%	1/8W	Car.
7R 5	3.9 ohm	5%	3W	ww

7T 1	TRANSFORMER	SKANTI CODE: R-0377

skanti

9V VOLTAGE REGULATOR

8

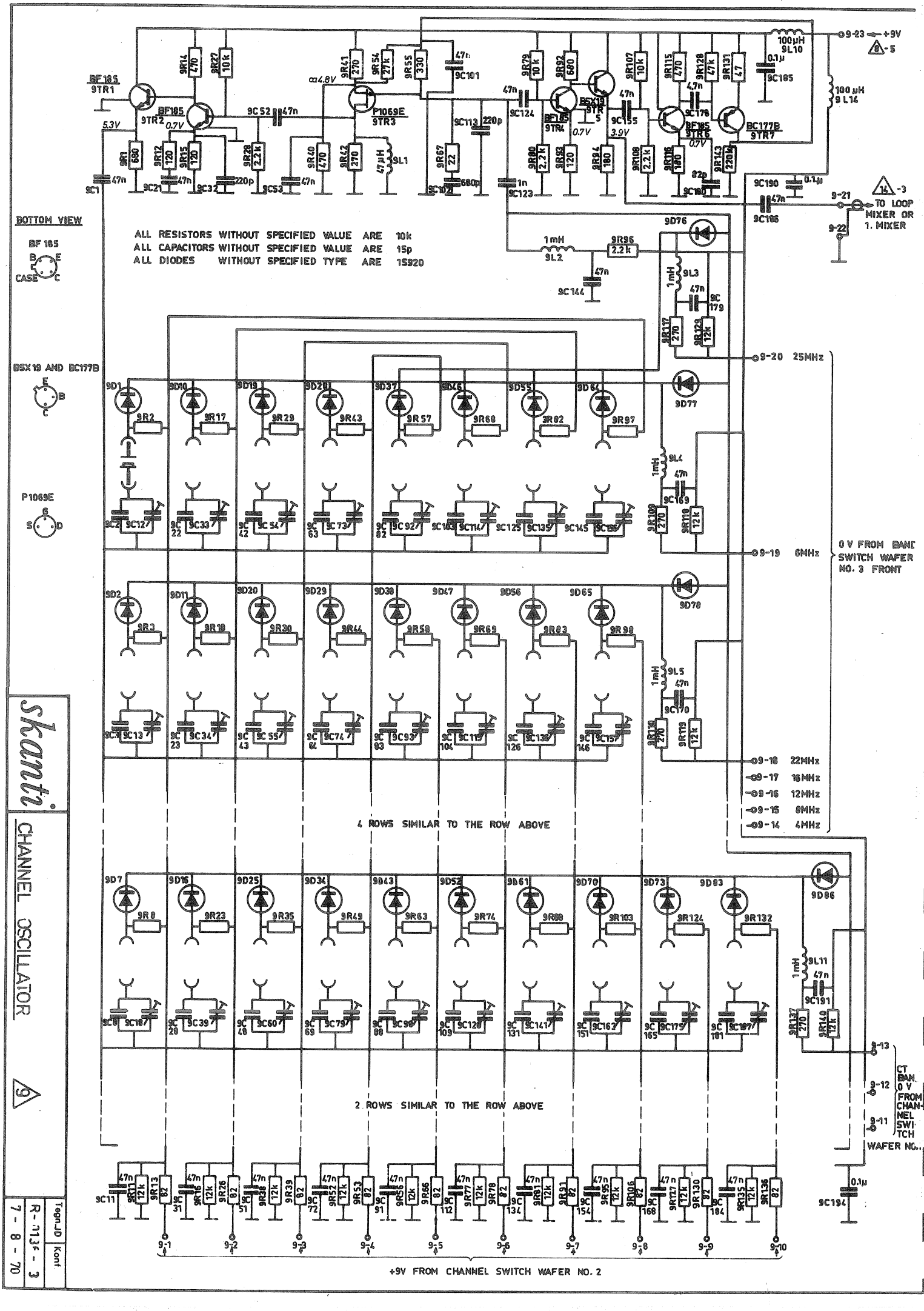


Tegn. JD	Kont
R-0132-1	
29-7-70	

PARTS LIST
FOR
9V VOLTAGE REGULATOR

△8

8C 1	1.0 µF	10%	100V	Polyes.
8C 2	100 µF		16V	W.Alum.
8C 3	0.47 µF	10%	100V	Polyes.
8C 4	0.1 µF	10%	250V	Polyes.
8D 1	1S920			
8D 2	1S920			
8D 3	1S920			
8D 4	1S920			
8D 5	1S920			
8D 6	1S920			
8D 7	1S920			
8D 8	BZX79 C6V8	Zener		
8D 9	1S920			
8D10	1S920			
8R 1	1.0 kohm	5%	1/8W	Car.
8R 2	10 kohm	5%	1/8W	Car.
8R 3	680 ohm	5%	1/8W	Car.
8R 4	68 kohm	5%	1/8W	Car.
8R 5	680 ohm	5%	1/8W	Car.
8R 6	10 kohm	Var.		Car.
8R 7	5.6 kohm	5%	1/8W	Car.
8R 8	1 kohm	Var.		Car.
8TR 1	BC161/10			
8TR 2	2N1613			


BOTTOM VIEW
BF 185
CASE
BSX 19 AND BC177B
P1069E
ALL RESISTORS WITHOUT SPECIFIED VALUE ARE 10k
ALL CAPACITORS WITHOUT SPECIFIED VALUE ARE 15p
ALL DIODES WITHOUT SPECIFIED TYPE ARE 1S920
BF185 9TR1
BF185 9TR2
P1069E 9TR3
BSX19 9TR5
BF185 9TR4
BF185 9TR6
BC177B 9TR7
5.3V
0.7V
≈4.8V
0.7V
3.9V
0.7V
100µH 9L10
100µH 9L14
9-23 +9V
5
9-21
TO LOOP MIXER OR 1. MIXER
9-22
9D76
9D77
9D78
9D86
9-20 25MHz
9-19 6MHz
9-18 22MHz
9-17 16MHz
9-16 12MHz
9-15 8MHz
9-14 4MHz
0 V FROM BAND SWITCH WAFER NO. 3 FRONT
4 ROWS SIMILAR TO THE ROW ABOVE
2 ROWS SIMILAR TO THE ROW ABOVE
9-13
9-12
9-11
CT BAN. 0 V FROM CHANNEL SWITCH WAFER NO.
9-1 9-2 9-3 9-4 9-5 9-6 9-7 9-8 9-9 9-10
+9V FROM CHANNEL SWITCH WAFER NO. 2
skanti
CHANNEL OSCILLATOR
9
Tegn. JD
Kont.
7 - 8 - 70
R-11345-3

PARTS LIST

FOR

CHANNEL OSCILLATOR

△9

9C 1	47 nF	-20/+80%	12V	Cer.
9C 2	15 pF	5%	400V	Cer.P100
9C 3	15 pF	5%	400V	Cer.P100
9C 4	15 pF	5%	400V	Cer.P100
9C 5	15 pF	5%	400V	Cer.P100
9C 6	15 pF	5%	400V	Cer.P100
9C 7	15 pF	5%	400V	Cer.P100
9C 8	15 pF	5%	400V	Cer.P100
9C 9	15 pF	5%	400V	Cer.P100
9C10	15 pF	5%	400V	Cer.P100
9C11	47 nF	-20/+80%	12V	Cer.
9C12	20 pF	Var.		Cer.
9C13	20 pF	Var.		Cer.
9C14	20 pF	Var.		Cer.
9C15	20 pF	Var.		Cer.
9C16	20 pF	Var.		Cer.
9C17	20 pF	Var.		Cer.
9C18	20 pF	Var.		Cer.
9C19	20 pF	Var.		Cer.
9C20	20 pF	Var.		Cer.
9C21	47 nF	-20/+80%	12V	Cer.
9C22	15 pF	5%	400V	Cer.P100
9C23	15 pF	5%	400V	Cer.P100
9C24	15 pF	5%	400V	Cer.P100
9C25	15 pF	5%	400V	Cer.P100
9C26	15 pF	5%	400V	Cer.P100
9C27	15 pF	5%	400V	Cer.P100
9C28	15 pF	5%	400V	Cer.P100
9C29	15 pF	5%	400V	Cer.P100
9C30	15 pF	5%	400V	Cer.P100
9C31	47 nF	-20/+80%	12V	Cer.
9C32	220 pF	1%	125V	Polyst.
9C33	20 pF	Var.		Cer.
9C34	20 pF	Var.		Cer.
9C35	20 pF	Var.		Cer.
9C36	20 pF	Var.		Cer.
9C37	20 pF	Var.		Cer.
9C38	20 pF	Var.		Cer.
9C39	20 pF	Var.		Cer.
9C40	20 pF	Var.		Cer.
9C41	20 pF	Var.		Cer.
9C42	15 pF	5%	400V	Cer.P100
9C43	15 pF	5%	400V	Cer.P100
9C44	15 pF	5%	400V	Cer.P100
9C45	15 pF	5%	400V	Cer.P100
9C46	15 pF	5%	400V	Cer.P100
9C47	15 pF	5%	400V	Cer.P100
9C48	15 pF	5%	400V	Cer.P100
9C49	15 pF	5%	400V	Cer.P100
9C50	15 pF	5%	400V	Cer.P100

9C51	47 nF	-20/+80%	12V	Cer.
9C52	47 nF	-20/+80%	12V	Cer.
9C53	47 nF	-20/+80%	12V	Cer.
9C54	20 pF	Var.		Cer.
9C55	20 pF	Var.		Cer.
9C56	20 pF	Var.		Cer.
9C57	20 pF	Var.		Cer.
9C58	20 pF	Var.		Cer.
9C59	20 pF	Var.		Cer.
9C60	20 pF	Var.		Cer.
9C61	20 pF	Var.		Cer.
9C62	20 pF	Var.		Cer.
9C63	15 pF	5%	400V	Cer.P100
9C64	15 pF	5%	400V	Cer.P100
9C65	15 pF	5%	400V	Cer.P100
9C66	15 pF	5%	400V	Cer.P100
9C67	15 pF	5%	400V	Cer.P100
9C68	15 pF	5%	400V	Cer.P100
9C69	15 pF	5%	400V	Cer.P100
9C70	15 pF	5%	400V	Cer.P100
9C71	15 pF	5%	400V	Cer.P100
9C72	47 nF	-20/+80%	12 V	Cer.
9C73	20 pF	Var.		Cer.
9C74	20 pF	Var.		Cer.
9C75	20 pF	Var.		Cer.
9C76	20 pF	Var.		Cer.
9C77	20 pF	Var.		Cer.
9C78	20 pF	Var.		Cer.
9C79	20 pF	Var.		Cer.
9C80	20 pF	Var.		Cer.
9C81	20 pF	Var.		Cer.
9C82	15 pF	5%	400V	Cer.P100
9C83	15 pF	5%	400V	Cer.P100
9C84	15 pF	5%	400V	Cer.P100
9C85	15 pF	5%	400V	Cer.P100
9C86	15 pF	5%	400V	Cer.P100
9C87	15 pF	5%	400V	Cer.P100
9C88	15 pF	5%	400V	Cer.P100
9C89	15 pF	5%	400V	Cer.P100
9C90	15 pF	5%	400V	Cer.P100
9C91	47 nF	-20/+80%	12V	Cer.
9C92	20 pF	Var.		Cer.
9C93	20 pF	Var.		Cer.
9C94	20 pF	Var.		Cer.
9C95	20 pF	Var.		Cer.
9C96	20 pF	Var.		Cer.
9C97	20 pF	Var.		Cer.
9C98	20 pF	Var.		Cer.
9C99	20 pF	Var.		Cer.
9C100	20 pF	Var.		Cer.
9C101	47 nF	-20/+80%	12V	Cer.
9C102	680 pF	1%	125V	Polyst.
9C103	15 pF	5%	400V	Cer.P100
9C104	15 pF	5%	400V	Cer.P100
9C105	15 pF	5%	400V	Cer.P100

9C106	15 pF	5%	400V	Cer.P100
9C107	15 pF	5%	400V	Cer.P100
9C108	15 pF	5%	400V	Cer.P100
9C109	15 pF	5%	400V	Cer.P100
9C110	15 pF	5%	400V	Cer.P100
9C111	15 pF	5%	400V	Cer.P100
9C112	47 nF	-20/+80%	12V	Cer.
9C113	220 pF	1%	125V	Polyst.
9C114	20 pF	Var.		Cer.
9C115	20 pF	Var.		Cer.
9C116	20 pF	Var.		Cer.
9C117	20 pF	Var.		Cer.
9C118	20 pF	Var.		Cer.
9C119	20 pF	Var.		Cer.
9C120	20 pF	Var.		Cer.
9C121	20 pF	Var.		Cer.
9C122	20 pF	Var.		Cer.
9C123	1 nF	1%	125V	Polyst.
9C124	47 nF	-20/+80%	12V	Cer.
9C125	15 pF	5%	400V	Cer.P100
9C126	15 pF	5%	400V	Cer.P100
9C127	15 pF	5%	400V	Cer.P100
9C128	15 pF	5%	400V	Cer.P100
9C129	15 pF	5%	400V	Cer.P100
9C130	15 pF	5%	400V	Cer.P100
9C131	15 pF	5%	400V	Cer.P100
9C132	15 pF	5%	400V	Cer.P100
9C133	15 pF	5%	400V	Cer.P100
9C134	47 nF	-20/+80%	12V	Cer.
9C135	20 pF	Var.		Cer.
9C136	20 pF	Var.		Cer.
9C137	20 pF	Var.		Cer.
9C138	20 pF	Var.		Cer.
9C139	20 pF	Var.		Cer.
9C140	20 pF	Var.		Cer.
9C141	20 pF	Var.		Cer.
9C142	20 pF	Var.		Cer.
9C143	20 pF	Var.		Cer.
9C144	47 nF	-20/+80%	12V	Cer.
9C145	15 pF	5%	400V	Cer.P100
9C146	15 pF	5%	400V	Cer.P100
9C147	15 pF	5%	400V	Cer.P100
9C148	15 pF	5%	400V	Cer.P100
9C149	15 pF	5%	400V	Cer.P100
9C150	15 pF	5%	400V	Cer.P100
9C151	15 pF	5%	400V	Cer.P100
9C152	15 pF	5%	400V	Cer.P100
9C153	15 pF	5%	400V	Cer.P100
9C154	47 nF	-20/+80%	12V	Cer.
9C155	47 nF	-20/+80%	12V	Cer.
9C156	20 pF	Var.		Cer.
9C157	20 pF	Var.		Cer.
9C158	20 pF	Var.		Cer.
9C159	20 pF	Var.		Cer.
9C160	20 pF	Var.		Cer.

9C161	20 pF	Var.		Cer.
9C162	20 pF	Var.		Cer.
9C163	20 pF	Var.		Cer.
9C164	20 pF	Var.		Cer.
9C165	15 pF	5%	400V	Cer.P100
9C166	15 pF	5%	400V	Cer.P100
9C167	15 pF	5%	400V	Cer.P100
9C168	47 nF	-20/+80%	12V	Cer.
9C169	47 nF	-20/+80%	12V	Cer.
9C170	47 nF	-20/+80%	12V	Cer.
9C171	47 nF	-20/+80%	12V	Cer.
9C172	47 nF	-20/+80%	12V	Cer.
9C173	47 nF	-20/+80%	12V	Cer.
9C174	47 nF	-20/+80%	12V	Cer.
9C175	20 pF	Var.		Cer.
9C176	20 pF	Var.		Cer.
9C177	20 pF	Var.		Cer.
9C178	4.7 nF	-20/+80%	30V	Cer.
9C179	47 nF	-20/+80%	12V	Cer.
9C180	82 pF	5%	400V	Cer.N150
9C181	15 pF	5%	400V	Cer.P100
9C182	15 pF	5%	400V	Cer.P100
9C183	15 pF	5%	400V	Cer.P100
9C184	47 nF	-20/+80%	12V	Cer.
9C185	0.1 µF	-20/+80%	12V	Cer.
9C186	47 nF	-20/+80%	12V	Cer.
9C187	20 pF	Var.		Cer.
9C188	20 pF	Var.		Cer.
9C189	20 pF	Var.		Cer.
9C190	0.1 µF	-20/+80%	12V	Cer.
9C191	47 nF	-20/+80%	12V	Cer.
9C192	47 nF	-20/+80%	12V	Cer.
9C193	47 nF	-20/+80%	12V	Cer.
9C194	0.1 µF	-20/+80%	12V	Cer.

9D 1	1S920
9D 2	1S920
9D 3	1S920
9D 4	1S920
9D 5	1S920
9D 6	1S920
9D 7	1S920
9D 8	1S920
9D 9	1S920
9D10	1S920
9D11	1S920
9D12	1S920
9D13	1S920
9D14	1S92Ø
9D15	1S920
9D16	1S920
9D17	1S920
9D18	1S920
9D19	1S920
9D20	1S920

9D21	1S920
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9D33	1S920
9D34	1S920
9D35	1S920
9D36	1S920
9D37	1S920
9D38	1S92Ø
9D39	1S920
9D40	1S920
9D41	1S920
9D42	1S920
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9D74	1S920
9D75	1S920

9D76	1S920			
9D77	1S920			
9D78	1S920			
9D79	1S920			
9D80	1S920			
9D81	1S920			
9D82	1S920			
9D83	1S920			
9D84	1S920			
9D85	1S920			
9D86	1S920			
9D87	1S920			
9D88	1S920			
9L 1	47 µH	RF CHOKE	10%	
9L 2	1 mH	RF CHOKE	10%	
9L 3	1 mH	RF CHOKE	10%	
9L 4	1 mH	RF CHOKE	10%	
9L 5	1 mH	RF CHOKE	10%	
9L 6	1 mH	RF CHOKE	10%	
9L 7	1 mH	RF CHOKE	10%	
9L 8	1 mH	RF CHOKE	10%	
9L 9	1 mH	RF CHOKE	10%	
9L10	100 µH	RF CHOKE	10%	
9L11	1 mH	RF CHOKE	10%	
9L12	1 mH	RF CHOKE	10%	
9L13	1 mH	RF CHOKE	10%	
9L14	100 µH	RF CHOKE	10%	
9R 1	680 ohm	5%	1/8W	Car.
9R 2	10 kohm	5%	1/8W	Car.
9R 3	10 kohm	5%	1/8W	Car.
9R 4	10 kohm	5%	1/8W	Car.
9R 5	10 kohm	5%	1/8W	Car.
9R 6	10 kohm	5%	1/8W	Car.
9R 7	10 kohm	5%	1/8W	Car.
9R 8	10 kohm	5%	1/8W	Car.
9R 9	10 kohm	5%	1/8W	Car.
9R10	10 kohm	5%	1/8W	Car.
9R11	12 kohm	5%	1/8W	Car.
9R12	120 ohm	5%	1/8W	Car.
9R13	82 ohm	5%	1/8W	Car.
9R14	470 ohm	5%	1/8W	Car.
9R15	120 ohm	5%	1/8W	Car.
9R16	12 kohm	5%	1/8W	Car.
9R17	10 kohm	5%	1/8W	Car.
9R18	10 kohm	5%	1/8W	Car.
9R19	10 kohm	5%	1/8W	Car.
9R20	10 kohm	5%	1/8W	Car.
9R21	10 kohm	5%	1/8W	Car.
9R22	10 kohm	5%	1/8W	Car.
9R23	10 kohm	5%	1/8W	Car.
9R24	10 kohm	5%	1/8W	Car.
9R25	10 kohm	5%	1/8W	Car.

9R26	82 ohm	5%	1/8W	Car.
9R27	10 kohm	5%	1/8W	Car.
9R28	2.2 kohm	5%	1/8W	Car.
9R29	10 kohm	5%	1/8W	Car.
9R30	10 kohm	5%	1/8W	Car.
9R31	10 kohm	5%	1/8W	Car.
9R32	10 kohm	5%	1/8W	Car.
9R33	10 kohm	5%	1/8W	Car.
9R34	10 kohm	5%	1/8W	Car.
9R35	10 kohm	5%	1/8W	Car.
9R36	10 kohm	5%	1/8W	Car.
9R37	10 kohm	5%	1/8W	Car.
9R38	12 kohm	5%	1/8W	Car.
9R39	82 ohm	5%	1/8W	Car.
9R40	470 ohm	5%	1/8W	Car.
9R41	270 ohm	5%	1/8W	Car.
9R42	270 ohm	5%	1/8W	Car.
9R43	10 kohm	5%	1/8W	Car.
9R44	10 kohm	5%	1/8W	Car.
9R45	10 kohm	5%	1/8W	Car.
9R46	10 kohm	5%	1/8W	Car.
9R47	10 kohm	5%	1/8W	Car.
9R48	10 kohm	5%	1/8W	Car.
9R49	10 kohm	5%	1/8W	Car.
9R50	10 kohm	5%	1/8W	Car.
9R51	10 kohm	5%	1/8W	Car.
9R52	12 kohm	5%	1/8W	Car.
9R53	82 ohm	5%	1/8W	Car.
9R54	27 kohm	5%	1/8W	Car.
9R55	330 ohm	5%	1/8W	Car.
9R56	12 kohm	5%	1/8W	Car.
9R57	10 kohm	5%	1/8W	Car.
9R58	10 kohm	5%	1/8W	Car.
9R59	10 kohm	5%	1/8W	Car.
9R60	10 kohm	5%	1/8W	Car.
9R61	10 kohm	5%	1/8W	Car.
9R62	10 kohm	5%	1/8W	Car.
9R63	10 kohm	5%	1/8W	Car.
9R64	10 kohm	5%	1/8W	Car.
9R65	10 kohm	5%	1/8W	Car.
9R66	82 ohm	5%	1/8W	Car.
9R67	22 ohm	5%	1/8W	Car.
9R68	10 kohm	5%	1/8W	Car.
9R69	10 kohm	5%	1/8W	Car.
9R70	10 kohm	5%	1/8W	Car.
9R71	10 kohm	5%	1/8W	Car.
9R72	10 kohm	5%	1/8W	Car.
9R73	10 kohm	5%	1/8W	Car.
9R74	10 kohm	5%	1/8W	Car.
9R75	10 kohm	5%	1/8W	Car.
9R76	10 kohm	5%	1/8W	Car.
9R77	12 kohm	5%	1/8W	Car.
9R78	82 ohm	5%	1/8W	Car.
9R79	10 kohm	5%	1/8W	Car.
9R80	2.2 kohm	5%	1/8W	Car.

9R81	12 kohm	5%	1/8W	Car.
9R82	10 kohm	5%	1/8W	Car.
9R83	10 kohm	5%	1/8W	Car.
9R84	10 kohm	5%	1/8W	Car.
9R85	10 kohm	5%	1/8W	Car.
9R86	10 kohm	5%	1/8W	Car.
9R87	10 kohm	5%	1/8W	Car.
9R88	10 kohm	5%	1/8W	Car.
9R89	10 kohm	5%	1/8W	Car.
9R90	10 kohm	5%	1/8W	Car.
9R91	82 ohm	5%	1/8W	Car.
9R92	680 ohm	5%	1/8W	Car.
9R93	120 ohm	5%	1/8W	Car.
9R94	180 ohm	5%	1/8W	Car.
9R95	12 kohm	5%	1/8W	Car.
9R96	2.2 kohm	5%	1/8W	Car.
9R97	10 kohm	5%	1/8W	Car.
9R98	10 kohm	5%	1/8W	Car.
9R99	10 kohm	5%	1/8W	Car.
9R100	10 kohm	5%	1/8W	Car.
9R101	10 kohm	5%	1/8W	Car.
9R102	10 kohm	5%	1/8W	Car.
9R103	10 kohm	5%	1/8W	Car.
9R104	10 kohm	5%	1/8W	Car.
9R105	10 kohm	5%	1/8W	Car.
9R106	82 ohm	5%	1/8W	Car.
9R107	10 kohm	5%	1/8W	Car.
9R108	2.2 kohm	5%	1/8W	Car.
9R109	270 ohm	5%	1/8W	Car.
9R110	270 ohm	5%	1/8W	Car.
9R111	270 ohm	5%	1/8W	Car.
9R112	270 ohm	5%	1/8W	Car.
9R113	270 ohm	5%	1/8W	Car.
9R114	270 ohm	5%	1/8W	Car.
9R115	470 ohm	5%	1/8W	Car.
9R116	180 ohm	5%	1/8W	Car.
9R117	270 ohm	5%	1/8W	Car.
9R118	12 kohm	5%	1/8W	Car.
9R119	12 kohm	5%	1/8W	Car.
9R120	12 kohm	5%	1/8W	Car.
9R121	12 kohm	5%	1/8W	Car.
9R122	12 kohm	5%	1/8W	Car.
9R123	12 kohm	5%	1/8W	Car.
9R124	10 kohm	5%	1/8W	Car.
9R125	10 kohm	5%	1/8W	Car.
9R126	10 kohm	5%	1/8W	Car.
9R127	12 kohm	5%	1/8W	Car.
9R128	47 kohm	5%	1/8W	Car.
9R129	12 kohm	5%	1/8W	Car.
9R130	82 ohm	5%	1/8W	Car.
9R131	47 ohm	5%	1/8W	Car.
9R132	10 kohm	5%	1/8W	Car.
9R133	10 kohm	5%	1/8W	Car.
9R134	10 kohm	5%	1/8W	Car.
9R135	12 kohm	5%	1/8W	Car.

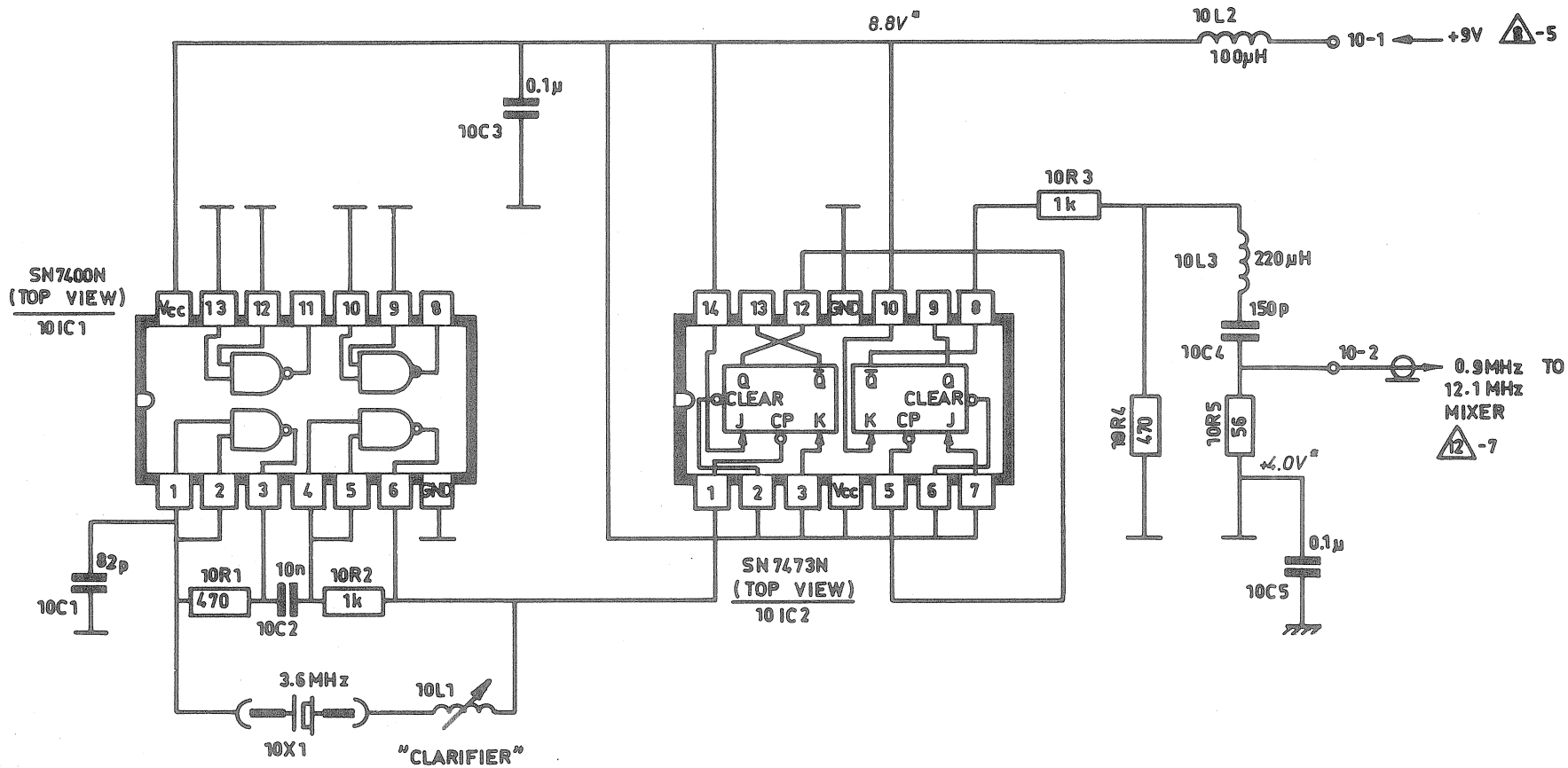
9R136	82 ohm	5%	1/8W	Car.
9R137=	270 ohm	5%	1/8W	Car.
9R138	270 ohm	5%	1/8W	Car.
9R139	270 ohm	5%	1/8W	Car.
9R140	12 kohm	5%	1/8W	Car.
9R141	12 kohm	5%	1/8W	Car.
9R142	12 kohm	5%	1/8W	Car.
9R143	220 kohm	5%	1/8W	Car.

9TR 1	BF185
9TR 2	BF185
9TR 3	P1069E
9TR 4	BF185
9TR 5	BSX19
9TR 6	BF185
9TR 7	BC177B

skanti

CLARIFIER OSCILLATOR

10



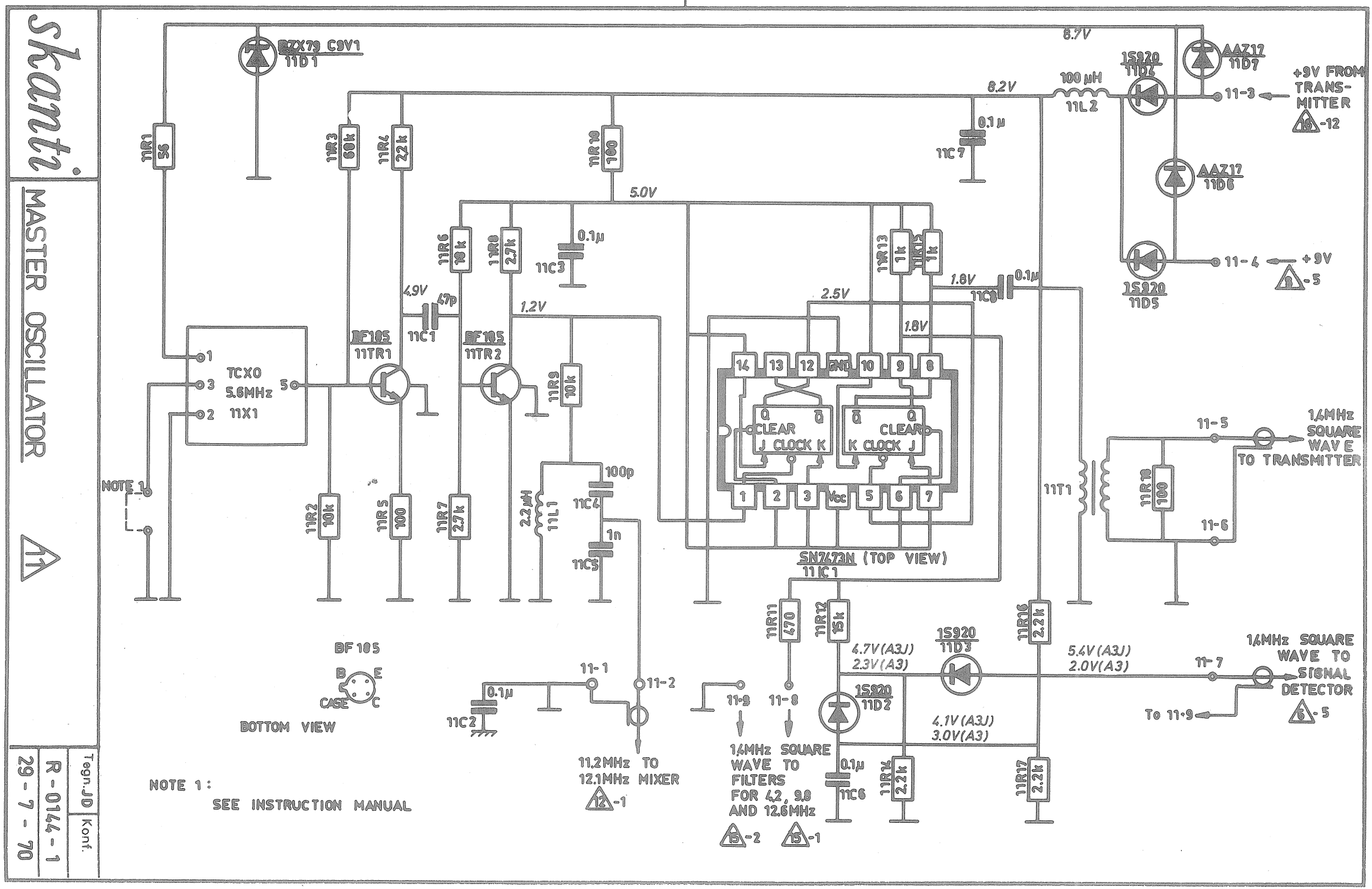
* RELATIVE TO RECEIVER COMMON

Tegn.	R-0140-2
Kont.	25-9-70

PARTS LIST
FOR
CLARIFIER OSCILLATOR

10

10C 1	82 pF	5%	400V	Cer.N150
10C 2	10 nF	-20/+80%	30V	Cer.
10C 3	0.1 µF	-20/+80%	12V	Cer.
10C 4	150 pF	5%	400V	Cer.N150
10C 5	0.1 µF	10%	250V	Polyes.
10IC 1	SN7400N			
10IC 2	SN7473N			
10L 1	COIL		SKANTI CODE: R-0307	
10L 2	100 µH	RF CHOKE	10%	
10L 3	220 µH	RF CHOKE	10%	
10R 1	470 ohm	5%	1/8W	Car.
10R 2	1 kohm	5%	1/8W	Car.
10R 3	1 kohm	5%	1/8W	Car.
10R 4	470 ohm	5%	1/8W	Car.
10R 5	56 ohm	5%	1/8W	Car.
10X 1	CRYSTAL		SKANTI CODE: R-0310	


skanti
MASTER OSCILLATOR
A1
Tegn. JD
Konf.
R-0144-1
29-7-70
BZX79 C9V1
11D1
11R1 56
11R3 68k
11R4 22k
11R10 100
5.0V
8.7V
8.2V
100 µH
11L2
0.1 µ
11C7
1S920
11D7
AAZ17
11D7
+9V FROM TRANSMITTER
11-3
A6-12
AAZ17
11D8
1S920
11D5
11-4
+9V
A1-5
11R6 10k
11R8 2.7k
11C3 0.1µ
11R13 1k
11R15 1k
1.8V
11C8 0.1µ
2.5V
1.8V
4.9V
47p
11C1
1.2V
BF105
11TR1
BF105
11TR2
11R9 10k
TCXO
5.6MHz
11X1
NOTE 1
11R2 10k
11R5 100
11R7 2.7k
2.2µH
11L1
100p
11C4
1n
11C5
14 13 12 GND 10 9 8
CLEAR J CLOCK K
CLEAR K CLOCK J
1 2 3 Vcc 5 6 7
SN7473N (TOP VIEW)
11IC1
11T1
11-5
1,4MHz SQUARE WAVE TO TRANSMITTER
11R18 100
11-6
11R11 470
11R12 15k
11R16 2.2k
4.7V(A3J)
2.3V(A3)
1S920
11D3
5.4V(A3J)
2.0V(A3)
11-7
1,4MHz SQUARE WAVE TO SIGNAL DETECTOR
A6-5
To 11-9
BF 105
B E
CASE C
BOTTOM VIEW
11-1
11-2
0.1µ
11C2
11-9
11-8
1S920
11D2
4.1V(A3J)
3.0V(A3)
11R14 2.2k
11R17 2.2k
0.1µ
11C6
11.2MHz TO 12.1MHz MIXER
A12-1
1,4MHz SQUARE WAVE TO FILTERS FOR 4.2, 9.8 AND 12.6MHz
A15-2
A15-1
NOTE 1:
SEE INSTRUCTION MANUAL

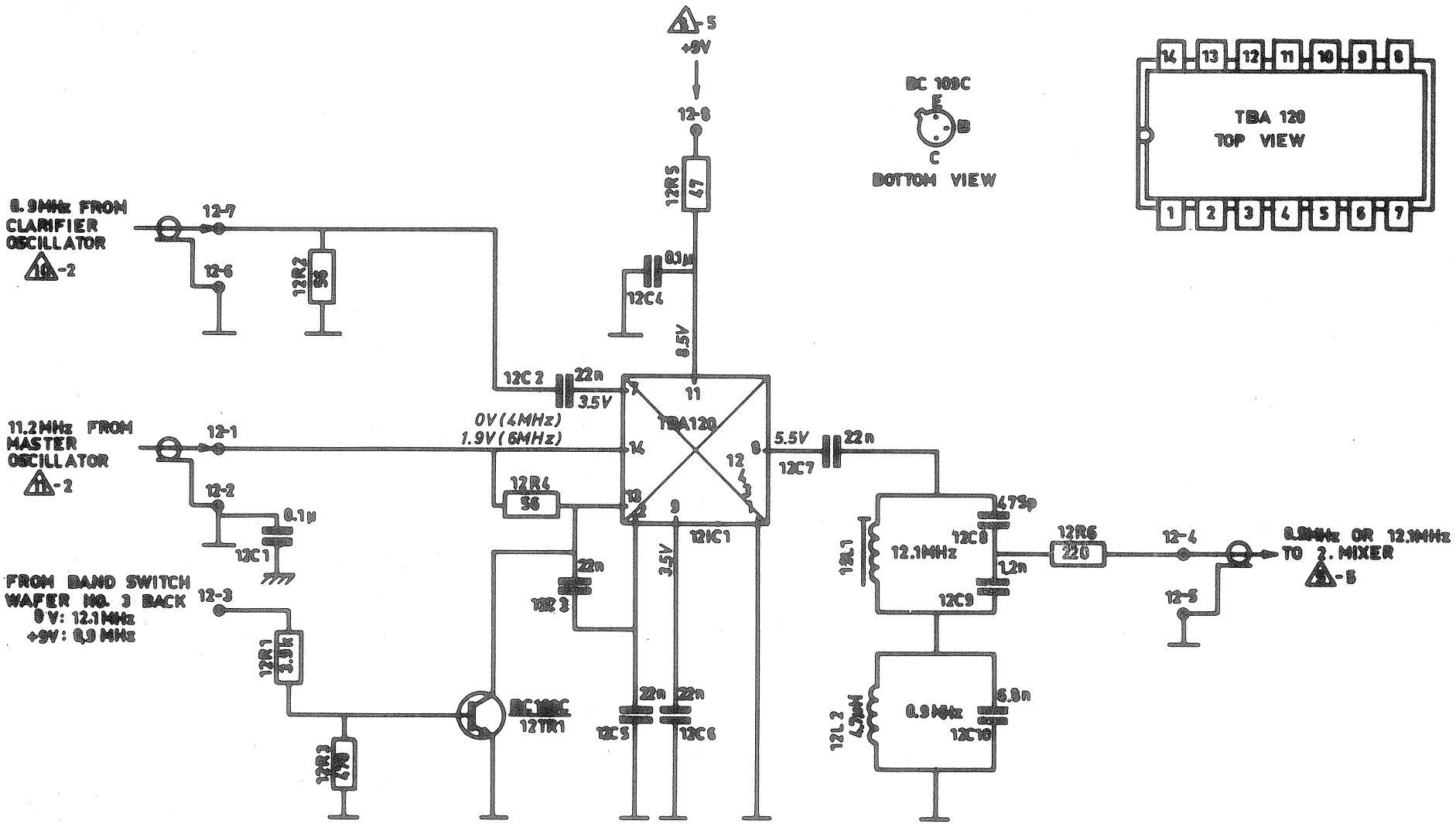
PARTS LIST

FOR

MASTER OSCILLATOR

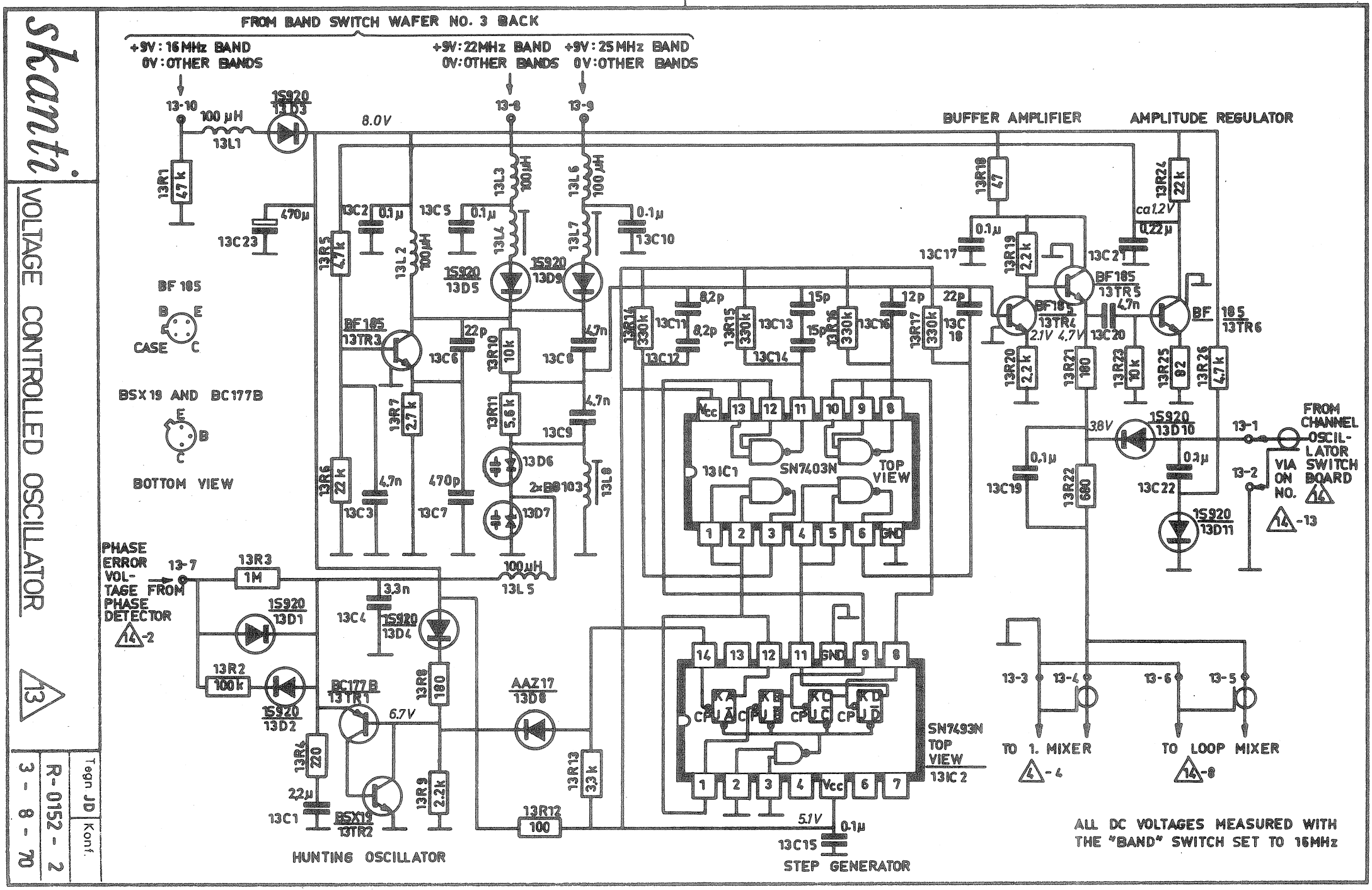
11

11C 1	47 pF	5%	400V	Cer.N150
11C 2	0.1 µF	±10%	250V	Polyes.
11C 3	0.1 µF	-20/+80%	12V	Cer.
11C 4	100 pF	5%	400V	Cer.N150
11C 5	1 nF	1%	125V	Polyst.
11C 6	0.1 µF	-20/+80%	12V	Cer.
11C 7	0.1 µF	-20/+80%	12V	Cer.
11C 8	0.1 µF	-20/+80%	12V	Cer.
11D 1	BZX79 C9V1	Zener		
11D 2	1S920			
11D 3	1S920			
11D 4	1S920			
11D 5	1S920			
11D 6	AAZ 17			
11D 7	AAZ 17			
11IC 1	SN7473N			
11L 1	2.2 µH	RF CHOKE	10%	
11L 2	100 µH	RF CHOKE	10%	
11R 1	56 ohm	5%	1/8W	Car.
11R 2	10 kohm	5%	1/8W	Car.
11R 3	68 kohm	5%	1/8W	Car.
11R 4	2.2 kohm	5%	1/8W	Car.
11R 5	100 ohm	5%	1/8W	Car.
11R 6	18 kohm	5%	1/8W	Car.
11R 7	2.7 kohm	5%	1/8W	Car.
11R 8	2.7 kohm	5%	1/8W	Car.
11R 9	10 kohm	5%	1/8W	Car.
11R10	100 ohm	5%	1/8W	Car.
11R11	470 ohm	5%	1/8W	Car.
11R12	15 kohm	5%	1/8W	Car.
11R13	1 kohm	5%	1/8W	Car.
11R14	2.2 kohm	5%	1/8W	Car.
11R15	1 kohm	5%	1/8W	Car.
11R16	2.2 kohm	5%	1/8W	Car.
11R17	2.2 kohm	5%	1/8W	Car.
11R18	100 ohm	5%	1/8W	Car.
11T 1	TRANSFORMER		SKANTI CODE: R-0222	
11TR 1	BF185			
11TR 2	BF185			
11X 1	OSCILLATOR TCXO		5.6MHz	


skanti
12.1MHz MIXER
12
Tegn. nr
R-0148-1
Kont.
31-7-70
+9V
12-8
12R5 47
12C4 0.1µ
0.5V
BC 109C
E
B
C
BOTTOM VIEW
TBA 120
TOP VIEW
14 13 12 11 10 9 8
1 2 3 4 5 6 7
8.9MHz FROM CLARIFIER OSCILLATOR
12-7
12-6
12R2 56
12C2 22n 3.5V
11.2MHz FROM MASTER OSCILLATOR
12-1
12-2
0.1µ
12C1
0V (4MHz)
1.9V (6MHz)
TBA120
12R4 56
12C3 22n
FROM BAND SWITCH WAFER NO. 3 BACK
0 V: 12.1MHz
+9V: 8.9 MHz
12-3
12R1 3.3k
12R2 4.7k
BC108C
12TR1
12IC1
3.5V
12C5 22n
12C6 22n
5.5V
12C7 22n
12L1
12.1MHz
12C8 47pF
12C9 1.2n
12L2 4.2µH
8.9 MHz
12C10 6.8n
12R6 220
12-4
12-5
8.9MHz OR 12.1MHz
TO 2. MIXER

PARTS LIST
FOR
12.1MHz MIXER

12C 1	0.1 µF	10%	250V	Polyes.
12C 2	22 nF	-20/+80%	30V	Cer.
12C 3	22 nF	-20/+80%	30V	Cer.
12C 4	0.1 µF	-20/+80%	12V	Cer.
12C 5	22 nF	-20/+80%	30V	Cer.
12C 6	22 nF	-20/+80%	30V	Cer.
12C 7	22 nF	-20/+80%	30V	Cer.
12C 8	475 pF	1%	125V	Polyst.
12C 9	1.2 nF	1%	125V	Polyst.
12C10	6.8 nF	1%	63V	Polyst.
12IC 1	TBA120			
12L 1	COIL		SKANTI CODE: R-0213	
12L 2	4.7 µH	RF CHOKE	10%	
12R 1	3.9 kohm	5%	1/8W	Car.
12R 2	56 ohm	5%	1/8W	Car.
12R 3	470 ohm	5%	1/8W	Car.
12R 4	56 ohm	5%	1/8W	Car.
12R 5	47 ohm	5%	1/8W	Car.
12R 6	220 ohm	5%	1/8W	Car.
12TR 1	BC109C			


skanti
VOLTAGE CONTROLLED OSCILLATOR
13
Tegn JD
Kont.
R-0152-2
3-8-70
FROM BAND SWITCH WAFER NO. 3 BACK
+9V: 16 MHz BAND
0V: OTHER BANDS
+9V: 22 MHz BAND
0V: OTHER BANDS
+9V: 25 MHz BAND
0V: OTHER BANDS
13-10
13-8
13-9
100 µH
13L1
15920
13D3
8.0V
13R1
4.7k
470µ
13C23
13C2
0.1µ
13C5
0.1µ
13L2
100µH
13L3
100µH
13L4
13L6
100µH
13L7
0.1µ
13C10
15920
13D5
15920
13D9
BF 185
B E
CASE C
BF185
13TR3
22p
13C6
13R10
10k
4.7n
13C8
BSX19 AND BC177B
E
B
C
BOTTOM VIEW
13R7
2.7k
13R11
5.6k
4.7n
13C9
13R6
22k
4.7n
13C3
470p
13C7
13D6
2×BB103
13D7
13L8
PHASE ERROR VOLTAGE FROM PHASE DETECTOR
14-2
13-7
13R3
1M
100µH
13L5
3.3n
13C4
15920
13D1
15920
13D4
13R2
100k
15920
13D2
BC177B
13TR1
13R8
180
6.7V
AAZ17
13D8
13R4
220
2.2µ
13C1
BSX19
13TR2
13R9
2.2k
13R13
3.3k
13R12
100
HUNTING OSCILLATOR
BUFFER AMPLIFIER
AMPLITUDE REGULATOR
13R18
47
0.1µ
13C17
13R19
2.2k
BF185
13TR5
2.1V
BF185
13TR4
4.7V
13R24
22k
ca 1.2V
0.22µ
13C21
4.7n
13C20
BF 185
13TR6
13R20
2.2k
13R21
180
13R23
10k
13R25
82
13R26
4.7k
8,2p
13C11
8,2p
13C12
13R14
330k
13R15
330k
15p
13C13
15p
13C14
13R16
330k
12p
13C16
22p
13C
18
13R17
330k
Vcc 13 12 11 10 9 8
13IC1
SN7403N
TOP VIEW
1 2 3 4 5 6 GND
3.8V
15920
13D10
13-1
FROM CHANNEL OSCILLATOR VIA SWITCH BOARD ON NO. 14
14-13
0.1µ
13C19
13R22
680
0.1µ
13C22
13-2
15920
13D11
14 13 12 11 GND 9 8
CP KA KB KC KD
SN7493N
TOP VIEW
13IC2
1 2 3 4 Vcc 6 7
5.1V
0.1µ
13C15
STEP GENERATOR
13-3
13-4
13-6
13-5
TO 1. MIXER
4-4
TO LOOP MIXER
14-8
ALL DC VOLTAGES MEASURED WITH THE "BAND" SWITCH SET TO 16MHz

PARTS LIST

FOR

VOLTAGE CONTROLLED OSCILLATOR

13

13C 1	2.2 µF	10%	100V	Polyes.
13C 2	0.1 µF	-20/+80%	12V	Cer.
13C 3	4.7 nF	-20/+80%	30V	Cer.
13C 4	3.3 nF	1%	63V	Polyst.
13C 5	0.1 µF	-20/+80%	12V	Cer.
13C 6	22 pF	5%	400V	Cer.N150
13C 7	470 pF	1%	125V	Polyst.
13C 8	4.7 nF	-20/+80%	30V	Cer.
13C 9	4.7 nF	-20/+80%	30V	Cer.
13C10	0.1 µF	-20/+80%	12V	Cer.
13C11	8.2 pF	±0.25pF	400V	Cer.N150
13C12	8.2 pF	±0.25pF	400V	Cer.N150
13C13	15 pF	5%	400V	Cer.N150
13C14	15 pF	5%	400V	Cer.N150
13C15	0.1 µF	-20/+80%	12V	Cer.
13C16	12 pF	5%	400V	Cer.N150
13C17	0.1 µF	-20/+80%	12V	Cer.
13C18	22 pF	5%	400V	Cer.N150
13C19	0.1 µF	-20/+80%	12V	Cer.
13C20	4.7 nF	-20/+80%	30V	Cer.
13C21	0.22 µF	-20/+80%	12V	Cer.
13C22	0.1 µF	-20/+80%	12V	Cer.
13C23	470 µF		16V	W.alum.

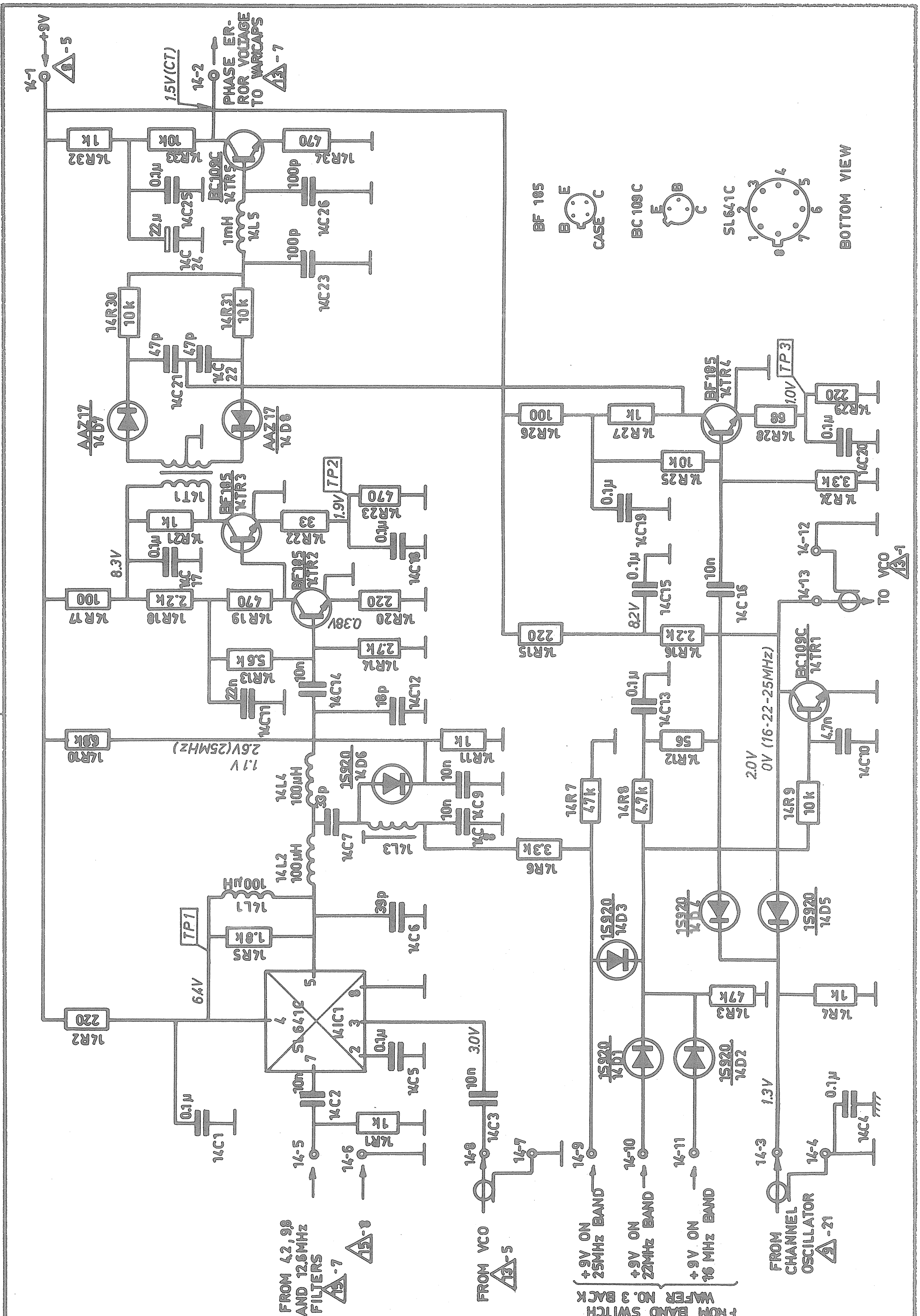
13D 1	1S920
13D 2	1S920
13D 3	1S920
13D 4	1S920
13D 5	1S920
13D 6	BB103 green Varicap
13D 7	BB103 green Varicap
13D 8	AAZ 17
13D 9	1S920
13D10	1S920
13D11	1S920

13IC 1	SN7403N
13IC 2	SN7493N

13

13L 1	100 µH	RF CHOKE	10%	
13L 2	100 µH	RF CHOKE	10%	
13L 3	100 µH	RF CHOKE	10%	
13L 4	COIL		SKANTI CODE: R-0212	
13L 5	100 µH	RF CHOKE	10%	
13L 6	100 µH	RF CHOKE	10%	
13L 7	COIL		SKANTI CODE: R-0214	
13L 8	COIL		SKANTI CODE: R-0211	
13R 1	47 kohm	5%	1/8W	Car.
13R 2	100 kohm	5%	1/8W	Car.
13R 3	1 Mohm	5%	1/8W	Car.
13R 4	220 ohm	5%	1/8W	Car.
13R 5	4.7 kohm	5%	1/8W	Car.
13R 6	22 kohm	5%	1/8W	Car.
13R 7	2.7 kohm	5%	1/8W	Car.
13R 8	180 ohm	5%	1/8W	Car.
13R 9	2.2 kohm	5%	1/8W	Car.
13R10	10 kohm	5%	1/8W	Car.
13R11	5.6 kohm	5%	1/8W	Car.
13R12	100 ohm	5%	1/8W	Car.
13R13	3.3 kohm	5%	1/8W	Car.
13R14	330 kohm	5%	1/8W	Car.
13R15	330 kohm	5%	1/8W	Car.
13R16	330 kohm	5%	1/8W	Car.
13R17	330 kohm	5%	1/8W	Car.
13R18	47 ohm	5%	1/8W	Car.
13R19	2.2 kohm	5%	1/8W	Car.
13R20	2.2 kohm	5%	1/8W	Car.
13R21	180 ohm	5%	1/8W	Car.
13R22	680 ohm	5%	1/8W	Car.
13R23	10 kohm	5%	1/8W	Car.
13R24	22 kohm	5%	1/8W	Car.
13R25	82 ohm	5%	1/8W	Car.
13R26	4.7 kohm	5%	1/8W	Car.

13TR 1	BC177B
13TR 2	BSX19
13TR 3	BF185
13TR 4	BF185
13TR 5	BF185
13TR 6	BF185



skanti	LOOP MIXER AND PHASE DETECTOR 14	Tegn. JD Konf.
		R-0156-1
		31 - 7 - 70

7439 - (01) 29 21 11

PARTS LIST

FOR

LOOP MIXER AND PHASE DETECTOR

14

14C 1	0.1 µF	-20/+80%	12V	Cer.
14C 2	10 nF	-20/+80%	30V	Cer.
14C 3	10 nF	-20/+80%	30V	Cer.
14C 4	0.1 µF	10%	250V	Polyes.
14C 5	0.1 µF	-20/+80%	12V	Cer.
14C 6	39 pF	5%	400V	Cer.N150
14C 7	33 pF	5%	400V	Cer.N150
14C 8	10 nF	-20/+80%	30V	Cer.
14C 9	10 nF	-20/+80%	30V	Cer.
14C10	4.7 nF	-20/+80%	30V	Cer.
14C11	22 nF	-20/+80%	30V	Cer.
14C12	18 pF	5%	400V	Cer.N150
14C13	0.1 µF	-20/+80%	12V	Cer.
14C14	10 nF	-20/+80%	30V	Cer.
14C15	0.1 µF	-20/+80%	12V	Cer.
14C16	10 nF	-20/+80%	30V	Cer.
14C17	0.1 µF	-20/+80%	12V	Cer.
14C18	0.1 µF	-20/+80%	12V	Cer.
14C19	0.1 µF	-20/+80%	12V	Cer.
14C20	0.1 µF	-20/+80%	12V	Cer.
14C21	47 pF	5%	400V	Cer.N150
14C22	47 pF	5%	400V	Cer.N150
14C23	100 pF	5%	400V	Cer.N150
14C24	22 µF	20%	15V	Tan.
14C25	0.1 µF	-20/+80%	12V	Cer.
14C26	100 pF	5%	400V	Cer.N150

14D 1	1S920
14D 2	1S920
14D 3	1S920
14D 4	1S920
14D 5	1S920
14D 6	1S920
14D 7	AAZ 17
14D 8	AAZ 17

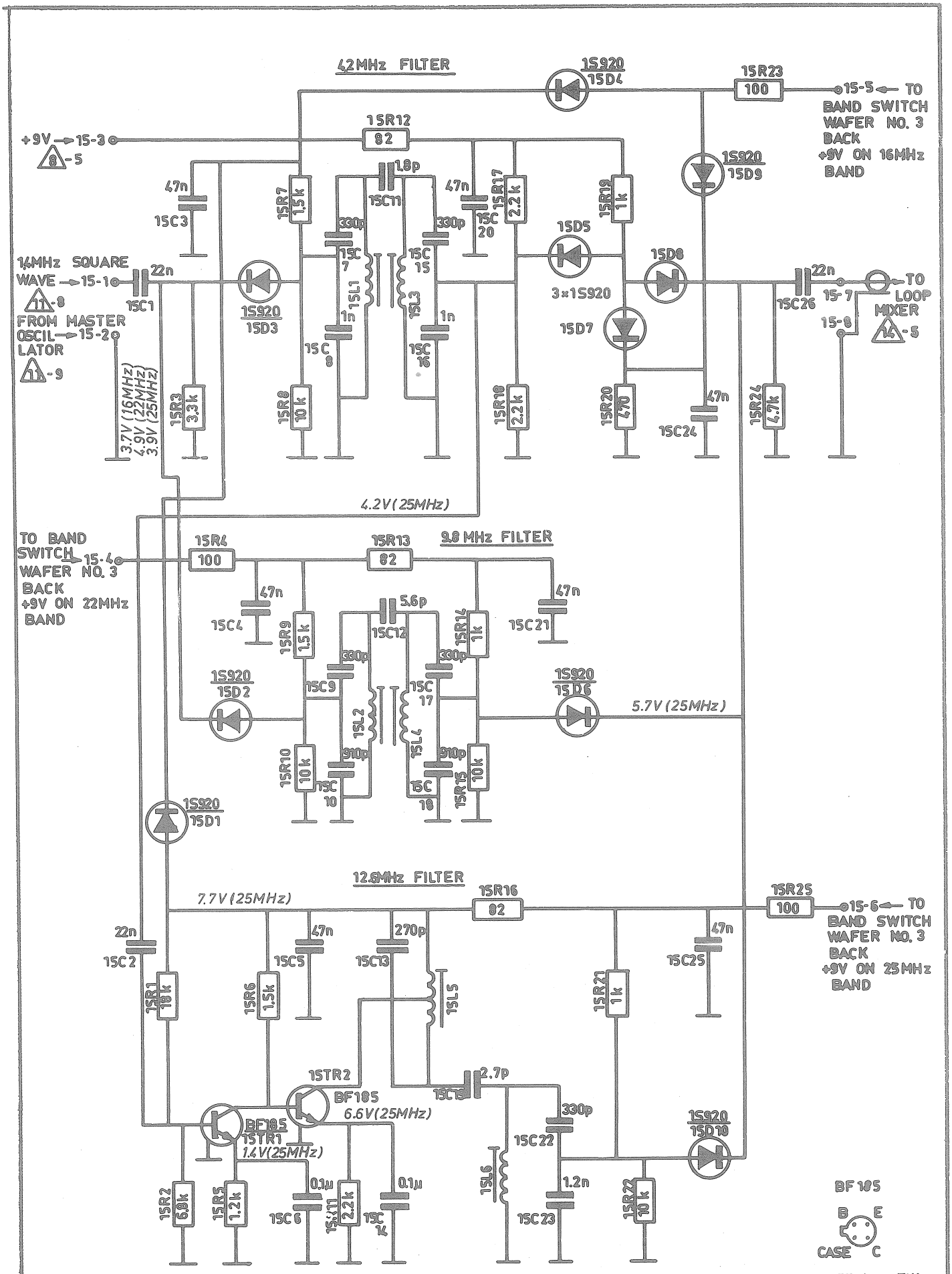
14IC 1	SL641C

14L 1	100 µH	RF CHOKE	10%
14L 2	100 µH	RF CHOKE	10%
14L 3	COIL		SKANTI CODE: R-0241
14L 4	100 µH	RF CHOKE	10%
14L 5	1 mH	RF CHOKE	10%

14R 1	1.0 kohm	5%	1/8W	Car.
14R 2	220 ohm	5%	1/8W	Car.
14R 3	47 kohm	5%	1/8W	Car.
14R 4	1.0 kohm	5%	1/8W	Car.
14R 5	1.8 kohm	5%	1/8W	Car.
14R 6	3.3 kohm	5%	1/8W	Car.
14R 7	47 kohm	5%	1/8W	Car.
14R 8	4.7 kohm	5%	1/8W	Car.
14R 9	10 kohm	5%	1/8W	Car.
14R10	6.8 kohm	5%	1/8W	Car.
14R11	1.0 kohm	5%	1/8W	Car.
14R12	56 ohm	5%	1/8W	Car.
14R13	5.6 kohm	5%	1/8W	Car.
14R14	2.7 kohm	5%	1/8W	Car.
14R15	220 ohm	5%	1/8W	Car.
14R16	2.2 kohm	5%	1/8W	Car.
14R17	100 ohm	5%	1/8W	Car.
14R18	2.2 kohm	5%	1/8W	Car.
14R19	470 ohm	5%	1/8W	Car.
14R20	220 ohm	5%	1/8W	Car.
14R21	1.0 kohm	5%	1/8W	Car.
14R22	33 ohm	5%	1/8W	Car.
14R23	470 ohm	5%	1/8W	Car.
14R24	3.3 kohm	5%	1/8W	Car.
14R25	10 kohm	5%	1/8W	Car.
14R26	100 ohm	5%	1/8W	Car.
14R27	1.0 kohm	5%	1/8W	Car.
14R28	68 ohm	5%	1/8W	Car.
14R29	220 ohm	5%	1/8W	Car.
14R30	10 kohm	5%	1/8W	Car.
14R31	10 kohm	5%	1/8W	Car.
14R32	1.0 kohm	5%	1/8W	Car.
14R33	10 kohm	5%	1/8W	Car.
14R34	470 ohm	5%	1/8W	Car.

14T 1	TRANSFORMER	SKANTI CODE: R-0221

14TR 1	BC109C
14TR 2	BF185
14TR 3	BF185
14TR 4	BF185
14TR 5	BC109C


4,2MHz FILTER
1S920 15D4
15R23 100
15-5 TO BAND SWITCH WAFER NO. 3 BACK +9V ON 16MHz BAND
+9V 15-3
8-5
15R12 82
1S920 15D9
1,4MHz SQUARE WAVE 15-1
11-8
FROM MASTER OSCILLATOR 15-2
11-9
3.7V (16MHz) 4.9V (22MHz) 3.9V (25MHz)
15C1 22n
1S920 15D3
15D5 3×1S920
15D8
15D7
15C26 22n
15-7 TO LOOP MIXER 14-5
15-8
15R3 3.3k
15R8 10k
15R18 2.2k
15R20 470
15C24 47n
15R24 4.7k
4.2V (25MHz)
TO BAND SWITCH 15-4 WAFER NO. 3 BACK +9V ON 22MHz BAND
15R4 100
15R13 82
9.8 MHz FILTER
1S920 15D2
1S920 15D6
5.7V (25MHz)
1S920 15D1
12.6MHz FILTER
7.7V (25MHz)
15R16 82
15R25 100
15-6 TO BAND SWITCH WAFER NO. 3 BACK +9V ON 25MHz BAND
15TR2 BF185
6.6V (25MHz)
BF185 15TR1
1.4V (25MHz)
1S920 15D10
BF 185
B E
CASE C
BOTTOM VIEW
skanti
FILTERS FOR 4.2 - 9.8 AND 12.6MHz
15
Tegn. JD
Konf.
R - 0160 - 1
30 - 7 - 70

PARTS LIST

FOR

FILTERS FOR 4.2-9.8 AND 12.6MHz

15

15C 1	22 nF	-20/+80%	30V	Cer.
15C 2	22 nF	-20/+80%	30V	Cer.
15C 3	47 nF	-20/+80%	12V	Cer.
15C 4	47 nF	-20/+80%	12V	Cer.
15C 5	47 nF	-20/+80%	12V	Cer.
15C 6	0.1 µF	-20/+80%	12V	Cer.
15C 7	330 pF	1%	125V	Polyst.
15C 8	1 nF	1%	125V	Polyst.
15C 9	330 pF	1%	125V	Polyst.
15C10	910 pF	1%	125V	Polyst.
15C11	1.8 pF	±0.25pF	400V	Cer.NP0
15C12	5.6 pF	±0.25pF	400V	Cer.N150
15C13	270 pF	1%	125V	Polyst.
15C14	0.1 µF	-20/+80%	12V	Cer.
15C15	330 pF	1%	125V	Polyst.
15C16	1 nF	1%	125V	Polyst.
15C17	330 pF	1%	125V	Polyst.
15C18	910 pF	1%	125V	Polyst.
15C19	2.7 pF	±0.25pF	400V	Cer.NP0
15C20	47 nF	-20/+80%	12V	Cer.
15C21	47 nF	-20/+80%	12V	Cer.
15C22	330 pF	1%	125V	Polyst.
15C23	1.2 nF	1%	125V	Polyst.
15C24	47 nF	-20/+80%	12V	Cer.
15C25	47 nF	-20/+80%	12V	Cer.

15D 1	1S920
15D 2	1S920
15D 3	1S920
15D 4	1S920
15D 5	1S920
15D 6	1S920
15D 7	1S920
15D 8	1S920
15D 9	1S920
15D10	1S920

15L 1	COIL	SKANTI CODE: R-0215
15L 2	COIL	SKANTI CODE: R-0216
15L 3	COIL	SKANTI CODE: R-0215
15L 4	COIL	SKANTI CODE: R-0216
15L 5	COIL	SKANTI CODE: R-0235
15L 6	COIL	SKANTI CODE: R-0217

15R 1	18 kohm	5%	1/8W	Car.
15R 2	6.8 kohm	5%	1/8W	Car.
15R 3	3.3 kohm	5%	1/8W	Car.
15R 4	100 ohm	5%	1/8W	Car.
15R 5	1.2 kohm	5%	1/8W	Car.
15R 6	1.5 kohm	5%	1/8W	Car.
15R 7	1.5 kohm	5%	1/8W	Car.
15R 8	10 kohm	5%	1/8W	Car.
15R 9	1.5 kohm	5%	1/8W	Car.
15R10	10 kohm	5%	1/8W	Car.
15R11	2.2 kohm	5%	1/8W	Car.
15R12	82 ohm	5%	1/8W	Car.
15R13	82 ohm	5%	1/8W	Car.
15R14	1.0 kohm	5%	1/8W	Car.
15R15	10 kohm	5%	1/8W	Car.
15R16	82 ohm	5%	1/8W	Car.
15R17	2.2 kohm	5%	1/8W	Car.
15R18	2.2 kohm	5%	1/8W	Car.
15R19	1.0 kohm	5%	1/8W	Car.
15R20	470 ohm	5%	1/8W	Car.
15R21	1.0 kohm	5%	1/8W	Car.
15R22	10 kohm	5%	1/8W	Car.
15R23	100 ohm	5%	1/8W	Car.
15R24	4.7 kohm	5%	1/8W	Car.
15R25	100 ohm	5%	1/8W	Car.

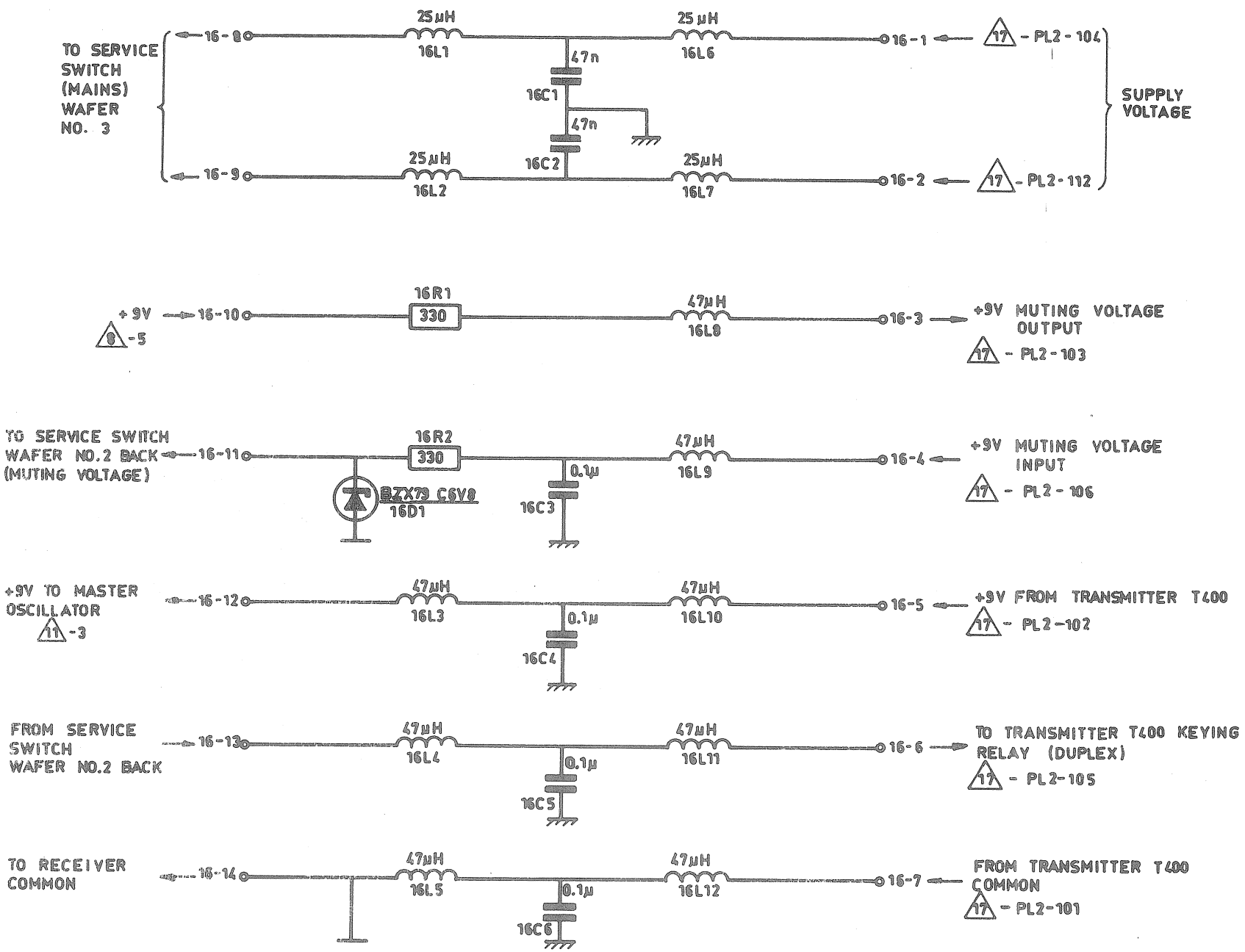
15TR 1	BF185
15TR 2	BF185

skanti

RFI FILTERS

16

Tegn JD	
R-0164-1	Kont.
9-11-70	



PARTS LIST
FOR
RFI FILTERS

16

16C 1	47 nF		1000V	MP
16C 2	47 nF		1000V	MP
16C 3	0.1 µF	±10%	250V	Polyes.
16C 4	0.1 µF	±10%	250V	Polyes.
16C 5	0.1 µF	±10%	250V	Polyes.
16C 6	0.1 µF	±10%	250V	Polyes.
16D 1	BZX79 C6V8	Zener		
16L 1	25 µH	RF CHOKE	3A	
16L 2	25 µH	RF CHOKE	3A	
16L 3	47 µH	RF CHOKE	±10%	
16L 4	47 µH	RF CHOKE	±10%	
16L 5	47 µH	RF CHOKE	±10%	
16L 6	25 µH	RF CHOKE	3A	
16L 7	25 µH	RF CHOKE	3A	
16L 8	47 µH	RF CHOKE	±10%	
16L 9	47 µH	RF CHOKE	±10%	
16L10	47 µH	RF CHOKE	±10%	
16L11	47 µH	RF CHOKE	±10%	
16L12	47 µH	RF CHOKE	±10%	
16R 1	330 ohm	5%	1/8W	Car.
16R 2	330 ohm	5%	1/8W	Car.

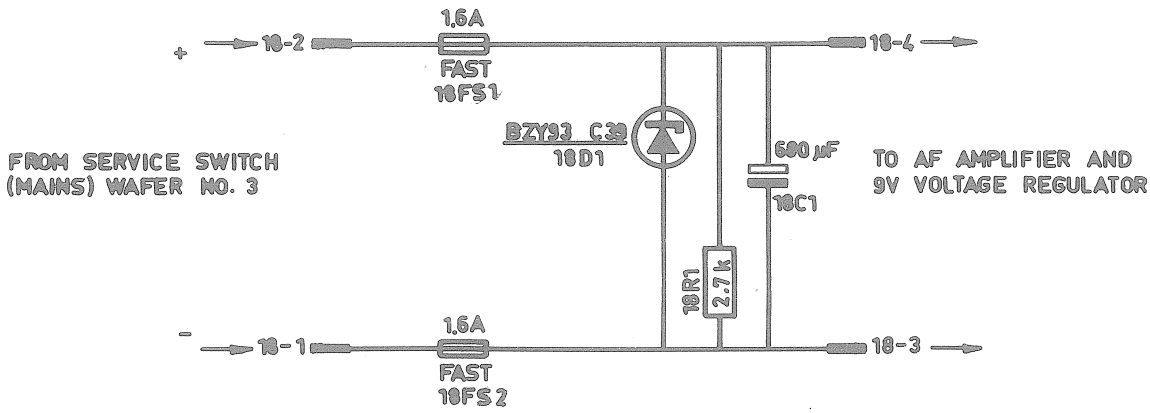
PARTS LIST

FOR

CHASSIS (electrical parts)

17

17C 1	15 nF	-20/+80%	400V	Cer.
17C 2	0.1 µF	10%	250V	Polyes.
17C 3	15 nF	-20/+80%	400V	Cer.
17C 4	47 nF	10%	250V	Polyes.
17C 5	0.1 µF	10%	250V	Polyes.
17C 6	4.7 nF	±20%	5kV	Cer.
17C 7	47 nF	10%	250V	Polyes.
17C 8	22 nF	-20/+80%	30V	Cer.
17C 9	22 nF	-20/+80%	30V	Cer.
17D 1	388A			
17D 2	388A			
17D 3	1S920			
17D 4	BZX79 C6V8	Zener		
17L 1	1 mH	RF CHOKE	±10%	
17L 2	100 µH	RF CHOKE	±10%	
17LS 1	8 ohm	0.5W	LOUDSPEAKER	
17PL 1	1 pole plug		SKANTI CODE: R-0233	
17PL 2	12 pole plug		XP12	McMurdo
17R 1	10 kohm	5%	1 W	Car.
17R 2	10 kohm	5%	1/8 W	Car.
17R 3	100 ohm	5%	1/8 W	Car.
17R 4	10 kohm	5%	1/8 W	Car.
17R 5	10 kohm	log.	1/3 W	Var.Car.
17R 6	2.2 kohm	5%	1/8 W	Car.
17R 7	10 kohm	lin.	1/3 W	Var.Car.
17R 8	330 ohm	5%	1/8 W	Car.
17R 9	8.2 ohm	5%	1 W	ww
17S 1a,b,c,d	service	ROTARY SWITCH	SKANTI CODE: R-0224	
17S 2a,b,c	band	ROTARY SWITCH	SKANTI CODE: R-0225	
17S 3	mode	ROTARY SWITCH	SKANTI CODE: R-0223	
17S 4	speaker	ROTARY SWITCH	SKANTI CODE: R-0223	
17S 5a,b	channel	ROTARY SWITCH	SKANTI CODE: R-0226	
17SK 1	socket	BNC UG657/U		
17SK 2	socket	BNC UG657/U	isol.	
17SK 3	4 pole socket		XS4	McMurdo
17SL 1	LAMP	12V	913 0012	Schurter
17TR 1	2N3055			
17TR 2	2N3055			



skanti

DC POWER PACK

18

Tegn.JD	Konf.
R-0168-1	
31-7-70	

PARTS LIST

FOR

DC POWER PACK

18

18C 1	680 µF	-10/+50%	63V	W.alum.
18D 1	BZY93 C39	Zener		
18FS 1	1.6A	FAST	6.3Ø x 32mm	
18FS 2	1.6A	FAST	6.3Ø x 32mm	
18R 1	2.7 kohm	±5%	1/2W	Car.

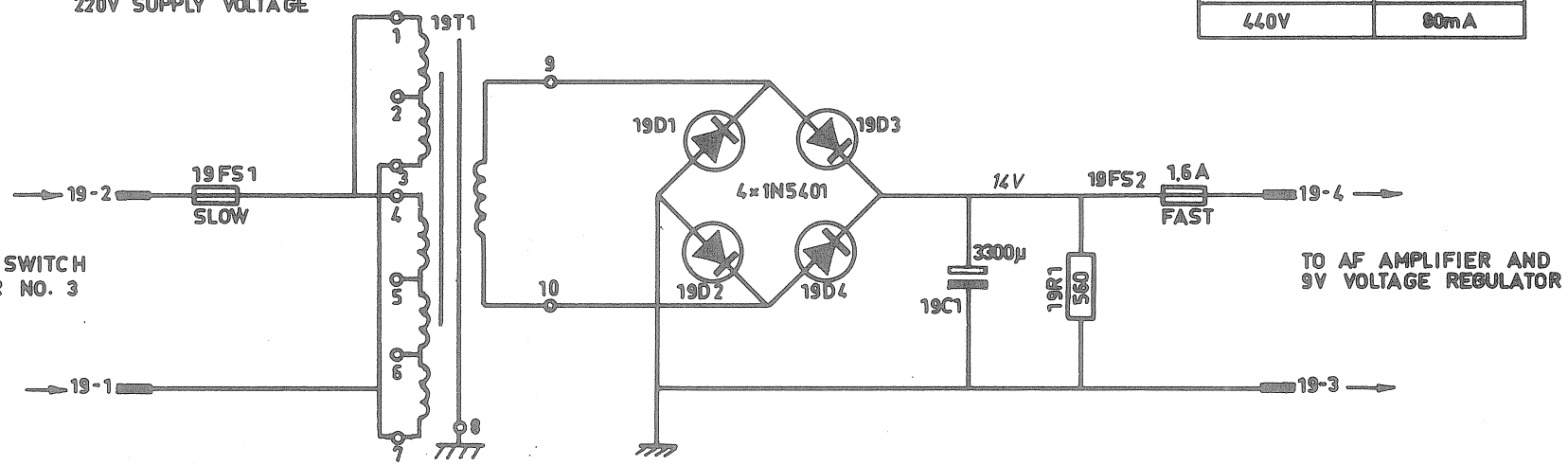
skanti

AC POWER PACK

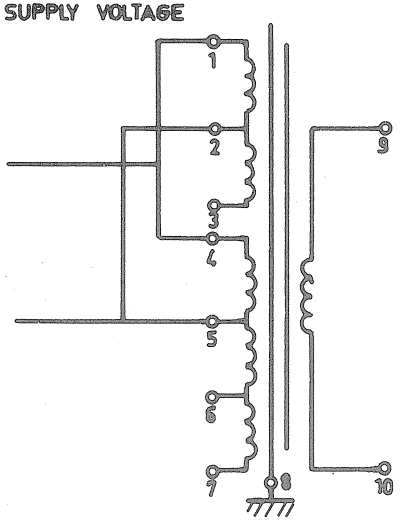
19

AC SUPPLY VOLTAGE	F1
110V	315mA
220V	160mA
380V	80mA
440V	80mA

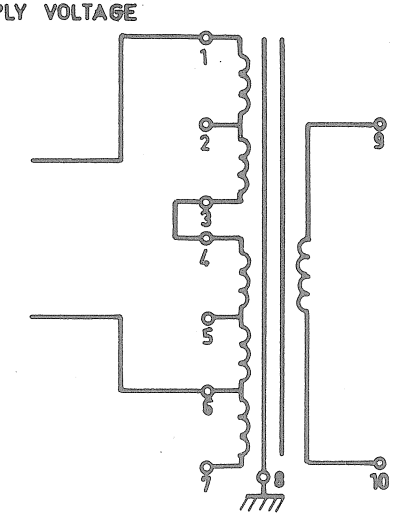
TRANSFORMER CONNECTED FOR
220V SUPPLY VOLTAGE



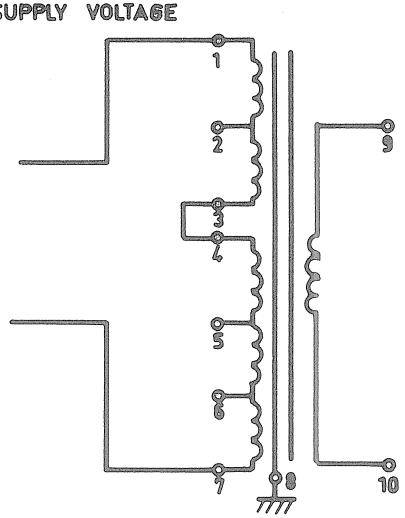
CONNECTION FOR 110V
SUPPLY VOLTAGE



CONNECTION FOR 380V
SUPPLY VOLTAGE



CONNECTION FOR 440V
SUPPLY VOLTAGE



Tegn. JD	Kont
R-0172-1	
31-7-70	

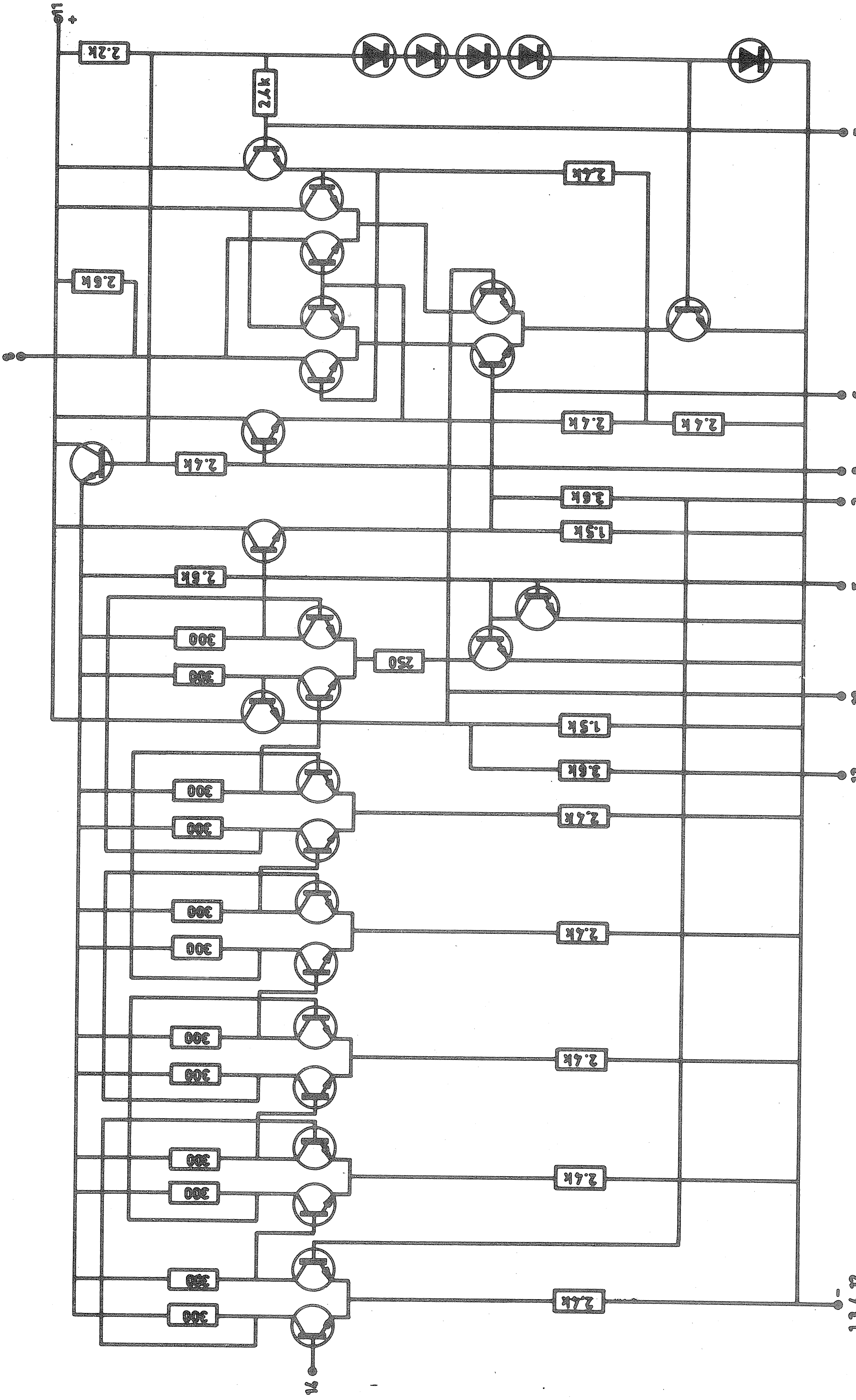
PARTS LIST

FOR

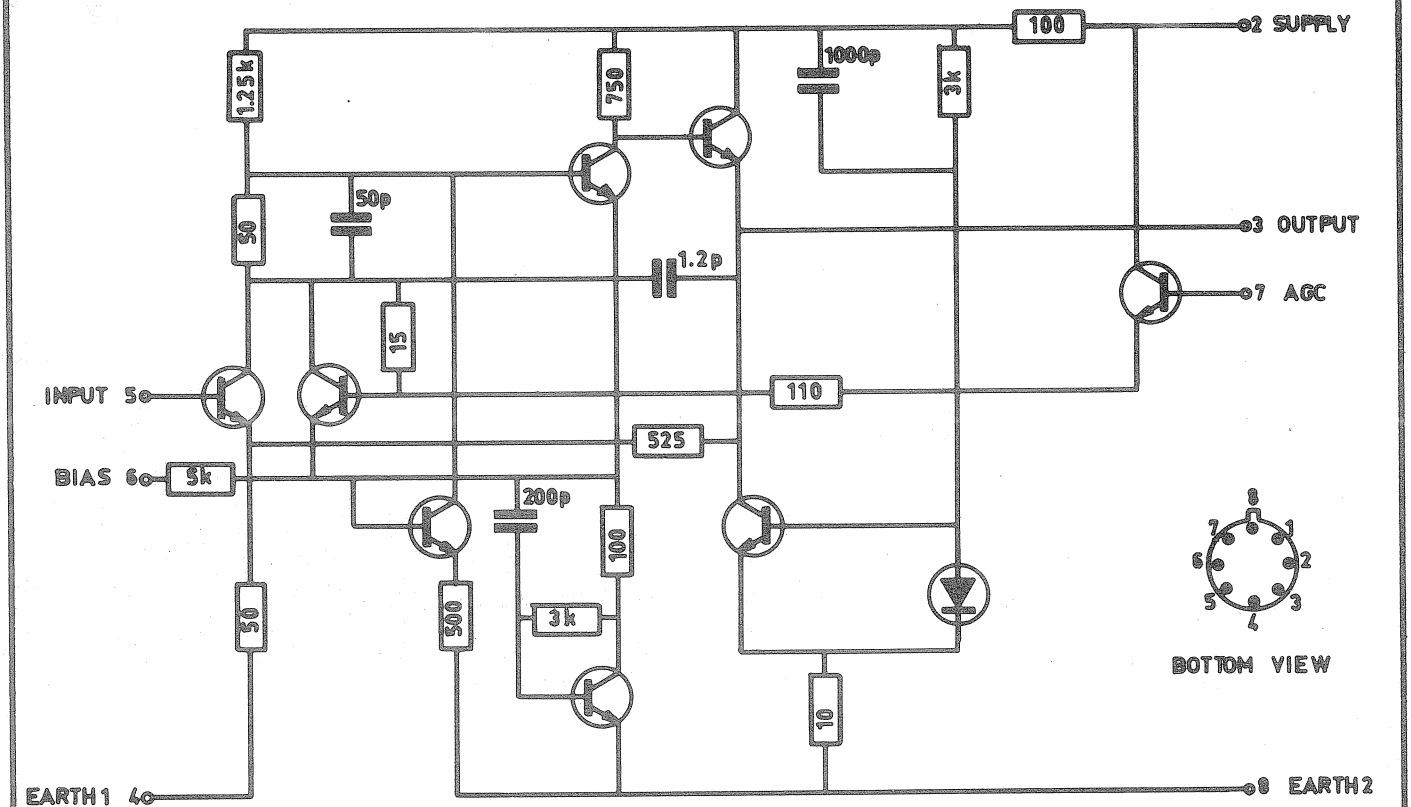
AC POWER PACK

19

19C 1	3300 µF		16V	W.alum.
19D 1	1N5401			
19D 2	1N5401			
19D 3	1N5401			
19D 4	1N5401			
19FS 1	110V	315mA	SLOW	6.3Ø x 32mm
	220V	160mA	SLOW	6.3Ø x 32mm
	380/440V	80mA	SLOW	6.3Ø x 32mm
19FS 2	1.6A		FAST	6,3Ø x 32mm
19R 1	560 ohm	5%	1/2W	Car.
19T 1	TRANSFORMER		SKANTI CODE: R-0309	



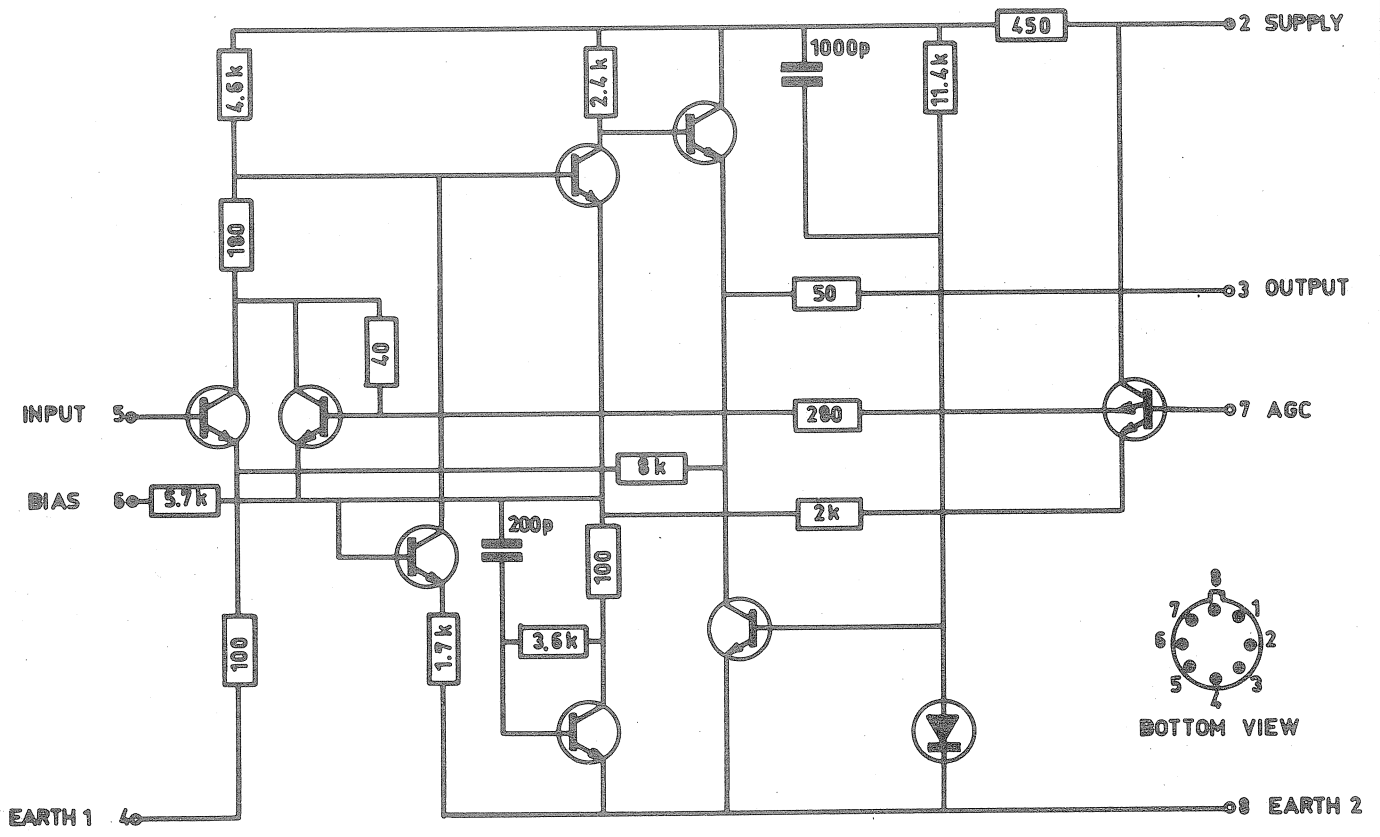
skanti	CIRCUIT DIAGRAM OF TBA120	Tegn. JD	Konf.
		R - 0311 - 1	
		30 - 10 - 70	



skanti

CIRCUIT DIAGRAM OF SL610C

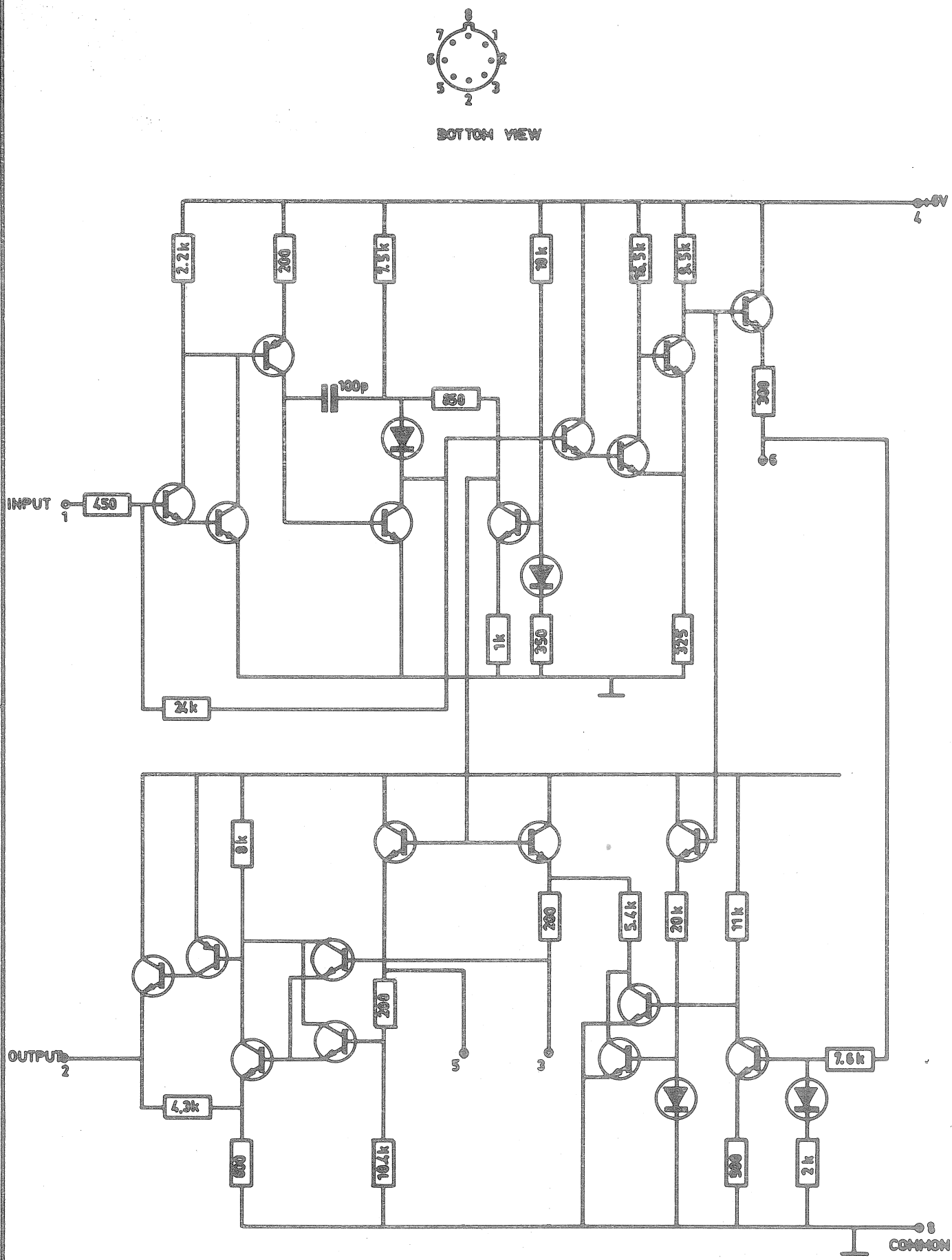
Tegn. JD	Konf.
R - 0321 - 1	
10 - 11 - 70	



skanti

CIRCUIT DIAGRAM OF SL612C

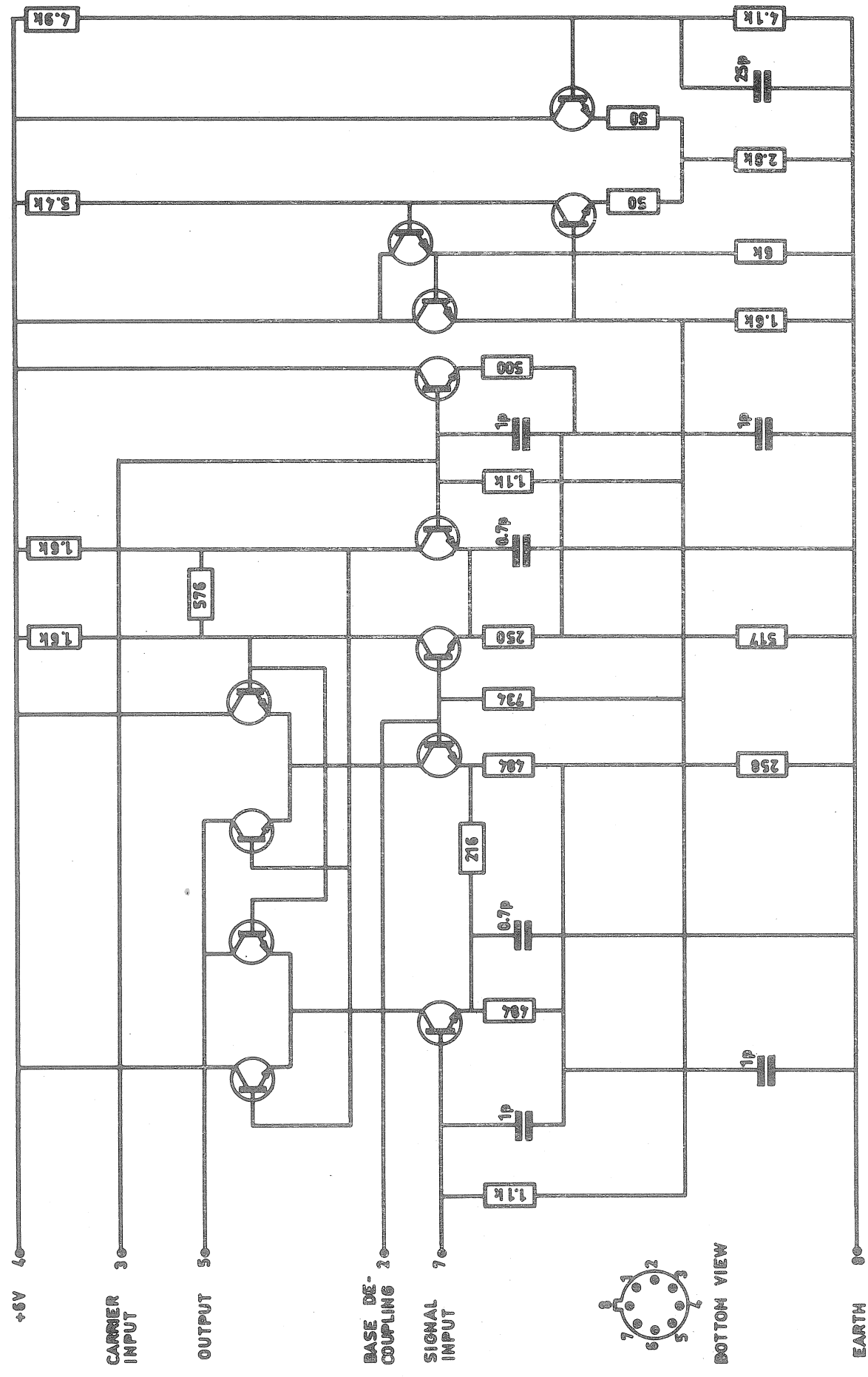
Tegn. JD	Konf.
R - 0322 - 1	
10 - 11 - 70	



skanti

CIRCUIT DIAGRAM OF SL621C

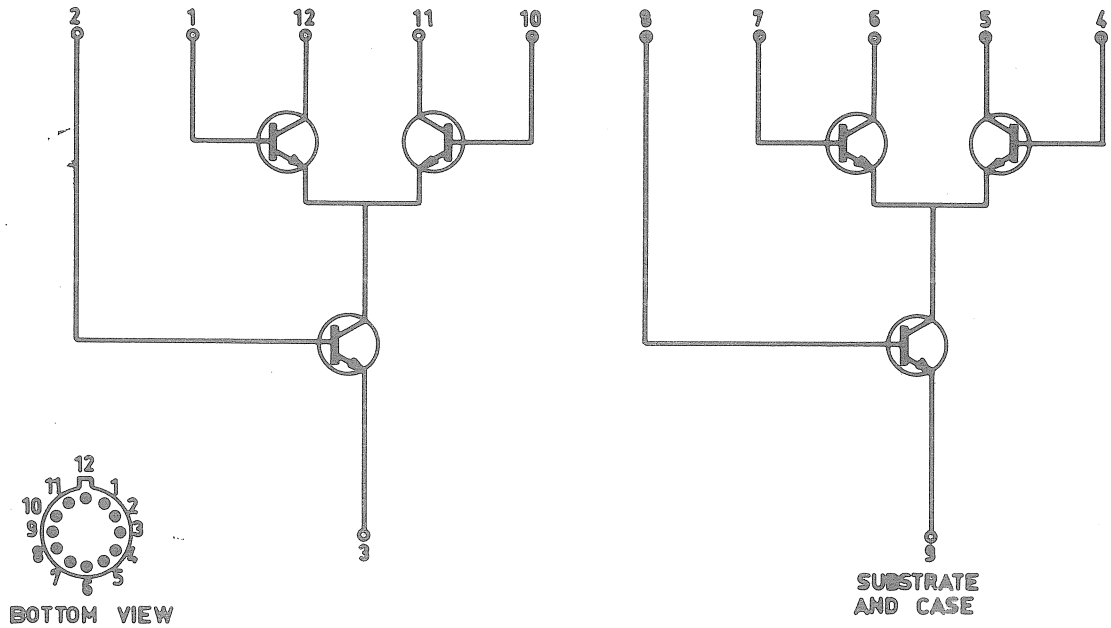
Tegn. JD	Konf.
R- 0323 - 1	
30 - 10 - 70	



skanti

CIRCUIT DIAGRAM OF SL641C

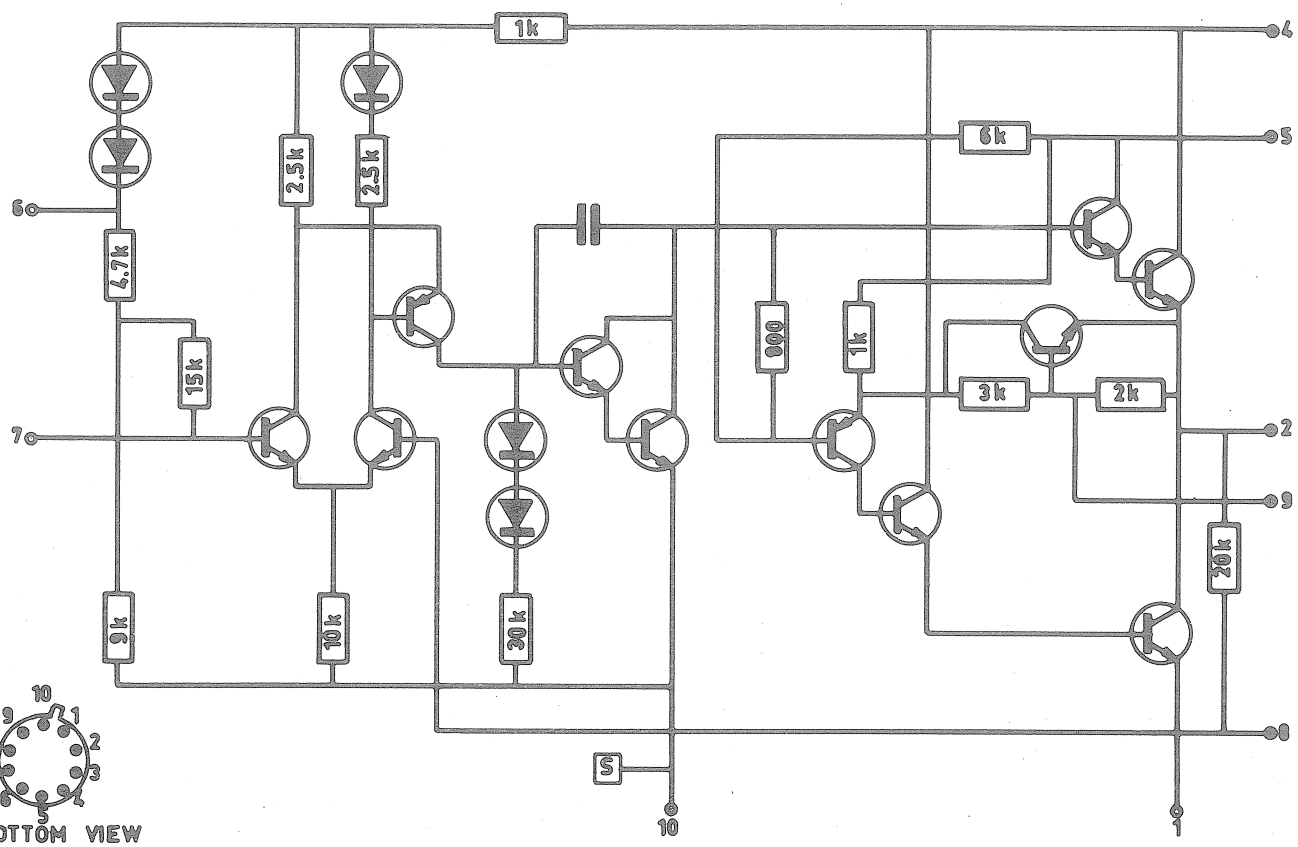
Tegn.JD	Konf.
R - 0324 - 1	
11 - 11 - 70	



skanti

CIRCUIT DIAGRAM OF CA 3026

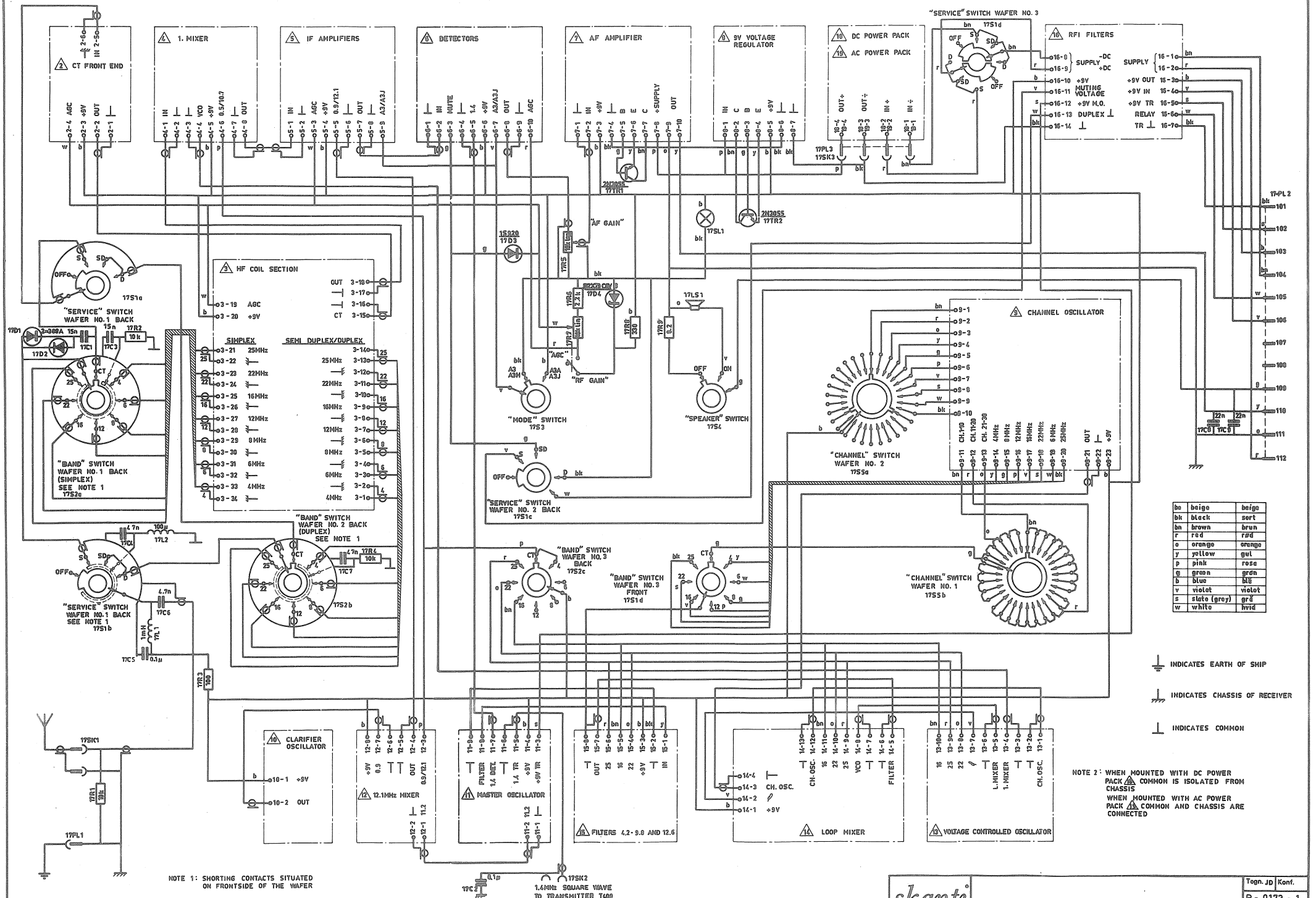
Tegn. JD	Konf.
R - 0325 - 1	
11 - 11 - 70	



skanti

CIRCUIT DIAGRAM OF TAA 300

Tegn. JD	Konf.
R - 0326 - 1	
11 - 11 - 70	



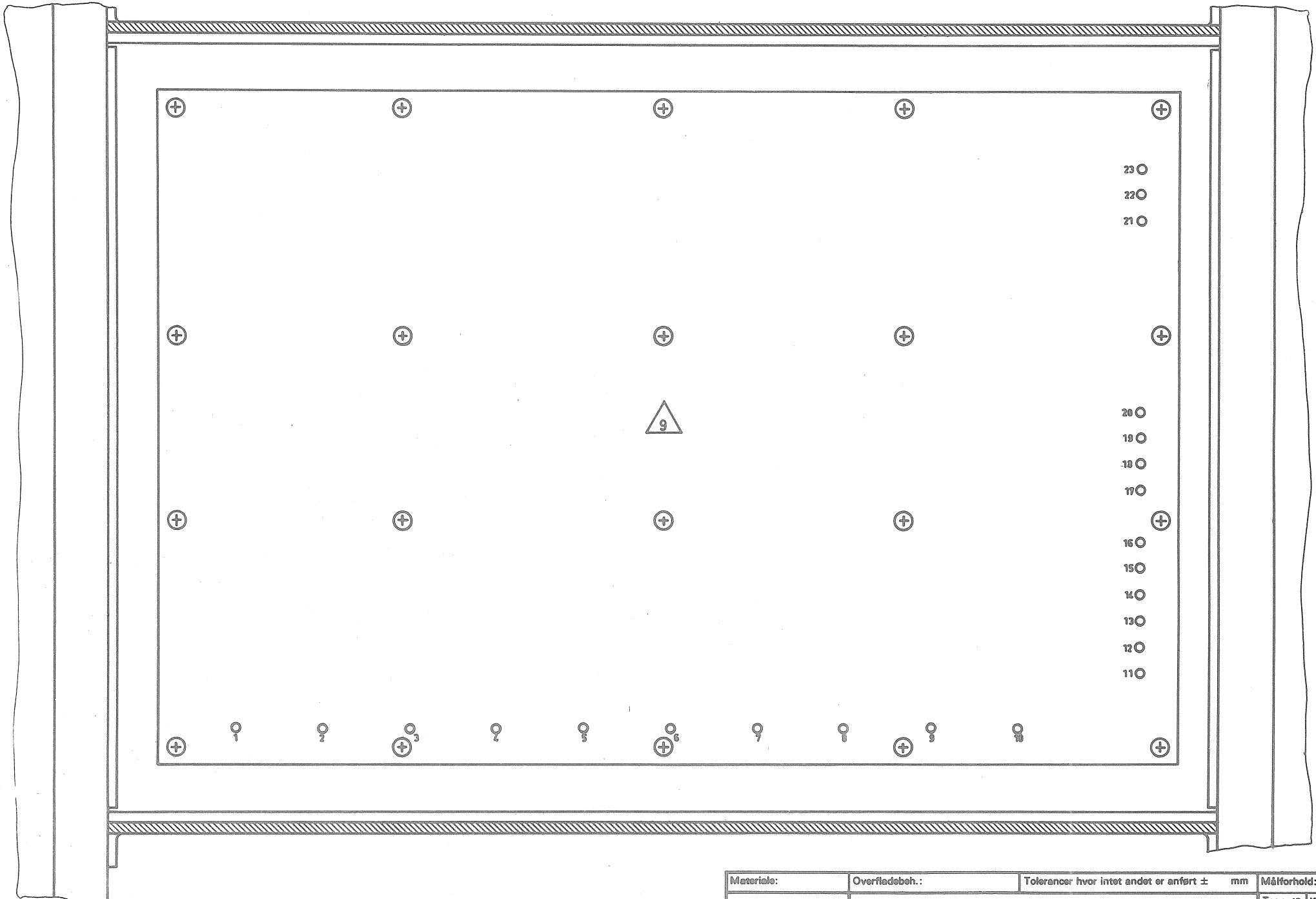
be	beige	beige
bk	black	sort
bn	brown	brun
r	red	rød
o	orange	orange
y	yellow	gul
p	pink	rosa
g	green	grøn
b	blue	blå
v	violet	violet
s	slate (grey)	grå
w	white	hvid

skanti WIRING DIAGRAM

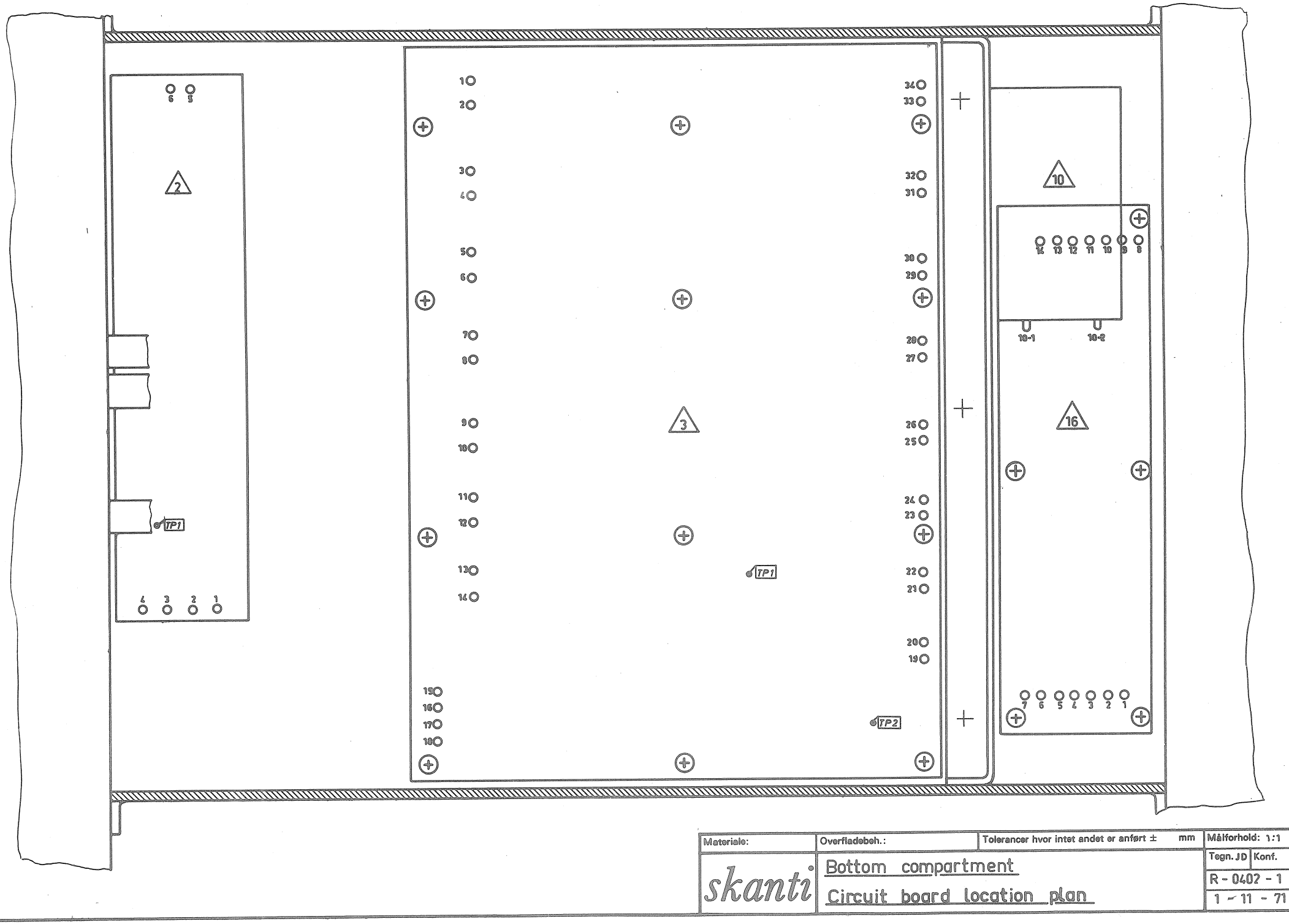
Tegn. JD | Konf.

R - 0173 - 1

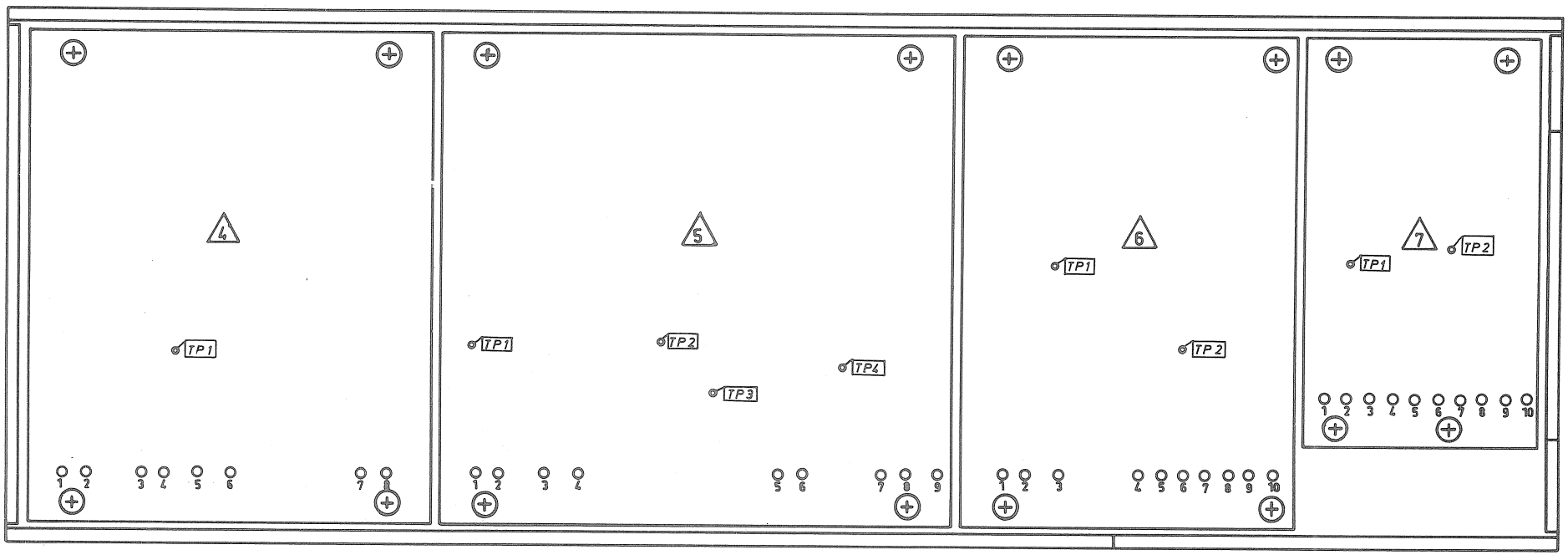
16 - 11 - 70



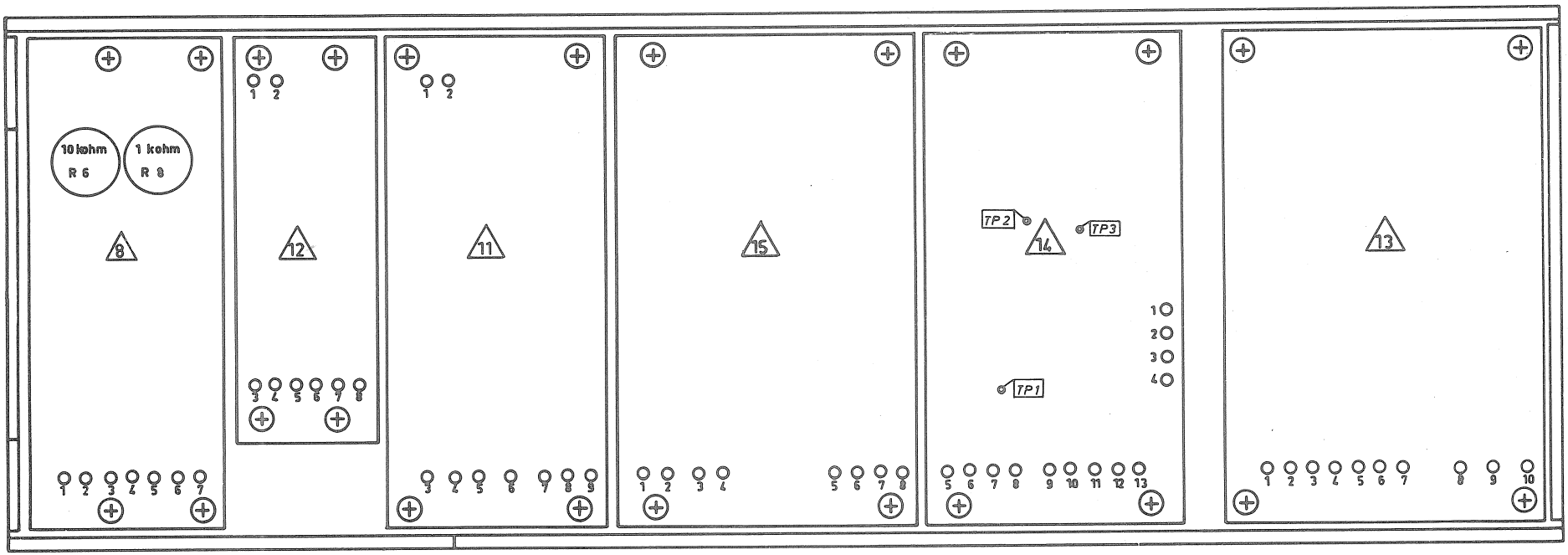
Materiale:	Overfladebeh.:	Tolerancer hvor intet andet er anført ± mm	Målforhold: 1 : 1
skanti	Top compartment Circuit board location plan		Tegn. JD / Konf. R - 0403 - 1 1 - 11 - 71



Materiale:	Overfladebeh.:	Tolerancer hvor intet andet er anført ± mm	Målforhold: 1:1
skanti	Bottom compartment Circuit board location plan		Tegn. JD / Konf. R - 0402 - 1 1 - 11 - 71



Materiale:	Overfladebeh.:	Tolerancer hvor intet andet er anført ± mm	Målforhold: 1:1
skanti	Left side compartment Circuit board location plan		Tegn. JD / Konf. R - 0400 - 1 29 - 10 - 71



Materiale:	Overfladebeh.:	Tolerancer hvor intet andet er anført ± mm	Målforhold: 1:1
skanti	Right side compartment Circuit board location plan		Tegn. JD / Konf. R - 0401 - 1 1 - 11 - 71