Mobile & Basestation
AP 700 UHF
20/25 kHz & 50 kHz
422-470 MHz
Manual 68

Diagrams.	Draw. no.
Contents 1	71048-4E
Contents 2	71157-4E
Contents 3	71158-4E
Top view of mobile local controlled	71153-4E
Bottom view of mobile local controlled	71154-4E
Technical data 1 type, mobile basestation	70315-4E
Technical data 2 " " "	70316-4E
Diagram AP 700 UHF with 4 channels and sel.call	70319-4E
Technical description of the receiver	70313-4E
Technical description of the transmitter	70314-4E
Tuning instruction 1. Receiver	71052-4E
Tuning instruction 2. Receiver	71053-4E
Tuning instruction 1. Transmitter	71054-4E
Tuning instruction 2. Transmitter	71055-4E

Diagrams.		Draw. no.
AP 404/1	1. RF-stage UHF-Receiver.	70307-4E
	+ stykliste 70308-4S	
AP 403/1	2. RF-stage UHF-Receiver.	70305-4E
	+ stykliste 70306-4S	
AP 402/1	1. Mixer-stage UHF-Receiver.	70309-4E
	+ stykliste 70310-4S	
AP 399/1	2. Mixer-stage UHF-Receiver.	70311-4E
	+ stykliste 7032-4S	
AP 390/1	Multiplier for UHF-Receiver	7o317-4E
	+ stykliste 70318-4S	
AP 310a/3	10,7 MHz and 455 KHz IF-amplifier 20-25KHz	72129-3E
	+ stykliste 72129-4S	
AP 311/3	Limiter and discriminator. 2o-25 KHz	72132-3E
	+ stykliste 72132-4S	
AP 31o/1	1o,7 MHz and 455 KHz IF-Amplifier 5o KHz	7o169-4E
	+ stykliste 7o17o-4S	
AP 311/2	Limiter and discriminator 5o KHz	7o464-4E
	+ stykliste 7o469-4S	
AP 3o6/3	AF-Amplifier and squelch AP7oo	73252-3E
	+ stykliste 73252-4S	
Alignment procedure for sequence tone RX AP 351		7o176-4E
AP 351/3	Sequence tone RX for 3 tones	7o212-4E
	+ stykliste 7o213-4S	
AP 369	Tuning instruction for tone tx	74393-4E
AP 369/3	Dual tonegenerator with aut. change over	7o21o-4E
	+ stykliste 7o211-4S	
C-values for tone-rx AP351 and tone -tx AP 369		
AP 317/2	1o V stab. power supply	7o177-4E
	+ stykliste 7o178-4S	
AP 326/4	4 channel x-tal shift	7o196-4E
	+ stykliste 7o197-4S	
AP 438/1	Temperatur stabilized crystal oven for basest.	71oo2-4E
	+ stykliste 71156-4S	
AP 4o8/3	Modulation amplifier with AVC	72128-3E
	+ stykliste 72128-4S	
AP 32o/5	Tx. oscillator and phase modulator	7o3oo-4E
	+ stykliste 7o3o1-4S	
AP 397/1	Multiplier UHF transmitter	7o29o-4E
	+ stykliste 7o291-4S	

Diagrams.		Draw. no.
AP 396/1	Tx-5 doubler UHF	74o95-4E
	+ stykliste 74o95-4S	
AP 395/1	Tx- buffer UHF	7o354-4E
	+ stykliste 7o255-4S	
AP 398/1	Tx 12/6W Power Amplifier UHF	7o298-4E
	+ Stykliste 7o299-4S	
AP 4o1/1	Electronic antenna swifch UHF	7o296-4E
	+ stukliste 7o297-4S	
	Low-pass filter UHF	7o292-4E
	+ stykliste 7o293-4S	
	Mounting Instructions loc. control mob. with (out) DC- conv.	68127-4E
	Mobile AP 7oo Local control Simplex 1chan func. lay out.	7o2o2-4E
	Mobile AP 7oo. Local cont. simplex 1 ch., sel. call lay out	7o225-4E
	Mobile AP 7oo. Local cont. simplex 4 ch. function lay out	7o2o7-4E
	Mobile AP 7oo. Local cont. simplex 4ch. sel. call, lay out	7o214-4E
	Local cont. simplex 12 ch. for mob. telephone service (MTS)	7o223-4E

Rettet:

AP-RADIOTELEFON

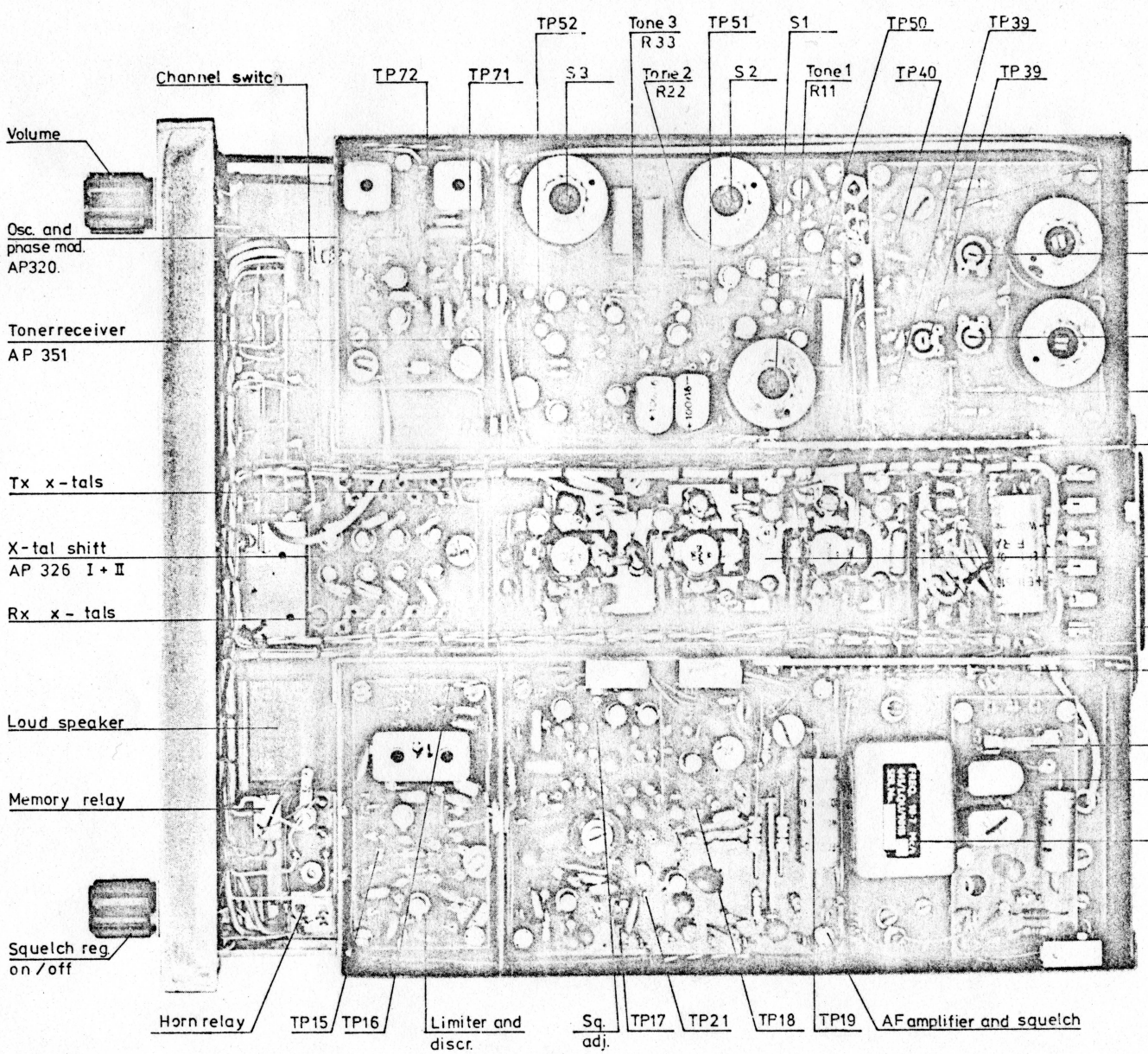
TOP VIEW OF MOBILE
LOCAL CONTROLLED AP 700 UHF.

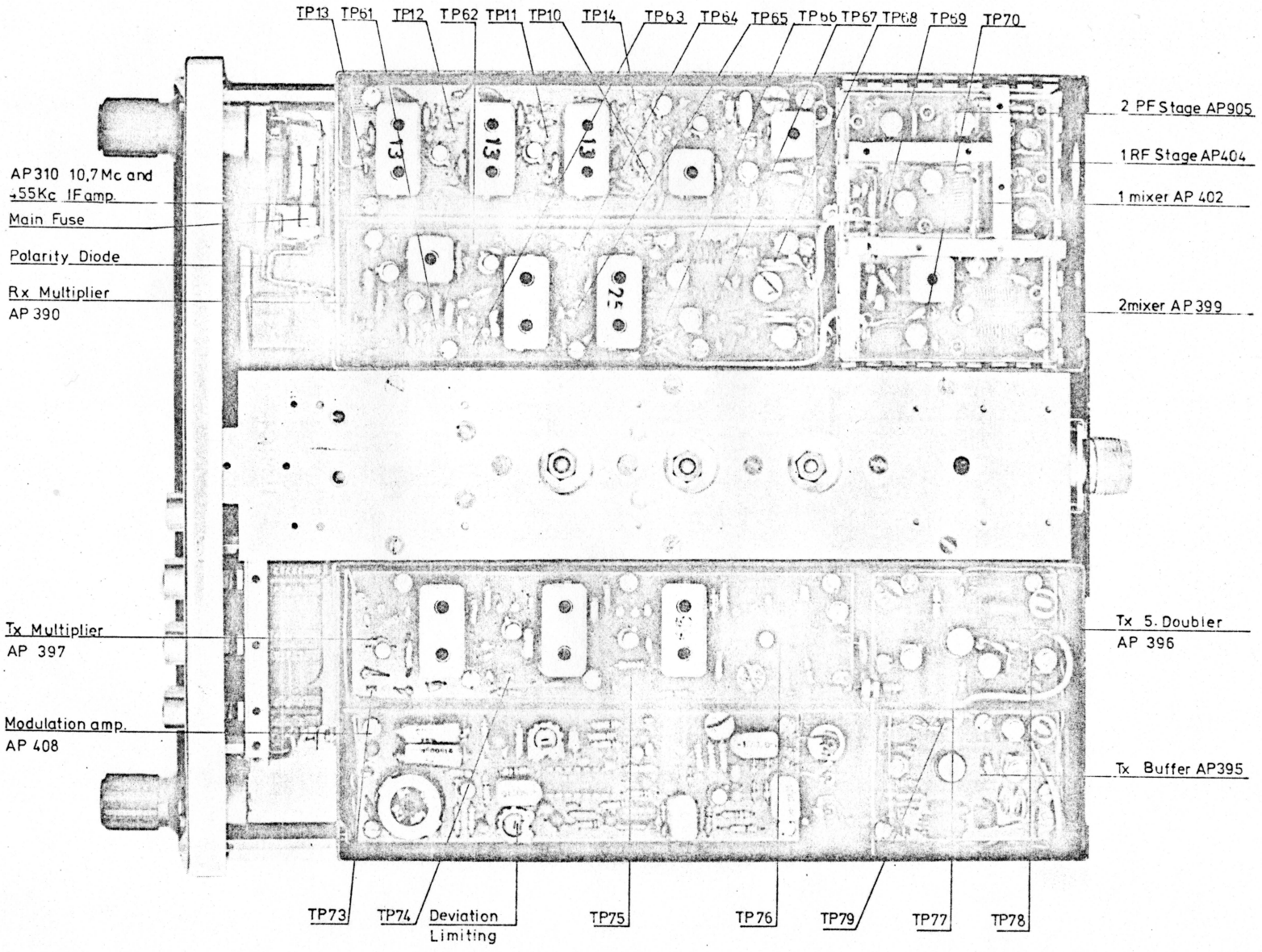
Tegn. nr.: 7115 3/4

Tegn.:

Stykl. nr.:

Kontr.:





BOTTOM VIEW OF MOBILE
LOCAL CONTROLLED AP 700 UHF.

AP-RADIOTELEFON

Rettet:

Tegn.:

Kontr.:

Stykl. nr.:

Tegn. nr.:

71154/4

A.P. 700

4 channel UHF F.M. Radiotelephone.

Technical data:

General:

Operation:	Single-frequency simplex, two-frequency simplex (semiduplex)
Channels:	1 to 4 with 2o/25KHz and 5o KHz spacing.
Frequency range:	422 - 470 MHz
Modulation:	Frequency modulation F 3.
Deviation:	4/5 KHz and 15 KHz
Controls:	on/off switch, volume, squelch, channel selector, transmitter key, switch for selective call and an auxiliary switch.
Power supply:	Main unit adapted for direct 12 Volt (nom.) battery supply with negative earth. Optional separate converter units supplied for $\pm$ 6, +12 and $\pm$24 Volts d.c. Separate 220 Volts AC Power supplies, and automatic emergency power supplies are also available.
Current comsumption at 13,8 V:	Stand by: 0,15 A.
	Reception: 0,2 A.
	Transmission: 3 A
Loudspeaker:	Internal 5 ohms 2"
Microphone:	200 ohms dynamic.
Coaxial connector:	50 ohms UHF type
Working temperature:	From -25° to +50° centigrade.
Dimensions:	Height 5,7 cm, width 22 cm, depth 31 cm, weight 3,5kg

Rettet:	Technical Data I AP 700 UHF	Tegn.:	Kontr.: E.F 18-9-70
		Stykl. nr.:	
	AP-RADIOTELEFON	Tegn. nr.:	70315/4

Transmitter:

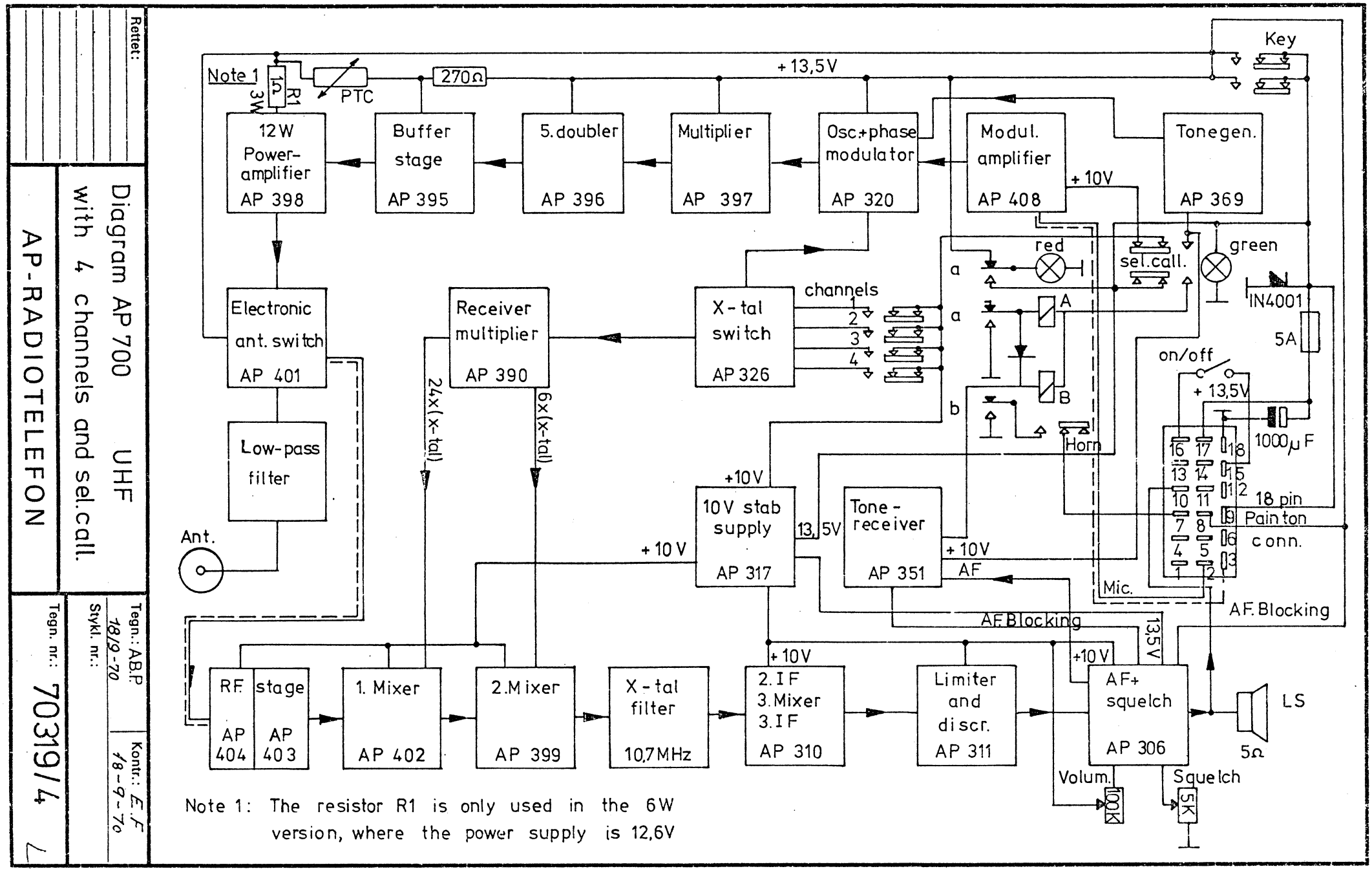
Power output:	10 to 13 Watts at 13,8 V supply voltage. 6 Watt at 12,6 V in the 6 Watt version.
Spurious outputs and harmonics:	Each less than 0,2 µW.
Frequency Stability:	Mobile, better than ±2,5 KHz from -25° to +50° C. Basestation, better than ± 1 KHz " " "
Microphone input:	Nominal for 200 ohms dynamic microphone.
A.F.response:	Within +1 to -1,5 dB of a 6 dB pr. octave pre-emphasis characteristic from 0,3 to 3 KHz, referred to 1 KHz level.
Modulation limiting:	Obtained by an a.g.c. controlled amplifier. with less than 2% distortion at full limiting.

Receiver:

Sensitivity:	0,7 µV E.M.F. for 12 dB SINAD.
Adjacent channel selectivity:	Better than 75 dB
Spurious responses:	None greater than 8o dB
Intermodulation:	66 dB.
A.F.response:	+1 to -3 dB of a 6 dB pr. octave deemphasis characteristic from 0,3 to 3 KHz referred to 1 KHz level.
Audio output power:	2 Watts into 5 ohms with less than 1o% distortion at 13,8 V supply voltage

Figures quoted are typical and must be specifically confirmed before they become applicable to any particular tender, order or contrac

Rettet:	Technical Data II AP 700 UHF	Tegn.:	Kontr.: EF 18-9-70
		Stykl. nr.:	
	AP-RADIOTELEFON	Tegn. nr.:	70316/1


Rettet:
AP-RADIOTELEFON
Diagram AP 700 UHF
with 4 channels and sel.call.
Tegn.: A.B.P. 18/9-70
Stykl. nr.:
Kontr.: E.F. 18-9-70
Tegn. nr.: 70319/4
Note 1
1Ω
3W
R1
PTC
270Ω
+13,5V
Key
12W Power-amplifier AP 398
Buffer stage AP 395
5. doubler AP 396
Multiplier AP 397
Osc.+phase modulator AP 320
Modul. amplifier AP 408
+10V
Tonegen. AP 369
red
sel.call.
green
IN4001
5A
on/off
+13,5V
1000µF
Electronic ant. switch AP 401
Receiver multiplier AP 390
X-tal switch AP 326
channels
1
2
3
4
a
a
b
A
B
Horn
Low-pass filter
24x(x-tal)
6x(x-tal)
Ant.
+10V
10V stab supply AP 317
13,5V
Tone-receiver AP 351
+10V
AF
Mic.
18 pin Painton conn.
AF. Blocking
AF. Blocking
13,5V
+10V
+10V
RF stage AP 404 AP 403
1. Mixer AP 402
2. Mixer AP 399
X-tal filter 10,7MHz
2. IF 3. Mixer 3. IF AP 310
Limiter and discr. AP 311
AF+ squelch AP 306
LS
5Ω
Volum.
100K
Squelch
5K
Note 1: The resistor R1 is only used in the 6W version, where the power supply is 12,6V

Technical description of the
AP 700 UHF Communicationset.

Receiver.

The receiver is a triple super. It consists of one RF stage on the operating frequency, feeding the first mixer, mixing down to the first IF app. 80 MHz. This first IF is mixed down to 10,7 MHz in the second mixer, and fed through a x-tal filter to the 3rd mixer, where the low IF of 455 KHz is produced. This signal is detected and fed to the AF and loudspeaker.
The injection signals for the 1st and 2nd mixer are made by multiplication from a x-tal oscillator operating in the range 14-16 MHz. The multiplying factor is 24 times for the 1st oscillator and 6 times for the 2nd oscillator.
In the first stages of the receiver, field effect transistors are used in order to obtain good intermodulation and blocking ratios. The RF amplifier has 4 tuned circuits on the operating frequency in order to obtain the necessary selectivity. The RF-signal from the antenna is fed to a dual gate MOSFET, amplified and fed to the gate of the J-FET in the first mixer.
The injection signal from the first oscillator app. 80 MHz below the RF signal is fed to the source of the J-FET. The resulting first IF-signal app. 80 MHz, is passed through a 3-stage filter, to obtain high selectivity, and to gate 1 of the dual gate MOSFET in the 2nd mixer. The injection signal is fed to gate 2. The outcoming signal is the 2nd IF of 10,7 MHz, which is passed through a x-tal filter with 90 dB attenuation on neighbouring channels, and further amplified before it is fed to the 3rd mixer, where it is mixed with a x-tal oscillator on the frequency 10.245 MHz.
The converted signal on 455 KHz is amplified in a 2 stage amplifier and fed to a limiter and Foster Seeley discriminator.
The demodulated signal is integrated with a 6 dB roll off per octave and amplified in a 4 stage pre- & power AF-amplifier delivering 2 Watts in a 5 ohm load with nominal supply voltage.
Part of the noise generated in the limiter is fed via a rectifier doubler to a DC-amplifier, muting the LF-amplifier in case of missing or too weak RF signal.

Rettet:	Technical Description of the AP 700 UHF. Receiver	Tegn.:	Kontr.: EF 17-9-70
		Stykl. nr.:	
	AP-RADIOTELEFON	Tegn. nr.:	7031314

Technical description of the AP 700 UHF Communicationset.

Transmitter.

The AF-signal from the microphone is amplified in a modulation amplifier, built around an integrated circuit, containing two separated amplifiers. The first amplifier is used as a normal pre-amplifier. Via a trimpot, for gain adjustment, the signal is fed into the next amplifier, through a gain compression system, which becomes active over a certain AF output level. With the aid of the following trimpot, max deviation can be adjusted. Finally the AF-signal is amplified in a single transistor amplifier followed by a lowpass-filter cutting off sharply over 3000 Hz.

The x-tal oscillator works at about 14 MHz. Via a bufferstage this signal is fed to a phasemodulator, consisting of 2 resonant circuits tuned with varactor diodes, modulated with the AF-signal. The phase modulated RF-signal is passed into the multiplier, consisting of 4 doubler stages with a bandpass filter between each stage, multiplying the frequency to 225 MHz.

A single doubler stage multiplies this signal up to 450 MHz, passing a further bandpassfilter. The signal is amplified in a bufferstage to 250 mW, which is used to drive the power amplifier. This power amplifier has 3 stages and the output power is 6 or 12 Watts.

On the way to the antenna, the output passes an electronic antenna switch, consisting of 3 diodes and 2 quarterwavelength sections. With the transmitter on, a bias is impressed on the diodes making these work as a short, passing the transmitter signal unhampered, but preventing it from reaching the input circuit of the receiver.

To suppress harmonic frequencies, the transmitter output signal is passed through a lowpass filter. To prevent overheating of the power amplifier transistors, either at high ambient temperature or with mismatched output, a ptc resistor is mounted on the heatsink and wired in series with power supply to the bufferstage, reducing the drive to the power amplifier, if the temperature rises over a dangerous value.

Rettet:	Technical Description of the AP 700 UHF Transmitter	Tegn.:	Kontr.: EF 11-9-70
		Stykl. nr.:	1
	AP-RADIOTELEFON	Tegn. nr.:	703414

Tuning Instructions for the AP 700 UHF.

Receiver:

Instruments used:

VTVM	Marconi TF 2604	-	or equiv.
Signal/Generator	Marconi TF 1066/B	"	"
Sweep/Generator	TLH 208	-	" "
Distortion Meter	Heathkit	-	" "

2nd and 3rd IF amp. AP 310

With the sweep generator adjusted to 10,7 Hz, tune the 2nd and 3rd IF.
Connect the diode probe to TP10, and the RF output to TP1 on pcb. AP 399. Now the 2nd IF can be tuned.

Starting on pcb. AP 399, tune S4 for min. ripple on the filter, continuing on pcb. AP 310, tune S1 for min. ripple and S2 for max. amplification.

Then move the diodeprobe to TP 13 and tune S3, S4 and S5 for max. amplification and symmetry.

Now connect the AF input of the sweep generator direct to TP 16 on pcb. AP 311. Tune S1 for max. slope and best possible symmetry.

With the RF probe of the VTVM connected to TP 14, check if the x-tal oscillator for the 3rd mixer is working. - reading 0,2 V.AC.

Multiplier AP 390:

The receiver frequency is found by the formula:

$$\text{frec} = 30\ (\text{fx.tal}) - 10{,}7\ \text{MHz}.$$

The multiplying factor for the 1st oscillator is 24, and for the 2nd oscillator is 6.

Connect the RF probe of the VTVM to TP61 and read 0,3-0,4 VAC with the oscillator working.

Connect the DC probe to TP63 and tune S1 for max. deflection: 0,2-0,4 V DC.

Then connect the DC probe to TP65 and tune S2 to max. reading should be 0,3-0,5 V DC.

Then move DC probe to TP66 tune S3 for max. deflection, read 0,16-0,8 V DC.

Rettet:	TUNING INSTRUCTION I RECEIVER UHF AP 700	Tegn.: 25.1.71 BEP	Kontr.: EF/JS 26-1-71
		Stykl. nr.:	
	AP-RADIOTELEFON	Tegn. nr.: 71052/4	

Move the DC probe to TP67 and tune S4 and S5 for max. read 0,18-0,25 V DC.

Now connect RF probe to TP68 and tune S6 and S7 for max. reading approx. 0,4-0,7 V AC, depending on the position of C3 in the 1st mixer stage - pcb. AP 402 -.

2nd mixer AP 399

Connect the RF probe of the VTVM to TP70 and tune S3 for max. read 0,7-1 V AC.

Adjust the signal generator to the 1st IF i.e. frec - 24 x fxtal MHz.

Fasten a loop to the generatorcable and couple this to S1 on pcb. AP 402 and adjust S1 for max. sensitivity, continuing to pcb AP 399, adjust S1, S2 and S3 for max sensitivity.

1st mixer AP 402:

Connect the signal gen., tuned to the desired receiver frequency, to the input connector of the receiver.

Now adjust S1 and S2 for best possible sensitivity. Check with the RF probe of the VTVM that there is 0,4-0,6 V AC on TP69.

1st and 2nd RF stage's AP 403 and AP 404:

Adjust S1 and S2 on pcb 403 and AP 404 to max. sensitivity, which should be 0,6-0,8 µV EMF for 12 dB SINAD or 0,9-1,1 µV EMF for 20 dB quieting.

After ended receiver adjustments, the frontend shielding has to be fitted and a readjustment of the frontend is necessary

AF squelch AP 306

Normally it should not be necessary to adjust the AF amplifier, but for controlling the squelch functioning, the voltagereadings on the different test points should be as follows:

On TP20 should be 8 V AC, "NOISE", so the squelch can function satisfactory.

With the squelch fully opened there should be 1,5 V DC on TP21 and 1,2 V DC on TP18.

With the squelch fully closed there should be no reading on TP18, and the AF amplifier blocked.

Check if the signal generator is capable to open the squelch at 0,7 µV.

Rettet:	TUNING INSTRUCTION II RECEIVER UHF AP700	Tegn.: 25.1.71 BEP	Kontr.: EF/JS 26-1-71
		Stykl. nr.:	
	AP-RADIOTELEFON	Tegn. nr.: 71053/4	

Tuning Instructions for the AP 700 UHF.

Transmitter:

Instruments used:

VTVM - Marconi TF 2604 - or equiv.

Wattmeter Bird Tru Line 43 - -

Modulationmeter - Marconi TF 2300 - or equiv.

50 Ω resistive load.

Audio generator - Philips GM 2308 - or equiv.

Power supply during tuning has to be 12 Volt. The voltage as given on the diagram are measured on a ready tuned transmitter with a supply of 13,8 Volt.

Before tuning set all trimmers halfway.

Phase modulator AP 320:

To make sure the oscillator is working, connect the AC probe of the VTVM to TP71, and read 0,3 AC. Next connect the AC-probe to TP72 and tune S1 and S2 for max. deflection.

This tuning can also be done by connecting the DC probe to TP1 on print AP 397 and tune to max deflection.

Multiplier AP 397

Connect the DC probe to TP74 and tune S1 to max. deflection, move probe to TP75 and tune S2 for max. Tune S3 for max. with probe on TP76

5 doubler AP 396 and buffer AP 395.

Connect the Wattmeter to the output pins of print AP 395, by unsoldering the cable to the PA. stage. Measuring range: 1 W full scale.

Connect the DC probe to TP77 of print AP 396, tune C25 on AP 397 and C2 on AP 396 for max. deflection.

Now connect the DC probe to TP79 on AP 395. Tune C5 and C7 on print AP 395 to max. dip.

If the Wattmeter before this last instruction shows an output, adjust directly after this indication for max. output. Next adjust C6 and C7 for max. output.
Complete with fine tuning of all the trimmers. Resolder cable to PA stage.

Rettet.	TUNING INSTRUCTION I TRANSMITTER UHF	Tegn.: 25.1.71 BEP	Kontr.: EF/JS. 26-1-71
		Stykl. nr.:	
	AP-RADIOTELEFON	Tegn. nr.: 71054/4	

PA stage AP 398:

Connect the Wattmeter to transmitter outputconnector. Start with turning C20 and C21 in and out, if there is an indication on the Wattmeter, adjust to max. If no indication on the Wattmeter, turn the other trimmers in and out, but make sure to leave the trimmers on the halfway point before turning to another trimmer, as long as there has not been any reaction on the Wattmeter. As soon as there is an indication on the Wattmeter, adjust C10 and C21 to max. indication. Then adjust C2 for max. deflection, adjust C8 and C9 over several times till the absolute maximum deflection is reached. The same counts for C14 and C15, also for C20 and C21.

Finally fine tune all trimmers beginning from the input.

Output effect should be at least 8 W with 12 Volt supply. With a supply of 13,8 V at least 11 W, and with a supply of 10,8 V at least 5 W.

Comprising 6 Watt types the power output should be between 6 and 7 Watt at 12,6 Volt supply. At 11,3 Volt at least 4,25 Watt should be obtained.

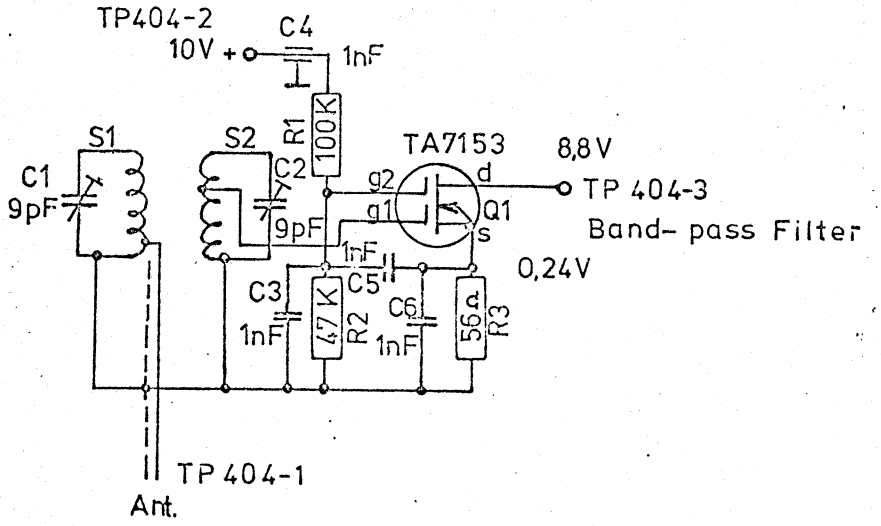
Modulation amplifier AP 408

Connect to the microphone input an audio generator matched to 200 Ω, with frequency 1000 Hz, input should be 2 mV Connect modulation meter and tune in.

Adjust limiter pot R12 to max. allowed frequency deviation. Reduce input with 20 dB to 0,2 mV. Adjust level pot. R6 to 2/3 of max. frequency deviation. Readjust input to 2 mV again and check max. deviation, readjust if necessary.

Finally check frequency deviation with 0,2 mV input.

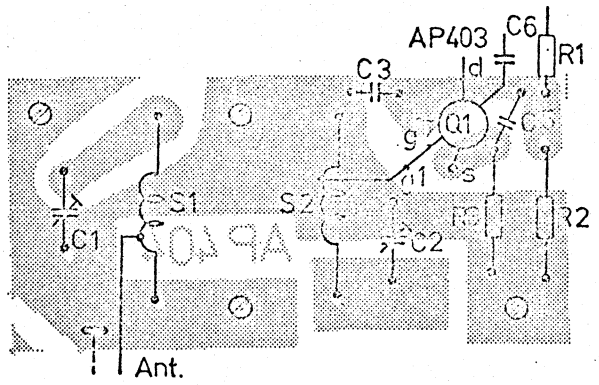
Rettet:	TUNING INSTRUCTION I TRANSMITTER UHF	Tegn.: 25.1.71 BEP	Kontr.: EF/JS 26-1-71
		Stykl. nr.:	
	AP-RADIOTELEFON	Tegn. nr.:	71055/4



Remarks: Quoted DC potentials are measured to chassis.

Ri = 10 MΩ provided 330 KΩ in series with test pin.

Rx stand by and Tx keyed.



Rettet: 23-10-73 HP	1. RF-STAGE UHF-RECEIVER PRINT BOARD AP 404/1	Tegn.: 16.9.70 BEP	Kontr.:
		Stykl. nr.: 703084	
	AP-RADIOTELEFON	Tegn. nr.: 70307/4	

AP-RADIOTELEFON

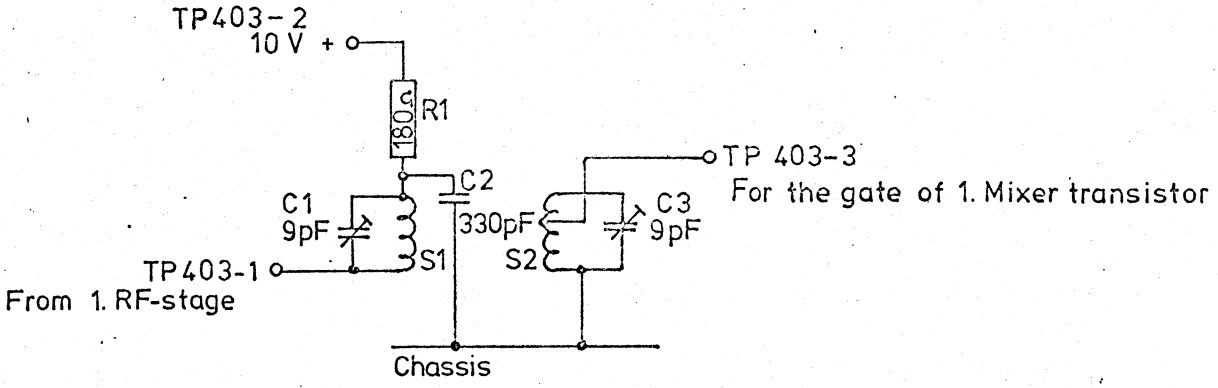
Nr.	Kode	Data	Nr.	Kode	Data
R1		1oo Kohm ¼ W			
R2		47 Kohm "			
R3		56 ohm "			
C1		9 pF trim.			
C2		9 pF trim.			
C3		1 nF ker.			
C4		1 nF ker.			
C5		1 nF ker.			
C6		1 nF ker.			
S1		L191			
S2		L191			
Q1		TA 7153 (3N 2oo)			

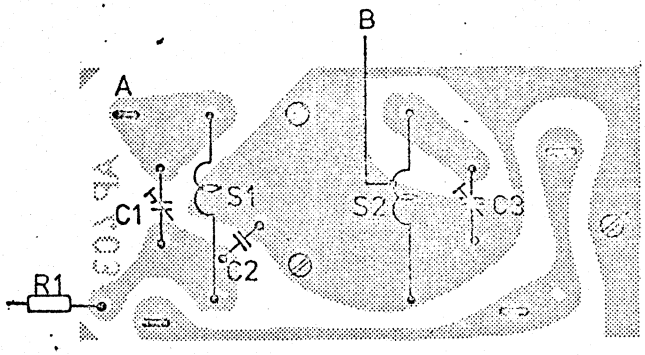
1.RF-Stage UHF-Receiver
Print Board AP 4o4 AP 7oo
Tilhører tegn. nr.: 7o3o7/4

Rettet:

Tegn.:
Kontr.:

Stykl. nr.:
7030814





Rettet: 23-10-73HF	Band-pass Filter UHF-Receiver Print board AP 403/1	Tegn.: 15.9.70 BEP	Kontr.: 15.9.70 EF
		Stykl. nr.: 70306/4	
	AP-RADIOTELEFON	Tegn. nr.:	70305/4

AP-RADIOTELEFON

Nr.	Kode	Data	Nr.	Kode	Data
R1		18o ohm ¼ W			
C1		9 pF trim.			
C2		33o pF ker.			
C3		9 pF trim.			
S1		L191			
S2		L191			

Band-pass Filter UHF-Receiver
Print board AP 403
Tilhører tegn. nr.: 70305/4.

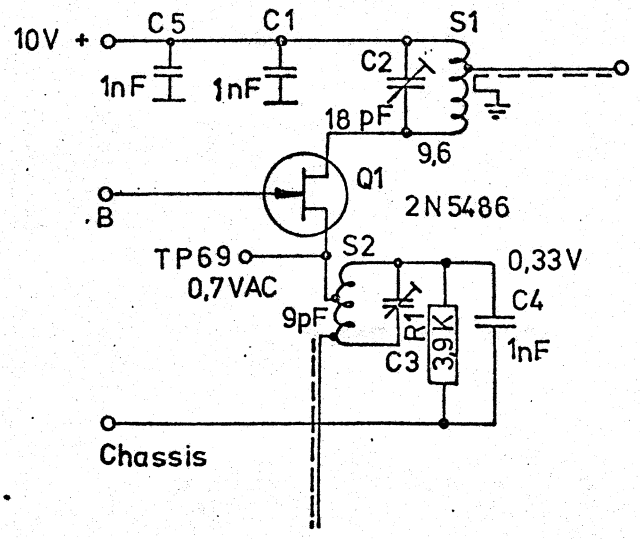
Rettet:23-10-73HP

Tegn.:

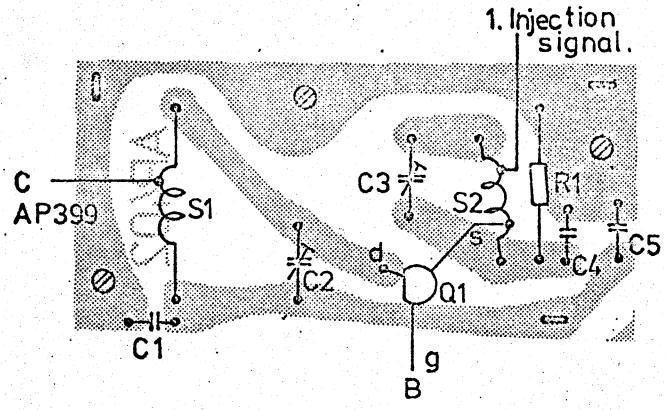
Kontr.:

Stykl. nr.:

70306/4



1. Injection Signal



Remarks: Quoted DC potentials are measured to chassis.

Ri = 10 MΩ provided 330 KΩ in series with test pin.

Rx stand by and Tx keyed.

Rettet:	1. MIXER-STAGE UHF-RECEIVER PRINT BOARD AP 402/1.	Tegn.: 16.9.70 BEP	Kontr.: 16.9.70 EF
		Stykl. nr.: 70310/4	
	AP-RADIOTELEFON	Tegn. nr.: 70309/4 2	

Nr.	Kode	Data	Nr.	Kode	Data
R1		3,9 Kohm ¼ W			
C1		1 nF ker.			
C2		18 pF trim.			
C3		9 pF trim.			
C4		1 nF ker.			
C5		1 nF ker.			
S1		L193			
S2		L192			
Q1		2N 5486 (2N 5245, Ti-S88)			

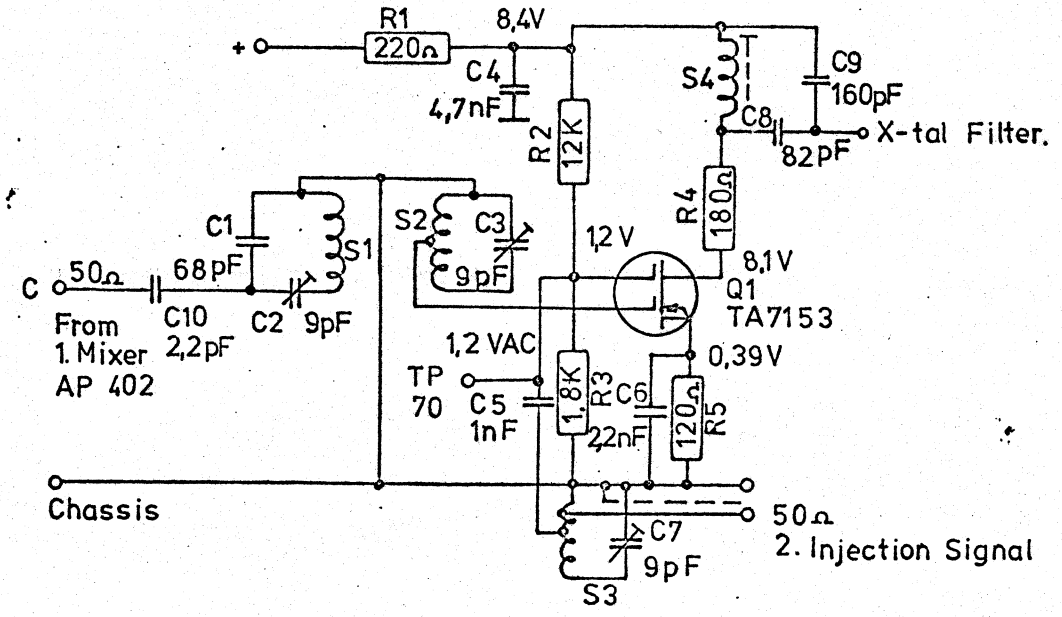
1.Mixer-Stage UHF-Receiver
Print Board AP 4o2/1. AP 7oo
Tilhører tegn. nr.: 703o9/4

Rettet:

Tegnet: EB

Kontr.:

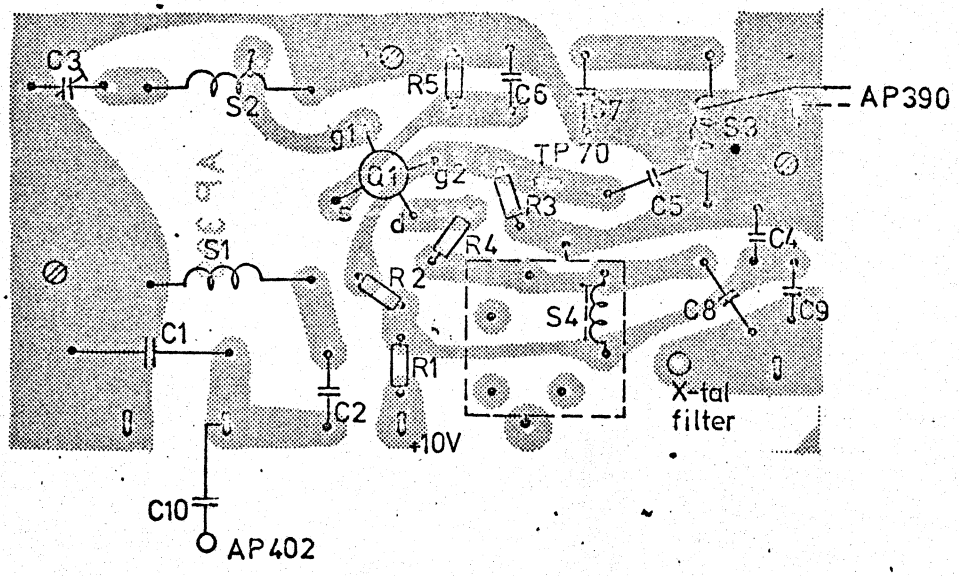
Stykl. nr.:
70310/4



Remarks: Quoted DC potentials are measured to chassis.

Ri = 10 MΩ provided 330 KΩ in series with test pin.

Rx stand by and Tx keyed.

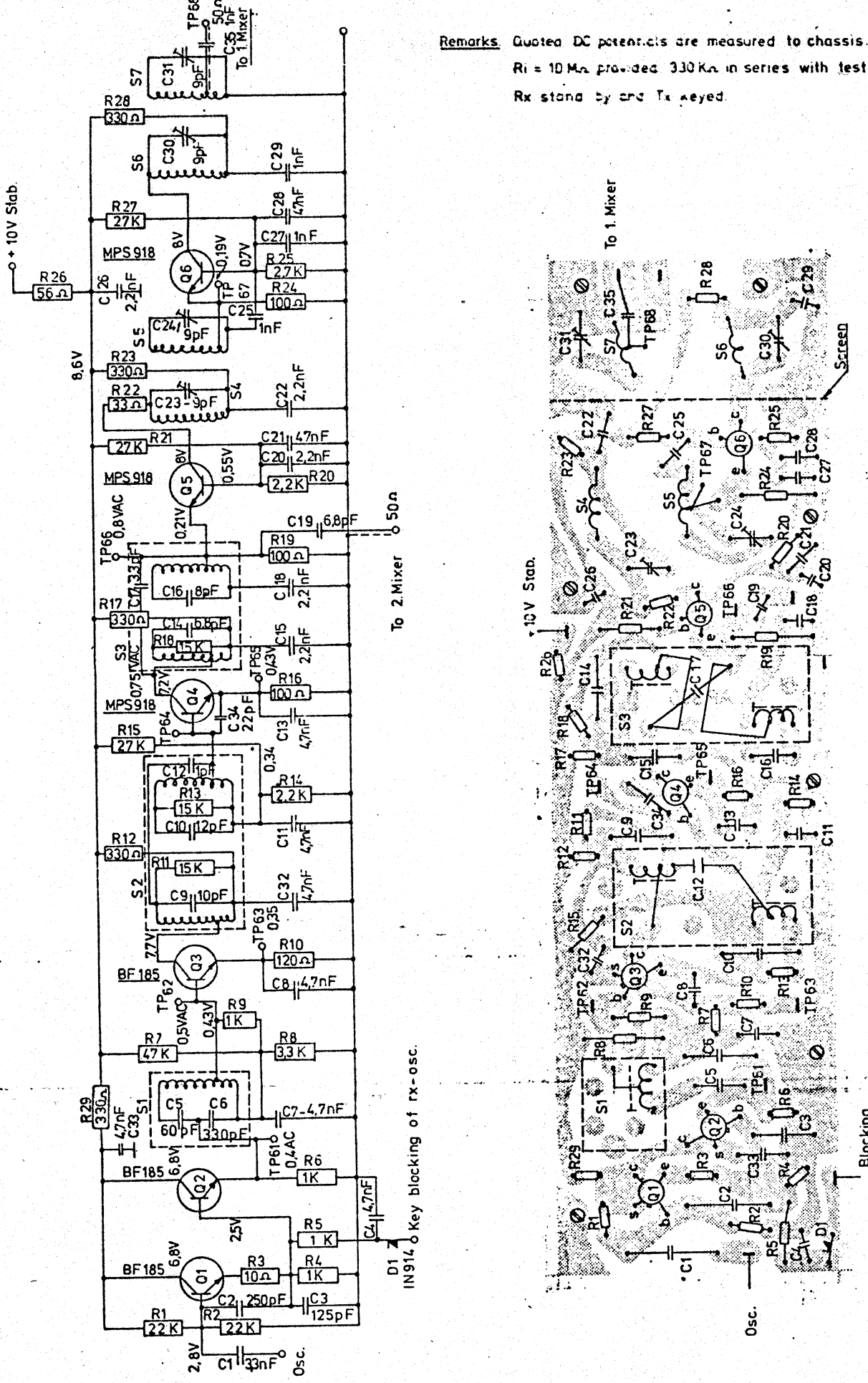


Rettet:	2. MIXER-STAGE UHF-RECEIVER PRINT BOARD AP 399/1.	Tegn.: 16.9.70 BEP	Kontr.: EF 11-3-71
		Stykl. nr.: 7031214	
	AP-RADIOTELEFON	Tegn. nr.: 7031114	

Nr.	Kode	Data	Nr.	Kode	Data
R1		22o ohm ¼ W			
R2		12 Kohm "			
R3		1,8 Kohm "			
R4		18o ohm "			
R5		12o ohm "			
C1		68 pF styr.			
C2		9 pF trim.			
C3		9 pF trim.			
C4		4,7 nF ker.			
C5		1 nF ker.			
C6		2,2 nF ker.			
C7		9 pF trim.			
C8		82 pF styr.			
C9		16o pF styr.			
C1o		2,2 pF Ker.			
S1		L194			
S2		L195			
S3		L196			
S4		L7 Tg. 68o93/4			
Q1		TA 7153 (3N 2oo)			

2.Mixer-Stage UHF-Receiver Print Board AP 399/1. AP 7oo Tilhører tegn. nr.: 7o311/4	Rettet:	Tegn.:	Stykl. nr.: 70312/4
		Kontr.:	

Remarks. Quoted DC potentials are measured to chassis.
Ri = 10 MΩ provided 330 KΩ in series with test pin.
Rx stand by and Tx keyed.



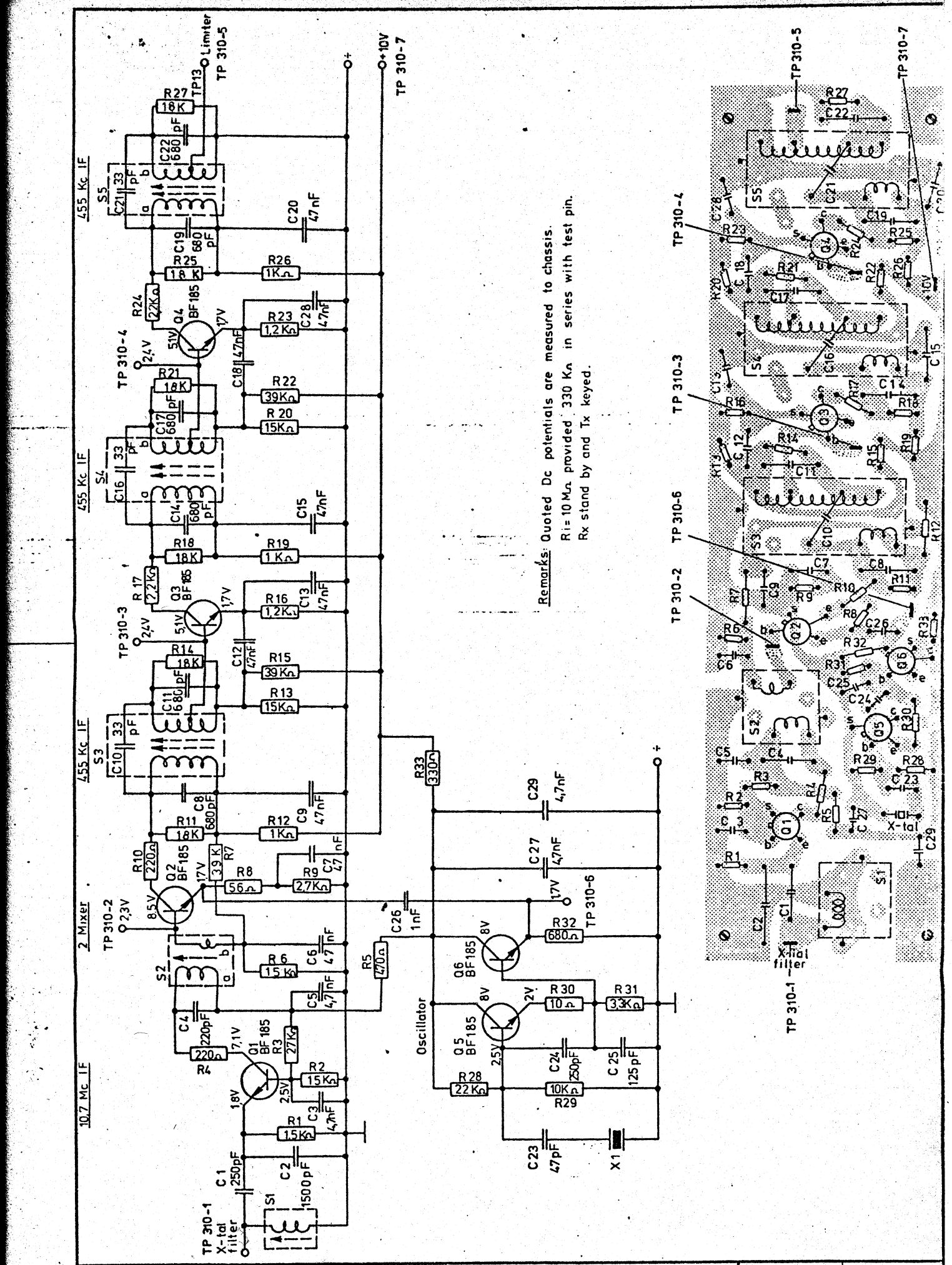
Rettet:	MULTIPLIER FOR UHF RECEIVER	Tegn.: A.B.P. 17-9-70	Kontr.: E.F. 18-9-70
2-1-73 H.P.	PRINT BOARD AP 390/1	Stykl. nr.: 70318/4	
6-12-73 JAN		Tegn. nr.: 70317/3	
21-1-75 AC/POR.			

Nr.	Kode	Data	Nr.	Kode	Data
R1		22 kΩ ¼W	C10		12 pF ker.
R2		22 kΩ "	C11		4,7 nF ker.
R3		10 Ω "	C12		1 pF ker.
R4		1 Ω "	C13		4,7 nF ker.
R5		1 kΩ "	C14		6,8 pF ker.
R6		1 kΩ "	C15		2,2 nF ker.
R7		47 kΩ "	C16		8 pF ker.
R8		3,3 kΩ "	C17		3,3 pF ker.
R9		1 kΩ "	C18		2,2 nF ker.
R10		120 Ω "	C19		6,8 pF ker.
R11		15 kΩ "	C20		2,2 nF ker.
R12		330 Ω "	C21		47 nF ker.
R13		15 kΩ "	C22		2,2 nF ker.
R14		2,2 kΩ "	C23		9 pF trim.
R15		27 kΩ "	C24		9 pF trim.
R16		100 Ω "	C25		1 nF ker.
R17		330 Ω "	C26		2,2 nF ker.
R18		15 kΩ "	C27		1 nF ker.
R19		100 Ω "	C28		47 nF ker.
R20		2,2 kΩ "	C29		1 nF ker.
R21		27 kΩ "	C30		9 pF trim.
R22		33 Ω "	C31		9 pF trim.
R23		330 Ω "	C32		4,7 nF ker.
R24		100 Ω "	C33		4,7 nF ker.
R25		2,7 kΩ "	C34		22 Pf ker.
R26		56 Ω "	C35		1 nF ker.
R27		27 kΩ			
R28		330 Ω "	S1		L 17 Tg.68206/4
R29		330 Ω "	S2		L198 Tg.70328/4
			S3		L 25 Tg.68206/4
C1		3,3 nF styr.	S4		L199
C2		250 pF styr.	S5		L197
C3		125 pF styr.	S6		L192
C4		4,7 nF ker.	S7		L192
C5		60 pF styr.			
C6		330 pF styr.	D1		1N914
C7		4,7 nF ker.			
C8		4,7 nF ker.			
C9		10 pF ker.			

Multiplier for UHF-receiver print board AP390/1 AP700 Tilhører tegn. nr.: 70317/4	Rettet: 6.12.73.	Tegn.:	Stykl. nr.: 70318-4S
		Kontr.:	

Nr.	Kode	Data	Nr.	Kode	Data
Q 1		BF 185			
Q 2		BF 185			
Q 3		BF 185			
Q 4		MPS 918			
Q 5		MPS 918			
Q 6		MPS 918			

Multiplier for UHF-receiver print board AP 390/1 AP700 Tilhører tegn. nr.: 70317/4	Rettet: 6.12.73.	Tegn.:	Stykl. nr.:	
		Kontr.:	70318-4S	



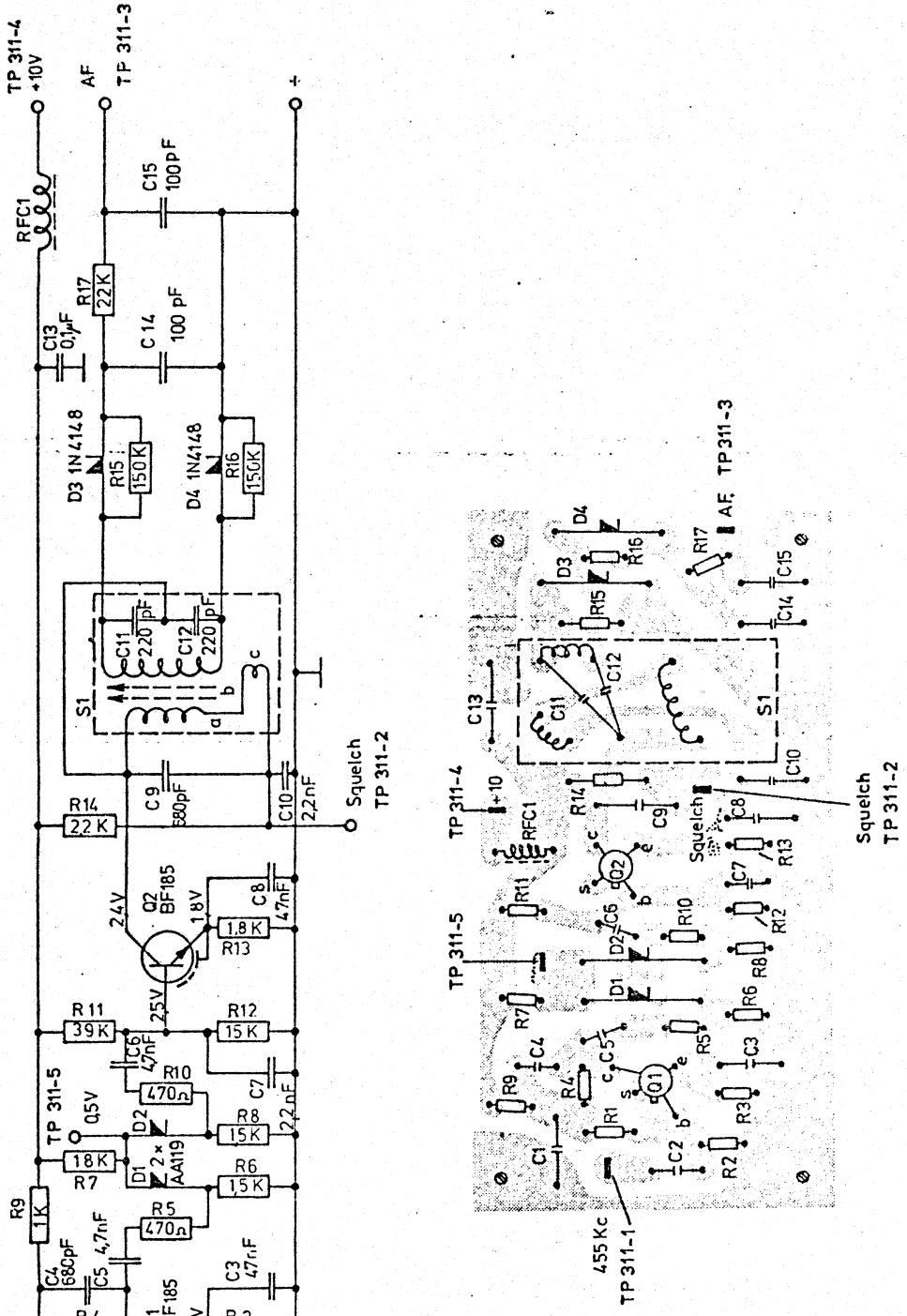
Rettet: 27-11-72 H.P 18-3-74 H.P 28-10-74 HJ./J.S.	10,7 Mc and 455 Kc IF Amplifier Narrowband. Print AP 310a/3	Tegn.: ML 15-3-72 | Kontr.: HM 15-3-72 Stykl. nr.: 72129-4S Tegn. nr.: 72129-3E
	AP-RADIOTELEFON	

AP-RADIOTELEFON

Nr.	Kode	Data	Nr.	Kode	Data
R 1		1,5 kΩ ¼ w	C 5		4,7 nF ker.
R 2		15 kΩ ¼ w	C 6		47 nF/12V ker.
R 3		27 kΩ ¼ w	C 7		47 nF/12V ker.
R 4		220 Ω ¼ w	C 8		680 pF styr.
R 5		470 Ω ¼ w	C 9		47 nF/12V ker.
R 6		15 kΩ ¼ w	C10		33 pF styr.
R 7		39 kΩ ¼ w	C11		680 pF styr.
R 8		56 Ω ¼ w	C12		47 nF/12V ker.
R 9		2,7 kΩ ¼ w	C13		47 nF/12V ker.
R10		220 Ω ¼ w	C14		680 pF styr.
R11		18 kΩ ¼ w	C15		47 nF/12V ker.
R12		1 kΩ ¼ w	C16		33 pF styr.
R13		15 kΩ ¼ w	C17		680 pF styr.
R14		18 kΩ ¼ w	C18		47 nF/12V ker.
R15		39 kΩ ¼ w	C19		680 pF styr.
R16		1,2 kΩ ¼ w	C20		47 nF/12V ker.
R17		2,2 kΩ ¼ w	C21		33 pF styr.
R18		18 kΩ ¼ w	C22		680 pF styr.
R19		1 kΩ ¼ w	C23		47 pF styr.
R20		15 kΩ ¼ w	C24		250 pF styr.
R21		18 kΩ ¼ w	C25		125 pF styr.
R22		39 kΩ ¼ w	C26		1 nF ker.
R23		1,2 kΩ ¼ w	C27		4,7 nF ker.
R24		2,2 kΩ ¼ w	C28		47 nF ker.
R25		18 kΩ ¼ w	C29		4,7 nF ker.
R26		1 kΩ ¼ w	S 1		L11 Tg.68093/4
R27		18 kΩ ¼ w	S 2		L12 Tg.68093/4
R28		22 kΩ ¼ w	S 3		L13 Tg.68095/4
R29		10 kΩ ¼ w	S 4		L13 Tg.68095/4
R30		10 kΩ ¼ w	S 5		L13 Tg.68095/4
R31		3,3 kΩ ¼ w			
R32		680 Ω ¼ w	Q 1		BF 185
R33		330 Ω ¼ w	Q 2		BF 185
			Q 3		BF 185
C 1		250 pF styr.	Q 4		BF 185
C 2		1,5 nF styr.	Q 5		BF 185
C 3		4,7 nF ker.	Q 6		BF 185
C 4		220 pF styr.	X 1	Finland	X-tal 11.155 MHz
				Others	X-tal 10.245 MHz

10,7Mc and 455Kc IF-Amplifier
Narrowband Print board AP 310a/3
Tilhører tegn. nr.: 72129-3E

Tegn.:
Kontr.:
Stykl. nr.: 72129-43

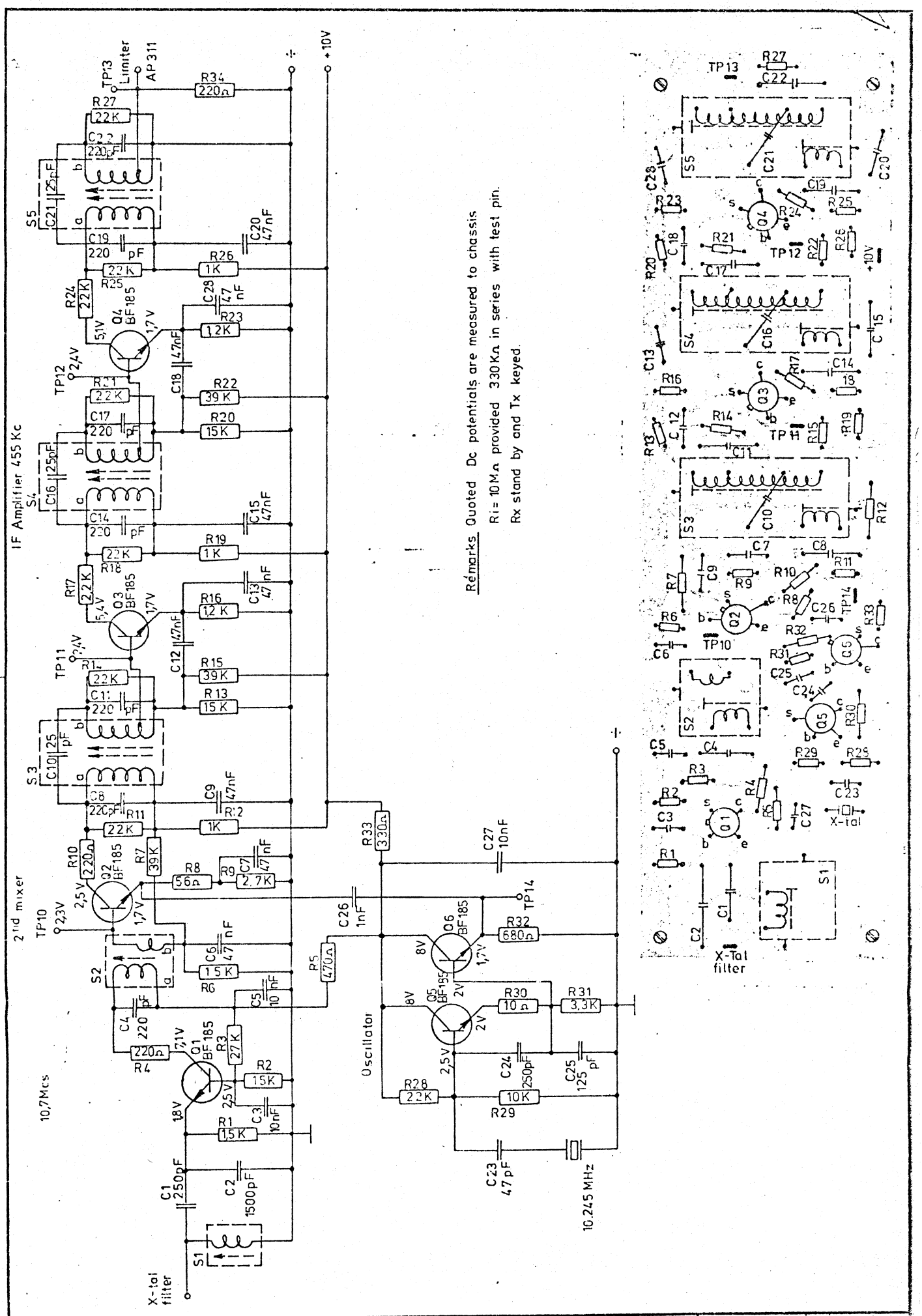


Remarks: Quoted Dc potentials are measured to chassis
Ri = 10 MΩ provided 330 KΩ in series with test pin.
Rx stand by and Tx keyed.

Rettet: 14-11-73 HP	LIMITER AND DISCRIMINATOR PRINT BOARD AP311/3	Tegn.: ML. 16-3-72 / Kontr.: HM. 16-3-72
		Stykl. nr.: 72132-4S
	AP-RADIOTELEFON	Tegn. nr.: 72132-4E

Nr.	Kode	Data	Nr.	Kode	Data
R 1		27 kΩ ¼ w	S 1		L 16 Tg.68096/4
R 2		10 kΩ ¼ w			
R 3		680 Ω ¼ w			
R 4		2,7 kΩ ¼ w	D 1		AA 119
R 5		470 Ω ¼ w	D 2		AA 119
R 6		1,5 kΩ ¼ w	D 3		1N 4148
R 7		18 kΩ ¼ w	D 4		1N 4148
R 8		1,5 kΩ ¼ w			
R 9		1 kΩ ¼ w			
R10		470 Ω ¼ w	Q 1		BF 185
R11		39 kΩ ¼ w	Q 2		BF 185
R12		15 kΩ ¼ w			
R13		1,8 kΩ ¼ w			
R14		2,2 kΩ ¼ w			
R15		150 kΩ ¼ w			
R16		150 kΩ ¼ w			
R17		22 kΩ ¼ w			
C 1		47 nF ker.			
C 2		47 nF ker.			
C 3		47 nF ker.			
C 4		680 pF styr.			
C 5		4,7 nF ker.			
C 6		4,7 nF ker.			
C 7		2,2 nF ker.			
C 8		47 nF ker.			
C 9		680 pF styr.			
C10		2,2 nF styr.			
C11		220 pF styr.			
C12		220 pF styr.			
C13		0,1 µF ker.			
C14		100 pF styr.			
C15		100 pF styr.			
RFC -1		Wide Band RFC			

Limiter and Discriminator Print board AP 311/3 Tilhører tegn. nr.: 72132-3E	Rettet:14-11-73H.P.	Tegn.: Kontr.:	Stykl. nr.: 72132-4S



Rettet:	10,7 Mc AND 455Kc IF-AMPLIFIER PRINT BOARD AP 310q/2 50KHz AP 700	Tegn.: 2.7.70 BEP / Kontr.: 2.7.70 E.F. Stykl. nr.: 70170/4 Tegn. nr.: Erstatter 69016/3 70169/3

AP-RADIOTELEFON

Nr.	Kode	Data
R1		1,5 Kohm ½ W
R2		15 Kohm "
R3		27 Kohm "
R4		22o ohm "
R5		47o ohm "
R6		15 Kohm "
R7		39 Kohm "
R8		56 ohm "
R9		2,7 Kohm "
R1o		22o ohm "
R11		22 Kohm "
R12		1 Kohm "
R13		15 Kohm "
R14		22 Kohm "
R15		39 Kohm "
R16		1,2 Kohm "
R17		2,2 Kohm "
R18		22 Kohm "
R19		1 Kohm "
R2o		15 Kohm "
R21		22 Kohm "
R22		39 Kohm "
R23		1,2 Kohm "
R24		2,2 Kohm "
R25		22 Kohm "
R26		1 Kohm "
R27		22 Kohm "
R28		22 Kohm "
R29		1o Kohm "
R3o		1o ohm "
R31		3,3 Kohm "
R32		68o ohm "
R33		33o ohm "
R34		22o ohm "
C1		25o pF styr.
C2		1,5 nF styr.
C3		1o nF ker.
C4		22o pF styr.
C5		1o nF ker.
C6		47 nF/12v ker.
C7		47 nF/12v ker.
C8		22o pF styr.
C9		47 nF/12v ker.
C1o		25 pF styr.
C11		22o pF styr.
C12		47 nF/12v ker.
C13		47 nF/12v ker.
C14		22o pF styr.
C15		47 nF/12v ker.
C16		25 pF styr.
C17		22o pF styr.
C18		47 nF/12v ker.
C19		22o pF styr.
C2o		47 nF/12v ker.

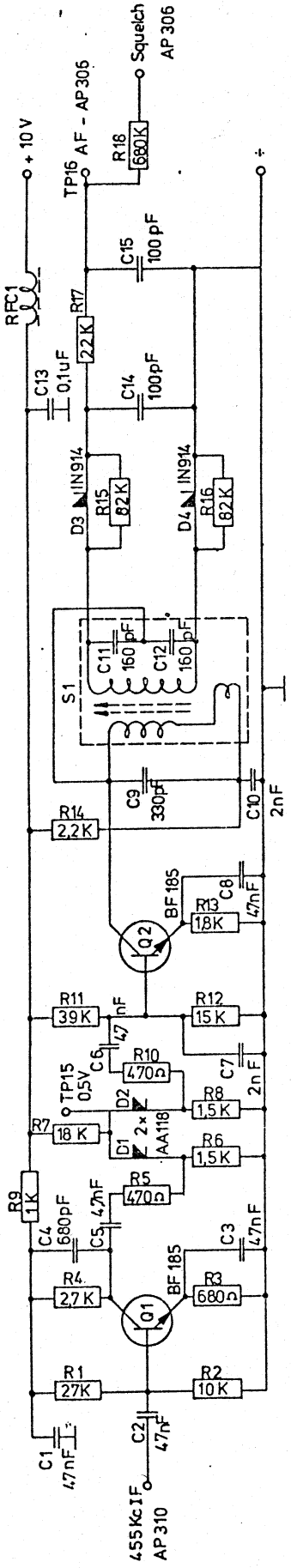
Nr.	Kode	Data
C21		25 pF styr.
C22		22o pF styr.
C23		47 pF styr.
C24		25o pF styr.
C25		125 pF styr.
C26		1 nF ker.
C27		1o nF ker.
C28		47 nF/12v ker.
S1		L11 Tg. 68o93/4
S2		L12 Tg. 68o93/4
S3		L153 Tg. 69o28/4
S4		L153 Tg. 69o28/4
S5		L153 Tg. 69o28/4
Q1		BF 185
Q2		BF 185
Q3		BF 185
Q4		BF 185
Q5		BF 185
Q6		BF 185
X1		X-tal 1o.245 Mhz

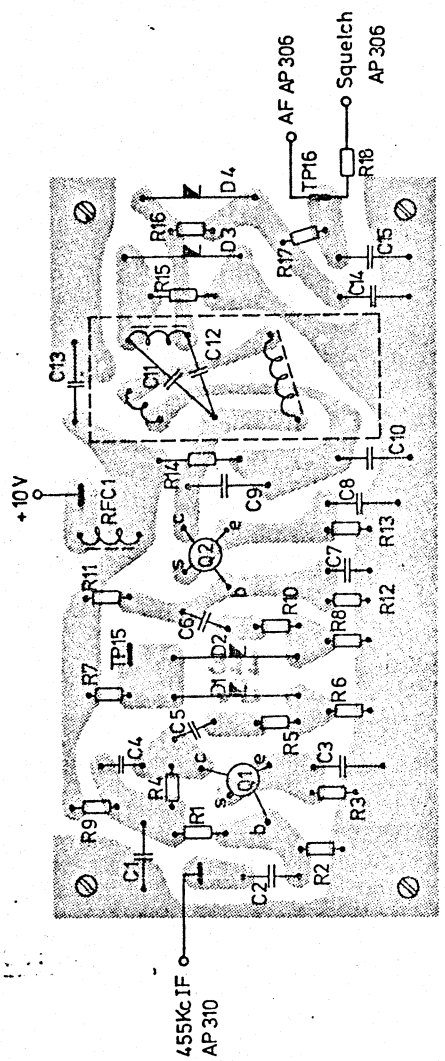
10,7 Mc and 455Kc IF-Amplifier
Print Board AP 310a/2
Tilhører tegn. nr.: 70169/4

Rettet:

Tegn.: EB
Kontr.:

Stykl. nr.: 70170/4





Rettet: C 14, C 15 og R 17 ændret 4-3-71

DISCRIMINATOR AND LIMITER, 50 Khz.

PRINT BOARD AP 311/2

AP-RADIOTELEFON

Tegn.: ABP 26.11.70 | Kontr.: EF 11-3-71

Stykl. nr.: 70469 / 4

Tegn. nr.: 70464/4

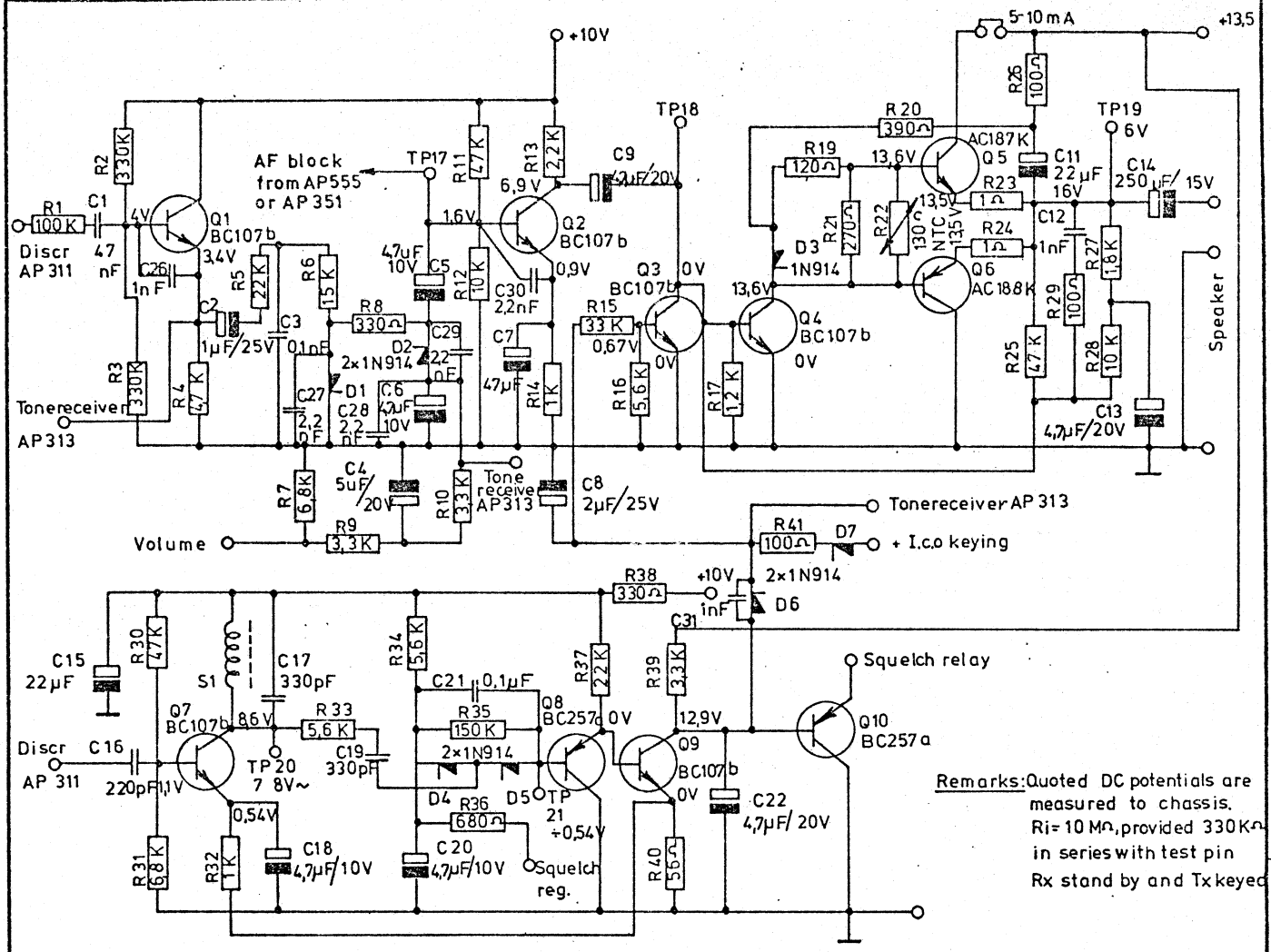
Nr.	Kode	Data	Nr.	Kode	Data
R1		27 Kohm ¼ W			
R2		10 Kohm "			
R3		680 ohm "			
R4		2,7 Kohm "			
R5		470 ohm "			
R6		1,5 Kohm "			
R7		18 Kohm "			
R8		1,5 Kohm "			
R9		1 Kohm "			
R10		470 ohm "			
R11		39 Kohm "			
R12		15 Kohm "			
R13		1,8 Kohm "			
R14		2,2 Kohm "			
R15		82 Kohm "			
R16		82 Kohm "			
R17		22 Kohm "			
R18		680 Kohm "			
C1		47 nF. ker.			
C2		47 nF. ker.			
C3		47 nF. ker.			
C4		680 pF. styr.			
C5		4,7 nF. ker.			
C6		4,7 nF. ker.			
C7		2 nF. ker.			
C8		47 nF. ker.			
C9		330 pF. styr.			
C10		2 nF. styr.			
C11		160 pF. styr.			
C12		160 pF. styr.			
C13		0,1 nF. ker.			
C14		100 pF. styr.			
C15		100 pF. styr			
RFC	1	Wide band RFC			
S1		L 16 tg.68096/4			
D1		AA118			
D2		AA118			
D3		IN914			
D4		In914			
Q1		BF185			
Q2		BF185			

Discr. and Limiter 50 KHz
Print board AP 311
Tilhører tegn. nr.: 70464/4

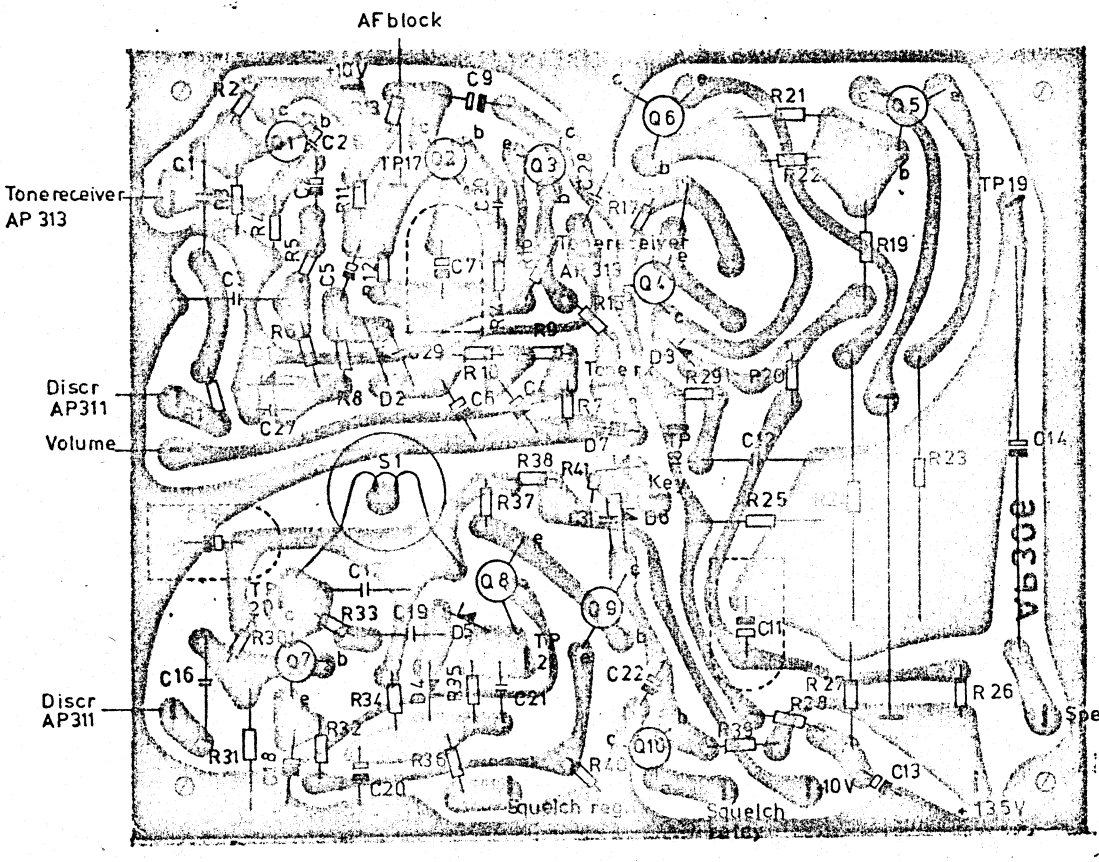
Rettet:

Tegn.: EF 11-3-71
Kontr.:

Stykl. nr.: 70469/4



Remarks: Quoted DC potentials are measured to chassis.
Ri = 10 MΩ, provided 330 KΩ in series with test pin
Rx stand by and Tx keyed



Rettet:	AF and squelch AP 700 print board AP306/3.	Tegn.: 9-7-73 H.P.	Kontr.: 9-7-73 E.F.
		Stykl. nr.: 73252-4 S.	
	AP-RADIOTELEFON	Tegn. nr.: 73252-3E.	

Nr.	Kode	Data
R 1		100 kΩ ¼ w
R 2		330 kΩ ¼ w
R 3		330 kΩ ¼ w
R 4		4,7 kΩ ¼ w
R 5		22 kΩ ¼ w
R 6		15 kΩ ¼ w
R 7		6,8 kΩ ¼ w
R 8		330 Ω ¼ w
R 9		3,3 kΩ ¼ w
R10		3,3 kΩ ¼ w
R11		47 kΩ ¼ w
R12		10 kΩ ¼ w
R13		2,2 kΩ ¼ w
R14		1 kΩ ¼ w
R15		33 kΩ ¼ w
R16		5,6 kΩ ¼ w
R17		1,2 kΩ ¼ w
R18		
R19		120 Ω ¼ w
R20		390 Ω ¼ w
R21		270 Ω ¼ w
R22		130 Ω NTC
R23		1 Ω ½ w
R24		1 Ω ½ w
R25		47 kΩ ¼ w
R26		100 Ω ¼ w
R27		1,8 kΩ ¼ w
R28		10 kΩ ¼ w
R29		100 Ω ¼ w
R30		47 kΩ ¼ w
R31		6,8 kΩ ¼ w
R32		1 kΩ ¼ w
R33		5,6 kΩ ¼ w
R34		5,6 kΩ ¼ w
R35		150 kΩ ¼ w
R36		680 Ω ¼ w
R37		22 kΩ ¼ w

Nr.	Kode	Data
R38		330 Ω ¼ w
R39		3,3 kΩ ¼ w
R40		56 Ω ¼ w
R41		100 Ω ¼ w
C 1		47 nF pol.
C 2		1 µF/35V tant.
C 3		0,1 nF pol.
C 4		4,7 µF/25V tant.
C 5		4,7 µF/10V tant.
C 6		4,7 µF/10V tant.
C 7		47 µF/16V lyt.
C 8		2,2 µF/35V tant.
C 9		4,7 µF/25V tant.
C10		
C11		22 µF/16V tant.
C12		1 nF styr.
C13		4,7 µF/25V tant.
C14		250 µF/16V lyt.
C15		22 µF/16V tant.
C16		220 pF styr.
C17		330 pF styr.
C18		4,7 µF/10V tant.
C19		330 pF styr.
C20		4,7 µF/10V tant.
C21		0,1 µF/12V ker.
C22		4,7 µF/25V tant.
C26		1 nF ker.
C27		2,2 nF ker.
C28		2,2 nF ker.
C29		2,2 nF ker.
C30		2,2 nF ker.
C31		1 nF ker.
S 1		L21 tg. 67091-4

AF and squelch AP 700 print board 306/3

Tilhører tegn. nr.: 73252-3E

Rettet:

Tegn.:

Kontr.:

Stykl. nr.: 73252-4S

Nr.	Kode	Data	Nr.	Kode	Data
D 1		1N 914			
D 2		1N 914			
D 3		1N 914			
D 4		1N 914			
D 5		1N 914			
D 6		1N 914			
Q 1		BC 107 b			
Q 2		BC 107 b			
Q 3		BC 107 b			
Q 4		BC 107 b			
Q 5		AC 187 k parret			
Q 6		AC 187 k			
Q 7		BC 107 b			
Q 8		BC 257 a			
Q 9		BC 107 b			
Q10		BC 257 a			

AF and squelch AP 700 print borad 306/3

Tilhører tegn. nr.: 73252-3E

Rettet:

Tegn.:

Kontr.:

Stykl. nr.: 73252-4S

Alignment procedure for sequence tonereceiver AP 351.

The capacitors of the chosen code numbers in accordance to the scheme (see dwg.no.70180/4.) are to be installed, first code at C7, second at C13 and third at 020. Place the trim.pot. meters R11, R22 and R33 to center position.

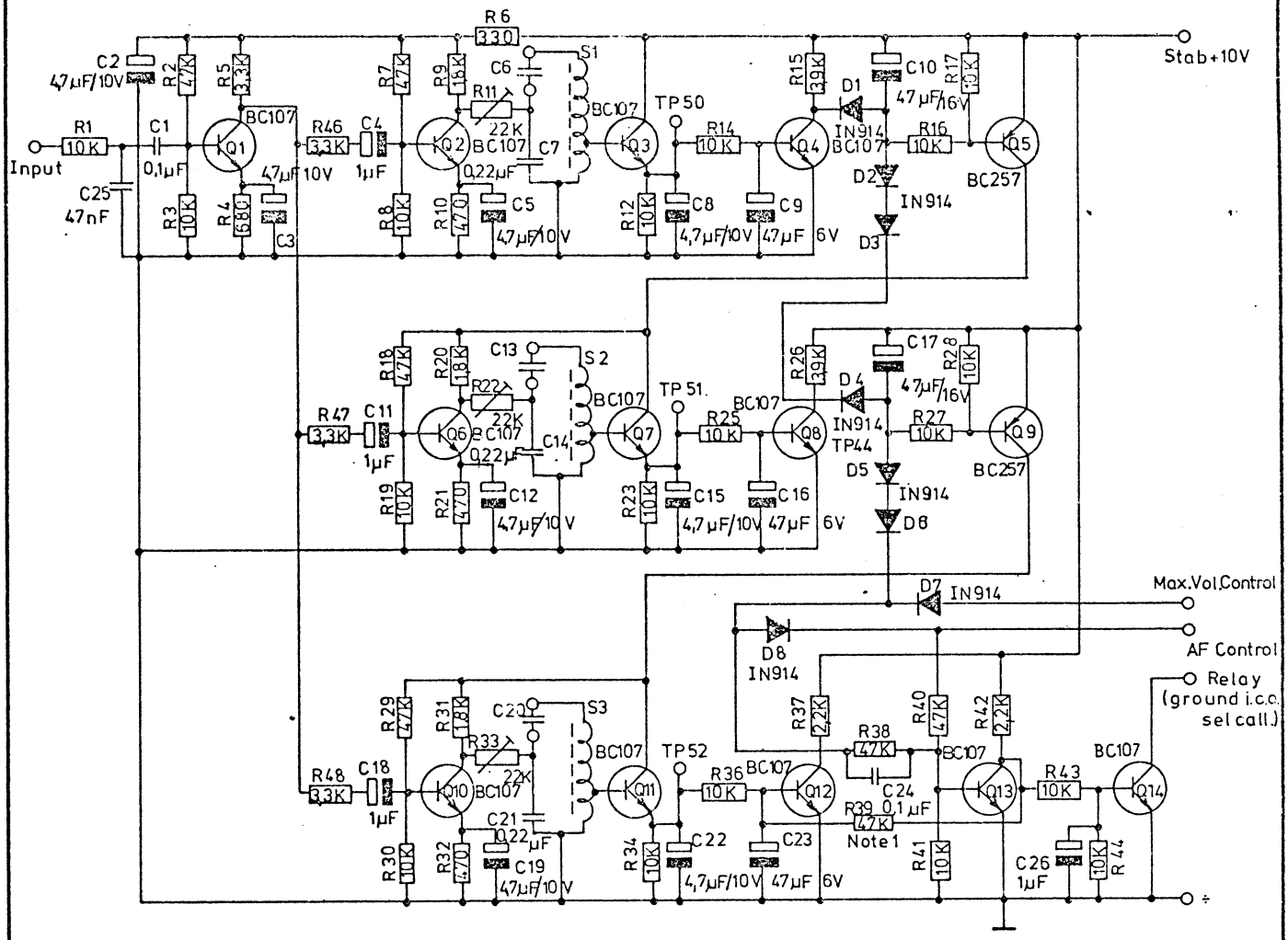
An AF-generator tuned to the chosen frequency in connection with a signal generator is connected to the VHF-receiver. The deviation is adjusted in accordance to the scheme. A VTVM in range 3 Volt is connected to TP 50. The core of S1 is adjusted to max. deflection. By means of R11 the size of the deflection is adjusted to 1,5 Volt hereby another max. adjustment must be tried on the iron core of S1 and the deflection readjusted to 1,5 Volt. First tone should be adjusted and the same procedure is followed for tone two and three where R22, S2 and R33, S3 have to be used.

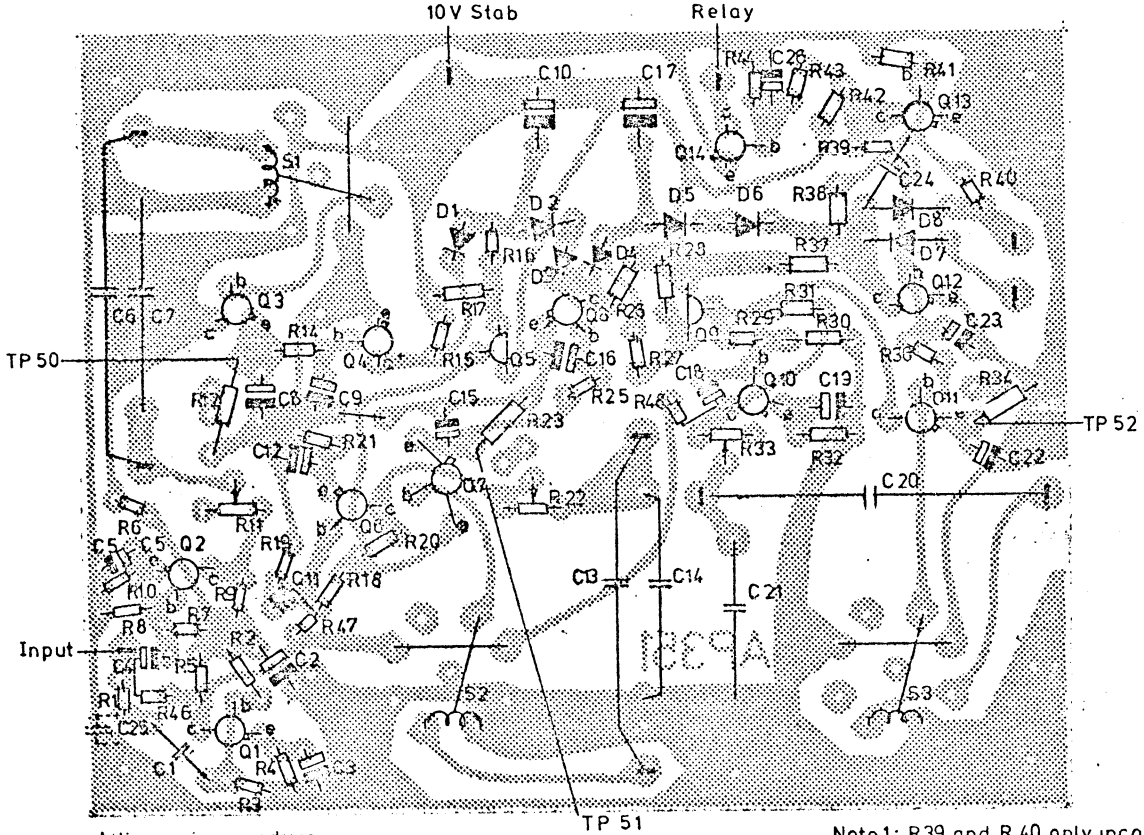
To obtain the tuning of tone two and three a separate power supply of each tone section has to be made, to obtain this, a connection between + 10V and the house of the respective transistor- Q7 and Q11 has to be made.

For tonereceivers, comprising only one or two tones, the procedure is the same as mentioned above.

E. Folling 31-7-70.

AP-RADIOTELEFON





Alligment procedure
look for description no. 70176-4
and C values no. 70180-4

Note 1: R39 and R 40 only incorporated at squelch controlled sel.call.

Rettet 18-9-73 HP 28-5-74 HP 7-10-75 EH/EF	Sequence tone receiver for 3 tones Printboard AP 351/3. AP 700	Tegn.: 27-6-73 HP / Kontr.: 27-6-73 Stykl. nr.: 70212-4S. Tegn. nr.: 70212-3E.
	AP-RADIOTELEFON	

Nr.	Kode	Data	Nr.	Kode	Data
R 1		10 kΩ ¼ w	R39		47 kΩ ¼ w
R 2		47 kΩ ¼ w	R40		47 kΩ ¼ w
R 3		10 kΩ ¼ w	R41		10 kΩ ¼ w
R 4		680 Ω ¼ w	R42		2,2 kΩ ¼ w
R 5		3,3 kΩ ¼ w	R43		10 kΩ ¼ w
R 6		330 Ω ¼ w	R44		10 kΩ ¼ w
R 7		47 kΩ ¼ w	R46		3,3 kΩ ¼ w
R 8		10 kΩ ¼ w	R47		3,3 kΩ ¼ w
R 9		1,8 kΩ ¼ w	R48		3,3 kΩ ¼ w
R10		470 Ω ¼ w			
R11		22 kΩ pot.			
R12		10 kΩ ¼ w	C 1		0,1 µF/12V ker.
R13			C 2		4,7 µF/10V tant.
R14		10 kΩ ¼ w	C 3		4,7 µF/10V tant.
R15		3,9 kΩ ¼ w	C 4		1 µF/35V tant.
R16		10 kΩ ¼ w	C 5		4,7 µF/10V tant.
R17		10 kΩ ¼ w	C 6		matched f. code
R18		47 kΩ ¼ w	C 7		0,22 µF MKH
R19		10 kΩ ¼ w	C 8		4,7 µF/10V tant.
R20		1,8 kΩ ¼ w	C 9		47 µF/ 6V tant.
R21		470 Ω ¼ w	C10		100 µF/15V lyt.
R22		22 kΩ pot.	C11		1 µF/35V tant.
R23		10 kΩ ¼ w	C12		4,7 µF/10V tant.
R24			C13		matched f. code
R25		10 kΩ ¼ w	C14		0,22 µF MKH
R26		3,9 kΩ ¼ w	C15		4,7 µF/10V tant.
R27		10 kΩ ¼ w	C16		47 µF/ 6V tant.
R28		10 kΩ ¼ w	C17		100 µF/15V lyt.
R29		47 kΩ ¼ w	C18		1 µF/35V tant.
R30		10 kΩ ¼ w	C19		4,7 µF/10V tant.
R31		1,8 kΩ ¼ w	C20		matched f. code
R32		470 Ω ¼ w	C21		0,22 µF MKH
R33		22 kΩ pot.	C22		4,7 µF/10V tant.
R34		10 kΩ ¼ w	C23		47 µF/ 6V tant.
R35			C24		0,1 µF/12V ker.
R36		10 kΩ ¼ w	C25		47 nF/12V ker.
R37		2,2 kΩ ¼ w	C26		1 µF/35V tant.
R38		47 kΩ ¼ w			

Sequence tone receiver for 3 tonet Print AP 351/3.
Tilhører tegn. nr.: 70212-[illegible]

Rettet:

Tegn.:

Kontr.:

Styki. nr.: 70[illegible]

Nr.	Kode	Data	Nr.	Kode	Data
S 1		L 221 tg. 71312-4			
S 2		L 221 tg. 71312-4			
S 3		L 221 tg. 71312-4			
D 1		1N 914			
D 2		1N 914			
D 3		1N 914			
D 4		1N 914			
D 5		1N 914			
D 6		1N 914			
D 7		1N 914			
D. 8		1N 914			
Q 1		BC 107			
Q 2		BC 107			
Q 3		BC 107			
Q 4		BC 107			
Q 5		BC 257			
Q 6		BC 107			
Q 7		BC 107			
Q 8		BC 107			
Q 9		BC 257			
Q10		BC 107			
Q11		BC 107			
Q12		BC 107			
Q13		BC 107			
Q14		BC 107			

Sequence tone receiver for 3 tonet Print AP 351/3 Tilhører tegn. nr.: 70212-3E	Rettet:	Tegn.: Kontr.:	Stykl. nr.: 70212-4S

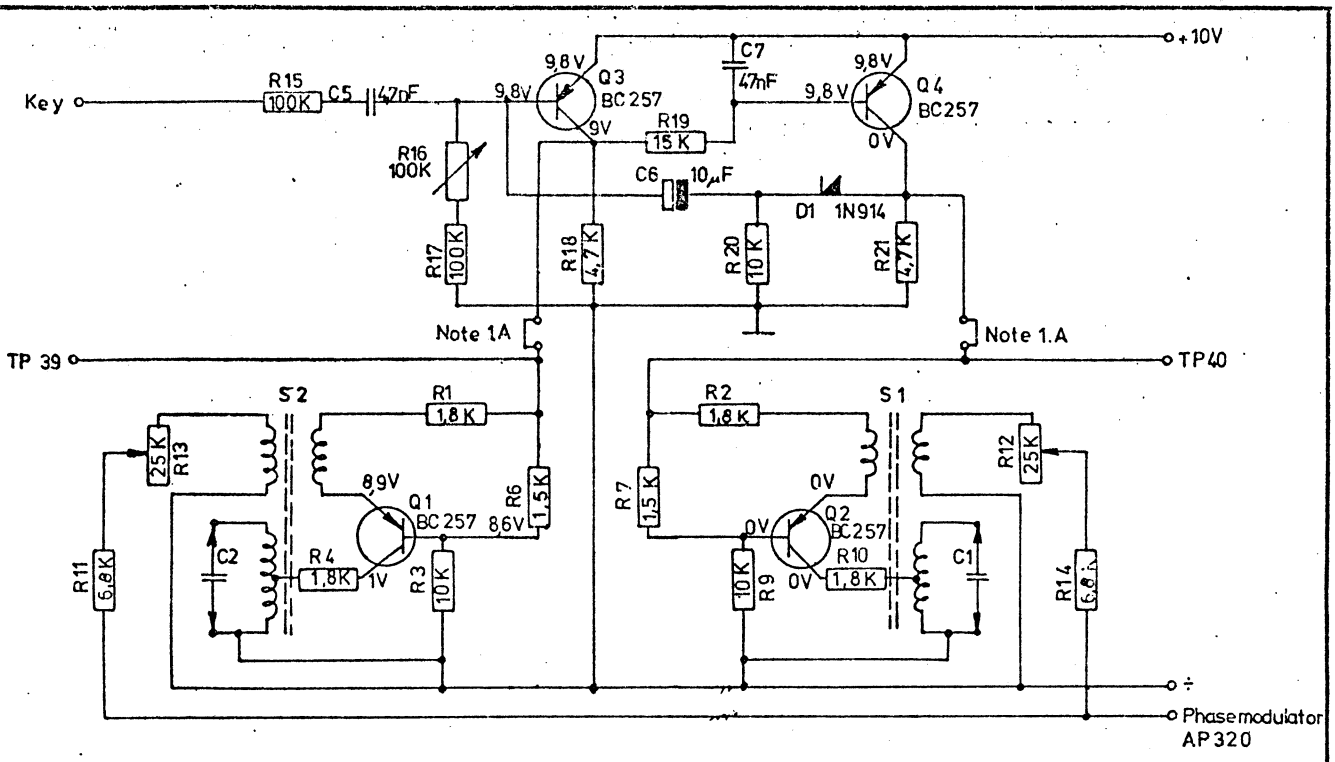
Tuning instructions for the AP 700
2-4 m. Communicationset.

Tone transmitter AP 369/3 (See dwg. 70210/4)

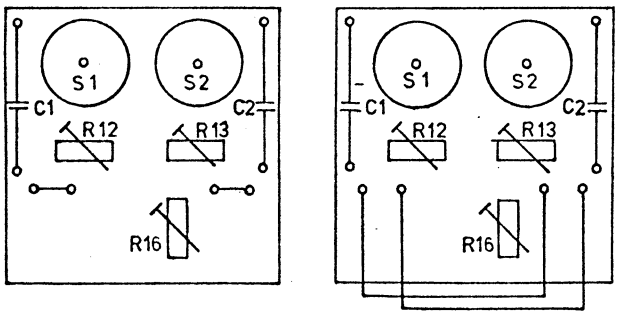
The chosen tonenumbers are being set in according to the scheme dwg. no.: 70180/4, so that the capacitor representing tone 1 is mounted in position "C 1" and the capacitor representing tone 2 is mounted in position "C 2".

Connect 10 Volt supply to TP 39 and tune S 1 to the correct tone frequency with the aid of an AF frequency counter, and set the deviation by means of R 12, with the aid of a modulation meter, according to the scheme. Similar for tone 2 connect 10 Volt supply to TP 40, frequency correction, tune S 2, deviation set R 13.

In case of an automatic dual tone transmitter follow instructions above and for setting the timing of the tones, adjust R 16 so that first tone, when actuated, lasts 2 sec. before tone 2 starts.



NOTE 1.



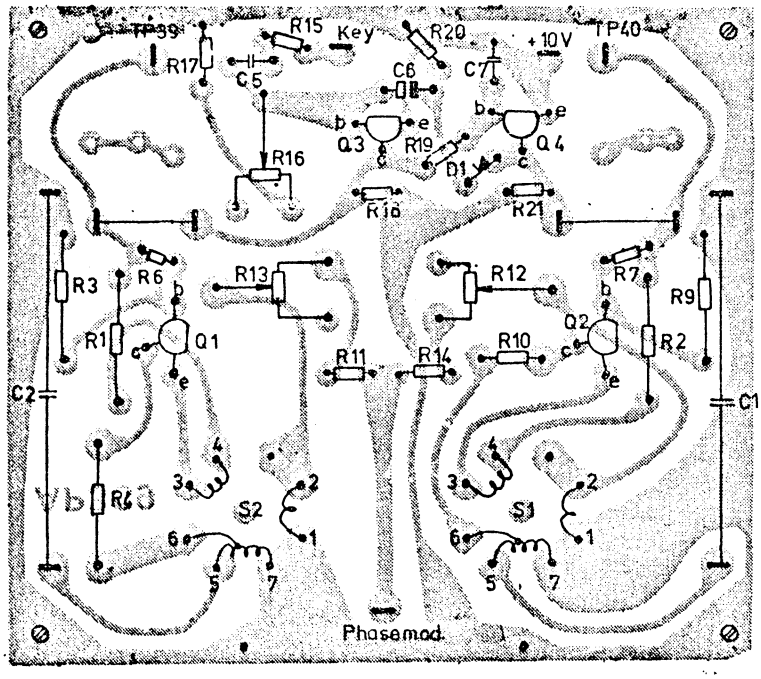
Note 1 ("A" and "B")

At normal strapping as in note 1 "A" tone sequence is tone 1 – tone 2.

By a strapping as in note 1 "B" the tone sequence is tone 2 – tone 1.

NB. The change over is obtained by the pushbutton switch situated in the control panel. (To obtain two different calls.)

See tuning instruction dwg. 70222/4



Erstatter 68072/3

Rettet: 4-1-73 L.T.	DUAL TONEGENERATOR WITH AUTOMATIC CHANGE OVER	Tegn.: 26.8.70 BEP	Kontr.: 26.8.70 E.F
	PRINT BOARD AP 369/3. AP700.	Stykl. nr.: 70211/4	
	AP-RADIOTELEFON	Tegn. nr.: 70210/4	

Nr.	Kode	Data	Nr.	Kode	Data
R1		1,8 Kohm ¼ W	S1		L67 Tg. 69142/4
R2		1,8 Kohm "	S2		L67 Tg. 69142/4
R3		1o Kohm "			
R4		1,8 Kohm "	D1		1N914
R6		1,5 Kohm "	Q1		Bc 257
R7		1,5 Kohm "	Q2		Bc 257
			Q3		Bc 257
			Q4		Bc 257
R9		1o Kohm "			
R1o		1,8 Kohm "			
R11		6,8 Kohm "			
R12		22 Kohm pot.			
R13		22 Kohm pot.			
R14		6,8 Kohm ¼ W			
R15		1oo Kohm "			
R16		1oo Kohm pot.			
R17		1oo Kohm ¼ W			
R18		4,7 Kohm "			
R19		15 Kohm "			
R2o		1o Kohm "			
R21		4,7 Kohm "			
C1		matched f. code			
C2		matched f. code			
C5		4,7 nF ker.			
C6		1o uF/25v tant			
C7		47 nF ker.			

Dual Tonegenerator with Automatic Change over Tilhører tegn. nr.: 7o21o/4 AP 369/3	Rettet: 4/1-73. L.T.	Tegn.: Kontr.:	Stykl. nr.: 7o211-4.

		Values for "Siemens" pot.core 22/13 N28 A315	Values for "Philips" pot. core 22/13 - 387 A0A - μe 150	Values for "Siemens" pot.core 22/13 N28 A315	Values for "Philips" pot. core 22/13 A0A μe150	
Tone	Frequency in c/s	Tone-receiver C6 and C12 pF	Tone-receiver C6 and C12 pF	Tone-transmitter C1 and C2 pF	Tone-transmitter C1 and C2 in pF	Frequency Deviation in K c/s
0	980	23500	16900	21000	16000	1,2
1	1190	15500	11400	13800	10700	1,4
2	1380	11200	8300	10100	7900	1,65
3	1600	8300	6200	7300	5800	1,9
4	1800	6500	4900	5600	4500	2,2
5	2010	5200	3900	4400	3500	2,5
6	2220	4200	3200	3500	2800	2,8
7	2410	3600	2700	2900	2300	3,1
8	2590	3100	2300	2400	1950	3,3
9	2820	2600	2000	1900	1600	3,5

Rettet: 15-4-73 EH/EE

C values for tone-receiver AP 351, and tonetransmitter AP 369

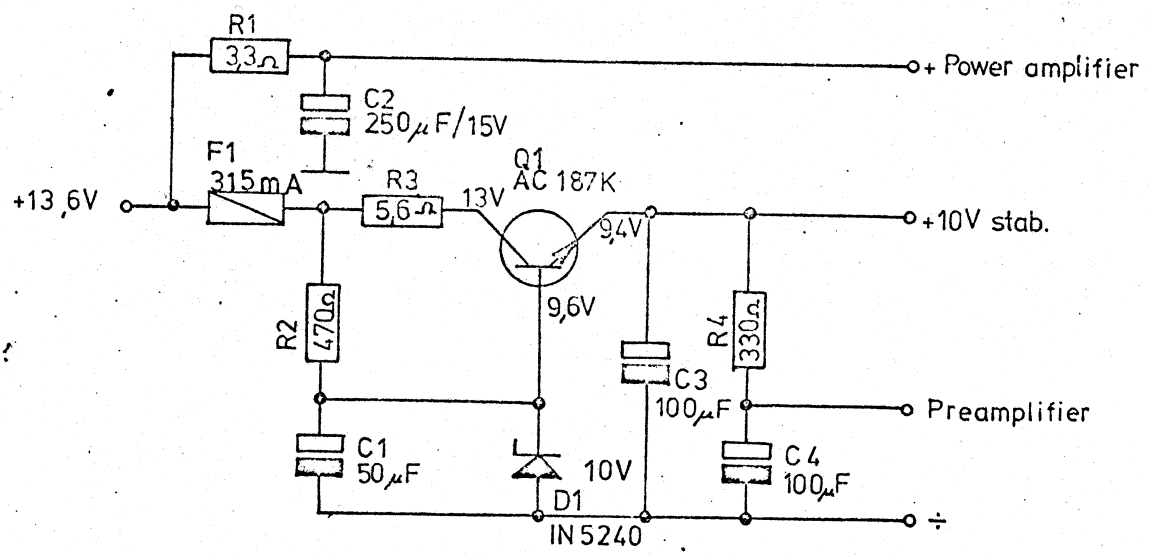
AP-RADIOTELEFON

Tegn.: A.B.P 13/10-70

Konstr.: E.F 13-10-70

Stykl. nr.:

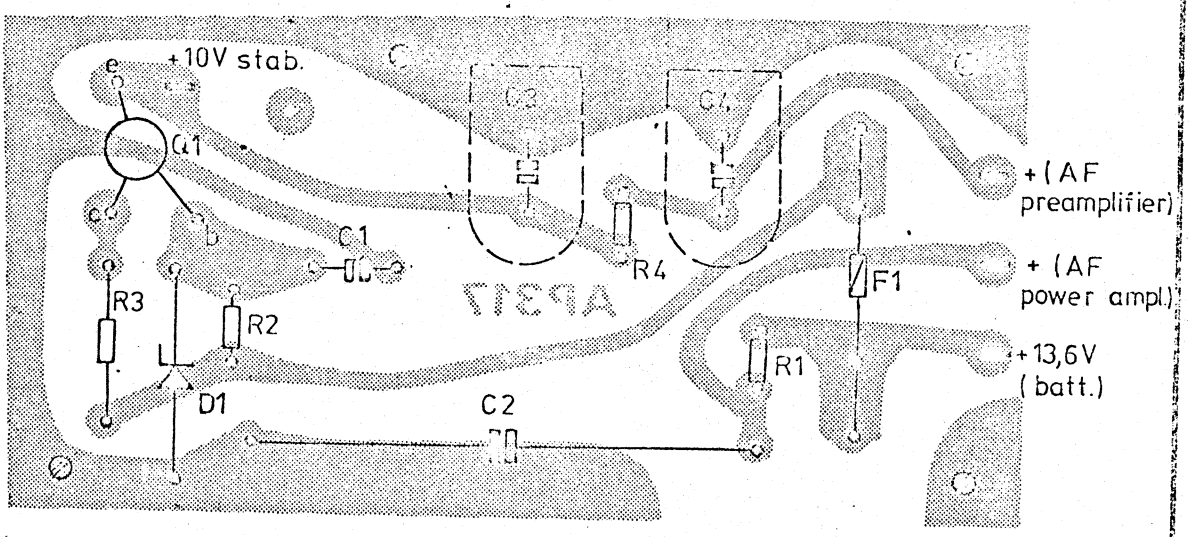
Tegn. nr.: 70100/4



Remarks: Quoted Dc potentials are measured to chassis.

Ri = 10 MΩ provided 330 KΩ in series with test pin.

Rx stand by and Tx keyed.



Erstatter 68070/4

Rettet: 1-11-73 H.P	10 V STAB. POWERSUPPLY	Tegn.: 30.7.70 BEP	Kontr.: 30.7.70 E.F
	PRINT BOARD AP 317a/1	Stykl. nr.: 70178/4	
	AP-RADIOTELEFON	Tegn. nr.: 70177/4	

AP-RADIOTELEFON

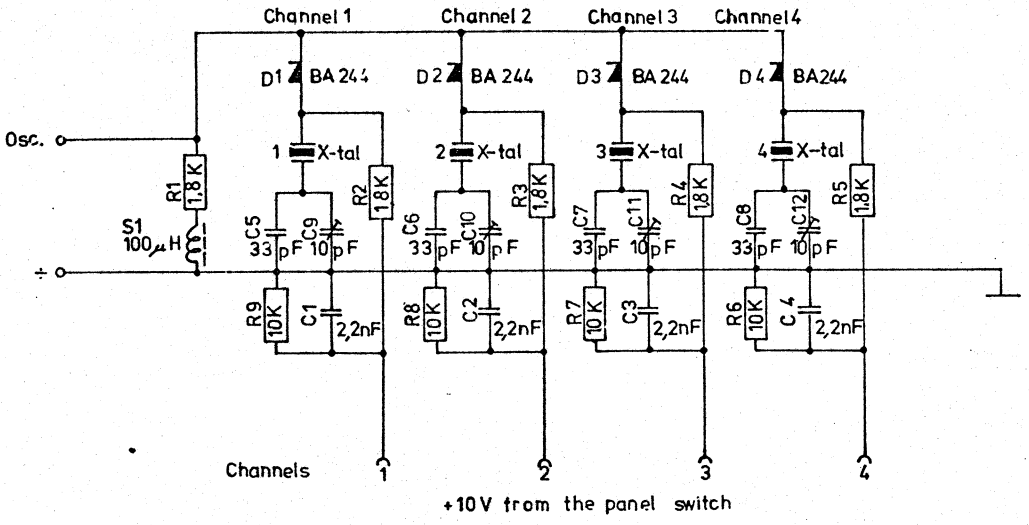
Nr.	Kode	Data	Nr.	Kode	Data
R1		3,3 ohm ¼ W			
R2		47o ohm ¼ W			
R3		5,6 ohm "			
R4		33o ohm "			
C1		5o mF/16v lyt.			
C2		25o mF/15v lyt.			
C3		1oo mF/16v lyt.			
C4		1oo mF/16v lyt.			
D1		1N524o lov zener			
Q1		Ac 187 k			
F1		315mA middeltræg			

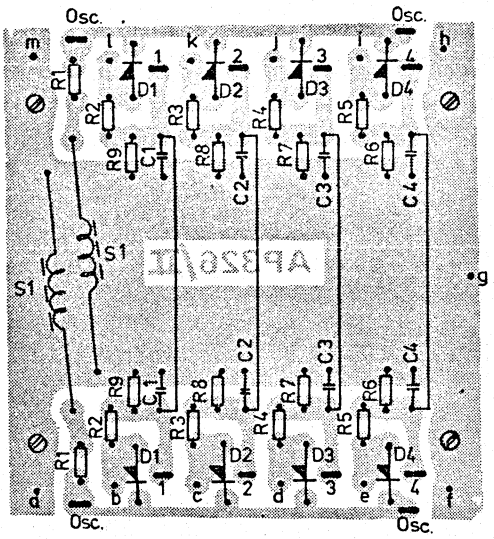
lov stab. Powersupply AP 7oo
Printboard AP 317/1
Tilhører tegn. nr.: 7o177/4

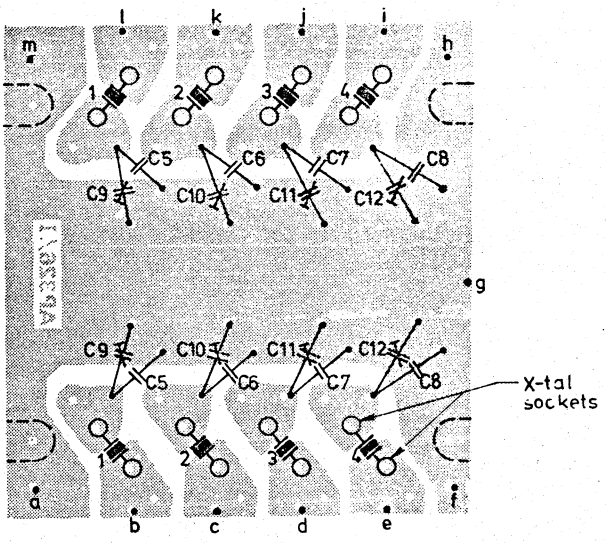
Rettet: 1-11-73.H.P.

Tegn.: MB
Kontr.:

Stykl. nr.: 70178/4







Rettet:	4 CHANNEL X-TAL SHIFT PRINT BOARD AP 326 I+II	Tegn.: 14.8.70 BEP	Kontr.: 14.8.70 E.F.
		Stykl. nr.: 70197/4	
	AP-RADIOTELEFON	Tegn. nr.: Erstatter 68071/4	70196/4

AP-RADIOTELEFON

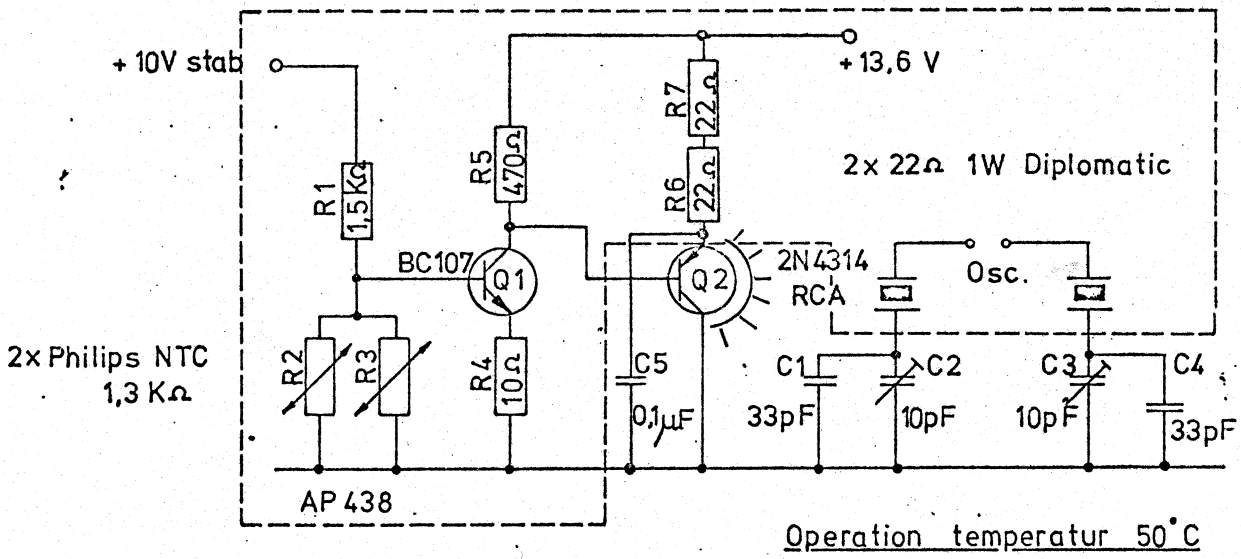
Nr.	Kode	Data	Nr.	Kode	Data
R1		1,8 Kohm ¼ W			
R2		1,8 Kohm "			
R3		1,8 Kohm "			
R4		1,8 Kohm "			
R5		1,8 Kohm "			
R6		1o Kohm "			
R7		1o Kohm "			
R8		1o Kohm "			
R9		1o Kohm "			
C1		2,2 nF ker.			
C2		2,2 nF ker.			
C3		2,2 nF ker.			
C4		2,2 nF ker.			
C5		33 pF styr.			
C6		33 pF styr.			
C7		33 pF styr.			
C8		33 pF styr.			
C9		1o pF trim.			
C1o		1o pF trim.			
C11		1o pF trim.			
C12		1o pF trim.			
S1		Wide Band RFC			
D1		BA 244			
D2		BA 244			
D3		BA 244			
D4		BA 244			

4 Channel X-tal Shift AP 7oo
Printboard AP 326 1+2
Tilhører tegn. nr.: 7o196/4

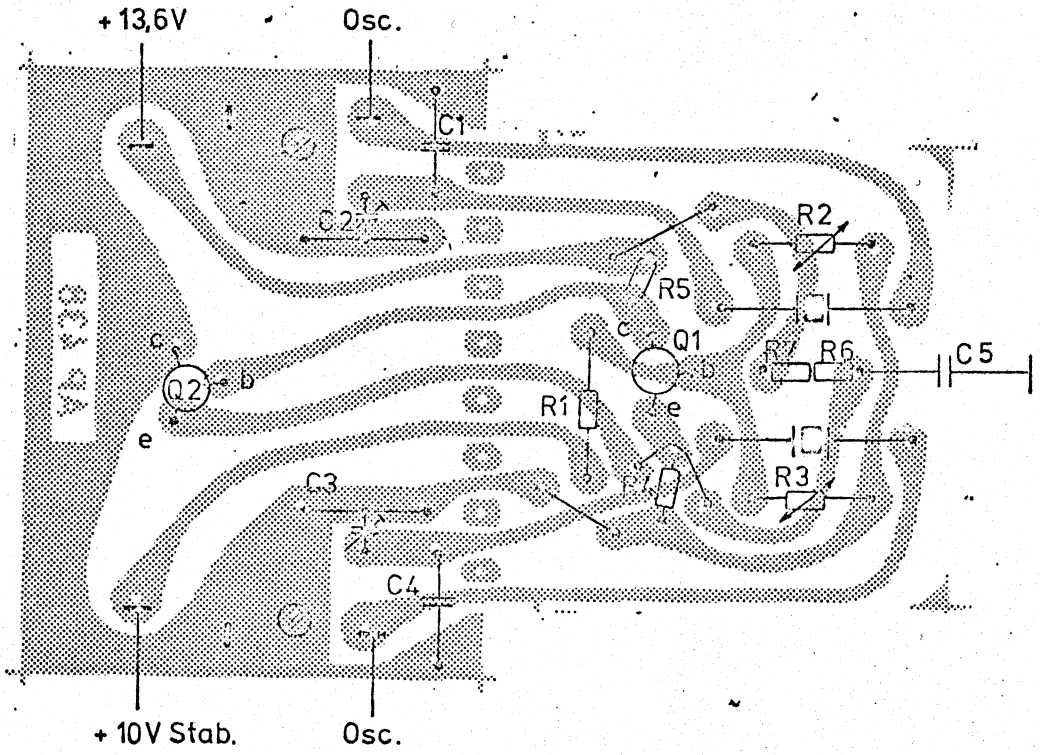
Rettet:

Tegn.: EB
Kontr.:

Stykl. nr.: 70197/4



Operation temperatur 50°C



Rettet: 6-3-75 EH /JS.	Temperatur stabilized crystal oven for U.H.F. Base station Pcb 438/1	Tegn.: A.B.P 4.1.71	Kontr.: 18.2.71 J.S.
		Stykl. nr.: 71156/4	
	AP-RADIOTELEFON	Tegn. nr.: 71002/4	

AP-RADIOTELEFON

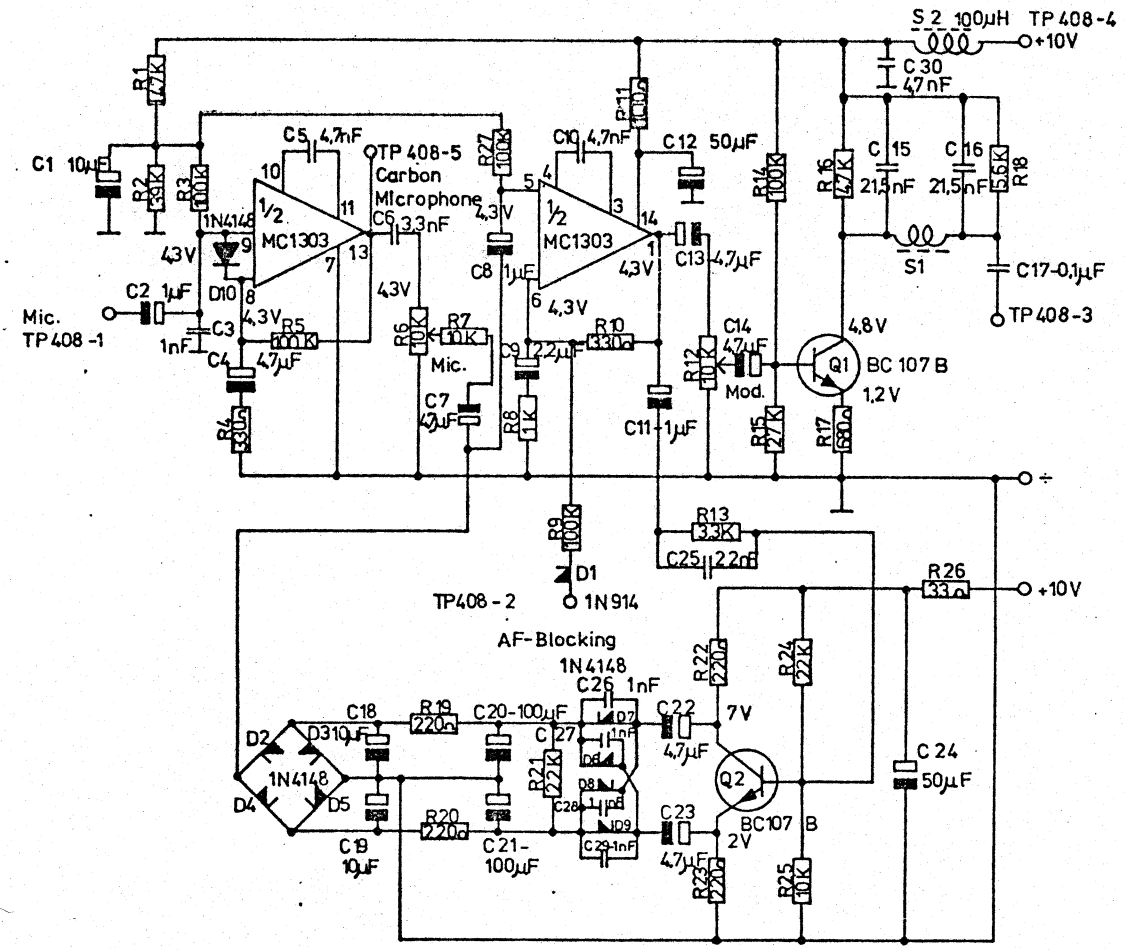
Nr.	Kode	Data	Nr.	Kode	Data
R1		1,5 kΩ ¼ W			
R2		1,3 kΩ NTC			
R3		1,3 kΩ "			
R4		10 Ω ¼ W			
R5		470 Ω "			
R6		22 Ω 1 W			
R7		22 Ω "			
		Diplomatic			
C1		33 pF Styr.			
C2--		10 pF Jackson			
C3		trimmer 5750			
C4		33 pF Styr.			
C5		0,1 µF/250 V			
Q1		BC 105			
Q2		RCA 2N 4314			

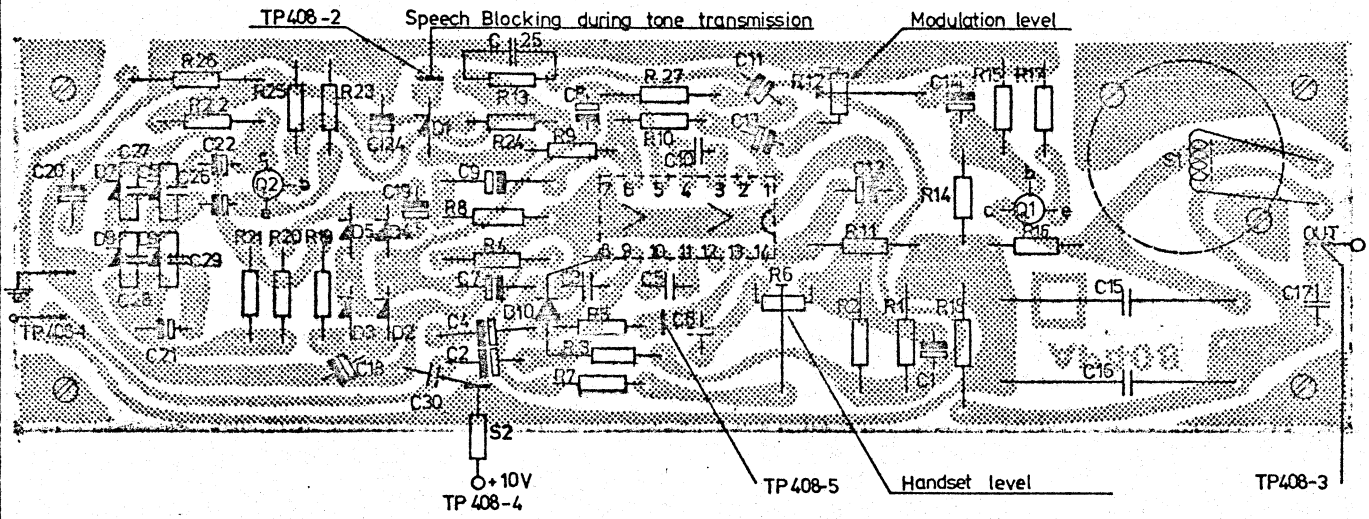
Crystal oven for UHF base st. Pettet.

Print board AP 438/1
Tilhører tegn. nr.: 71002-4E

Tegn.: EP 16-3-71
Kontr.:

Stykl. nr.: 71156-4S





Remarks: Quoted DC potentials are measured to chassis.

Ri = 10 MΩ provided 330 KΩ in series with test pin.

Rx stand by and Tx keyed.

Rettet: 15-3-73 AC
28-3-73 AC
29-5-73 HP
4-12-73 JAN
14-5-74 HP
21-10-75 EH
9-7-76 AC/HM

Modulation amplifier with AVC
Printboard AP 408/3
AP-RADIOTELEFON

Tegn.: 31-10-73 AC	Kontr.: 31-10-73 HM
Stykl. nr.: 72128-4S	
Tegn. nr.: 72128-3E	

Nr.	Kode	Data
R 1		47 kΩ ¼ w
R 2		39 kΩ ¼ w
R 3		100 kΩ ¼ w
R 4		330 Ω ¼ w
R 5		100 kΩ ¼ w
R 6		10 kΩ trim.pot.
R 7		10 kΩ trim.pot.
R 8		1 kΩ ¼ w
R 9		100 kΩ ¼ w
R10		330 kΩ ¼ w
R11		100 Ω ¼ w
R12		10 kΩ ¼ w
R13		3,3 kΩ ¼ w
R14		100 kΩ ¼ w
R15		100 kΩ ¼ w
R16		4,7 kΩ ¼ w
R17		680 Ω ¼ w
R18		5,6 kΩ ¼ w
R19		220 Ω ¼ w
R20		220 Ω ¼ w
R21		22 kΩ ¼ w
R22		220 Ω ¼ w
R23		220 Ω ¼ w
R24		22 kΩ ¼ w
R25		10 kΩ ¼ w
R26		33 Ω ¼ w
C 1		10 µF/25V tant.
C 2		1 µF/35V tant.
C 3		1 nF ker.kond.
C 4		4,7 µF/10V tant.
C 5		1 nF ker.kond.
C 6		3,3 nF ker.kond.
C 7		4,7 µF/10V tant.
C 8		1 µF/35V tant.
C 9		2,2 µF/25V tant.

Nr.	Kode	Data
C10		1 nF ker.kond.
C11		1 µF/35V tant.
C12		47 µF frako.
C13		4,7 µF/10V tant.
C14		4,7 µF/10V tant.
C15		21,5 nF styr.
C16		21,5 nF styr.
C17		0,1 µF laco.
C18		10 µF/25V tant.
C19		10 µF/25V tant.
C20		100 µF/ 3V tant.
C21		100 µF/ 3V tant.
C22		4,7 µF/10V tant.
C23		4,7 µF/10V tant.
C24		47 µF frako.
C25		22 nF laco.
C26		1 nF ker.kond.
C27		1 nF ker.kond.
C28		1 nF ker.kond.
C29		1 nF ker.kond.
C30		4,7 nF
S 1		L 66 tg.70386/4
S 2		0,1 mH
D 1		1N 4148
D 2		1N 4148
D 3		1N 4148
D 4		1N 4148
D 5		1N 4148
D 6		1N 4148
D 7		1N 4148
D 8		1N 4148
D 9		1N 4148
D10		1N 4148
Q 1		BC 107 b
Q 2		BC 107 b
IC		MC 1303 IC

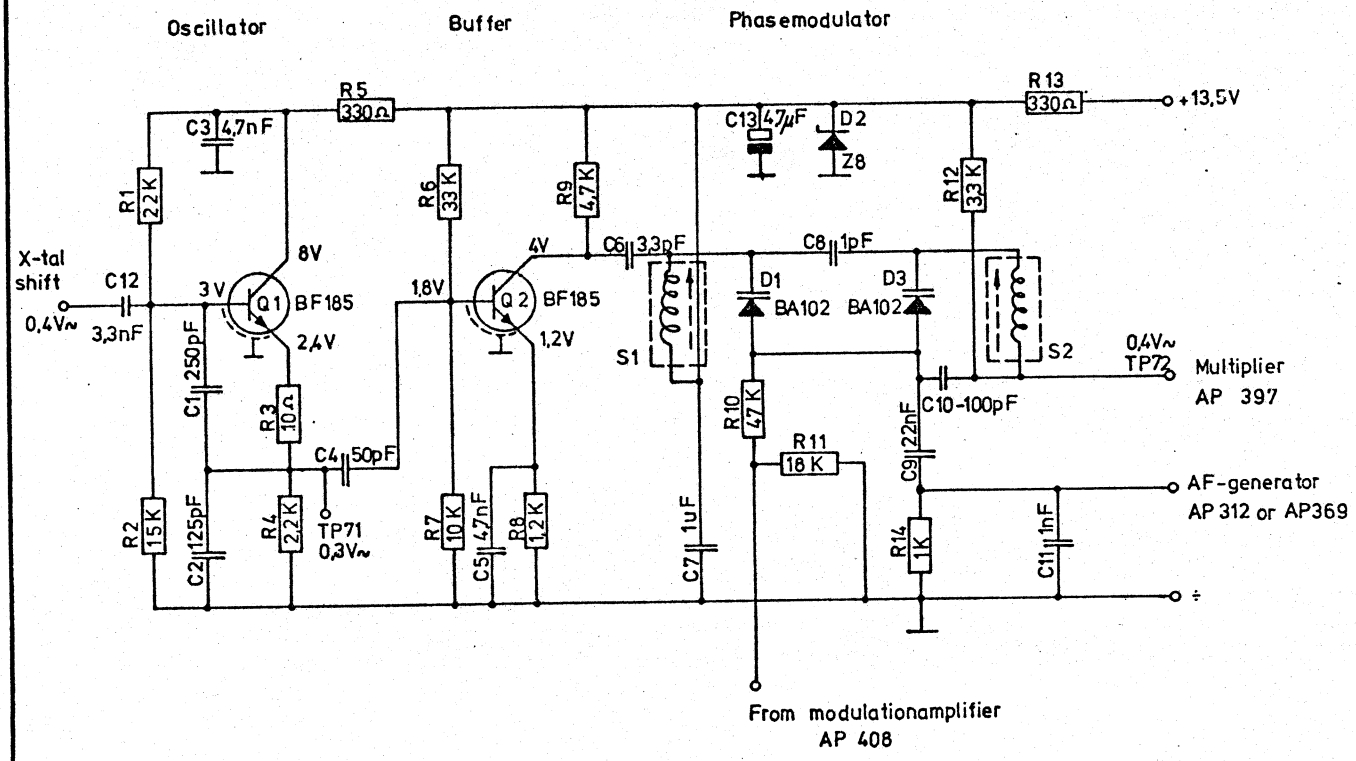
Modulation amplifier with AVC
Print Board AP 408/3
Tilhører tegn. nr.: 72128-

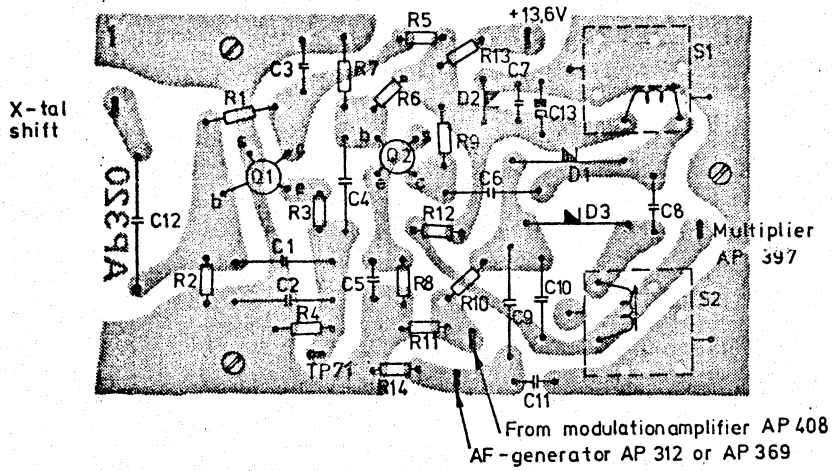
Rettet: 4-/2.-73

Tegn.:

Kontr.:

Stykl. nr.: 72128-43





Remarks: Quoted DC potentials are measured to chassis.
Ri = 10 MΩ provided 330 KΩ in series with test pin.
Rx stand by and Tx keyed.

Rettet:	TX. OSCILLATOR AND PHASEMODULATOR UHF PRINT BOARD AP 320a/5	Tegn.: AB.P 16/9-70	Kontr.: E.F 16-9-70
		Stykl. nr.: 70301/4	
		Tegn. nr.: 70300/4	
	AP-RADIOTELEFON		

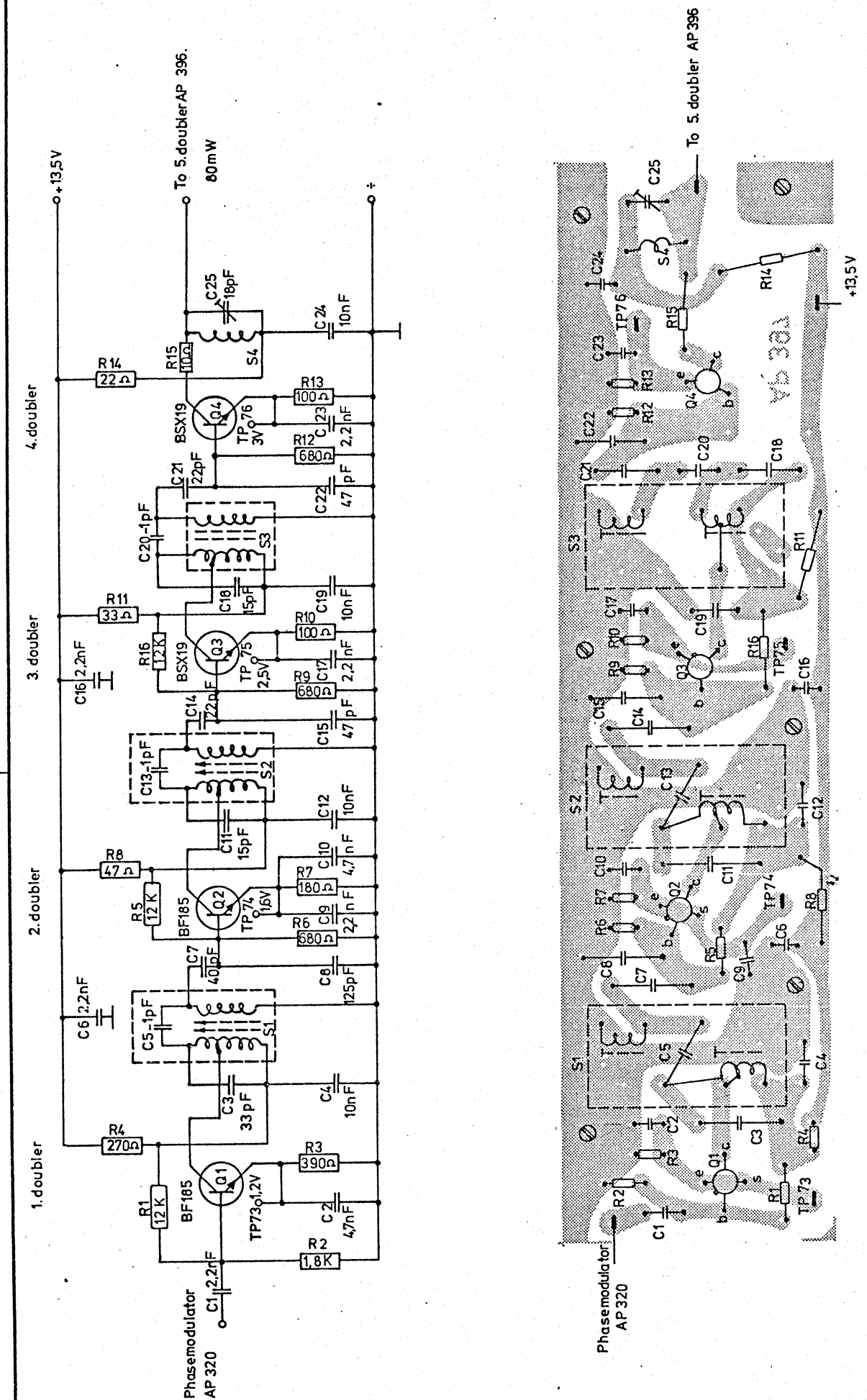
Nr.	Kode	Data	Nr.	Kode	Data
R1		22 Kohm ¼ W			
R2		1o Kohm "			
R3		1o ohm "			
R4		2,2 Kohm "			
R5		33o ohm "			
R6		33 Kohm "			
R7		1o Kohm "			
R8		1,2 Kohm "			
R9		4,7 Kohm "			
R1o		47 Kohm "			
R11		18 Kohm "			
R12		3,3 Kohm "			
R13		33o ohm "			
R14		1 Kohm "			
C1		25o pF styr.			
C2		125 pF styr.			
C3		4,7 nF ker.			
C4		5o pF styr.			
C5		4,7 nF ker.			
C6		3;3 pF ker.			
C7		4,7 nF ker.			
C8		1 pF ker.			
C9		22 nF pol.			
C1o		1oo pF styr.			
C11		1 nF ker.			
C12		3,3 nF styr.			
C13		4,7 mF/25v tant.			
S1		LL47 Tg. 7o322/4			
S2		LL47 Tg. 7o322/4			
D1		BA 1o2			
D2		Z 8,2 zener			
D3		BA 1o2			
Q1		BF 185			
Q2		BF 185			

TX-oscill. and Phasemod. UHF
Print Board AP 32o AP 7oo
Tilhører tegn. nr.: 7o3oo/4

Rettet:

Tegn.: DB
Kontr.:

Stykl. nr.: 70301/4



Rettet:

MULTIPLIER UHF TRANSMITTER

PRINT BOARD AP397/1

AP-RADIOTELEFON

Tegn.: A.B.P. 11/9-70 | Kontr.: E.F 16-9-70

Stykl. nr.: 70291/4

Tegn. nr.: 70290/4

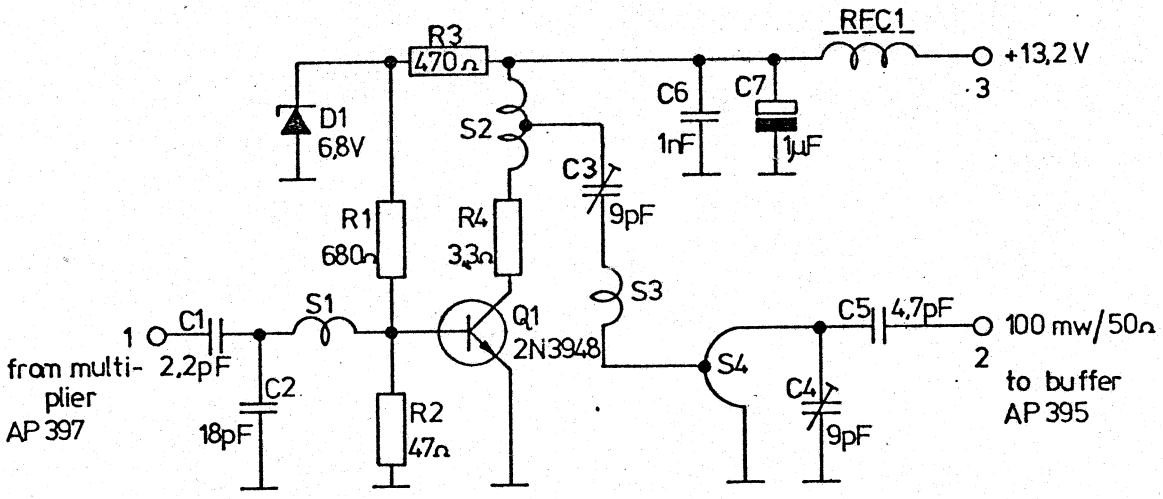
Nr.	Kode	Data	Nr.	Kode	Data
R1		12 Kohm ¼ W			
R2		1,8 Kohm "			
R3		39o ohm "			
R4		27o ohm "			
R5		12 Kohm "			
R6		68o ohm "			
R7		18o ohm "			
R8		47 ohm "			
R9		68o ohm "			
R1o		1oo ohm "			
R11		33 ohm "			
R12		68o ohm "			
R13		1oo ohm "			
R14		22 ohm "			
R15		1o ohm "			
R16		12 Kohm "			
C1		2,2 nF ker.			
C2		4,7 nF ker.			
C3		33 pF styr.			
C4		1o nF ker.			
C5		1 pF ker.			
C6		2,2 nF ker.			
C7		4o pF styr.			
C8		125 pF styr.			
C9		2,2 nF ker.			
C1o		4,7 nF ker.			
C11		15 pF styr.			
C12		1o nF ker.			
C13		1 pF ker.			
C14		22 pF styr.			
C15		47 pF styr.			
C16		2,2 nF ker.			
C17		2,2 nF ker.			
C18		15 pF styr.			
C19		1o nF ker.			
C2o		1 pF ker.			
C21		22 pF styr.			
C22		47 pF styr.			
C23		2,2 nF ker.			
C24		1o nF ker.			
C25		18 pF trim.			
S1		L152			
S2		L15o			
S3		L55 Tg. 68o97/4			
S4		L148			
Q1		BF 185			
Q2		BF 185			
Q3		BSX 19			
Q4		BSX 19			

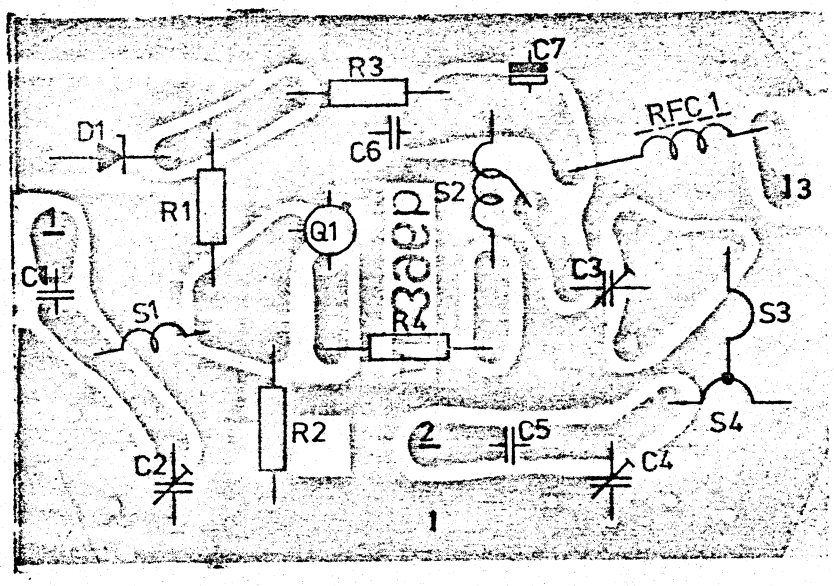
Multiplier UHF-Transmitter
Print Board AP 397/1 AP 7oo
Tilhører tegn. nr.: 7o29o/4

Rettet:

Tegn.: EB
Kontr.:

Stykl. nr.: 70291/4



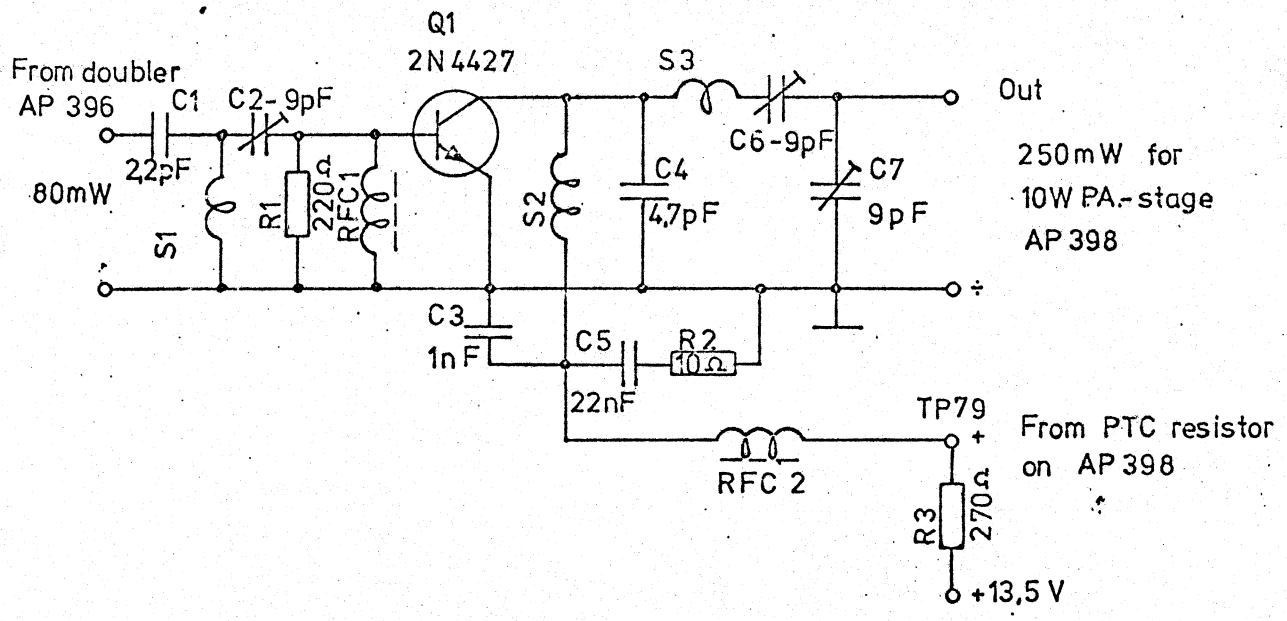


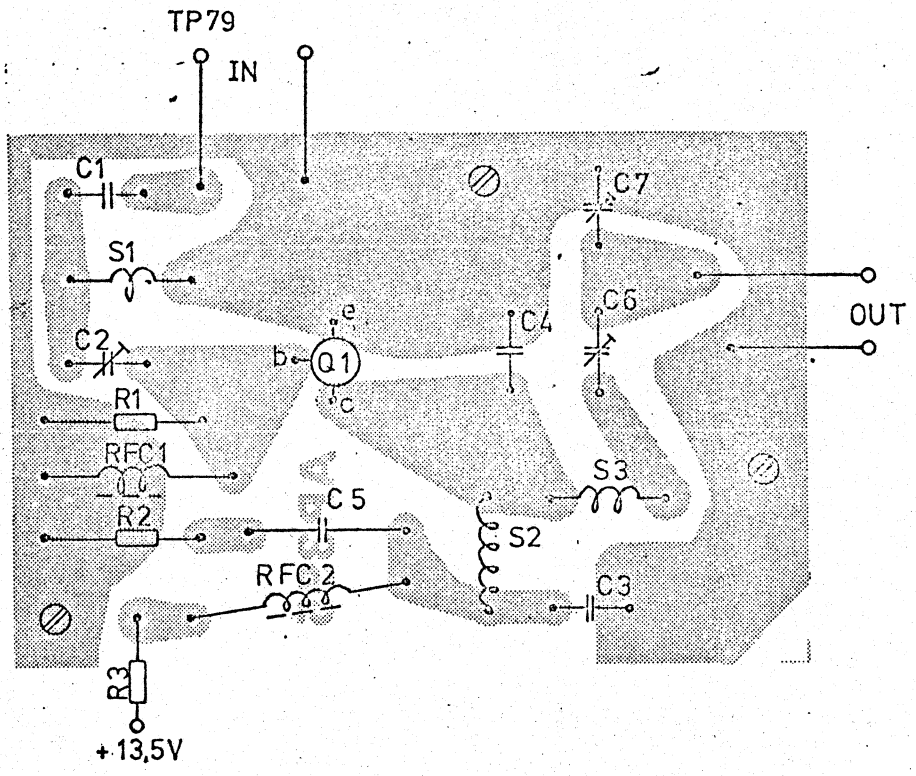
Rettet:	UHF Doublerstage 422 - 470 MHz Printboard AP 396 b/ 1	Tegn.: 28-2-74 A.C.	Kontr.: 28-2-74 J.H.
		Stykl. nr.: 74095-4S	
	AP-RADIOTELEFON A/s	Tegn. nr.: 74095-4E	

AP-RADIOTELEFON

Nr.	Kode	Data	Nr.	Kode	Data
R 1		680 Ω ¼ w			
R 2		47 Ω ¼ w			
R 3		470 Ω ¼ w			
R 4		3,3 Ω ¼ w			
C 1		2,2 pF ker.			
C 2		18 pF trim.			
C 3		9 pF trim.			
C 4		9 pF trim.			
C 5		4,7 pF ker.			
C 6		1 nF ker.			
C 7		1 µF/35V tant.			
D 1		BZX 55 C6V8			
Q 1		2N 3948			
RFC -1		36640			
S 1		L 2			
S 2		L 236			
S 3		L 159			
S 4		L 164			

UHF doubler stage 422-470 MHz Print Board AP 396b 74095-4E Tilhører tegn. nr.:	Rettet:	Tegn.:	Stykl. nr.: 74095-4S
		Kontr.:	





Remarks: Quoted DC potentials are measured to chassis.

Ri = 10 MΩ provided 330 KΩ in series with test pin.

Rx stand by and Tx keyed.

Rettet:	Tx-buffer UHF Printboard AP 395/1	Tegn.: A.B.P. 3/9-70	Kontr.: E.F. 3/9-70
		Stykl. nr.: 7025514	
	AP-RADIOTELEFON	Tegn. nr.:	70254/4

AP-RADIOTELEFON

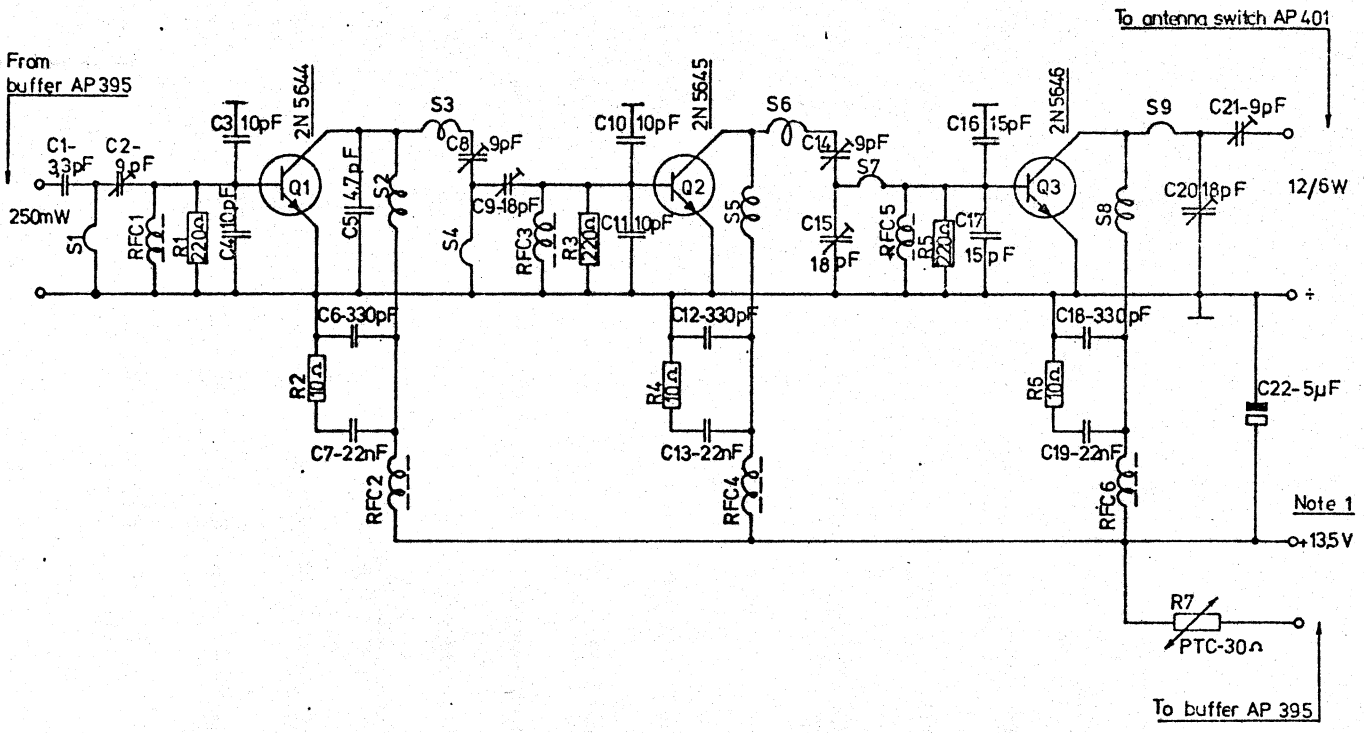
Nr.	Kode	Data	Nr.	Kode	Data
R1		22o ohm ¼ W			
R2		1o ohm "			
R3		27o ohm "			
C1		2,2 pF ker.			
C2		9 pF trim.			
C3		1 nF ker.			
C4		4,7 pF ker.			
C5		22 nF pol.			
C6		9 pF trim.			
C7		9 pF trim.			
S1		L164			
S2		L187			
S3		L166			
RFC -1		2,2 microH choke			
RFC -2		Wide Band Choke			
Q1		2N 4427			

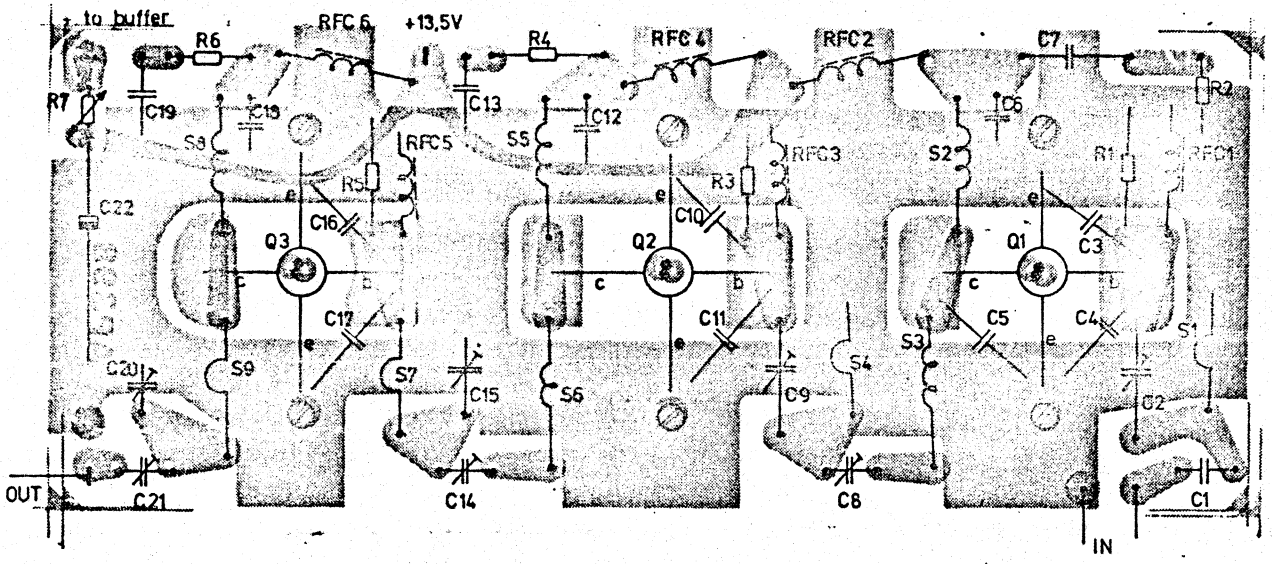
Buffer UHF-Transmitter
Print Board AP 395/1 AP 7oo
Tilhører tegn. nr.: 7o254/4

Rettet:

Tegn.: BR
Kontr.:

Stykl. nr.: 70255/4





Remarks: Quoted DC potentials are measured to chassis.
Ri = 10 MΩ provided 330 KΩ in series with test pin.
Rx stand by and Tx keyed.

Note 1: To obtain 6W a resistor 1Ω / 3W has to be incorporated in the power supply, which has to be 12,6 V.

Rettet:	TX 12/6W POWER AMPLIFIER UHF PRINT BOARD AP 398/1	Tegn.: A.B.P 15/9-70 | Kontr.: E.F 16-9-70 Stykl. nr.: 70 299/4 Tegn. nr.: 70298/4
	AP-RADIOTELEFON	

AP-RADIOTELEFON

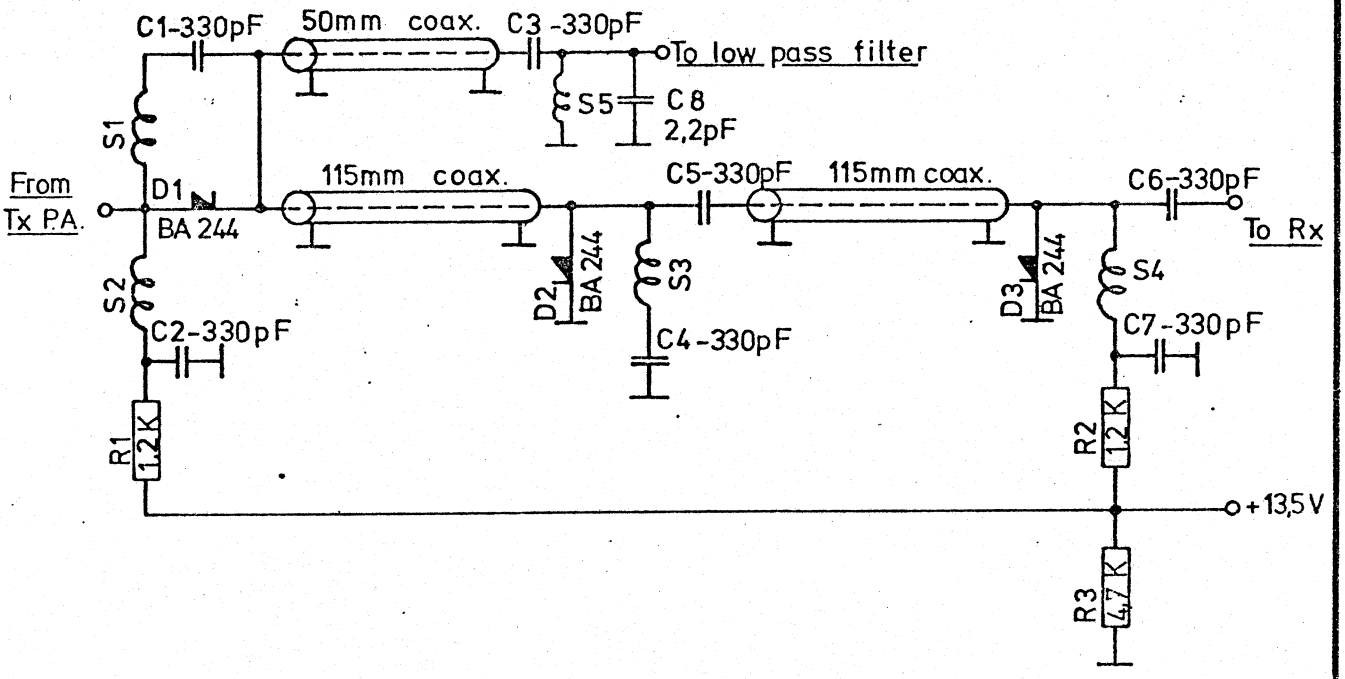
Nr.	Kode	Data	Nr.	Kode	Data
R1		22o ohm ¼ W			
R2		1o ohm "			
R3		22o ohm "			
R4		1o ohm "			
R5		22o ohm "			
R6		1o ohm "			
R7		3o ohm PTC			
C1		3,3 pF ker.			
C2		9 pF trim.			
C3		1o pF ker.			
C4		1o pF ker.			
C5		4,7 pF ker.			
C6		33o pF ker.			
C7		22 nF pol.			
C8		9 pF trim.			
C9		18 pF trim.			
C1o		1o pF ker.			
C11		1o pF ker.			
C12		33o pF ker.			
C13		22 nF pol.			
C14		9 pF trim.			
C15		18 pF trim.			
C16		15 pF ker.			
C17		15 pF ker.			
C18		33o pF ker.			
C19		22 nF pol.			
C2o		18 pF trim.			
C21		9 pF trim.			
C22		5 mF/35v lyt.			
S1		L182			
S2		L183			
S3		L184			
S4		L182			
S5		L183			
S6		L184			
S7		L185			
S8		L183			
S9		L186			
RFC -1		2,2 microH choke			
RFC -2		Wide Band Choke			
RFC -3		2,2 microH choke			
RFC -4		Wide Band Choke			
RFC -5		2,2 microH choke			
RFC -6		Wide Band Choke			
Q1		2N 5644			
Q2		2N 5645			
Q3		2N 5646			

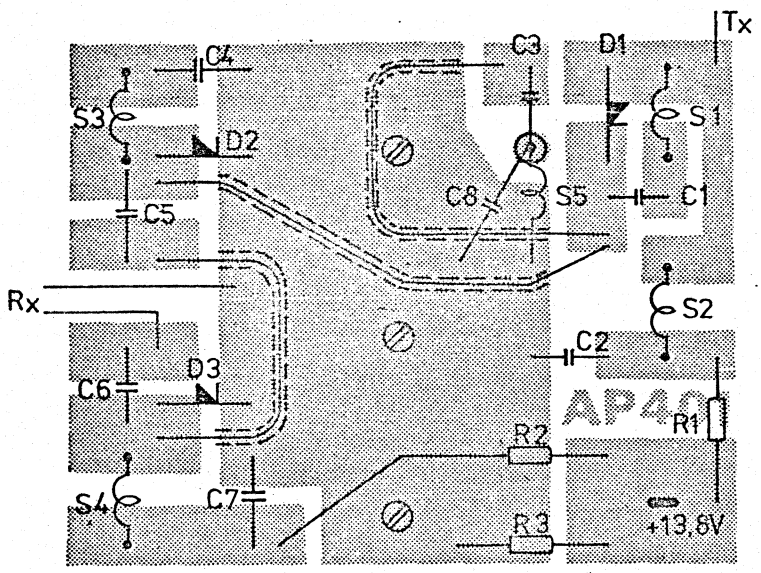
TX Power Amplifier UHF
Print Board AP 398/1 AP 7oo
Tilhører tegn. nr.: 7o298/4

Rettet:

Tegn.: JB
Kontr.:

Stykl. nr.: 70299/4





Remarks: Quoted DC potentials are measured to chassis.

Ri = 10 MΩ provided 330 KΩ in series with test pin.

Rx stand by and Tx keyed.

Rettet:	ELECTRONIC ANTENNA SWITCH UHF Print board AP 401/1	Tegn.: A.B.P. 14/9-70	Kontr.: E.F. 16-9-70
		Stykl. nr.: 70 297/4	
	AP-RADIOTELEFON	Tegn. nr.:	70296/4

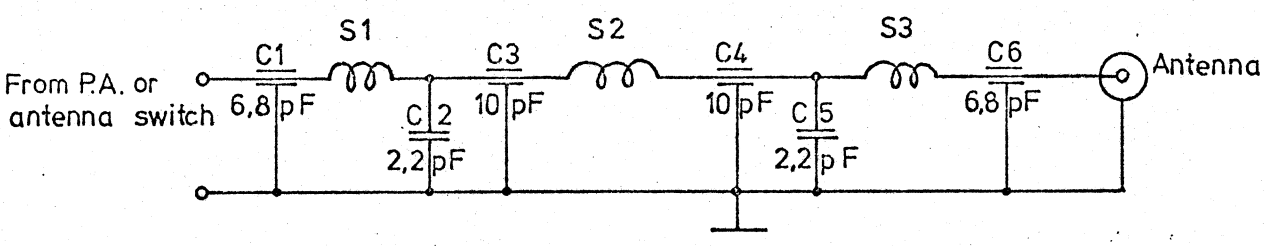
Nr.	Kode	Data	Nr.	Kode	Data
R1		1,2 Kohm ¼ W			
R2		1,2 Kohm "			
R3		4,7 Kohm "			
C1		33o pF ker.			
C2		33o pF ker.			
C3		33o pF ker.			
C4		33o pF ker.			
C5		33o pF ker.			
C6		33o pF ker.			
C7		33o pF ker.			
S1		L188			
S2		L187			
S3		L188			
S4		L188			
S5		L2oo			
D1		BA 244			
D2		BA 244			
D3		BA 244			

Electronic Antenna Switch
Print Board AP 4o1 AP 7oo
Tilhører tegn. nr.: 7o296/1 UHF

Rettet:

Tegn.: HB
Kontr.:

Stykl. nr.: 702971 4



Rettet: 28-11-73 AC	LOW PASS FILTER UHF	Tegn.: A.B.P. 14/9-70	Kontr.: E F 14-9-70
		Stykl. nr.: 70293/4	
	AP-RADIOTELEFON	Tegn. nr.:	70292/4

AP-RADIOTELEFON

Nr.	Kode	Data	Nr.	Kode	Data
C1		6,8 pF Feed Thru			
C2		2,2 pF ker.			
C3		lo pF Feed Thru			
C4		lo pF Feed Thru			
C5		2,2 pF ker.			
C6		6,8 pF Feed Thru			
S1		L189			
S2		L19o			
S3		L189			

Low Pass Filter UHF

Tilhører tegn. nr.:

Rettet:

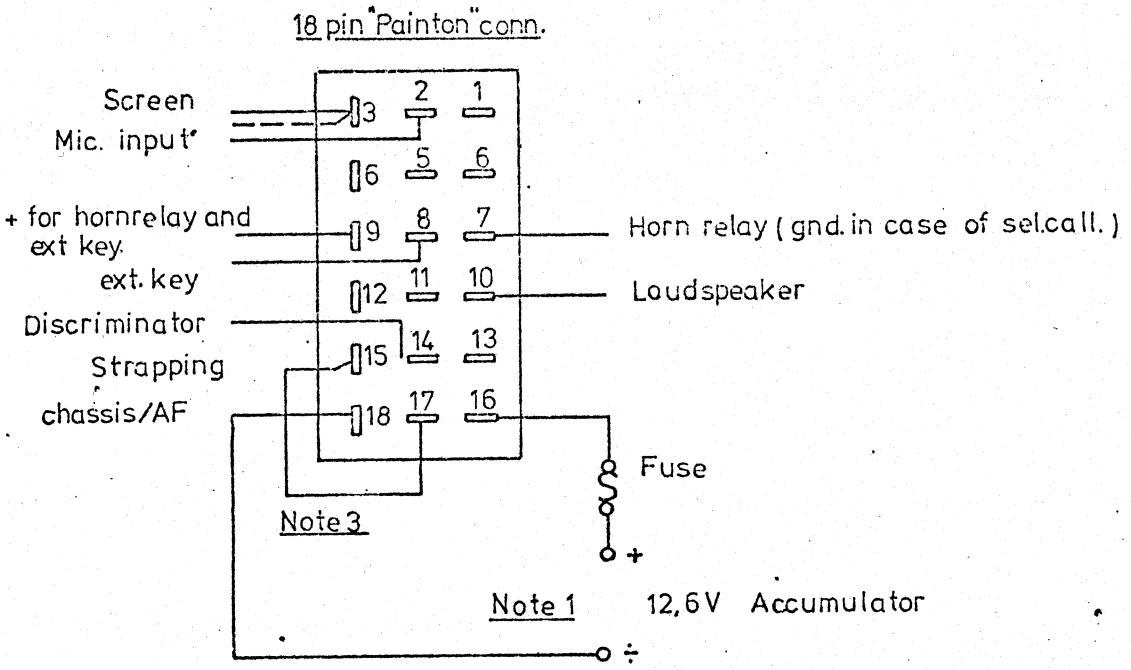
Tegn.: BB

Kontr.:

Stykl. nr.: 70293/4

AP RADIOTELEFON

Without DC-Converter only 12,6V chassis negative.

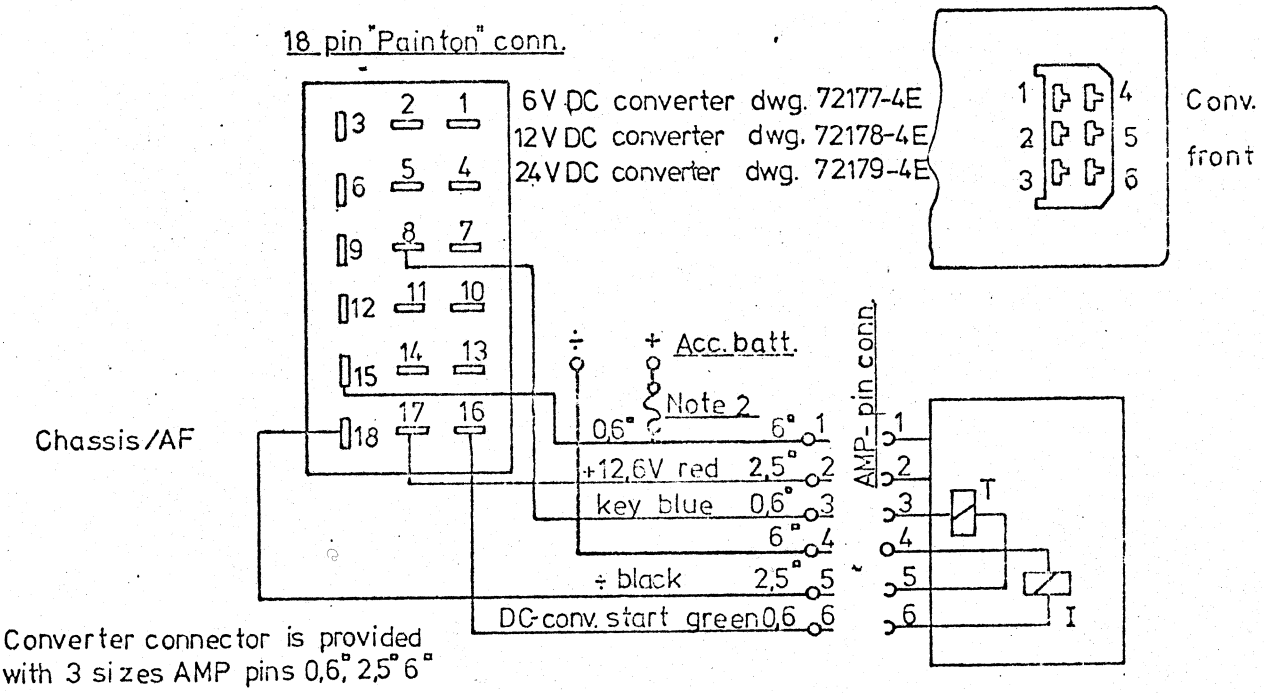


Note 1: DC converter has to be used as far as the power supply is not 12,6VDC with chassis negative.

Note 2: Main fuse has to be incorporated in Power supply line.

Note 3: At 12,6 V strap 15 and 17.

For DC-Converter

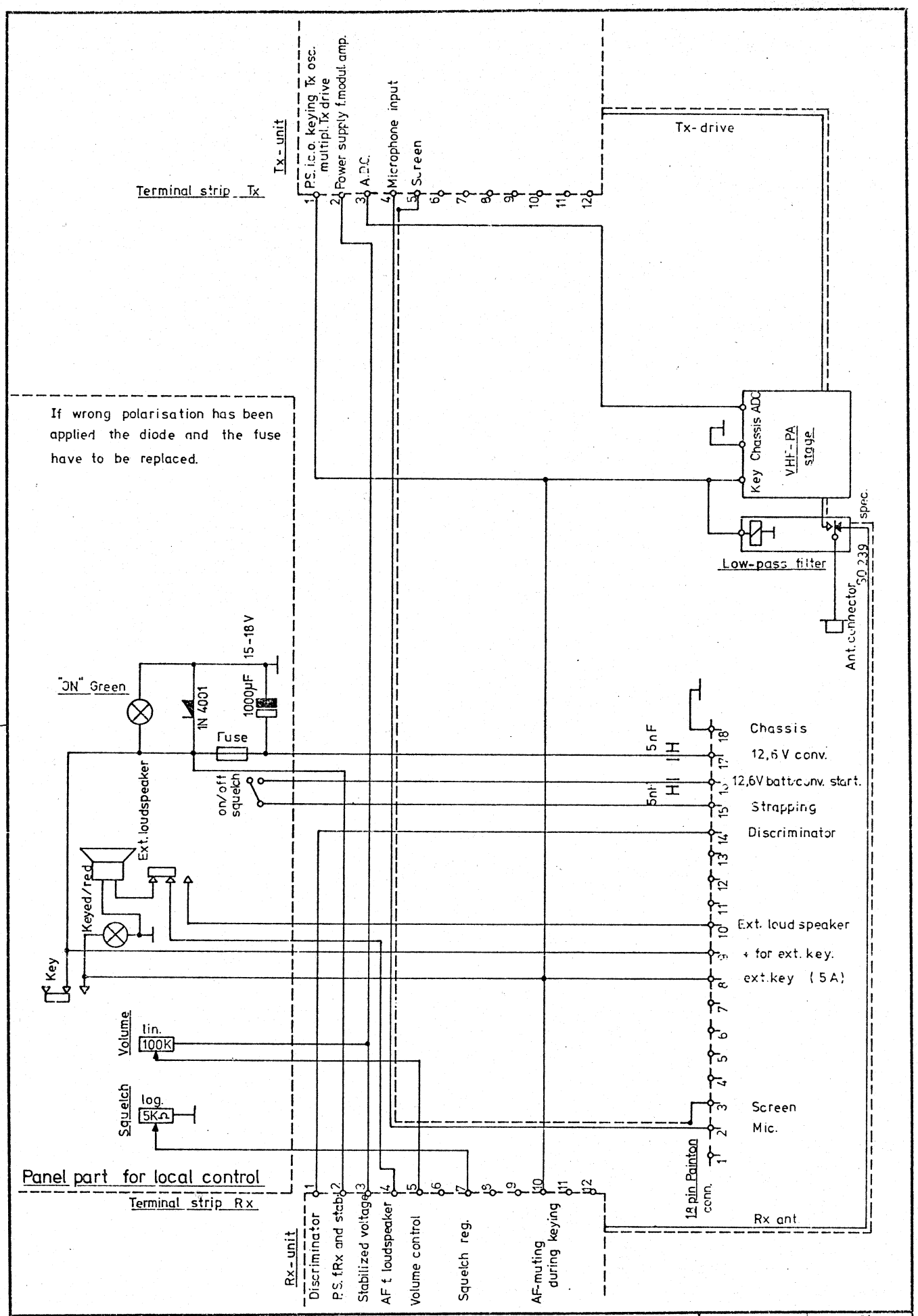


Converter connector is provided with 3 sizes AMP pins 0,6", 2,5" 6"

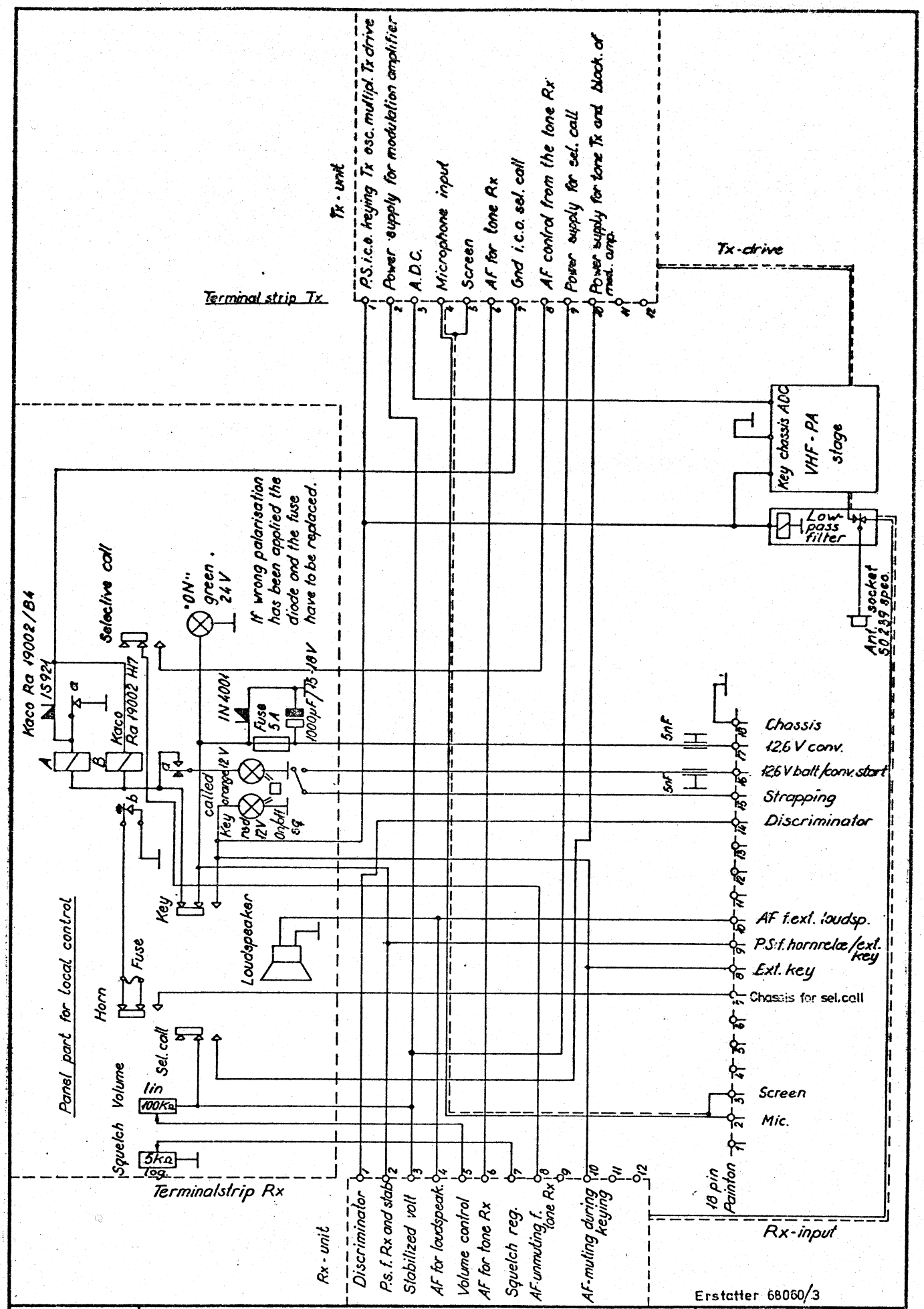
Rettet: 7-10-74 AC	Materiale	Model nr.	Lager nr.	Målforhold	Tegn. 17/8-70	A.B.R.
					Kont. 18/8-70	E.F.
	Genstand: Mounting Instructions. local control. Mobile with(out) DC-converter.			Tg. nr	60127	

Alle mål uden tolerance ++ mm

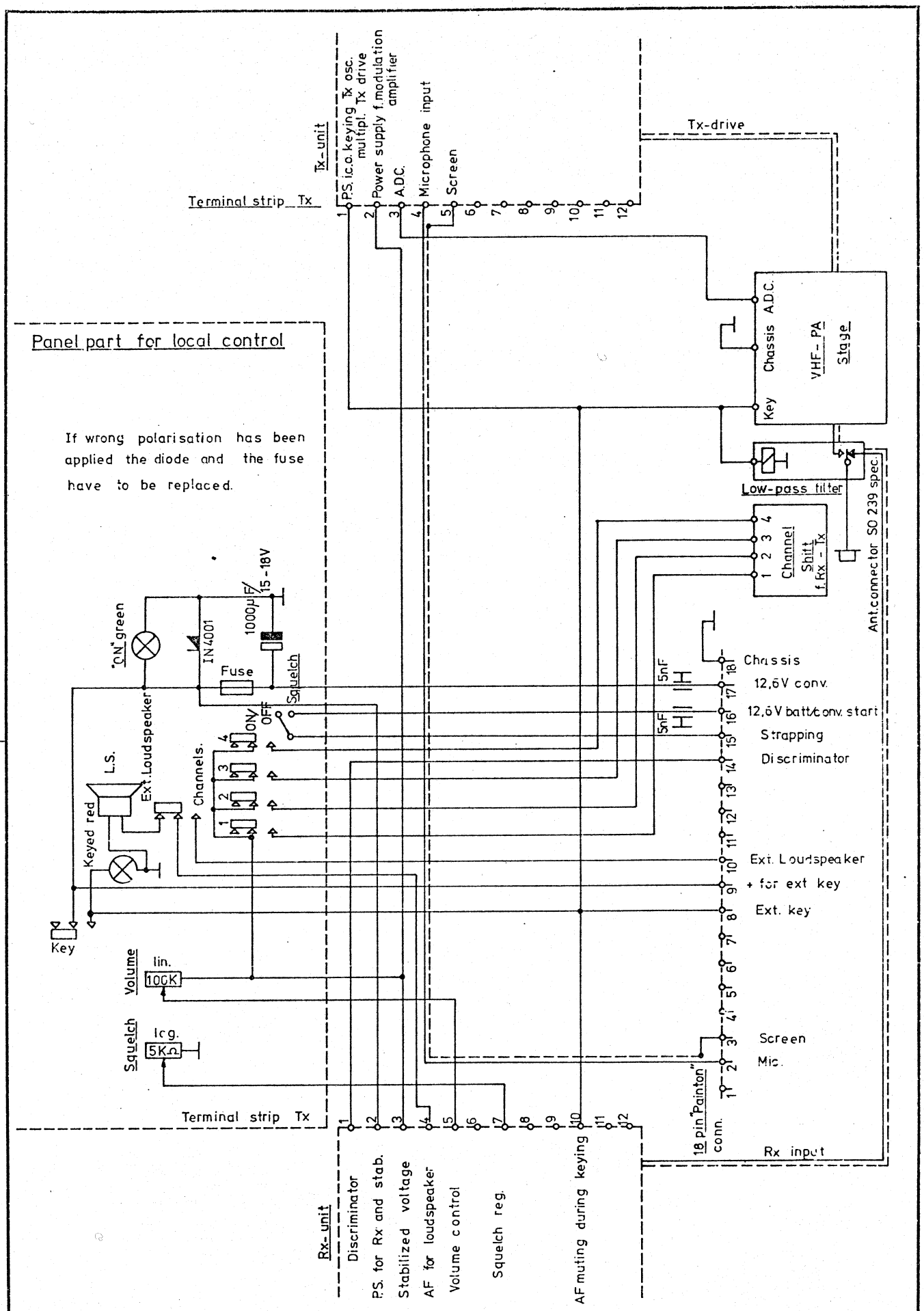
A4 - NTI A/S



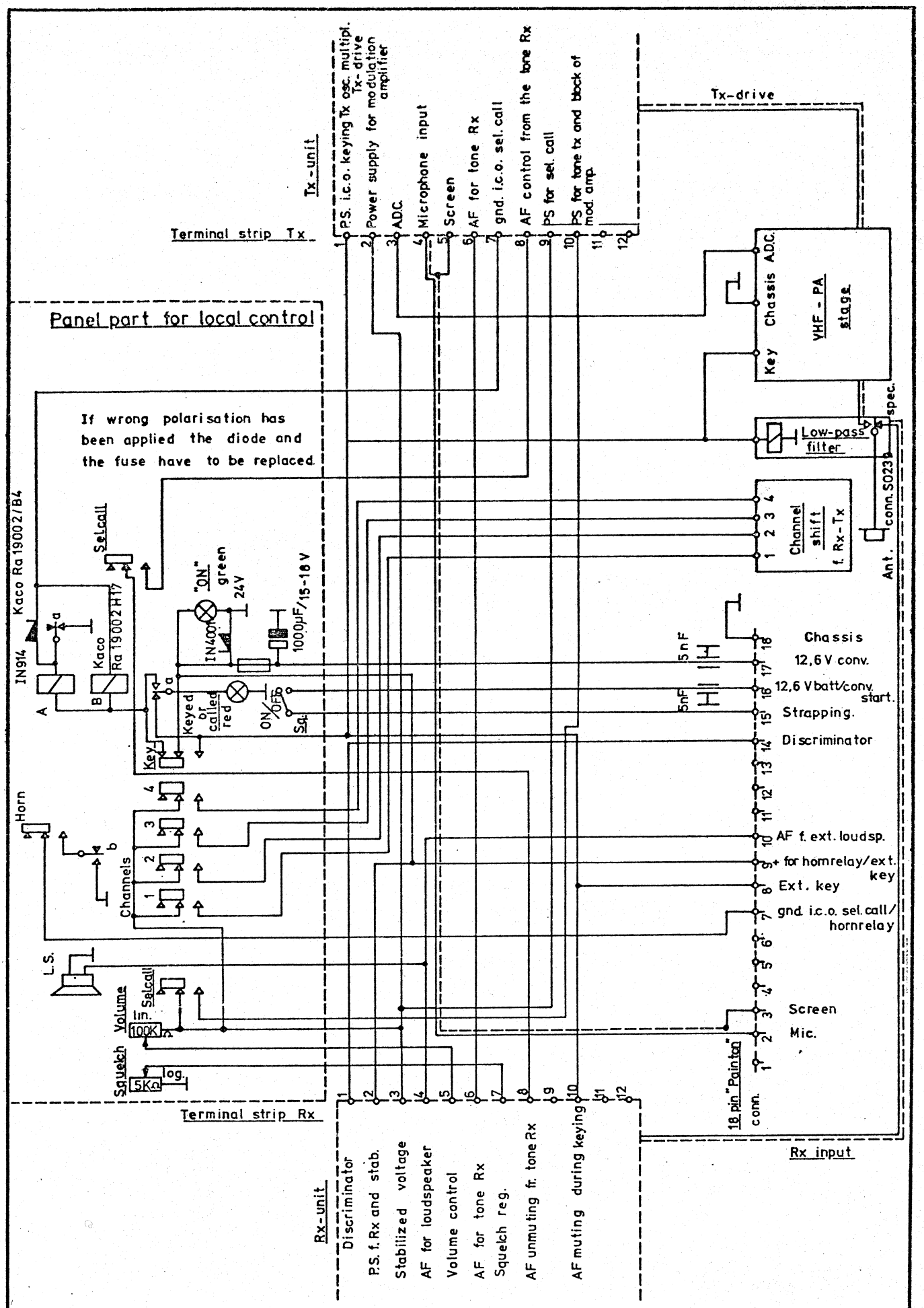
Rettet:	MOBILE AP 700 LOCAL CONTROLLED SIMPLEX, 1 CHANNEL, FUNCTION, LAY-OUT	Tegn.: 19-8-70 ABP Kontr.: 19/8-70 EF Stykl. nr.: Tegn. nr.: Erstatter 68069/3
	AP-RADIOTELEFON	70202/4



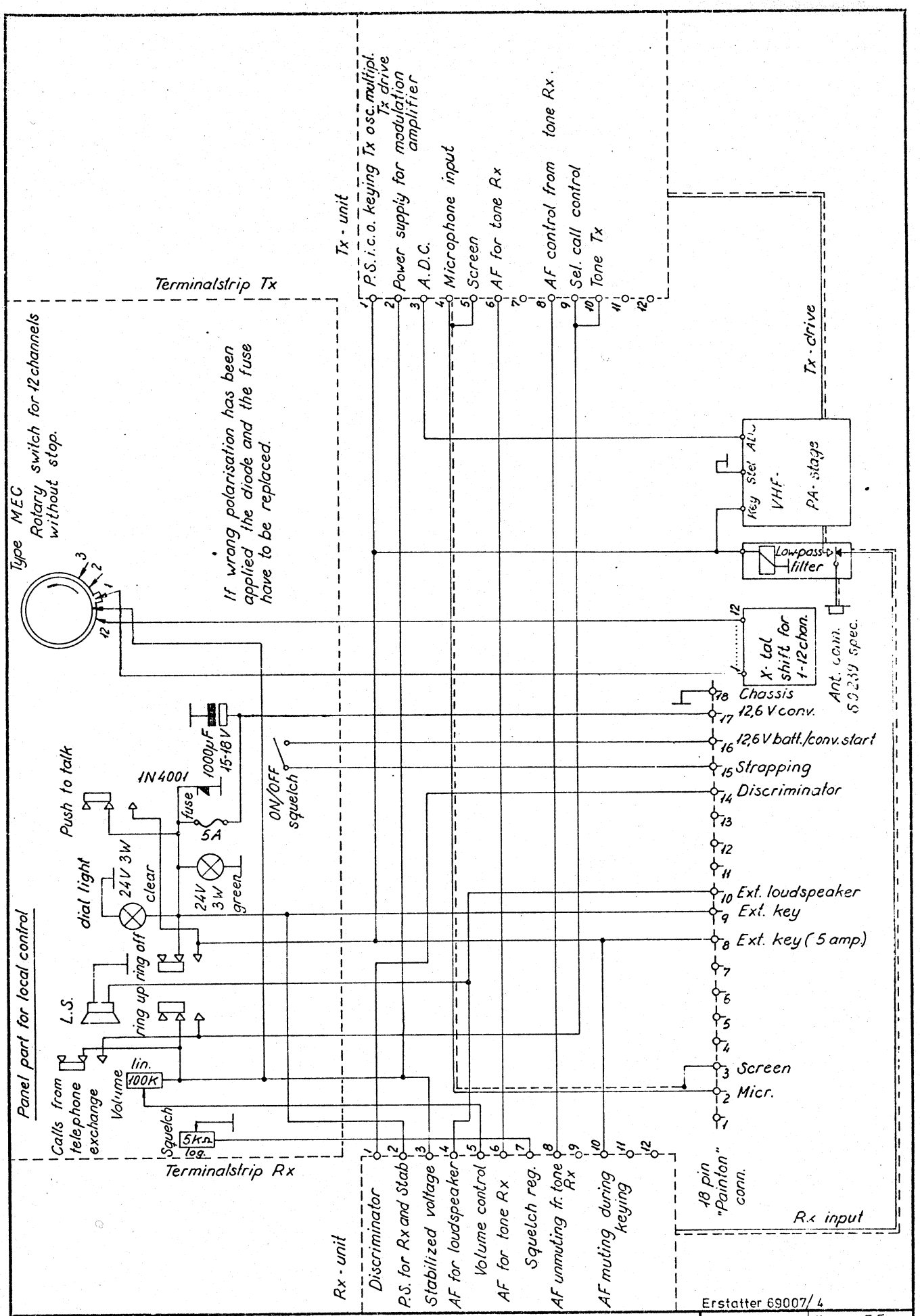
Rettet: 27-5-74 HP 4-10-74 AC	Mobile AP 700 Local controlled simplex 1 channel, sel. call function lay-out.	Tegn.: U.K.	Kontr.: E.F. 2-9-70
		Stykl. nr.:	
	AP-RADIOTELEFON	Tegn. nr.:	70225/4



Rettet:	MOBILE AP 700, LOCAL CONTROLLED SIMPLEX, 4 CHANNELS, FUNCTION LAY-OUT	Tegn.: AB.P 20-8-70 Kontr.: E.F 20-8-70
		Stykl. nr.:
		Tegn. nr.: Erstatter 68068/3
	AP-RADIOTELEFON	70207/4



Rettet: 27-5-74 HP 4-10-74 AC	MOBILE AP 700 LOCAL CONTROLLED SIMPLEX 4 CHANNELS. SEL. CALL. FUNCTION LAY-OUT AP-RADIOTELEFON	Tegn.: 24/8-70 A.B.P Kontr.: 24/8-70 E.F. Stykl. nr.: Tegn. nr.: Erstatter nr. 68064/3 70214/4



Erstatter 69007/4

Rettet:	Local controlled AP 700 Simplex, 12 channels for mobile telephone service (MTS) function lay-out AP-RADIOTELEFON	Tegn.: VK Kontr.: E.F 8-9-70 Stykl. nr.: Tegn. nr.: 70223/4