

ZODIAC

Description of Line Unit LU-75330-D

The Line Unit consists of a balanced hybrid with an active lowpass-filter and a coding-circuit which controls F.E.T.'s by supplying signal in normal-function and in repeat-function.

Normal-function:

A signal from the controlbox feds via the line to the Line Unit and is coupled out via T1. The signal feds to IC5b and is amplified so much that the loss of the line and the connected stages is eliminated. From the output of IC5b the signal feds over C12 and R10, across which it is possible to connect a compensation network for the characteristic of the line, to RM, where the amplifier is adjusted. A notch-filter can be inserted between RM and Q1. From Q1 the signal feds to the microphone amplifier. In order that the signal can pass Q1, it is necessary that the gate is at low-potential. This is obtained if the opto-coupler OT is activated by the current used to transfer the signal. The opto-coupler gives a high-potential across R30, which feds to TC1d. By means of the NOR-gates IC1d, IC3b and the NAND-gate IC4d the gate of Q1 obtains a low-potential, at the same time the base of Q5 feds with a high-potential via IC4a and c so that Q5 draws current and shifts to "Transmit", why Q2 via IC3c admits a high-potential and goes off, and Q3 does the same. In this position the signal feds to the microphone amplifier.

If a signal is received by the receiver, this feds via pin 7 from the IF-amplifier to Q3. If the signal has to pass Q3, it is necessary that the gate is at low-potential, this obtains if there is no current in the line. The potential at the input of IC1d is low, which causes that the potential at the output is high which feds to the input of IC4d. The potential at the output of IC4d and with that the potential at the gate of Q3 will be low.

"Rep. oct" will not be activated in this case, which causes that via the NOR-gates IC3a and b there will be a low-potential at the output of IC3b. With that the gate of Q2 is at high-potential, while the gate of Q1 is at low-potential. The transistor Q5 will in this case via the NAND-gates IC4a and c not be activated. The signal from the receiver feds via Q3 to a lowpass-filter and IC5a and after this over T1 into the line.

Repeat-function:

If the Line Unit works as repeater, it is necessary that the l. tone in the call is prolonged, and at the same frequency which is adjusted to the unit SR-75318, because the repeater sets by the l. tone. If a signal is received, it feds via pin 7 to Q3. In repeat-function it will be necessary to have low-potential at the gates of Q3 and Q2, this is obtained if there is a squelch-signal, which controls Q4 to get off, if there is no current in the line, and there adds a high-potential to pin 10 "Rep. set" from the unit SR-75318. The potential at the output of IC4d and with that the gate of Q3 will be at low-potential as mentioned under the normal-function, while the potential at the output of IC3b now will be at high-potential. This results in the fact that the potential at the gate of Q2 will be at low-potential while the transistor Q5 now activates via IC4a and c. Via Q3 the signal now feds via Q3 to the low-pass-filter and IC5a and into the line (monitoring), while the signal from Q3 feds via Q2 to the microphone amplifier and sends out again.

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As mentioned in the description of the SR-75318 unit, there will be a delay of 250 msec between the tone-receive and the Rep. set-puls.

If a call and a conversation is finished, and the squelch-signal controls Q4 to go on, by the means of the time-constant formed of the RC-combination of IC1b and iC1c it will take about 3 sec until the transmitter is blocked, by the means of the time-constant formed of the RC-combination of IC2d and IC2c it will take about 10 sec until the repeater is blocked.

The normal-function has always priority over the repeat-function, as Rep.set resets as soon as there is keyed from the controlbox.

If the button "CR" at the controlbox is pushed, the polarity of the current will be so that the opto-coupler OT2 activates. In this way it is possible from the controlbox to break into a conversation.

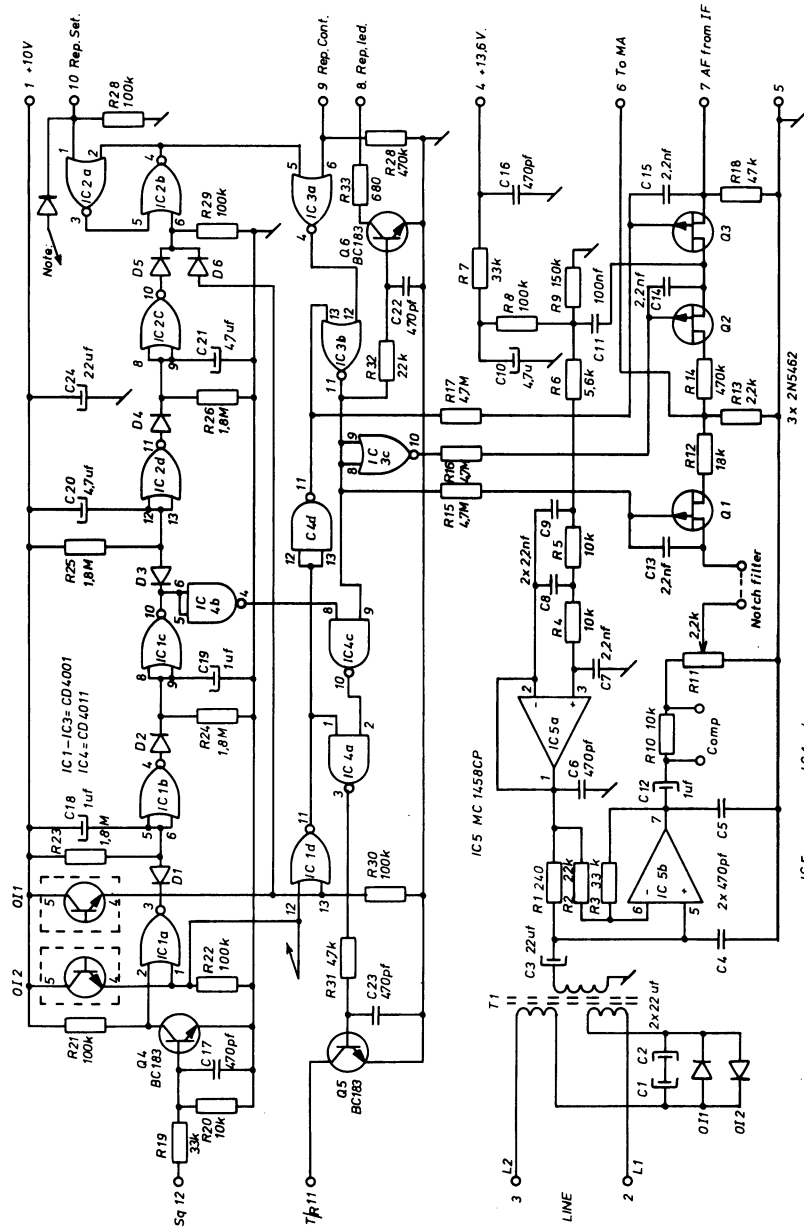
FEJL: REPEATER STARTER HVER GANG DER TASTES FRA
MOBIL STATION.

ÅRSAG: EVNT. C 18, OI 1~~8~~, ELLER MEST SANDSYNLIG IC 1.

(VED UDSK AF C18+OI 1 BLEV DET SVÆRERE AT STARTE, MED UDSK AF
IC 1 UMUGLIGT). PULS OVERHØRING FRA PW 1-2.

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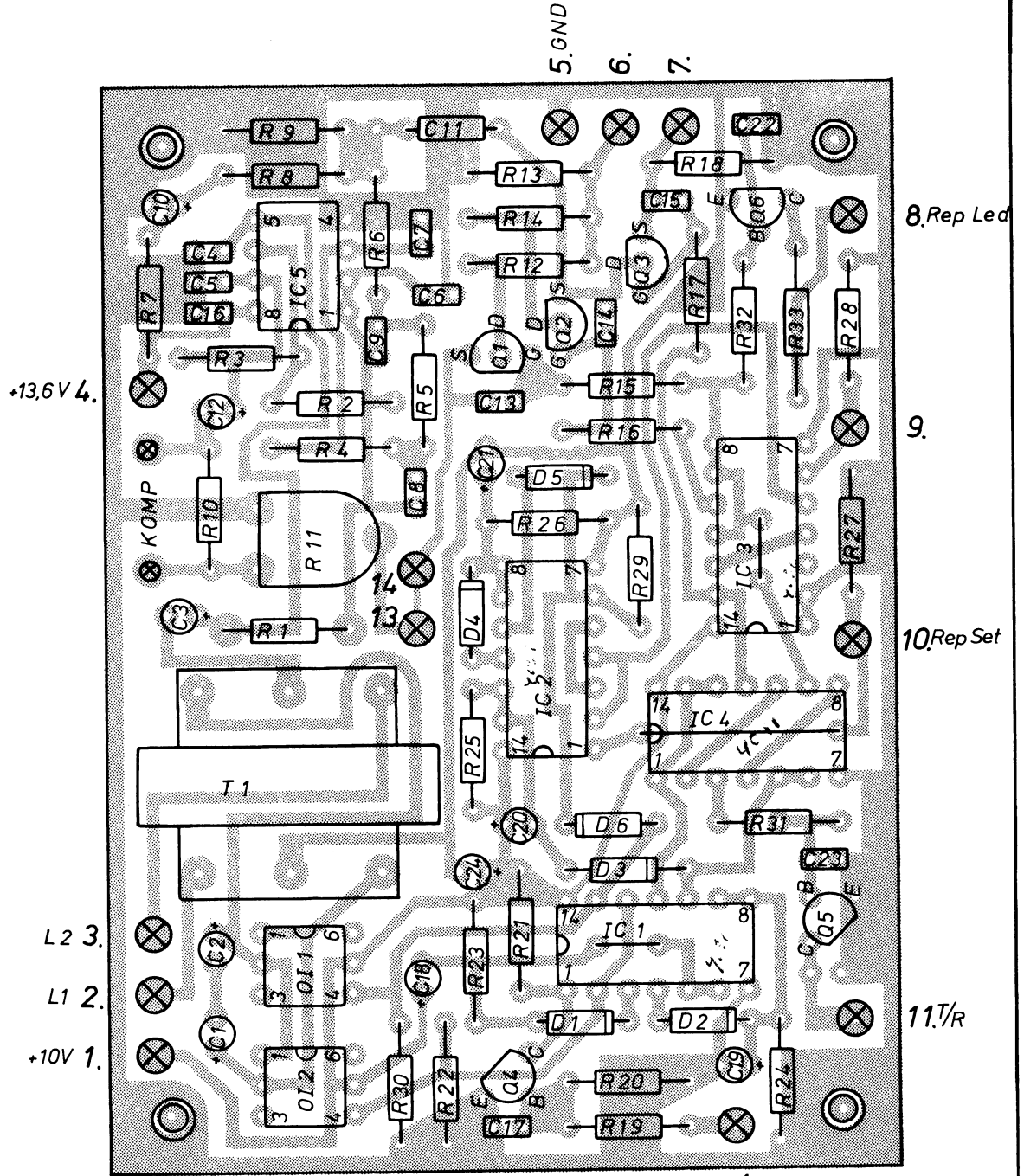
IC5 MC1458CP
 IC1-4
 Pin 4 GND
 Pin 7 GND
 Pin 8 +13.6V, Pin 14 +10V
 Note: For manual Repeater-start in position "C.R" connect diode between IC4d pin 12 and IC2a pin 1

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Line Unit
 LU - 75330 - D
 Dwg. no. 75330-4

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Line Unit
LU-75330-D
Dwg. no. 75330-5

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TYPE	NO.	ITEM NO.	DESCRIPTION	
	T1	660190	PC-board	
		651015	Transformer	
220 Ohm		630057	Resistor	
240 Ohm	R1	630058	Resistor	
2,2Kohm	R13	630081	Resistor	
2,5Kohm			Resistor	
5,6Kohm	R6	630091	Resistor	
10Kohm	R4	630097	Resistor	
10Kohm	R5	630097	Resistor	
10 Kohm	R10	630097	Resistor	
10 Kohm	R20	630097	Resistor	
12 Kohm	R12	630099	Resistor	
22 Kohm	R2	630105	Resistor	
33 Kohm	R3	630110	Resistor	
33 Kohm	R7	630110	Resistor	
33 Kohm	R19	630110	Resistor	
47 Kohm	R18	630114	Resistor	
100 Kohm	R8	630121	Resistor	
100 Kohm	R21	630121	Resistor	
100 Kohm	R22	630121	Resistor	
100 Kohm	R27	630121	Resistor	
100 Kohm	R34	630121	Resistor	
150 Kohm	R9	630125	Resistor	
470 Kohm	R14	630137	Resistor	
470 Kohm	R28	630137	Resistor	
470 Kohm	R30	630137	Resistor	
470 pF	C4	640006	Capacitor, ceramic	
470 pF	C5	640006	Capacitor, ceramic	
470 pF	C6	640006	Capacitor, ceramic	
470 pF	C16	640006	Capacitor, ceramic	
470 pF	C17	640006	Capacitor, ceramic	
470 pF	C22	640006	Capacitor, ceramic	
470 pF	C23	640006	Capacitor, ceramic	
470 pF	C25	640006	Capacitor, ceramic	
2,2 nF	C7	640014	Capacitor, ceramic	
2,2 nF	C8	640014	Capacitor, ceramic	
2,2 nF	C9	640014	Capacitor, ceramic	
2,2 nF	C13	640014	Capacitor, ceramic	
2,2 nF	C14	640014	Capacitor, ceramic	
2,2 nF	C15	640014	Capacitor, ceramic	
100 nF	C11	641225	Capacitor	
1 uF/35V	C1	643013	Capacitor, Tantalum	
4,7uF/16V	C10	643021	Capacitor, Tantalum	
22 uF/16V	C2	643029	Capacitor, Tantalum	
22 uF/16V	C3	643029	Capacitor, Tantalum	
			Date	
			84.10.16.	
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TYPE	NO.	ITEM NO.	DESCRIPTION
22 uF/16V	C24	643029	Capacitor, Tantalum
2N5462	Q1	614150	Transistor
MPS-A14	Q5	614075	Transistor
1458	IC5	610005	IC
SPX33	OI1		Optocoupler
SPX33	OI2		Optocoupler
		672015	Solderpin
		671125	Turbular Rivet
			Silver Wire 0,5mm
			Date 84.10.16.
LINE UNIT LU-75330/D			Comp. List No
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