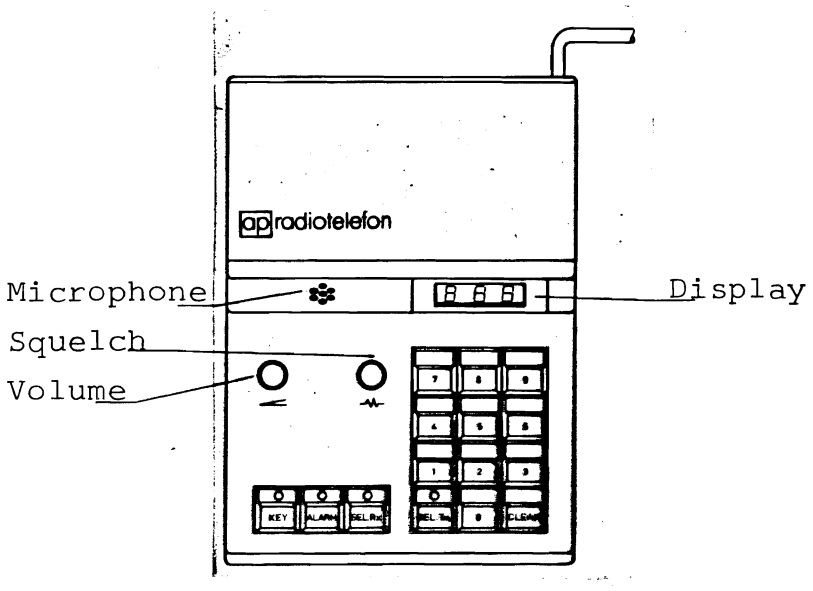
Contents for Remote controlled box 206-038 F and 206-039 F

# REMOTE CONTROLBOX FOR AP 2000 BASE STATION

## 202-020




APPLICATION: For operation of AP 2000 main unit as base station. The last 3 digits of a 5 tone sequence can be programmed by means of the keyboard. The remote controlbox have built-in microphone and display and the feature of automatically transmit the repeat tone (R).

BUTTONS:

0-9: Buttons for entering the last 3 digits of the Tx code.

CLEAR: Clears the stored selective transmitter code.

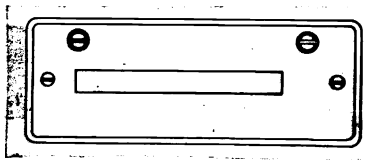
SEL Tx: Button for tone modulation, indicated by the sel Tx lamp and the key lamp.

SEL Rx: The button switches the lamp on/of. When the lamp is lightening the loudspeaker and the key are blocked. When receiving an ID-call the lamp is flashing,

ALARM: When the lamp is lightening an internal relay is switched when an ID-call is received. An external alarm unit can be connected to this relay.

KEY; Depress for talk.

Remote controlbox 202-020 must be operated together with installation kit no. 209-015.



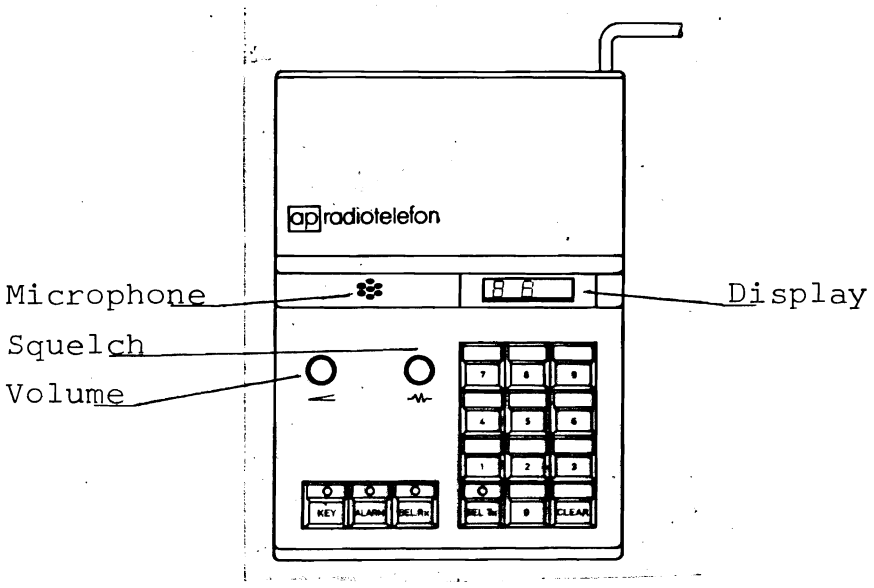
Controlbox 202-020 and front section 206-038 fits to the following units/mountings

| Frekv. MHz | 6W m. printconn. | 25W/UHF10W m. printconn. intermitt. |
|---|---|---|
| 68-88 | 201-033<br>215-006 | 201-040<br>215-006 |
| 146-174 | 201-031<br>215-006 | 201-039<br>215-006 |
| 406-470 | 201-034<br>215-006 | 201-034<br>215-006 |

TONE UNITS: 5 tone encoder/decoder 219-052, CCIR tones
5 tone encoder/decoder 219-053, ZVEI tones

# REMOTE CONTROLBOX FOR AP 2000 BASE STATION

## 202-021




APPLICATION: For operation of AP 2000 main unit as base station. The last 2 digits of a 5 tone sequence can be programmed by means of the keyboard. The remote controlbox have built-in microphone and display and the feature of automatically transmit the repeat tone (R).

BUTTONS:

0-9: Buttons for entering the last 2 digits of the Tx code.

CLEAR: Clears the stored selective transmitter code.

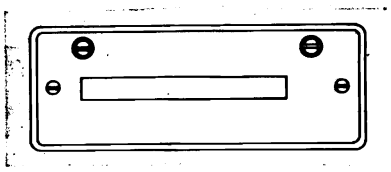
SEL Tx: Button for tone modulation, indicated by the sel Tx lamp and the key lamp.

SEL Rx: The button switches the lamp on/of. When the lamp is lightening the loudspeaker and the key are blocked. When receiving an ID-call the lamp is flashing.

ALARM: When the lamp is lightening an internal relay is switched when an ID-call is received. An external alarm unit can be connected to this relay.

KEY: Depress for talk.

Remote controlbox 202-021 must be operated together with installation kit no. 209-015.



Controlbox 202-021 and front section 206-039 fits to the follwing units/mountings.

| Frekv. MHz. | 6W m. printconn. | 25W/UHF10W m. printconn. intermitt. |
|---|---|---|
| 68-88 | 201-033<br>215-006 | 201-040<br>215-006 |
| 146-174 | 201-031<br>215-006 | 201-039<br>215-006 |
| 406-470 | 201-034<br>215-006 | 201-034<br>215-006 |

TONE UNITS: 5 tone encoder/decoder 219-048, CCIR tones
5 tone encoder/decoder 219-049, ZVEI tones

# REMOTE CONTROL BOX FOR BASESTATION

## 202-020. PRINT BOARDS C18A1/C19A1
## 202-021. PRINT BOARDS C18A2/C19A2

GENERAL DESCRIPTION.

The remote control boxes are designed for operation of a standard AP 2000 as basestation.
Two types are available, 202-020 with three selectable tones and 202-021 with two selectable tones. The remote control boxes have built-in microphone and the feature of automatically transmitting the repeat tone (R), if two identical tones are in succession. The remote control boxes must be operated together with the 5 tone encoder/decoder 219-048/052, CCIR tones or 219-049/053, ZVEI tones and control circuit C17A, which is mounted in the radio unit. This means that the first two or the three digits in the Tx code are fixed.
In the Rx mode a fixed ID call is received, indicated by the acoustic alarm in the loudspeaker and the flashing "sel.Rx" lamp. The ID call includes automatic transponding consisting of the ID code. The flashing of the selective lamp is cancelled by depressing the "sel.Rx" switch and the loudspeaker is opened. When using ZVEI tone units the blocking functions are cancelled too by activating the key. In stand by position the loudspeaker and the key functions are blocked by depressing the sel Rx switch once, indicated by the lightening of the sel Rx lamp.
In the Tx mode the last two or three digits are programmed by operating the keyboard. The callnumber is indicated on the display on the front. When transmitting the call number by depressing the sel Tx switch, the keyboard is blocked, and the clear button must be depressed before a new keyboard entry can be made.

Activating the alarm switch, indicated by the alarm lamp, an internal relay is turned on when the receiver code (ID) is received. An external alarm unit can be connected to this relay.

TECHNICAL DESCRIPTION

Print boards: C18A1/C19A1 - control circuit C17A1
C18A2/C19A2 - control circuit C17A1

IC4 print board C18A scans the keyboard by means of an internal oscillator and contains a debouncing circuit. By depressing on of the keyboard switches 0 - 9 the corresponding BCD-code appears at the outputs of IC4 pin 14, 15, 16 and 17. Furthermore the data available output pin 12 goes to a high level and through IN5 the information of IC4 is clocked into the first register position of the two dual 4-bit static shift registers IC2 and IC3. The data available output is delayed about 70 u sec. by R14 and C3. When the second keyboard entry is made the information at the D- inputs of IC2 and IC3 pin 7 and 15 are shifted to the first register, and all the data in the registers are shifted one position to the left by the high going level at the data available output pin 12 IC4.

The display section print board C19A is through two(printboard C18A2) respectively three (printboard C18A1) BCD to 7-segment decoder/driver IC9, IC10 and IC13 connected to the outputs of IC2 and IC3, displaying the stored selective transmitter code.

Having depressed the last digit of the call number, the first digit is represented at the outputs of IC1 (tristate buffer) and hence at the inputs of IC1 printboard C17A1 located in the radio unit. IC1 is a BCD to 1- of -16 decoder, and the outputs are through Q1 - Q11 connected to the tapped coil of the tone unit. In stand by position the outputs are enabled to a low level by the logical 1 on at pin 23.

Depressing the sel Tx button FF1 (print board C18A) is set, switching the outputs of IC4 for the tri state mode. The BCD-code of the first tone will now be represented at the D-inputs of IC2 and IC3 pin 7 and 15 through R9, R10, R11 and

R12. Furthermore the tone encoder is started and having transmitted the two first fixed tones (202-020) the low level at pin 23 IC1 print board C17A cancelles the blocking of the outputs, and the third tone is transmitted corresponding to the data at the inputs. When the third tone has ended, the high going level at pin 5 IN1 through IN3 shifts all the data in the registers of IC2 and IC3 one position to the left on the low to high transition at pin 1 and 9, and the fourth tone is transmitted. Similarly the fifth tone is transmitted and hence IC2 and IC3 returns to their initial position before the sel Tx switch was depressed.

Before a new keyboard entry can be accomplished FF1, IC2 and IC3 must be cleared by activating the clear switch.

IC6 is a 4-bit comparator comparing the second and the third digit (for system 202-020) respectively the third and fourth digit (for system 202-021) of the call number, in order to transmit the repeat tone (R) if the first selectable and the previous tone are identical. Hence IC6 pin 10, 12, 13 and 15 must be stapped to the number of the last fixed tone.

Transmitting a call number for example 61145 (202-020) pin 6 IC6 will be high, and having ended the second tone the low going level at pin 5 IN1 through C20, R16 and R17 will be allowed to set FF2, switching the tri state hex buffer IC1 for the tri-state mode. By means of the pull-up resistors R5-R8 the inputs of IC1 (print board C17A) are high, switching Q11 in the on-position, and tone (R) of the tapped coil is activated.

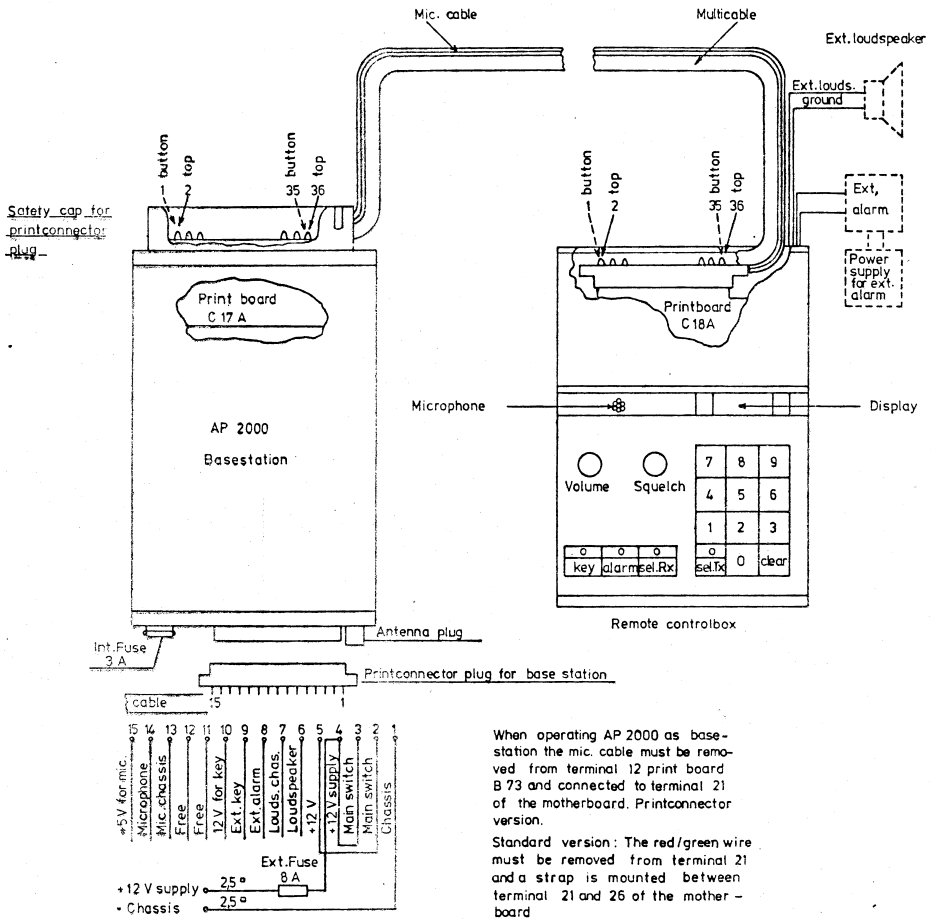
Similarly IC5 compares the third / fourth and the fourth/fifth digit (202-020). If for example the third and the fourth digit are the same, pin 6 IC5 goes to a high level, and having transmitted the third tone, the high going level at pin 10 IN3 clocks FF2 setting IC1 in the tri state mode, and the repeate tone (R)

is transmitted.

C11, R28, D7 and D8 reset FF1, FF2, IC2 and IC3 whenever the remote controlbox is turned on.

The alarm of/off circuit consist of IC12, Q2 and Q3. By depressing the alarm switch once the low level at pin 2 cancelles the blocking of Q2 and the relay will be switched by receiving an ID-call.

Diagrams: 202-020, drawing number: 79027-1E2
202-021, drawing number: 79026-1E2
Control circuit C17A1, drawing number: 79028-1E2
Cable wiring, drawing number: 79029-2E2
Tone units, drawing number: 78132-2E2




When operating AP 2000 as basestation the mic. cable must be removed from terminal 12 print board B 73 and connected to terminal 21 of the motherboard. Printconnector version.

Standard version: The red/green wire must be removed from terminal 21 and a strap is mounted between terminal 21 and 26 of the mother-board

Consult the main wiring diagrams of a 2m, 4m or a UHF manual.

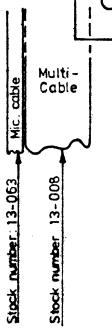
For installation of AP 2000 base station with external PA-stage consult a 2m, 4m or a UHF manual, drawing number 75058-2E2.

Printconnector plug

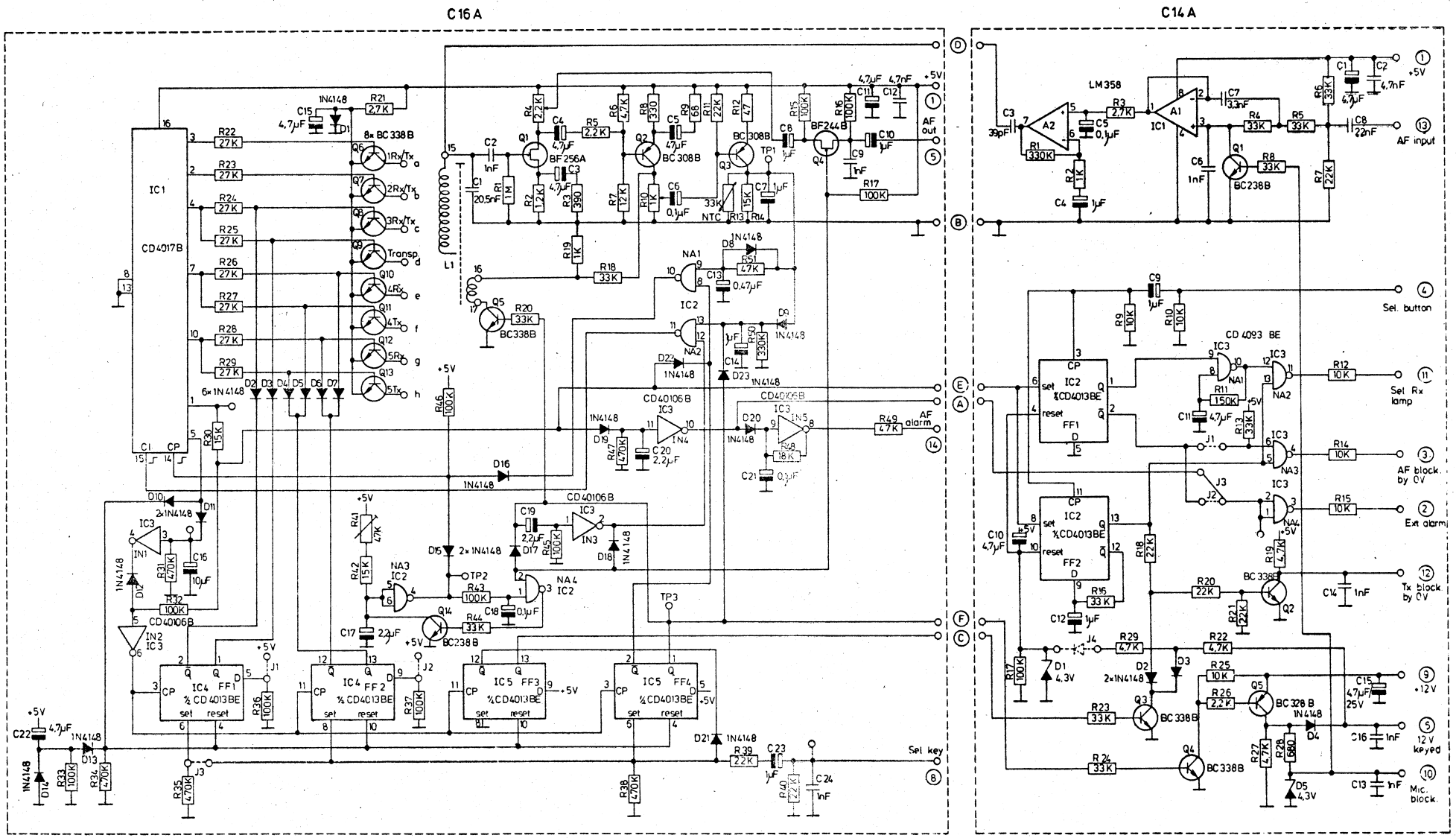
| Function | Colour | No | No | Colour | Function |
|---|---|---|---|---|---|
| (Ext. loudspeaker) loudspeaker | blue/brown | 2 | 1 | blue/grey | (Ext. loudspeker) loudspeaker |
| mic.chassis | shield (mic. kabel) | 4 | 3 | red/yellow | +12V for lamps |
| +5V for mic. | red (mic.kabel) | 6 | 5 | white (mic kabel) | Microphone |
| drive for alarm | brown | 8 | 7 | blue/green - blue/yellow | +12V keyed |
| +12 V supply | red/brown | 10 | 9 | blue/white | sel.Rx button |
| " | red/grey | 12 | 11 | red/blue | sel.key |
| ext. alarm I | | 14 | 13 | red | Free |
| " II | | 16 | 15 | red/white | key lamp |
| " III | | 18 | 17 | red/black | squelch |
| sel.key lamp | blue | 20 | 19 | red/green | sel. Rx lamp |
| volume | green | 22 | 21 | light green | 3.digit |
| 1.digit | yellow | 24 | 23 | pink | 2.digit |
| ground | black | 26 | 25 | blue/black | ground |
| 1 | white | 28 | 27 | orange | 2 |
| 8 | grey | 30 | 29 | violet | 4 |
| Free | | 32 | 31 | | Free |
| " | | 34 | 33 | | " |
| " | | 36 | 35 | | " |

Ext. alarm I, II and III:

An external alarm can be connected. In stand-by position point I and II are connected. When activating the alarmbutton, indicated by the lightening of the LED, point II and III are connected, when an ID-call is received. The external alarm must be connected to the plug of the remote controlbox Max load, 1A/25 V




| Rettet: | Cablewiring for remote controlbox 202-020/021 and AP 2000 basestation | Tegn.: | Kontr.: 13-02-79 LD |
|---|---|---|---|
| | | Stykl. nr.: | |
| | AP-RADIOTELEFON A/S | Tegn. nr.: | 79029 - 2E2 |




Tone 3 Tone 4 and 5 Transpond Key

| Tone no. | 75425-4E2 | 77118-4E2 |
|---|---|---|
| 0 | 970 | 970 |
| 1 | 1124 | 1060 |
| 2 | 1197 | 1160 |
| 3 | 1276 | 1270 |
| 4 | 1358 | 1400 |
| 5 | 1446 | 1530 |
| 6 | 1540 | 1670 |
| 7 | 1640 | 1830 |
| 8 | 1747 | 2000 |
| 9 | 1860 | 2200 |
| 10 | 1981 | 2400 |
| 11 | 2110 | 2600 |
| 12 | 2403 | 2900 |

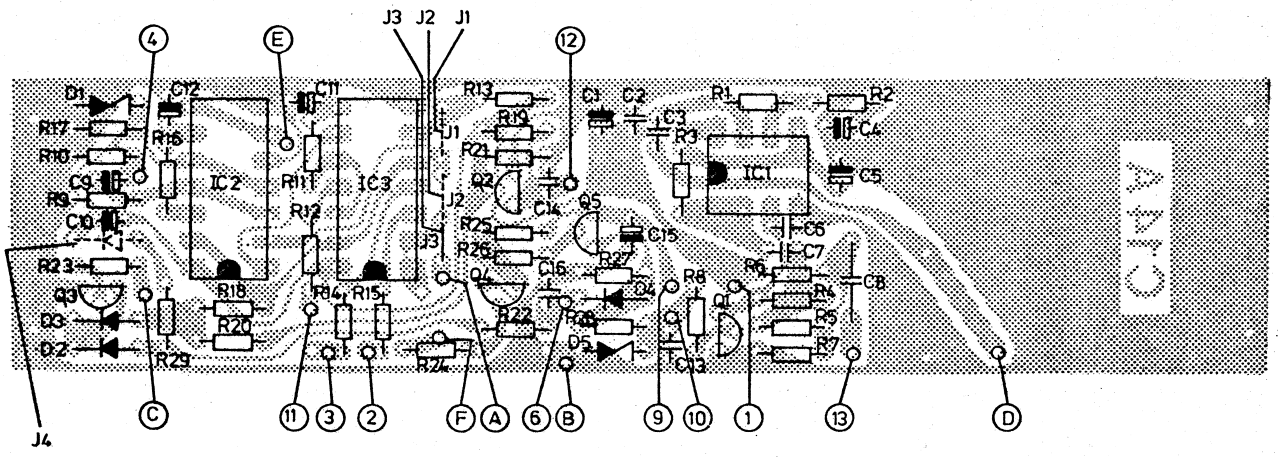
The tone units are delivered as standard, with automatic transponding, including the ID-code.

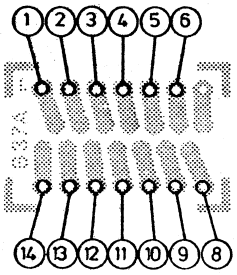
If automatic transponding is not required, it can be cancelled by removing D11 and R32, and short-circuit D12. Print board C 16 A.

| Stock no. | Printboards | Tones | L1 | J4-C14A | Transponding ID-code | Transponding Tx-code | R41 (C16A) is adjusted to: | Function |
|---|---|---|---|---|---|---|---|---|
| 219-044 | C16A1/C14A1 | CCIR | 75425-4E2 | | | J2/C16A | 100 m sec. | Fixed code |
| 219-045 | C16A4/C14A2 | ZVEI | 77118-4E2 | 1N4148 mounted | | J2/C16A | 70 m sec | Fixed code |
| 219-048 | C16A7/C14A1 | CCIR | 75425-4E2 | | | J2/C16A | 100 m sec. | Tone 4 and 5 selectable Also for base station |
| 219-049 | C16A8/C14A2 | ZVEI | 77118-4E2 | 1N4148 mounted | | J2/C16A | 70 m sec. | Tone 4 and 5 selectable Also for base station |
| 219-050 | C16A9/C14A1 | CCIR | 75425-4E2 | | J3/C16A | J1-J2-J3/C16A | 100 m sec. | Tone 3 and 5 selectable |
| 219-051 | C16A10/C14A2 | ZVEI | 77118-4E2 | 1N4148 mounted | J3/C16A | J1-J2-J3/C16A | 70 m sec. | Tone 3 and 5 selectable |
| 219-052 | C16A11/C14A1 | CCIR | 75425-4E2 | | J3/C16A | J1-J2-J3/C16A | 100 m sec | Tone 3,4 and 5 selectable For base station |
| 219-053 | C16A12/C14A2 | ZVEI | 77118-4E2 | 1N4148 mounted | J3/C16A | J1-J2-J3/C16A | 70 m sec | Tone 3,4 and 5 selectable For base station |

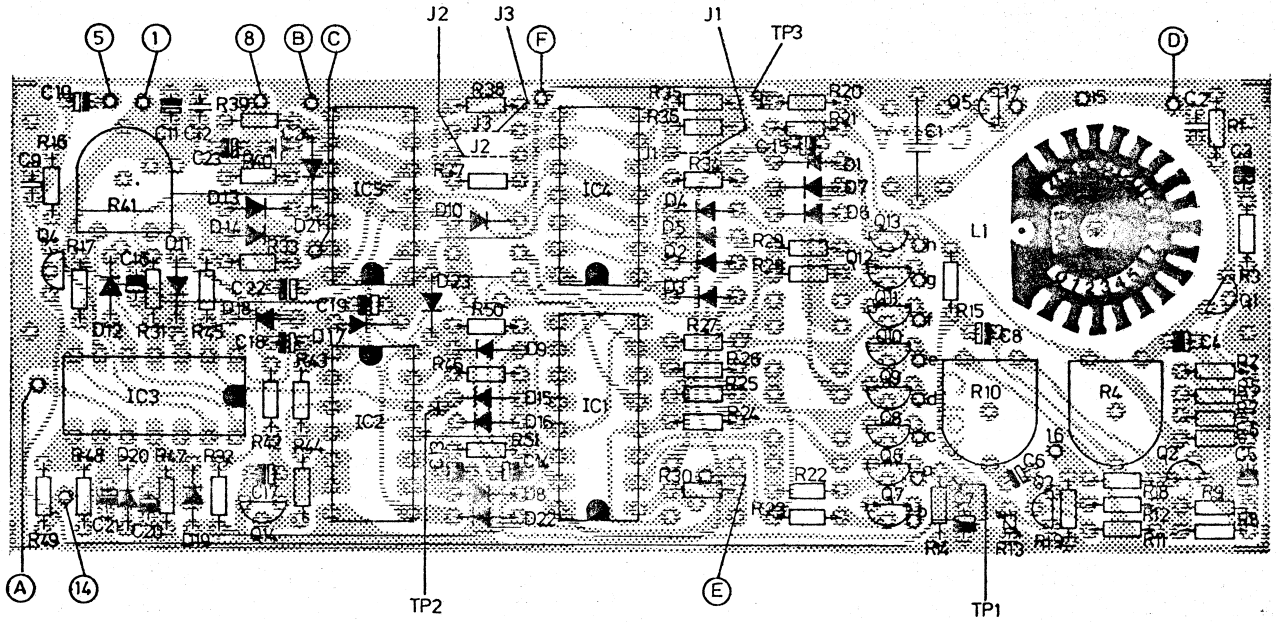
| | | | |
|---|---|---|---|
| Rettet: 20-12-78 LD | 5-tone encoder/decoder with automatic transponding. 219-044/045/048/049/050/051/052/053 | Tegn.: 21-9-78 AMC | Kontr.: 27-8-78 LD |
| | | Stykl. nr.: | |
| | AP·RADIOTELEFON A/S | Tegn. nr.: 78132-2E2 | |

C14 A



B37A




C16 A

| | | | |
|---|---|---|---|
| Rettet: | 5-tone encoder/decoder with automatic transponding | Tegn.: 3-10-78 AMC | Kontr.: 4-10-78 LD |
| | 219-044/045/048/049/050/051/052/053 | Stykl. nr.: | |
| | AP-RADIOTELEFON | Tegn. nr.: 78132-3E2 | |

# AP-RADIOTELEFON

| Nr. | Kode | Data |
|---|---|---|
| R1 | 13-310 | 330 KΩ 1/8W CR 16 |
| R2 | 13-283 | 1 KΩ " " |
| R3 | 13-288 | 2,7 KΩ " " |
| R4 | 13-300 | 33 KΩ " " |
| R5 | 13-300 | 33 KΩ " " |
| R6 | 13-300 | 33 KΩ " " |
| R7 | 13-299 | 22 KΩ " " |
| R8 | 13-300 | 33 KΩ " " |
| R9 | 13-295 | 10 KΩ " " |
| R10 | 13-295 | 10 KΩ " " |
| R11 | 13-308 | 150 KΩ " " |
| R12 | 13-295 | 10 KΩ " " |
| R13 | 13-300 | 33 KΩ " " |
| R14 | 13-295 | 10 KΩ " " |
| R15 | 13-295 | 10 KΩ " " |
| R16 | 13-300 | 33 KΩ " " |
| R17 | 13-306 | 100 KΩ " " |
| R18 | 13-299 | 22 KΩ " " |
| R19 | 13-291 | 4,7 KΩ " " |
| R20 | 13-299 | 22 KΩ " " |
| R21 | 13-299 | 22 KΩ " " |
| R22 | 13-291 | 22 KΩ " " |
| R23 | 13-300 | 33 KΩ " " |
| R24 | 13-300 | 33 KΩ " " |
| R25 | 13-295 | 10 KΩ " " |
| R26 | 13-287 | 2,2 KΩ " " |
| R27 | 13-291 | 4,7 KΩ " " |
| R28 | 13-281 | 680 Ω " " |
| R29 | 13-291 | 4,7 KΩ " " |
| C1 | 11-504 | 4,7 µF/10V tant. |
| C2 | 11-416 | 4,7 nF ker. |
| C3 | 11-393 | 39 pF " |
| C4 | 11-502 | 1 µF/35V tant. |
| C5 | 11-500 | 0,1 µF/35V " |
| C6 | 11-409 | 1 nF ker. |
| C7 | 11-414 | 3,3 nF " |
| C8 | 11-489 | 22 nF MKH |
| C9 | 11-502 | 1 µF/35V tant. |
| C10 | 11-504 | 4,7 µF/10V " |
| C11 | 11-504 | 4,7 µF/10V " |
| C12 | 11-502 | 1 µF/35V " |
| C13 | 11-409 | 1 nF ker. |
| C14 | 11-409 | 1 nF " |
| C15 | 11-505 | 4,7 µF/25V tant. |
| C16 | 11-409 | 1 nF ker. |
| D1 | 04-045 | BZX 83-C4V3 |
| D2 | 04-062 | 1N4148 |
| D3 | 04-062 | 1N4148 |
| D4 | 04-062 | 1N4148 |
| D5 | 04-045 | BZX 83-C4V3 |
| IC1 | 09-080 | LM 358 |
| IC2 | 09-074 | CD 4013AE |
| IC3 | 09-072 | CD 4093BE |
| Q1 | 19-117 | BC 238 BPL |
| Q2 | 19-085 | BC 338 BPL |
| Q3 | 19-085 | BC 338 BPL |
| Q4 | 19-085 | BC 338 BPL |
| Q5 | 19-082 | BC 328 BPL |

Control circuit for C 16 A.
Print board C 14 A1
Tilhører tegn. nr.: 78132-2E2

Rettet:

Tegn.:

Kontr.:

Stykl. nr.: 78132-4S2

# AP-RADIOTELEFON

| Nr. | Kode | Data |
|---|---|---|
| C22 | 11-504 | 4,7 µF/10V tant. |
| C23 | 11-502 | 1 µF/35V " |
| C24 | 11-409 | 1 nF ker. |
| | | |
| D1 | 04-062 | 1N4148 |
| D2 | 04-062 | 1N4148 |
| D3 | 04-062 | 1N4148 |
| D4 | 04-062 | 1N4148 |
| D5 | 04-062 | 1N4148 |
| D6 | 04-062 | 1N4148 |
| D7 | 04-062 | 1N4148 |
| D8 | 04-062 | 1N4148 |
| D9 | 04-062 | 1N4148 |
| D10 | 04-062 | 1N4148 |
| D11 | 04-062 | 1N4148 |
| D12 | 04-062 | 1N4148 |
| D13 | 04-062 | 1N4148 |
| D14 | 04-062 | 1N4148 |
| D15 | 04-062 | 1N4148 |
| D16 | 04-062 | 1N4148 |
| D17 | 04-062 | 1N4148 |
| D18 | 04-062 | 1N4148 |
| D19 | 04-062 | 1N4148 |
| D20 | 04-062 | 1N4148 |
| D21 | 04-062 | 1N4148 |
| D22 | 04-062 | 1N4148 |
| D23 | 04-062 | 1N4148 |
| | | |
| Q1 | 19-113 | BF 256 A |
| Q2 | 19-084 | BC 308 PL |
| Q3 | 19-084 | BC 308 PL |
| Q4 | 19-106 | BF 244 B |
| Q5 | 19-085 | BC 338 B |
| Q6 | 19-085 | BC 338 B |
| Q7 | 19-085 | BC 338 B |
| Q8 | 19-085 | BC 338 B |
| Q9 | 19-085 | BC 338 B |

| Nr. | Kode | Data |
|---|---|---|
| Q10 | 19-085 | BC 338 B |
| Q11 | 19-085 | BC 338 B |
| Q12 | 19-085 | BC 338 B |
| Q13 | 19-085 | BC 338 B |
| Q14 | 19-117 | BC 238 B |
| | | |
| IC1 | 09-086 | MC 14017 B |
| IC2 | 09-072 | CD 4093 BE |
| IC3 | 09-037 | CD 40106 BE |
| IC4 | 09-074 | CD 4013 AE |
| IC5 | 09-074 | CD 40 13 AE |
| | | |
| L1 | 18-677 | 75425-4E2 |
| | 18-681 | 77118-4E2 |

5-tone Rx/Tx with automatic transp.
C16 A1/A4/A7/A8/A9/A10/A11/A12
Tilhører tegn. nr.: 78132-2E2

Tegn.:
Kontr.:

Stykl. nr.: 78132-4S2

# AP-RADIOTELEFON

| Nr. | Kode | Data | Nr. | Kode | Data |
|---|---|---|---|---|---|
| R1 | 13-312 | 1 MΩ 1/8W CR 16 | R37 | 13-306 | 100 KΩ 1/8W CR 16 |
| R2 | 13-284 | 1,2 KΩ " " | R38 | 13-315 | 470 KΩ " " |
| R3 | 13-278 | 390 Ω " " | R39 | 13-299 | 22 KΩ " " |
| R4 | 19-253 | 2,2 KΩ Trim.ligg. | R40 | 13-299 | 22 KΩ " " |
| R5 | 13-287 | 2,2 KΩ 1/8W CR 16 | R41 | 19-261 | 47 KΩ Trim.ligg. |
| R6 | 13-291 | 4,7 KΩ " " | R42 | 13-297 | 15 KΩ 1/8W CR 16 |
| R7 | 13-296 | 12 KΩ " " | R43 | 13-306 | 100 KΩ " " |
| R8 | 13-277 | 330 Ω " " | R44 | 13-300 | 33 KΩ " " |
| R9 | 13-269 | 68 Ω " " | R45 | 13-306 | 100 KΩ " " |
| R10 | 19-253 | 1 KΩ Trim.ligg. | R46 | 13-306 | 100 KΩ " " |
| R11 | 13-299 | 22 KΩ 1/8W CR 16 | R47 | 13-315 | 470 KΩ " " |
| R12 | 13-267 | 47 Ω " " | R48 | 13-298 | 18 KΩ " " |
| R13 | 13-671 | 33 KΩ NTC | R49 | 13-302 | 47 KΩ " " |
| R14 | 13-297 | 15 KΩ 1/8W CR 16 | R50 | 13-310 | 330 KΩ " " |
| R15 | 13-306 | 100 KΩ " " | R51 | 13-302 | 47 KΩ " " |
| R16 | 13-306 | 100 KΩ " " | | | |
| R17 | 13-306 | 100 KΩ " " | C1 | 11-651 | 20,5 nF styr. |
| R18 | 13-300 | 33 KΩ " " | C2 | 11-409 | 1 nF ker. |
| R19 | 13-283 | 1 KΩ " " | C3 | 11-504 | 4,7 µF/10V tant. |
| R20 | 13-300 | 33 KΩ " " | C4 | 11-504 | 4,7 µF/10V " |
| R21 | 13-288 | 2,7 KΩ " " | C5 | 11-509 | 47 µF/6,3V " |
| R22 | 13-313 | 27 KΩ " " | C6 | 11-500 | 0,1 µF/35V " |
| R23 | 13-313 | 27 KΩ " " | C7 | 11-502 | 1 µF/25V " |
| R24 | 13-313 | 27 KΩ " " | C8 | 11-502 | 1 µF/25V " |
| | | | C9 | 11-409 | 1 nF ker. |
| R25 | 13-313 | 27 KΩ " " | C10 | 11-502 | 1 µF/25V tant. |
| R26 | 13-313 | 27 KΩ " " | C11 | 11-504 | 4,7 µF/10V " |
| R27 | 13-313 | 27 KΩ " " | C12 | 11-416 | 4,7 nF ker. |
| R28 | 13-313 | 27 KΩ " " | C13 | 11-501 | 0,47 µF/35V tant. |
| R29 | 13-313 | 27 KΩ " " | C14 | 11-502 | 1 µF/25V " |
| R30 | 13-297 | 15 KΩ " " | C15 | 11-504 | 4,7 µF/10V " |
| R31 | 13-315 | 470 KΩ " " | C16 | 11-506 | 10 µF/25V " |
| R32 | 13-306 | 100 KΩ " " | C17 | 11-503 | 2,2 µF/25V " |
| R33 | 13-306 | 100 KΩ " " | C18 | 11-500 | 0,1 µF/35V " |
| R34 | 13-315 | 470 KΩ " " | C19 | 11-503 | 2,2 µF/25V " |
| R35 | 13-315 | 470 KΩ " " | C20 | 11-503 | 2,2 µF/25V " |
| R36 | 13-306 | 100 KΩ " " | C21 | 11-500 | 0,1 µF/35V " |

5-tone Rx/Tx with automatic transp.
C 16 A1/A4/A7/A8/A9/A10/A11/A12
Tilhører tegn. nr.: 78132-2E2

Tegn.:
Kontr.:

Stykl. nr.: 78132-4S2

# AP-RADIOTELEFON

| Nr. | Kode | Data |
|---|---|---|
| R1 | 13-310 | 330 KΩ 1/8W CR 16 |
| R2 | 13-283 | 1 KΩ " " |
| R3 | 13-288 | 2,7 KΩ " " |
| R4 | 13-300 | 33 KΩ " " |
| R5 | 13-300 | 33 KΩ " " |
| R6 | 13-300 | 33 KΩ " " |
| R7 | 13-299 | 22 KΩ " " |
| R8 | 13-300 | 33 KΩ " " |
| R9 | 13-295 | 10 KΩ " " |
| R10 | 13-295 | 10 KΩ " " |
| R11 | 13-308 | 150 KΩ " " |
| R12 | 13-295 | 10 KΩ " " |
| R13 | 13-300 | 33 KΩ " " |
| R14 | 13-295 | 10 KΩ " " |
| R15 | 13-295 | 10 KΩ " " |
| R16 | 13-300 | 33 KΩ " " |
| R17 | 13-306 | 100 KΩ " " |
| R18 | 13-299 | 22 KΩ " " |
| R19 | 13-291 | 4,7 KΩ " " |
| R20 | 13-299 | 22 KΩ " " |
| R21 | 13-299 | 22 KΩ " " |
| R22 | 13-291 | 22 KΩ " " |
| R23 | 13-300 | 33 KΩ " " |
| R24 | 13-300 | 33 KΩ " " |
| R25 | 13-295 | 10 KΩ " " |
| R26 | 13-287 | 2,2 KΩ " " |
| R27 | 13-291 | 4,7 KΩ " " |
| R28 | 13-281 | 680 Ω " " |
| R29 | 13-291 | 4,7 KΩ " " |
| C1 | 11-504 | 4,7 µF/10V tant. |
| C2 | 11-416 | 4,7 nF ker. |
| C3 | 11-393 | 39 pF " |
| C4 | 11-502 | 1 µF/35V tant. |
| C5 | 11-500 | 0,1 µF/35V " |
| C6 | 11-409 | 1 nF ker. |
| C7 | 11-414 | 3,3 nF " |

| Nr. | Kode | Data |
|---|---|---|
| C8 | 11-489 | 22 nF MKH |
| C9 | 11-502 | 1 µF/35V tant. |
| C10 | 11-504 | 4,7 µF/10V " |
| C11 | 11-504 | 4,7 µF/10V " |
| C12 | 11-502 | 1 µF/35V " |
| C13 | 11-409 | 1 nF ker. |
| C14 | 11-409 | 1 nF " |
| C15 | 11-505 | 4,7 µF/25V tant. |
| C16 | 11-409 | 1 nF ker. |
| D1 | 04-045 | BZX 83-C4V3 |
| D2 | 04-062 | 1N4148 |
| D3 | 04-062 | 1N4148 |
| D4 | 04-062 | 1N4148 |
| D5 | 04-045 | BZX 83-C4V3 |
| J4 | 04-062 | 1N4148 |
| IC1 | 09-080 | LM 358 |
| IC2 | 09-074 | CD 4013AE |
| IC3 | 09-072 | CD 4093BE |
| Q1 | 19-117 | BC 238 BPL |
| Q2 | 19-085 | BC 338 BPL |
| Q3 | 19-085 | BC 338 BPL |
| Q4 | 19-085 | BC 338 BPL |
| Q5 | 19-082 | BC 328 BPL |

Control circuit for C 16 A
Print board C 14 A2
Tilhører tegn. nr.: 78132-2E2

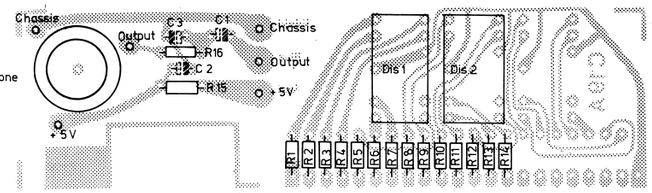
Rettet:

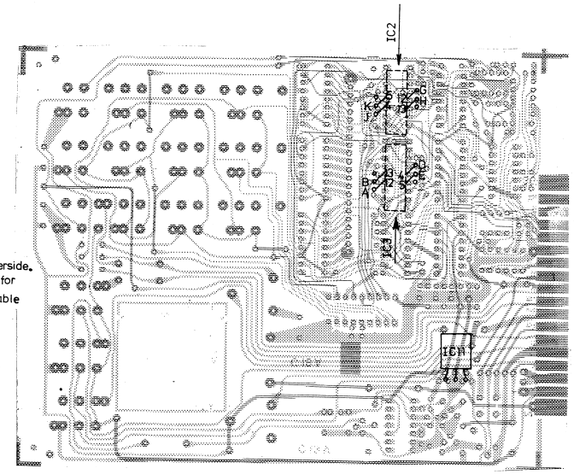
Tegn.:

Kontr.:

Stykl. nr.: 78132-4S2

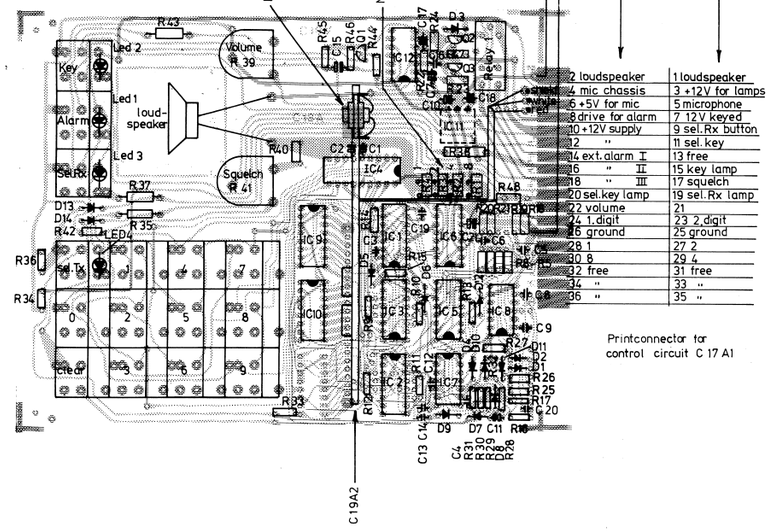
# C 19 A2



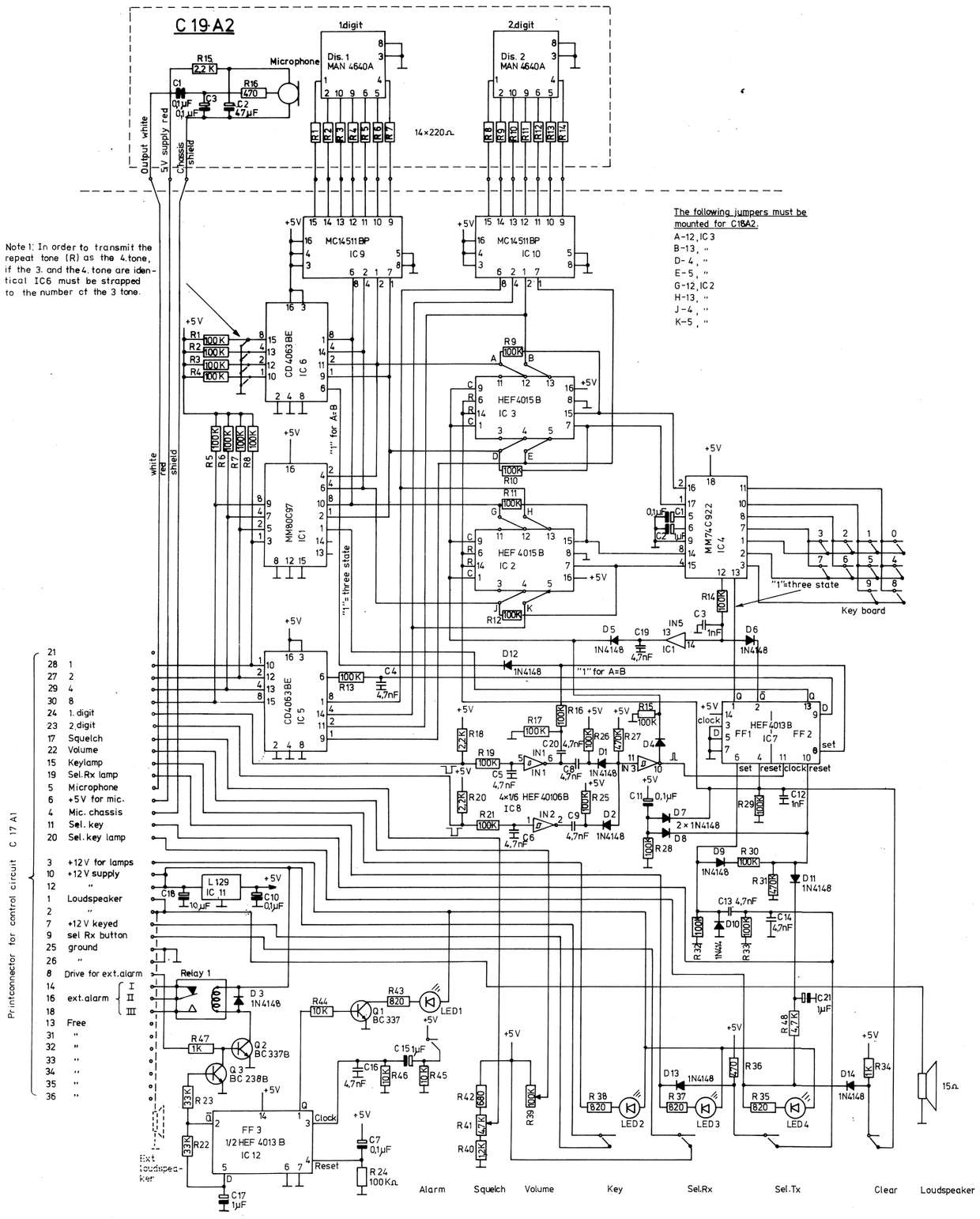

Viewed from solderside. Jumpers mounted for C 18 A2, 2 selectable tones.

# C 18 A2




| | |
|---|---|
| 2 loudspeaker | 1 loudspeaker |
| 4 mic. chassis | 3 +12V for lamps |
| 6 +5V for mic | 5 microphone |
| 8 drive for alarm | 7 12 V keyed |
| 10 +12V supply | 9 sel.Rx button |
| 12 " | 11 sel. key |
| 14 ext.alarm I | 13 free |
| 16 " II | 15 key lamp |
| 18 " III | 17 squelch |
| 20 sel.key lamp | 19 sel.Rx lamp |
| 22 volume | 21 |
| 24 1.digit | 23 2.digit |
| 26 ground | 25 ground |
| 28 1 | 27 2 |
| 30 8 | 29 4 |
| 32 free | 31 free |
| 34 " | 33 " |
| 36 " | 35 " |

Printconnector for control circuit C 17 A1




# C 18 A2

| | | | |
|---|---|---|---|
| Rettet: | Remote controlbox for AP 2000 Base station, 202-021 two selectable tones. Print boards C 18 A2/C19A2 | Tegn.: | Kontr.: 13-2-79 LD |
| | | Stykl. nr.: | |
| | AP-RADIOTELEFON A/S | Tegn. nr.: | 79026-1E2 |

# AP-RADIOTELEFON

| Nr. | Kode | Data | Nr. | Kode | Data |
|---|---|---|---|---|---|
| R1 | 13-306 | 100 KΩ 1/8W CR16 | R37 | 13-438 | 820 Ω 1/2W CR37 |
| R2 | 13-306 | 100 KΩ " " | R38 | 13-438 | 820 Ω " " |
| R3 | 13-306 | 100 KΩ " " | R39 | 16-025 | 100 KΩ Lin. |
| R4 | 13-306 | 100 KΩ " " | R40 | 13-284 | 1,2 KΩ 1/8W CR16 |
| R5 | 13-306 | 100 KΩ " " | R41 | 16-024 | 4,7 KΩ Pos.log. |
| R6 | 13-306 | 100 KΩ " " | R42 | 13-281 | 680 Ω 1/8W CR16 |
| R7 | 13-306 | 100 KΩ " " | R43 | 13-438 | 820 Ω 1/2W CR37 |
| R8 | 13-306 | 100 KΩ " " | R44 | 13-295 | 10 KΩ 1/8W CR16 |
| R9 | 13-306 | 100 KΩ " " | R45 | 13-295 | 10 KΩ " " |
| R10 | 13-306 | 100 KΩ " " | R46 | 13-295 | 10 KΩ " " |
| R11 | 13-306 | 100 KΩ " " | R47 | 13-283 | 1 KΩ " " |
| R12 | 13-306 | 100 KΩ " " | R48 | 13-291 | 4,7 KΩ " " |
| R13 | 13-306 | 100 KΩ " " | | | |
| R14 | 13-306 | 100 KΩ " " | | | |
| R15 | 13-306 | 100 KΩ " " | | | |
| R16 | 13-306 | 100 KΩ " " | | | |
| R17 | 13-306 | 100 KΩ " " | C1 | 11-500 | 0,1 µF/35 V Tant |
| R18 | 13-287 | 2,2 KΩ " " | C2 | 11-503 | 1 µF/35 V " |
| R19 | 13-306 | 100 KΩ " " | C3 | 11-409 | 1 nF Ker. |
| R20 | 13-287 | 2,2 KΩ " " | C4 | 11-416 | 4,7 nF " |
| R21 | 13-306 | 100 KΩ " " | C5 | 11-416 | 4,7 nF " |
| R22 | 13-300 | 33 KΩ " " | C6 | 11-416 | 4,7 nF " |
| R23 | 13-300 | 33 KΩ " " | C7 | 11-500 | 0,1 µF/35 V Tant |
| R24 | 13-306 | 100 KΩ " " | C8 | 11-416 | 4,7 nF Ker. |
| R25 | 13-306 | 100 KΩ " " | C9 | 11-416 | 4,7 nF " |
| R26 | 13-306 | 100 KΩ " " | C10 | 11-500 | 0,1 µF/35 V Tant |
| R27 | 13-315 | 470 KΩ " " | C11 | 11-500 | 0,1 µF/35 V Tant |
| R28 | 13-306 | 100 KΩ " " | C12 | 11-409 | 1 nF Ker. |
| R29 | 13-306 | 100 KΩ " " | C13 | 11-416 | 4,7 nF " |
| R30 | 13-306 | 100 KΩ " " | C14 | 11-416 | 4,7 nF " |
| R31 | 13-315 | 470 KΩ " " | C15 | 11-502 | 1 µF/35V Tant |
| R32 | 13-306 | 100 KΩ " " | C16 | 11-416 | 4,7 nF Ker. |
| R33 | 13-306 | 100 KΩ " " | C17 | 11-502 | 1 µF/35 V Tant |
| R34 | 13-283 | 1 KΩ " " | C18 | 11-506 | 10 µF/25 V " |
| R35 | 13-438 | 820 Ω " " | C19 | 11-416 | 4,7 nF Ker. |
| R36 | 13-279 | 470 Ω " " | C20 | 11-416 | 4,7 nF Ker. |
| | | | C21 | 11-502 | 1 µF/35 V Tant |

Remote controlbox for AP 2000
base station, 202-021 Print C18 A2
Tilhører tegn. nr.: 79026-1E2

| Tegn.: | Stykl. nr.: |
|---|---|
| Kontr.: | 79026-4S2 |

# AP-RADIOTELEFON

| Nr. | Kode | Data | Nr. | Kode | Data |
|---|---|---|---|---|---|
| | | | REL1 | 17-056 | AE5612RS-12V |
| D1 | 04-062 | 1N4148 | | | |
| D2 | 04-062 | 1N4148 | | | |
| D3 | 04-062 | 1N4148 | | | |
| D4 | 04-062 | 1N4148 | | | |
| D5 | 04-062 | 1N4148 | | | |
| D6 | 04-062 | 1N4148 | | | |
| D7 | 04-062 | 1N4148 | | | |
| D8 | 04-062 | 1N4148 | | | |
| D9 | 04-062 | 1N4148 | | | |
| D10 | 04-062 | 1N4148 | | | |
| D11 | 04-062 | 1N4148 | | | |
| D12 | 04-062 | 1N4148 | | | |
| D13 | 04-062 | 1N4148 | | | |
| D14 | 04-062 | 1N4148 | | | |
| Q1 | 19-096 | BC337B | | | |
| Q2 | 19-096 | BC337B | | | |
| Q3 | 19-093 | BC238B | | | |
| IC1 | 09-082 | MM80C97N | | | |
| IC2 | 09-049 | HEF4015B | | | |
| IC3 | 09-049 | HEF4015B | | | |
| IC4 | 09-060 | MM746922 | | | |
| IC5 | 09-096 | CD4063BE | | | |
| IC6 | 09-096 | CD4063BE | | | |
| IC7 | 09-048 | HEF4013B | | | |
| IC8 | 09-037 | HEF40106B | | | |
| IC9 | 09-068 | MC14511BP | | | |
| IC10 | 09-068 | MC14511BP | | | |
| IC11 | 09-081 | L129 | | | |
| IC12 | 09-048 | HEF4013B | | | |

Remote controlbox for AP 2000
base-station, 202-021 Print C 18 A2
Tilhører tegn. nr.: 79026-1E2

Tegn.:

Kontr.:

Stykl. nr.:
79026-4S2

# AP-RADIOTELEFON

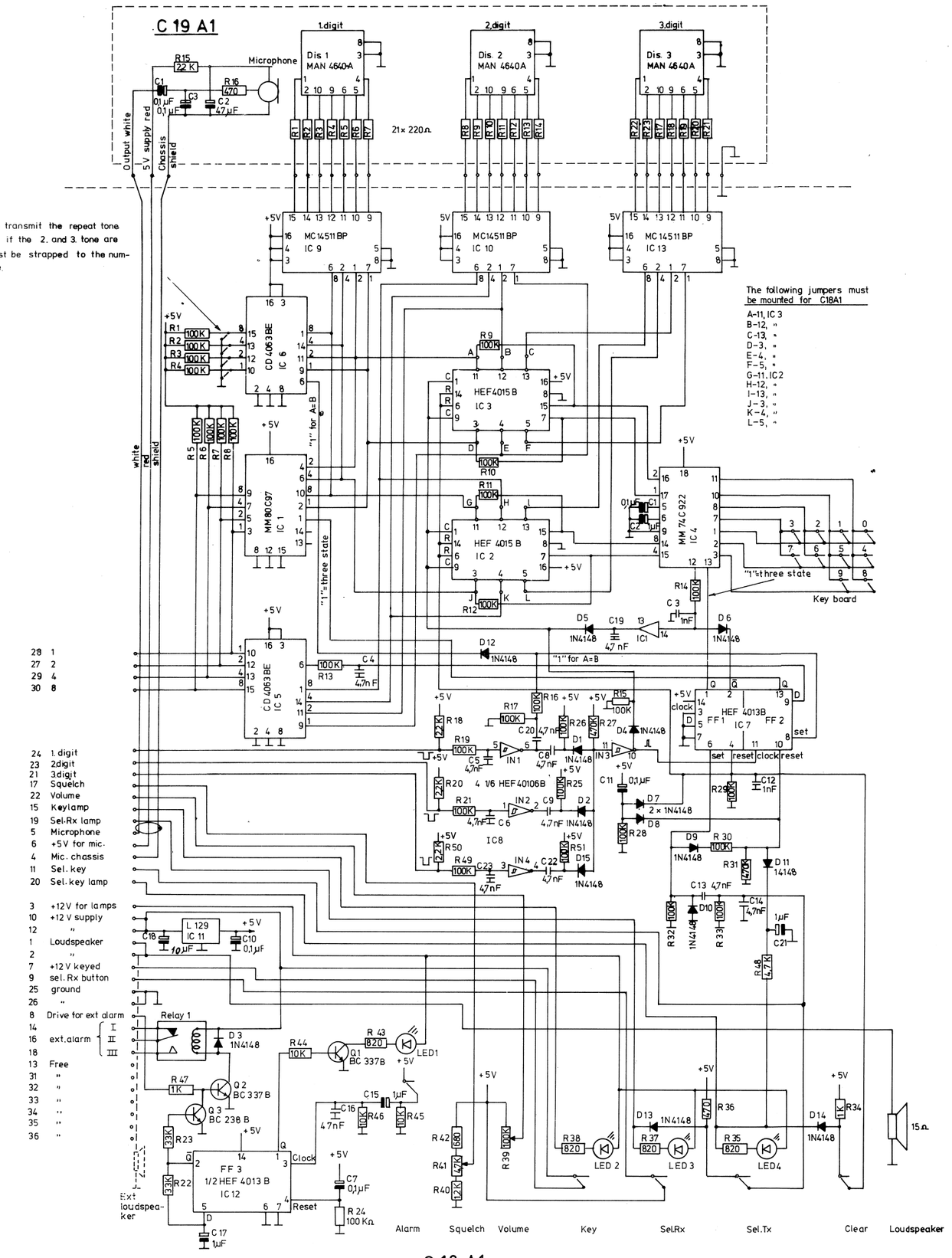
| Nr. | Kode | Data | Nr. | Kode | Data |
|---|---|---|---|---|---|
| R1 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R2 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R3 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R4 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R5 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R6 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R7 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R8 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R9 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R10 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R11 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R12 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R13 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R14 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R15 | 13-287 | 2,2 KΩ 1/8W CR16 | | | |
| R16 | 13-279 | 470 Ω 1/8W CR16 | | | |
| C1 | 11-500 | 0,1 µF/35V Tant. | | | |
| C2 | 11-509 | 47 µF/6,3V " | | | |
| C3 | 11-500 | 0,1 µF/35V " | | | |
| Dis 1 | 04-161 | MAN4640A | | | |
| Dis 2 | 04-161 | MAN4640A' | | | |

Remote controlbox for AP 2000
basestation 202-021 Print C 19 A2
Tilhører tegn. nr.: 79026-1E2

Tegn.:

Kontr.:

Stykl. nr.: 79026-4S2



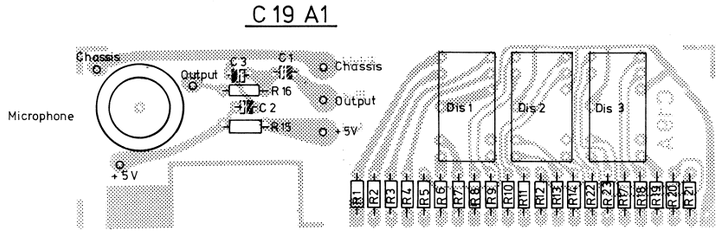

Note 1: In order to transmit the repeat tone (R) as the 3.tone, if the 2. and 3. tone are identical IC6 must be strapped to the number of the 2. tone.

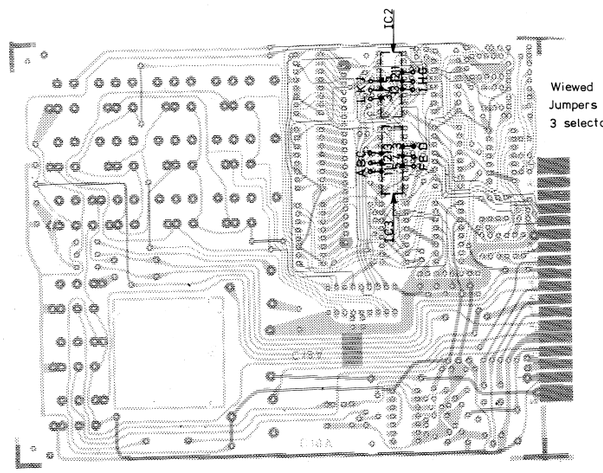
The following jumpers must be mounted for C18A1

A-11, IC 3
B-12, "
C-13, "
D-3, "
E-4, "
F-5, "
G-11, IC2
H-12, "
I-13, "
J-3, "
K-4, "
L-5, "

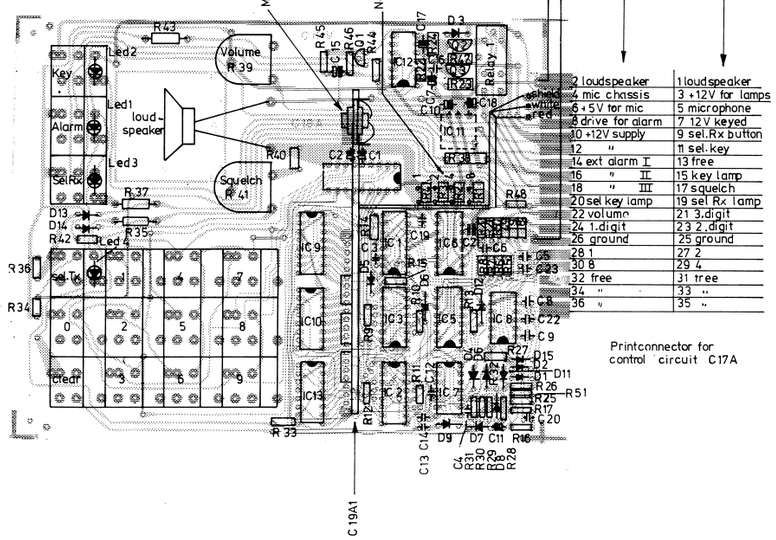
| | |
|---|---|
| 28 | 1 |
| 27 | 2 |
| 29 | 4 |
| 30 | 8 |
| 24 | 1. digit |
| 23 | 2digit |
| 21 | 3digit |
| 17 | Squelch |
| 22 | Volume |
| 15 | Keylamp |
| 19 | Sel-Rx lamp |
| 5 | Microphone |
| 6 | +5V for mic. |
| 4 | Mic. chassis |
| 11 | Sel. key |
| 20 | Sel. key lamp |
| 3 | +12V for lamps |
| 10 | +12 V supply |
| 12 | " |
| 1 | Loudspeaker |
| 2 | " |
| 7 | +12 V keyed |
| 9 | sel. Rx button |
| 25 | ground |
| 26 | " |
| 8 | Drive for ext alarm |
| 14 | I |
| 16 | ext.alarm II |
| 18 | III |
| 13 | Free |
| 31 | " |
| 32 | " |
| 33 | " |
| 34 | " |
| 35 | " |
| 36 | " |

## C 18 A1




Wiewed from solder side
Jumpers mounted for C18 A1
3 selectable tones




| | | | |
|---|---|---|---|
| 2 | loudspeaker | 1 | loudspeaker |
| 4 | mic chassis | 3 | +12V for lamps |
| 6 | +5 V for mic | 5 | microphone |
| 8 | drive for alarm | 7 | 12 V keyed |
| 10 | +12V supply | 9 | sel.Rx button |
| 12 | " | 11 | sel.key |
| 14 | ext alarm I | 13 | free |
| 16 | " II | 15 | key lamp |
| 18 | " III | 17 | squelch |
| 20 | sel key lamp | 19 | sel Rx lamp |
| 22 | volume | 21 | 3.digit |
| 24 | 1.digit | 23 | 2.digit |
| 26 | ground | 25 | ground |
| 28 | 1 | 27 | 2 |
| 30 | 8 | 29 | 4 |
| 32 | free | 31 | tree |
| 34 | " | 33 | " |
| 36 | " | 35 | " |

Printconnector for control circuit C17A

## C 18 A1

| | | | |
|---|---|---|---|
| Rettet: | Remote controlbox for AP 2000 Base station / 202-020 three selectable tones. Print boards C 18 A1 / C 19 A1 | Tegn.: | Kontr.: 13-02-79 LD |
| | | Stykl. nr.: | |
| | AP-RADIOTELEFON A/S | Tegn. nr.: | 79027 - 1E2 |

# AP-RADIOTELEFON

| Nr. | Kode | Data | Nr. | Kode | Data |
|---|---|---|---|---|---|
| R1 | 13-306 | 100 KΩ 1/8W CR16 | R37 | 13-438 | 820 Ω 1/2W CR37 |
| R2 | 13-306 | 100 KΩ " " | R38 | 13-438 | 820 Ω " " |
| R3 | 13-306 | 100 KΩ " " | R39 | 16-025 | 100 KΩ Lin. |
| R4 | 13-306 | 100 KΩ " " | R40 | 13-284 | 1,2 KΩ 1/8W CR16 |
| R5 | 13-306 | 100 KΩ " " | R41 | 16-024 | 4,7 KΩ Pos.log. |
| R6 | 13-306 | 100 KΩ " " | R42 | 13-281 | 680 Ω 1/8W CR16 |
| R7 | 13-306 | 100 KΩ " " | R43 | 13-438 | 820 Ω 1/2W CR37 |
| R8 | 13-306 | 100 KΩ " " | R44 | 13-295 | 10 KΩ 1/8W CR16 |
| R9 | 13-306 | 100 KΩ " " | R45 | 13-295 | 10 KΩ " " |
| R10 | 13-306 | 100 KΩ " " | R46 | 13-295 | 10 KΩ " " |
| R11 | 13-306 | 100 KΩ " " | R47 | 13-283 | 1 KΩ " " |
| R12 | 13-306 | 100 KΩ " " | R48 | 13-291 | 4,7 KΩ " " |
| R13 | 13-306 | 100 KΩ " " | R49 | 13-306 | 100 KΩ " " |
| R14 | 13-306 | 100 KΩ " " | R50 | 13-287 | 2,2 KΩ " " |
| R15 | 13-306 | 100 KΩ " " | R51 | 13-306 | 100 KΩ " " |
| R16 | 13-306 | 100 KΩ " " | | | |
| R17 | 13-306 | 100 KΩ " " | C1 | 11-500 | 0,1 µF/35 V Tant |
| R18 | 13-287 | 2,2 KΩ " " | C2 | 11-503 | 1 µF/35 V " |
| R19 | 13-306 | 100 KΩ " " | C3 | 11-409 | 1 nF Ker. |
| R20 | 13-287 | 2,2 KΩ " " | C4 | 11-416 | 4,7 nF " |
| R21 | 13-306 | 100 KΩ " " | C5 | 11-416 | 4,7 nF " |
| R22 | 13-300 | 33 KΩ " " | C6 | 11-416 | 4,7 nF " |
| R23 | 13-300 | 33 KΩ " " | C7 | 11-500 | 0,1 µF/35 V Tant |
| R24 | 13-306 | 100 KΩ " " | C8 | 11-416 | 4,7 nF Ker. |
| R25 | 13-306 | 100 KΩ " " | C9 | 11-416 | 4,7 nF " |
| R26 | 13-306 | 100 KΩ " " | C10 | 11-500 | 0,1 µF/35 V Tant |
| R27 | 13-315 | 470 KΩ " " | C11 | 11-500 | 0,1 µF/35 V Tant |
| R28 | 13-306 | 100 KΩ " " | C12 | 11-409 | 1 nF Ker. |
| R29 | 13-306 | 100 KΩ " " | C13 | 11-416 | 4,7 nF " |
| R30 | 13-306 | 100 KΩ " " | C14 | 11-416 | 4,7 nF " |
| R31 | 13-315 | 470 KΩ " " | C15 | 11-502 | 1 µF/35V Tant |
| R32 | 13-306 | 100 KΩ " " | C16 | 11-416 | 4,7 nF Ker. |
| R33 | 13-306 | 100 KΩ " " | C17 | 11-502 | 1 µF/35 V Tant |
| R34 | 13-283 | 1 KΩ " " | C18 | 11-506 | 10 µF/25 V " |
| R35 | 13-438 | 820 Ω " " | C19 | 11-416 | 4,7 nF Ker. |
| R36 | 13-279 | 470 Ω " " | C20 | 11-416 | 4,7 nF Ker. |
| | | | C21 | 11-502 | 1 µF/35 V Tant |

Remote controlbox for AP 2000
base station, 202-020 print C 18 A1
Tilhører tegn. nr.: 79027-1E2

Tegn.:
Kontr.:
Stykl. nr.: 79027-4S2

# AP-RADIOTELEFON

| Nr. | Kode | Data | Nr. | Kode | Data |
|---|---|---|---|---|---|
| C22 | 11-416 | 4,7 nF Ker. | REL1 | 17-056 | AE5612RS-12V |
| C23 | 11-416 | 4,7 nF Ker. | | | |
| | | | | | |
| D1 | 04-062 | 1N4148 | | | |
| D2 | 04-062 | 1N4148 | | | |
| D3 | 04-062 | 1N4148 | | | |
| D4 | 04-062 | 1N4148 | | | |
| D5 | 04-062 | 1N4148 | | | |
| D6 | 04-062 | 1N4148 | | | |
| D7 | 04-062 | 1N4148 | | | |
| D8 | 04-062 | 1N4148 | | | |
| D9 | 04-062 | 1N4148 | | | |
| D10 | 04-062 | 1N4148 | | | |
| D11 | 04-062 | 1N4148 | | | |
| D12 | 04-062 | 1N4148 | | | |
| D13 | 04-062 | 1N4148 | | | |
| D14 | 04-062 | 1N4148 | | | |
| D15 | 04-062 | 1N4148 | | | |
| | | | | | |
| Q1 | 19-096 | BC337B | | | |
| Q2 | 19-096 | BC337B | | | |
| Q3 | 19-093 | BC238B | | | |
| | | | | | |
| IC1 | 09-082 | MM80C97N | | | |
| IC2 | 09-049 | HEF4015B | | | |
| IC3 | 09-049 | HEF4015B | | | |
| IC4 | 09-060 | MM746922 | | | |
| IC5 | 09-096 | CD4063BE | | | |
| IC6 | 09-096 | CD4063BE | | | |
| IC7 | 09-048 | HEF4013B | | | |
| IC8 | 09-037 | HEF40106B | | | |
| IC9 | 09-068 | MC14511BP | | | |
| IC10 | 09-068 | MC14511BP | | | |
| IC11 | 09-081 | L129 | | | |
| IC12 | 09-048 | HEF4013B | | | |
| IC13 | 09-068 | MC14511BP | | | |

Remote controlbox for AP 2000
base station 202-020 Print C18 A1
Tilhører tegn. nr.: 79027-1E2

Tegn.:
Kontr.:

Stykl. nr.: 79027-4S2

# AP-RADIOTELEFON

| Nr. | Kode | Data | Nr. | Kode | Data |
|---|---|---|---|---|---|
| R1 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R2 | 13-275 | 220 Ω " " | | | |
| R3 | 13-275 | 220 Ω 1/8W CR16 | | | |
| R4 | 13-275 | 220 Ω " " | | | |
| R5 | 13-275 | 220 Ω " " | | | |
| R6 | 13-275 | 220 Ω " " | | | |
| R7 | 13-275 | 220 Ω " " | | | |
| R8 | 13-275 | 220 Ω " " | | | |
| R9 | 13-275 | 220 Ω " " | | | |
| R10 | 13-275 | 220 Ω " " | | | |
| R11 | 13-275 | 220 Ω " " | | | |
| R12 | 13-275 | 220 Ω " " | | | |
| R13 | 13-275 | 220 Ω " " | | | |
| R14 | 13-275 | 220 Ω " " | | | |
| R15 | 13-287 | 2,2 KΩ " " | | | |
| R16 | 13-279 | 470 Ω " " | | | |
| R17 | 13-275 | 220 Ω " " | | | |
| R18 | 13-275 | 220 Ω " " | | | |
| R19 | 13-275 | 220 Ω " " | | | |
| R20 | 13-275 | 220 Ω " " | | | |
| R21 | 13-275 | 220 Ω " " | | | |
| R22 | 13-275 | 220 Ω " " | | | |
| R23 | 13-275 | 220 Ω " " | | | |
| C1 | 11-500 | 0,1 µF/35V Tant. | | | |
| C2 | 11-509 | 47 µF/6,3 V " | | | |
| C3 | 11-500 | 0,1 µF/35 V " | | | |
| Dis 1 | 04-161 | MAN4640A | | | |
| Dis 2 | 04-161 | MAN4640A | | | |
| Dis 3 | 04-161 | MAN4640A | | | |

Remote controlbox for AP 2000
base station 202-021 Print C 19 A1
Tilhører tegn. nr. 79027-1E2

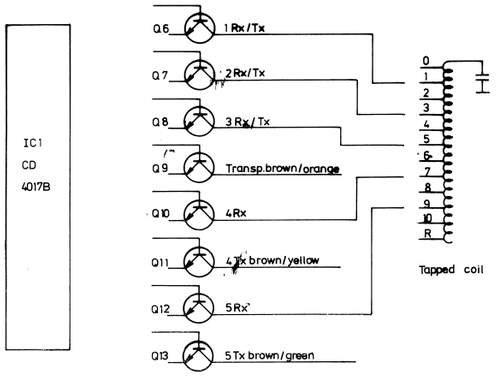
Tegn.:

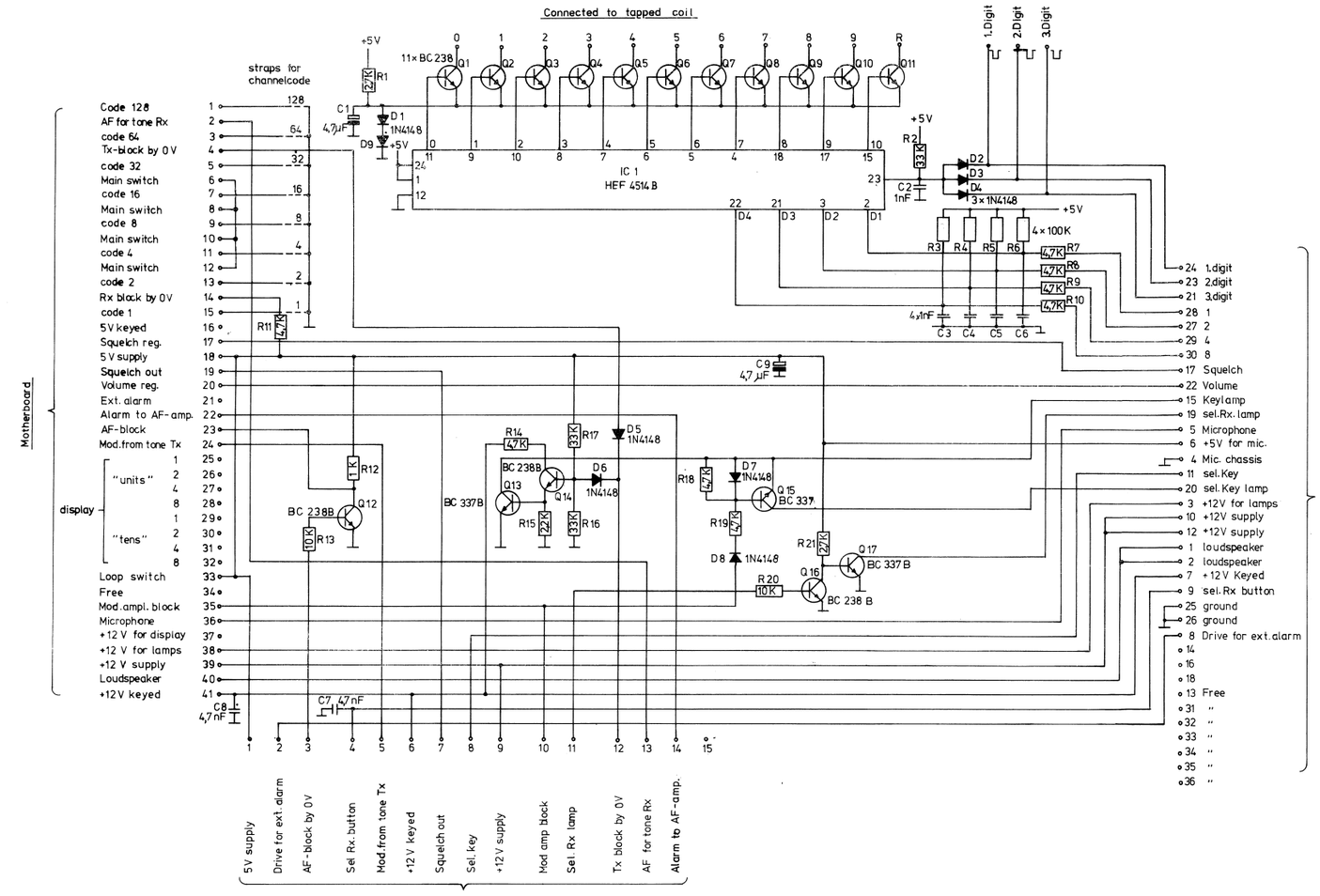
Kontr.:

Stykl. nr.: 79027-4S2

| Tone units | Control box | Wire | | |
|---|---|---|---|---|
| | | Brown/orange | Brown/yellow | Brown/green |
| 219-052, CCIR<br>219-053 ZVEI | Remote controlbox 202-020<br>3 selectable tones | Connected to<br>1. digit<br>C 17 A | Connected to<br>2. digit<br>C 17 A | Connected to<br>3 digit<br>C 17 A |
| 219-048 CCIR<br>219-049 ZVEI | Remote controlbox<br>202-021<br>2 selectable tones | Connected to<br>Tapped coil | Connected to<br>1. digit<br>C 17 A | Connected to<br>2. digit<br>C 17 A |

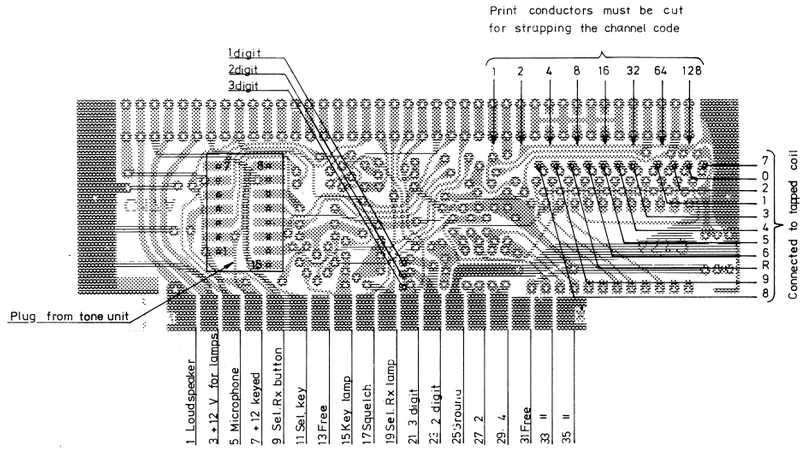
Wiring connections for tone units 219-048/49/52/53 print board C 16A and control circuit C17A.



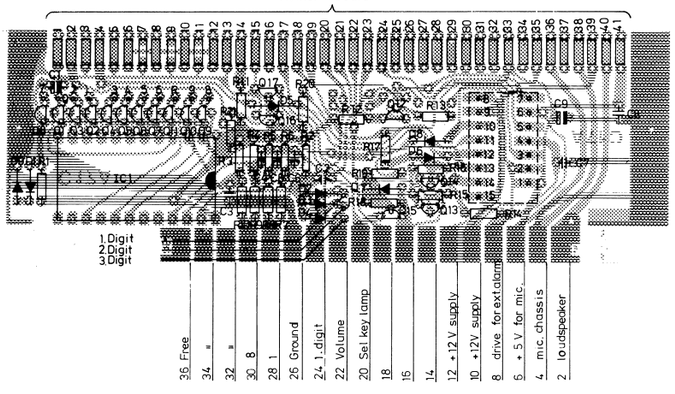




Tone units: 219-048, CCIR 2 selectable tones
219-049 ZVEI 2 selectable tones
219-052 CCIR 3 selectable tones
219-053 ZVEI 3 selectable tones
Drawing number 78132 - 3E2

Print conductors must be cut for strapping the channel code




C17 A1




| Rettet: | Control circuit with tone decoder for remote-controlbox 202-020 and 202-021. Print board C17A1 | Tegn.: | Kontr.: 12-02-79 LD |
|---|---|---|---|
| | | Stykl. nr.: | |
| | AP-RADIOTELEFON A/S | Tegn. nr.: | 79028-1E2 |

# AP-RADIOTELEFON

| Nr. | Kode | Data |
|---|---|---|
| R1 | 13-288 | 2,7 KΩ 1/8W CR16 |
| R2 | 13-300 | 33 KΩ " " |
| R3 | 13-306 | 100 KΩ 2 " |
| R4 | 13-306 | 100 KΩ " " |
| R5 | 13-306 | 100 KΩ " " |
| R6 | 13-306 | 100 KΩ " " |
| R7 | 13-291 | 4,7 KΩ " " |
| R8 | 13-291 | 4,7 KΩ " " |
| R9 | 13-291 | 4,7 KΩ " " |
| R10 | 13-291 | 4,7 KΩ " " |
| R11 | 13-291 | 4,7 KΩ " " |
| R12 | 13-283 | 1 KΩ " " |
| R13 | 13-295 | 10 KΩ " " |
| R14 | 13-291 | 4,7 KΩ " " |
| R15 | 13-287 | 2,2 KΩ " " |
| R16 | 13-300 | 33 KΩ " " |
| R17 | 13-300 | 33 KΩ " " |
| R18 | 13-291 | 4,7 KΩ " " |
| R19 | 13-291 | 4,7 KΩ " " |
| R20 | 13-295 | 10 KΩ " " |
| R21 | 13-288 | 2,7 KΩ " " |
| | | |
| C1 | 11-504 | 4,7 µF/10 V Tant |
| C2 | 11-409 | 1 nF Ker. |
| C3 | 11-409 | 1 nF " |
| C4 | 11-409 | 1 nF " |
| C5 | 11-409 | 1 nF " |
| C6 | 11-409 | 1 nF " |
| C7 | 11-416 | 4,7 nF " |
| C8 | 11-416 | 4,7 nF " |
| C9 | 11-504 | 4,7 µF/10 V Tant |
| | | |
| D1 | 04-062 | 1N4148 |
| D2 | 04-062 | 1N4148 |
| D3 | 04-062 | 1N4148 |
| D4 | 04-062 | 1N4148 |

| Nr. | Kode | Data |
|---|---|---|
| D5 | 04-062 | 1N4148 |
| D6 | 04-062 | 1N4148 |
| D7 | 04-062 | 1N4148 |
| D8 | 04-062 | 1N4148 |
| D9 | 04-062 | 1N4148 |
| | | |
| Q1 | 19-117 | BC238 |
| Q2 | 19-117 | BC238 |
| Q3 | 19-117 | BC238 |
| Q4 | 19-117 | BC238 |
| Q5 | 19-117 | BC238 |
| Q6 | 19-117 | BC238 |
| Q7 | 19-117 | BC238 |
| Q8 | 19-117 | BC238 |
| Q9 | 19-117 | BC238 |
| Q10 | 19-117 | BC238 |
| Q11 | 19-117 | BC238 |
| Q12 | 19-117 | BC238 |
| Q13 | 19-096 | BC337 |
| Q14 | 19-117 | BC238 |
| Q15 | 19-096 | BC337 |
| Q16 | 19-117 | BC238 |
| Q17 | 19-096 | BC337 |
| | | |
| IC1 | 09-061 | HEF4514B |

Control circuit with tone decoder for remote controlbox

Tilhører tegn. nr.: 79028-1E2 C17A

Rettet:

Tegn.:

Kontr.:

Stykl. nr.: 79028-4S2