

**ALARM TRANSMITTER
TYPE CTP862
INSTRUCTION MANUAL**

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ALARM TRANSMITTER CTP800

GENERAL

The CTP 800 portable VHF or UHF alarm transmitter emits a coded tone signal that distinguishes it from among the other transmitters in a system.

The following drawing shows the modular construction of the CTP 860.

Notice that there are three main sections:

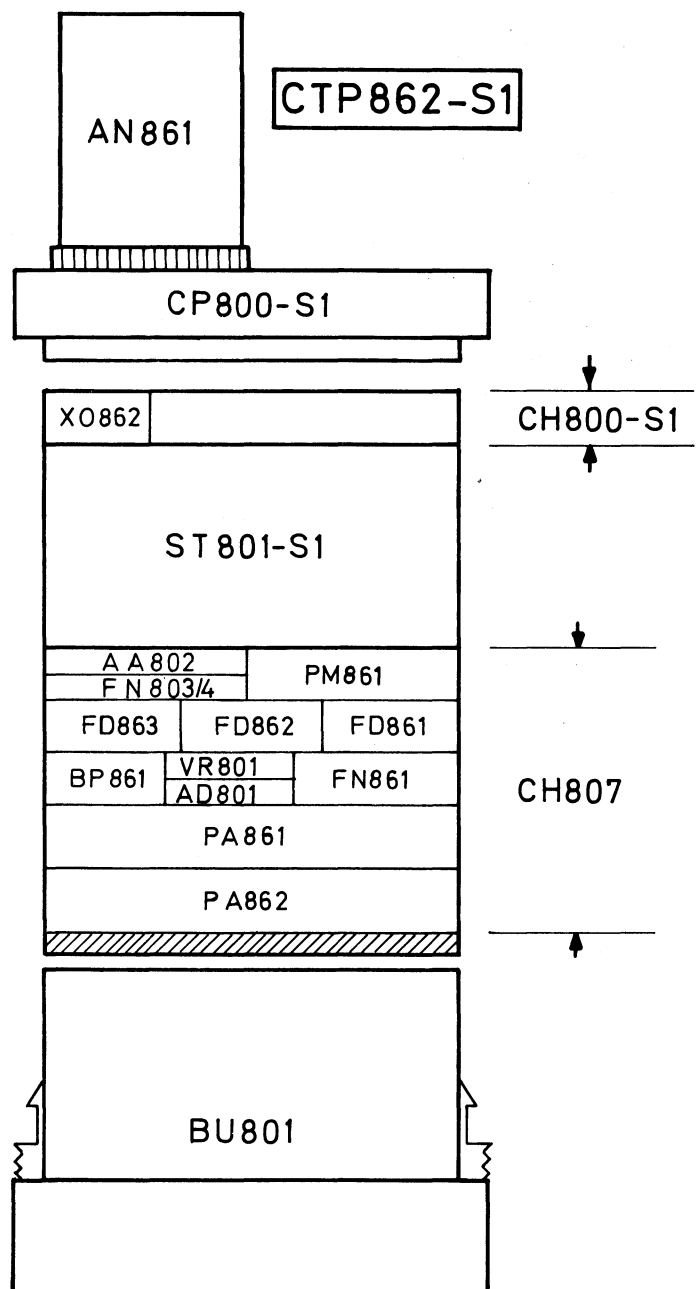
- 1) the control head, CP 800-S1
(shown here with a compact antenna, AN 861, fastened in place)
- 2) the composite frame consisting of
 - a) CH 800-S1 (chassis/motherboard for one crystal oscillator)
 - b) ST 801-S1 (complete sequential tone generator)
 - c) CH 807 (chassis/motherboard for transmitter circuit modules)
- 3) the battery unit, BU 801.

The radio unit is assembled on two rails. The modular subassemblies are slid on to the rails starting first with the transmitter section then the tone generator and finally the oscillator. The rails are then positioned on to the control head and a wiring harness interconnects CH 800-S1, ST 801-S1, CH 807, and CP 800-S1. The individual circuit modules are then plugged into place.

The bottom of the assembled unit forms a battery connector and a row of test points which allow convenient testing of the most vital circuits and functions.

The radio cabinet is a strong, solid aluminum, extruded sheathing covered with specially treated, genuine leather for durability and which assures a sure grip on the radio, even when wet. It slides over the frame from beneath and is held in place by two screws at the bottom of the frame.

Finally, the battery unit snaps into the well formed by the lower part of the cabinet. There is no need to worry about polarity since there is no "wrong" way to insert the battery unit. When carried in a pocket or at the belt the alarm transmitter can be secured by means of the strong clip fitted on the backside of the cabinet.



OPERATING INSTRUCTIONS

Fasten the antenna and slide the battery home, making certain that two clasps engage.

Transmitting

To transmit the alarm signal, depress the transmitter key button briefly. The red diode indicator will light and the radio will continue to transmit until the battery is removed or runs down.

DESCRIPTION

Circuit Design

The transmitter circuits are designed as functional plug-in modules, each module being a complete, shielded circuit function. Pins from the bottom of the module plug into sockets on the motherboard.

Most of the modules are thick film circuits employing subminiaturized components.

A Storno-innovated technique for reducing the size of coils and capacitors has done away with the discrete components that are usually found wired outside the circuit proper.

The tone generator circuit uses both thick film circuitry and dual-in-line IC's, all of which are included inside the ST 801-S1 subunit.

Transmitter

The transmitter signal originates in the crystal oscillator (XO). The exciter signal then goes to the phase modulator (PM) and after modulation the signal passes through the frequency doublers (FD) where the signal frequency is increased to obtain the final (output) frequency. (In the case of a CTP 860, with three doublers, the final frequency will be 8 times the crystal oscillator frequency.)

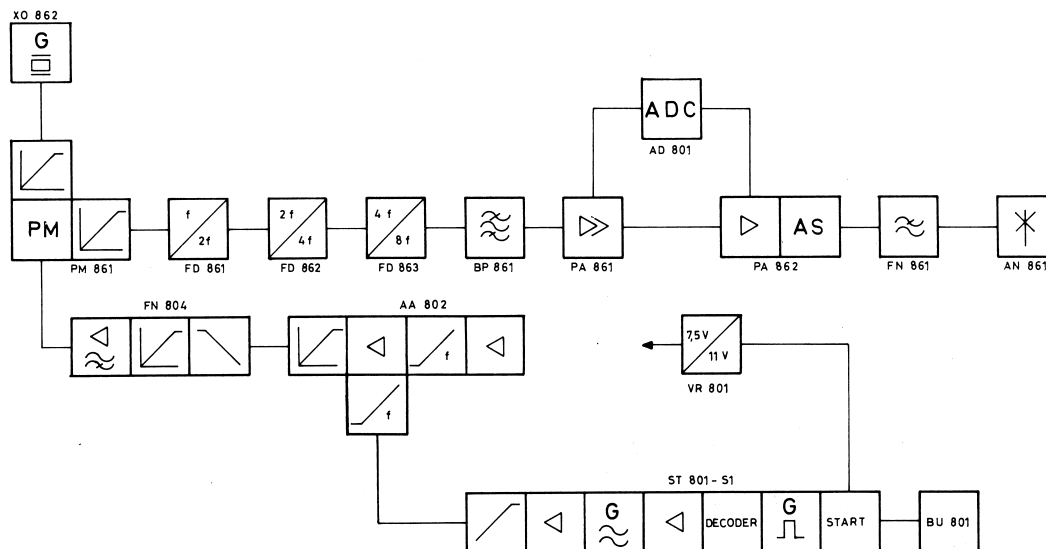
A bandpass filter (BP) between the frequency doublers and the driver stage (PA 8X1) suppresses harmonics of the original crystal frequency. The driver stage amplifies the signal to a level that is suitable for driving the power amplifier (PA 8X2).



Before the signal reaches the antenna (AN) it passes through the antenna filter (FN 8X1), a lowpass filter for suppressing harmonic radiation.

The alarm signal, 5 tones in sequence, is produced in the sequential tone generator (ST) and is then applied to the modulation amplifier (which is made up of AA and FN 80X). Here the signal is amplified, limited and filtered before going to the phase modulator (PM) where it modulates the exciter signal.

Depressing the start button in the control head (CP) activates an electronic keying circuit built into the tone generator (ST). This powers the transmitter and sets the generator to begin producing the coded tone signals that identify the particular radio. This circuit can only be turned off again by removing the battery (BU).



The transmitter is equipped with an automatic drive control (ADC) that, within relatively large tolerances, can maintain the transmitter output power at its nominal value independently of battery voltage and temperature variations. This circuit also protects the transmitter output transistor against destruction in case the transmitter becomes inadvertently keyed without having the antenna fastened in place.

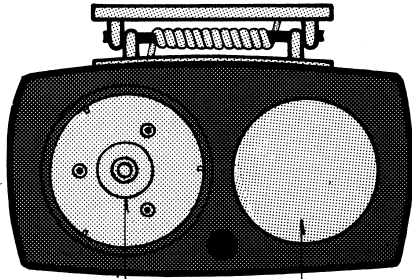
The CTP 800 is powered by a battery unit (BU). The battery voltage is fed to the transmitter output circuit (PA) via the start circuit in the

tone generator (ST). The other modules operate from the 7.5V stabilized voltage from the voltage regulator (VR).

The tone frequencies used in ST 801-S1 are the standard Storno series:

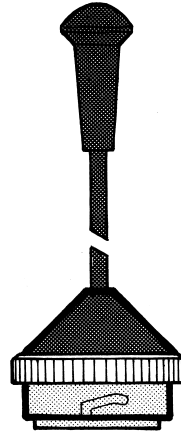
- | | |
|--------|---------|
| 970 Hz | 1830 Hz |
| 1060 " | 2000 " |
| 1160 " | 2200 " |
| 1270 " | 2400 " |
| 1400 " | 2600 " |
| 1530 " | 2800 " |
| 1670 " | |

CTP800 TECHNICAL SPECIFICATIONS				
Equipment Type		CTP813	CTP814	CTP863
Frequency Band	MHz	146 to 174		420 to 470
Output Power with BU801	W	Variable, 0.1 to 0.5		
Frequency Swing maximum	KHz	± 4 or ± 5	± 2.5	± 4 or ± 5
Antenna Impedance	Ω	50		
Spurious and Harmonic Radiation	μW	maximum 2		
Ambient Temperature Range	°C			
Operating range		-25 to +55		
Functioning range		-30 to +60		
Current Consumption at 0.5W output power	mA	300		360
BU801 Battery Capacity at +20°C	mAH	300		

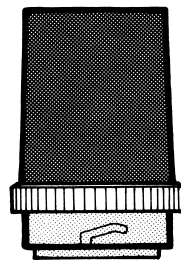


ANTENNA CONNECTOR

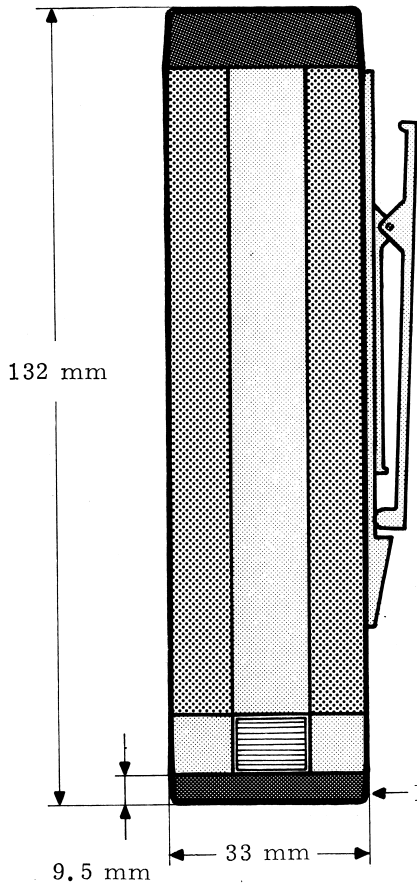
TRANSMITTER KEY BUTTON



ANTENNA AN8x2



ANTENNA AN8x1



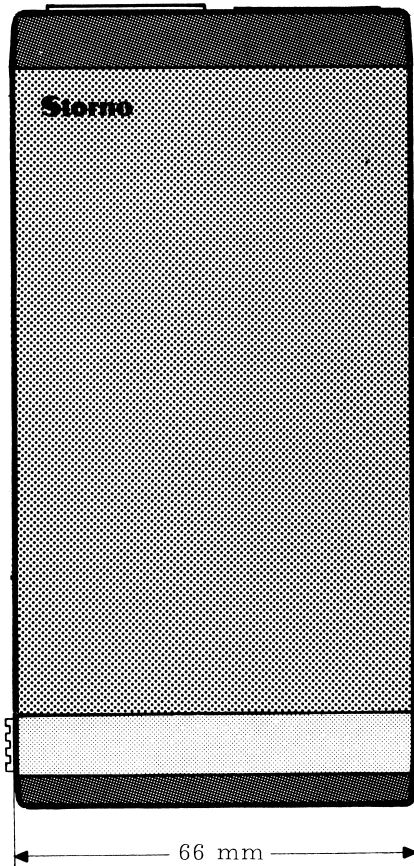
132 mm

9.5 mm

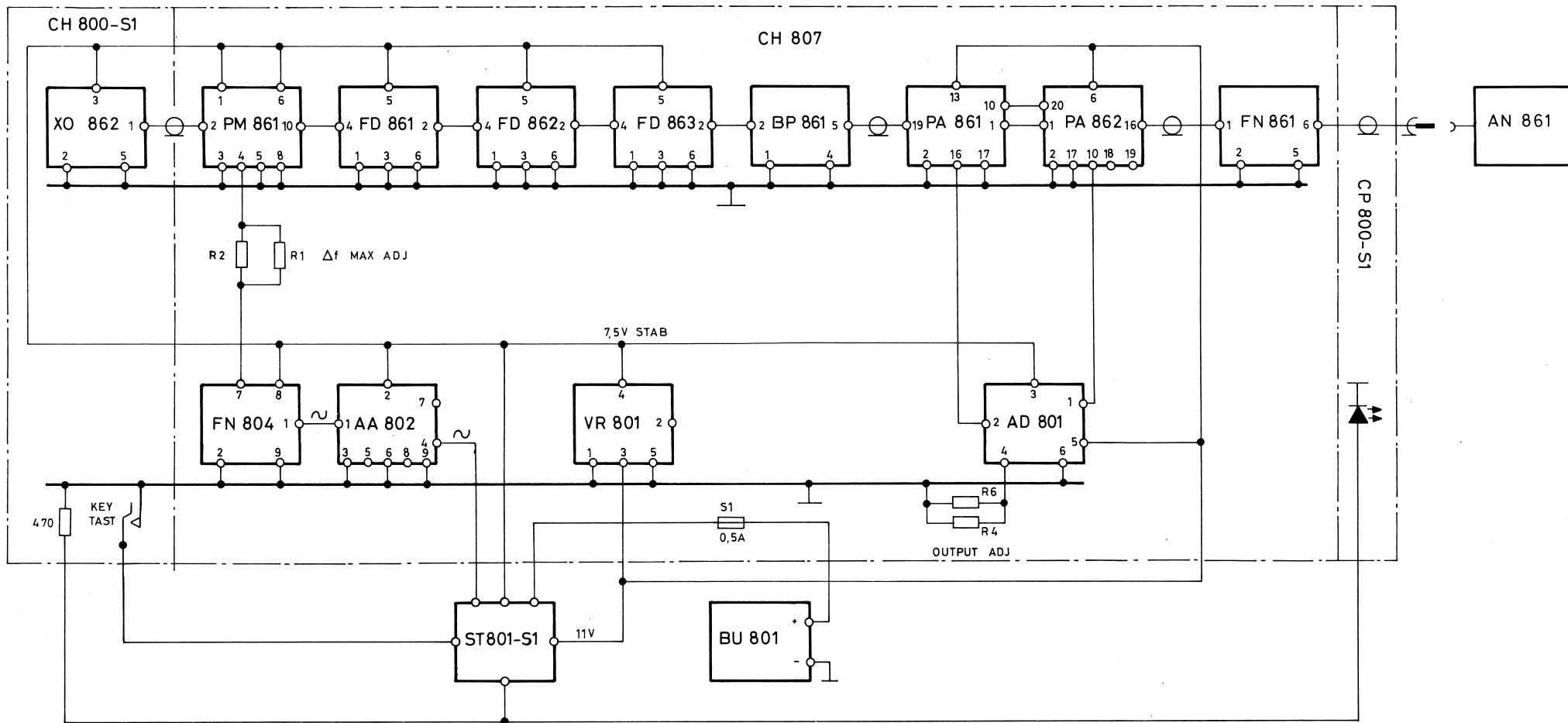
33 mm

BATTERY BU801

BATTERY CLASP

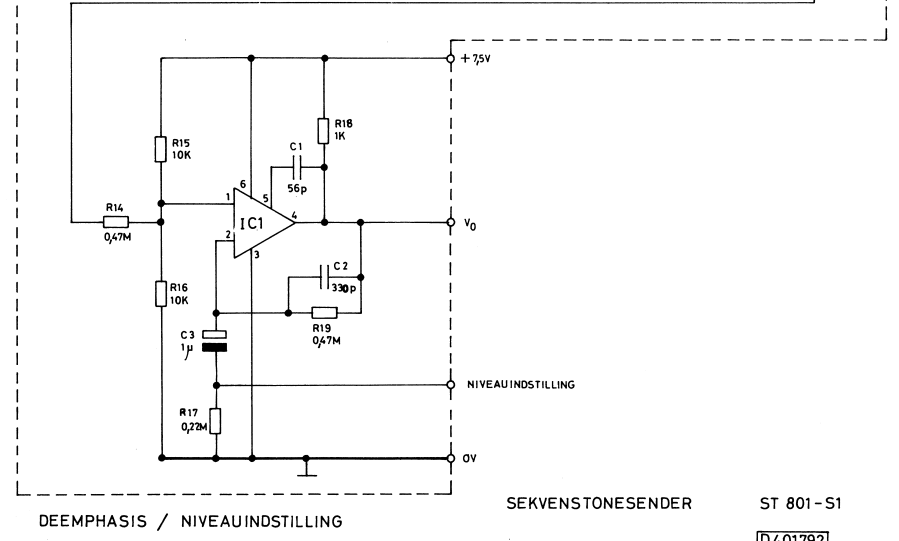
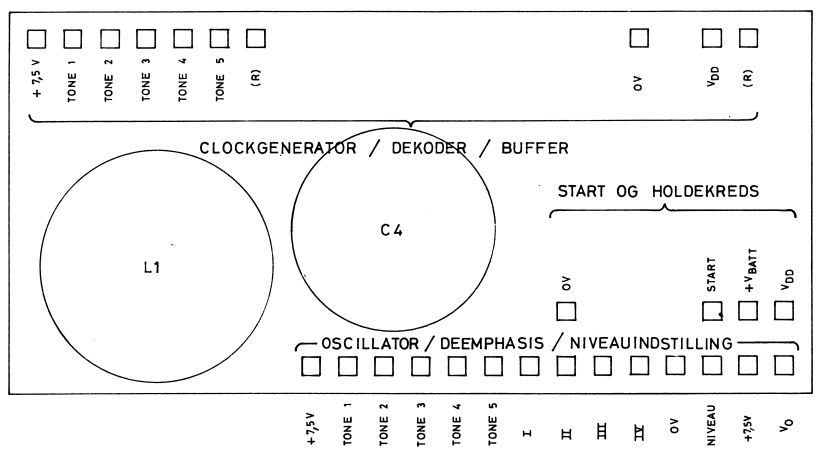
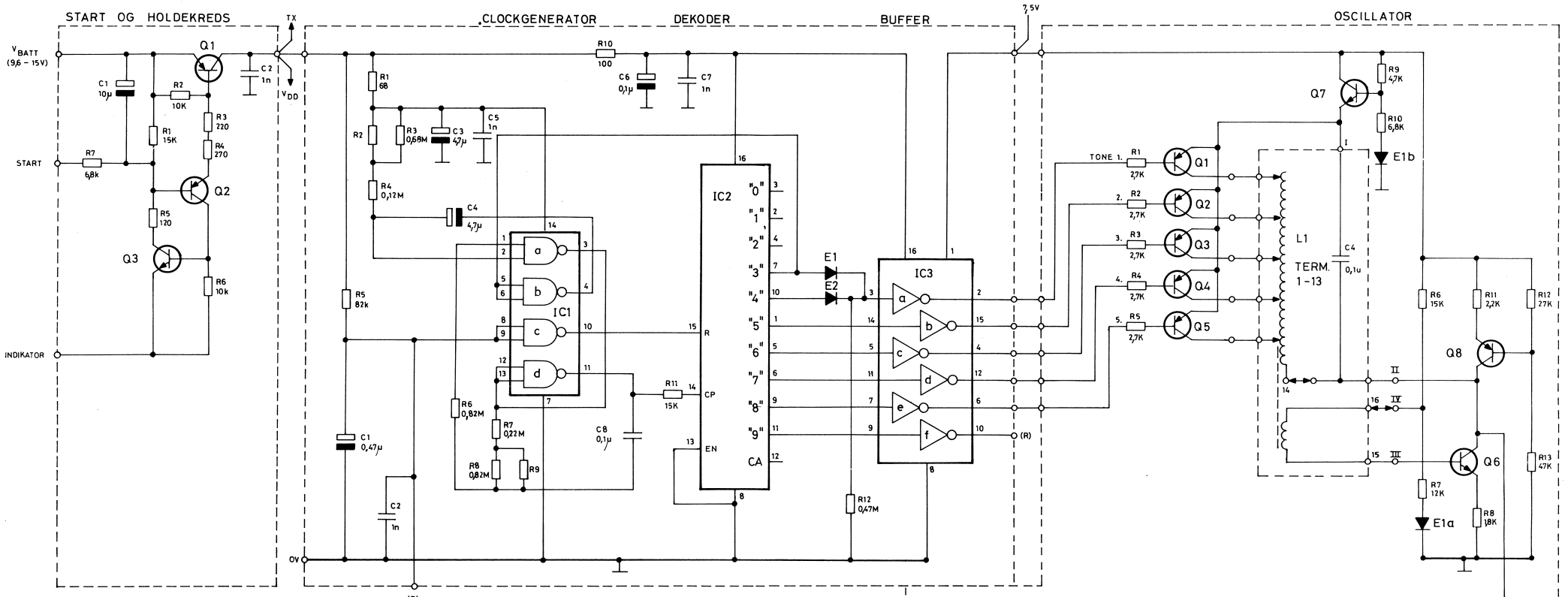


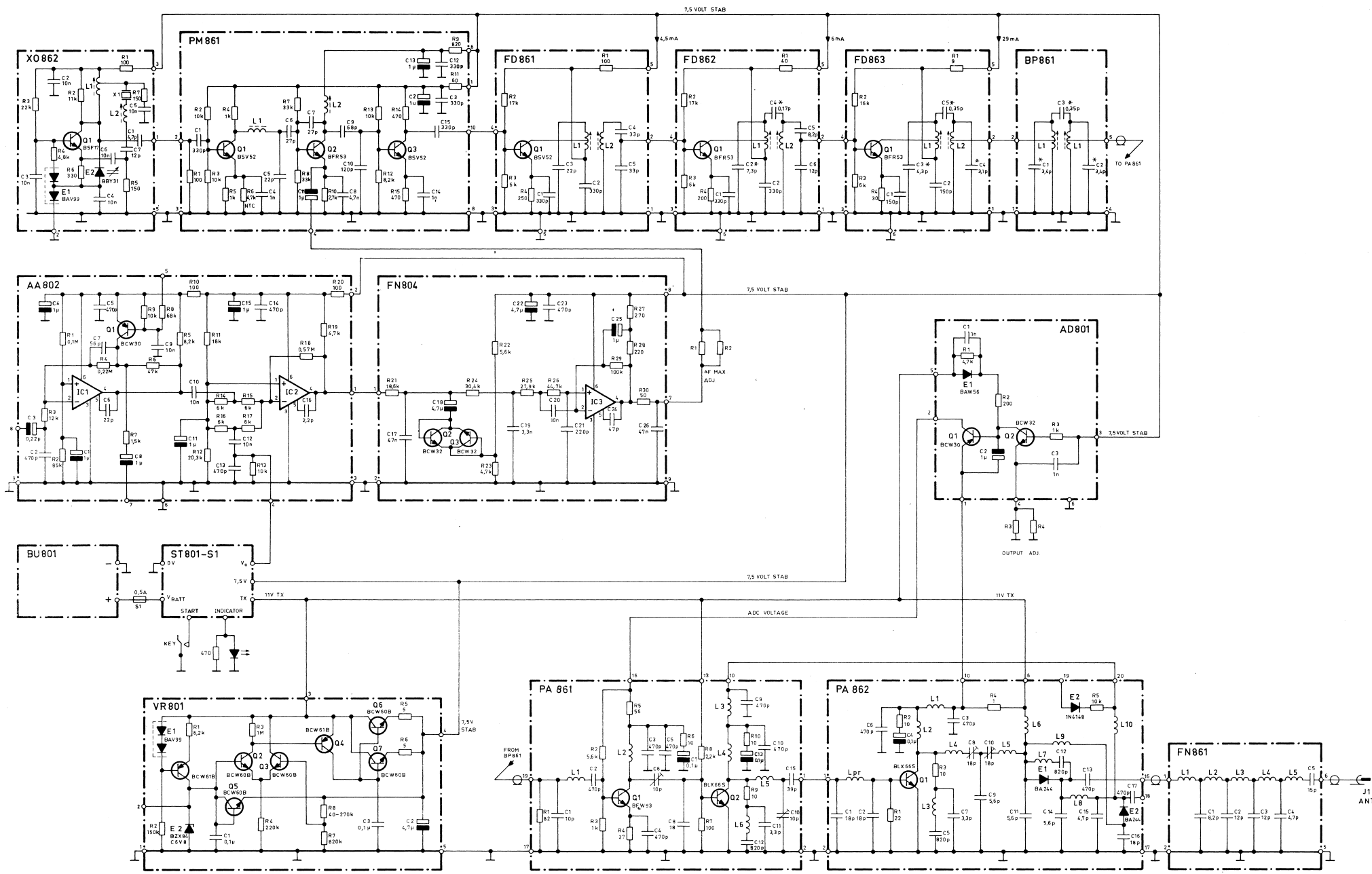
66 mm



SYSTEM LAYOUT CTP 862-S1

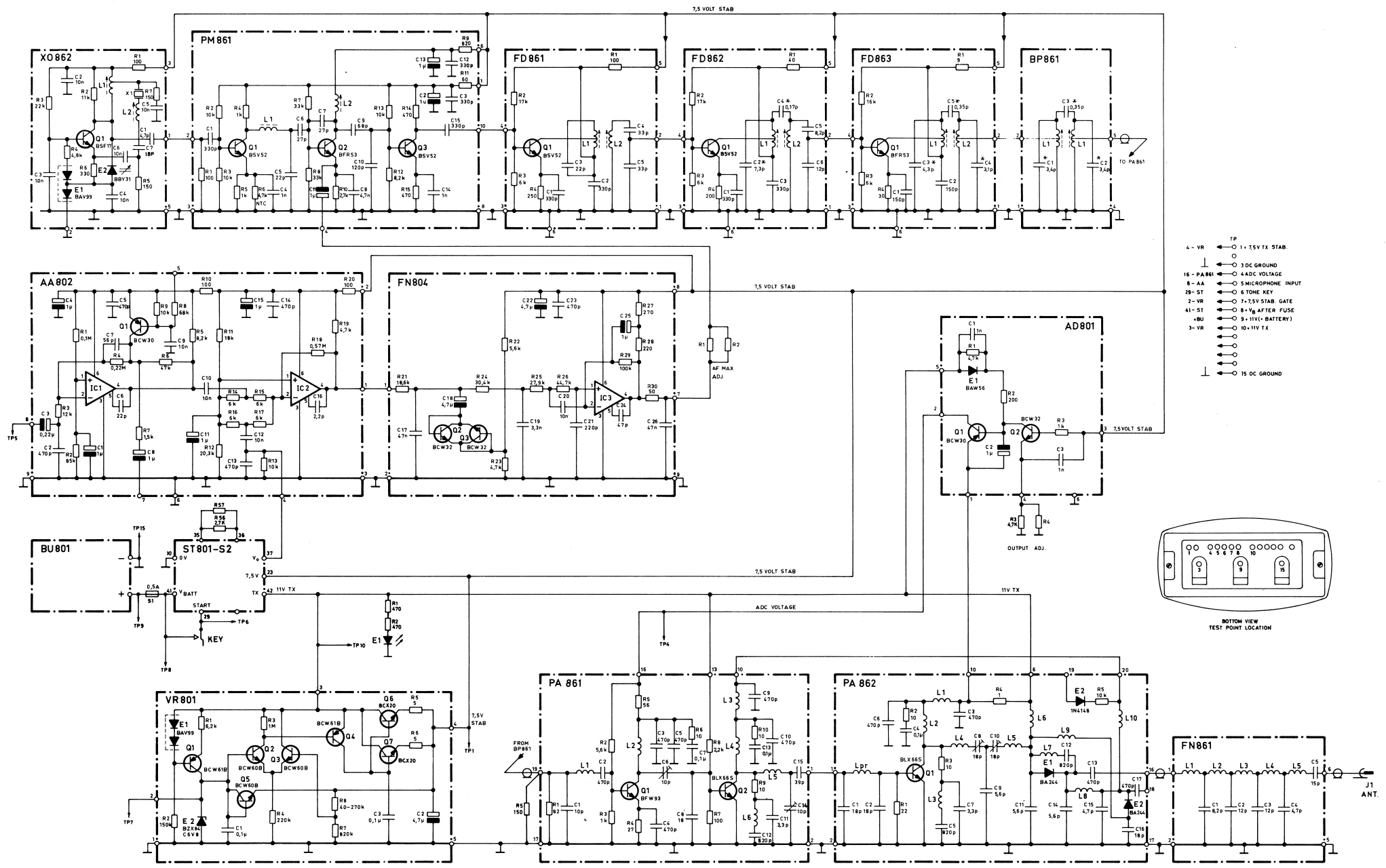
D401.890



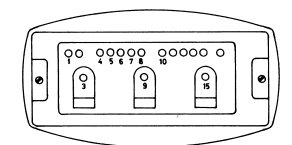


PORTABLE TRANSMITTER
CTP 862 sp. S1

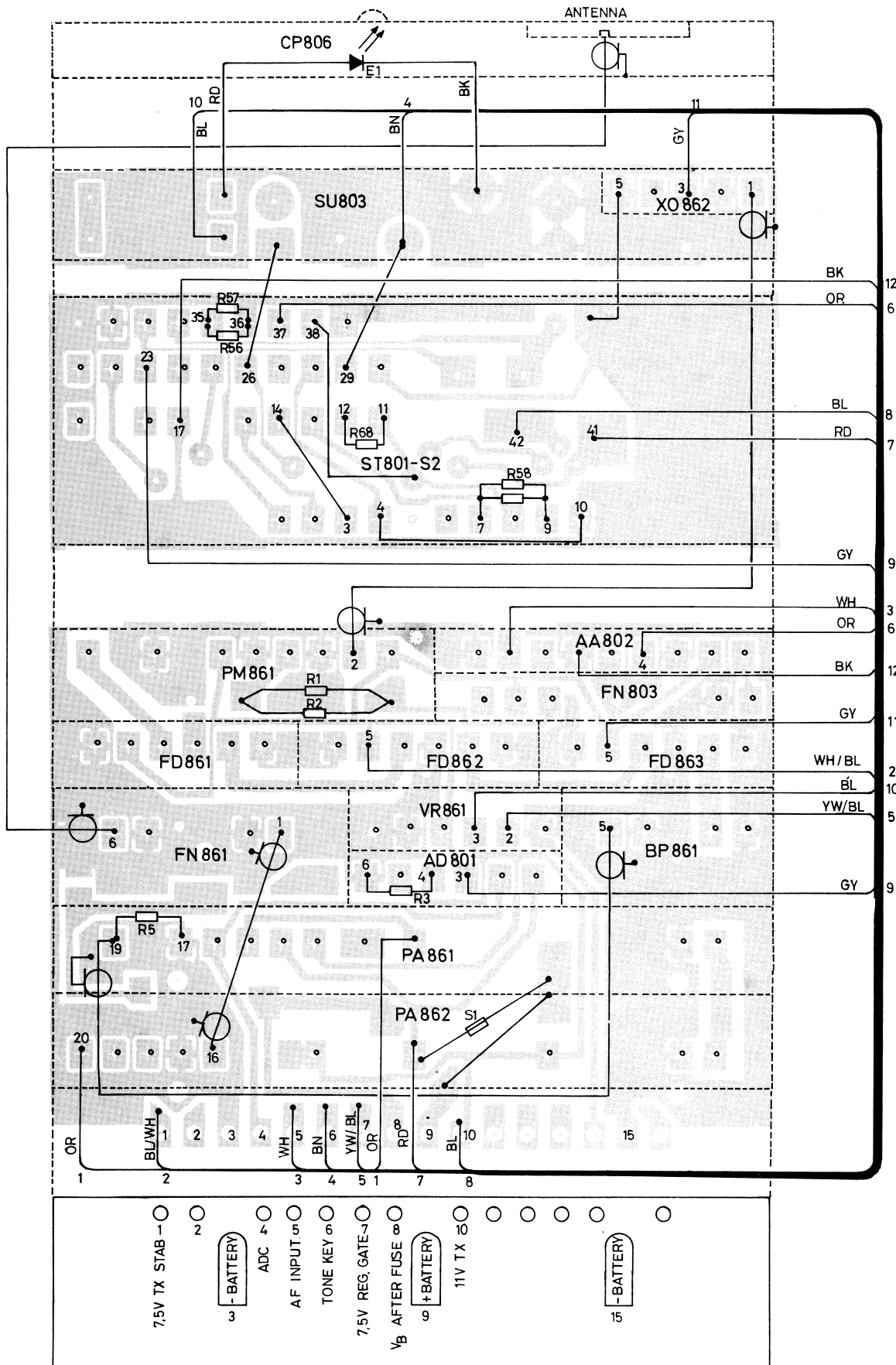
D401.874



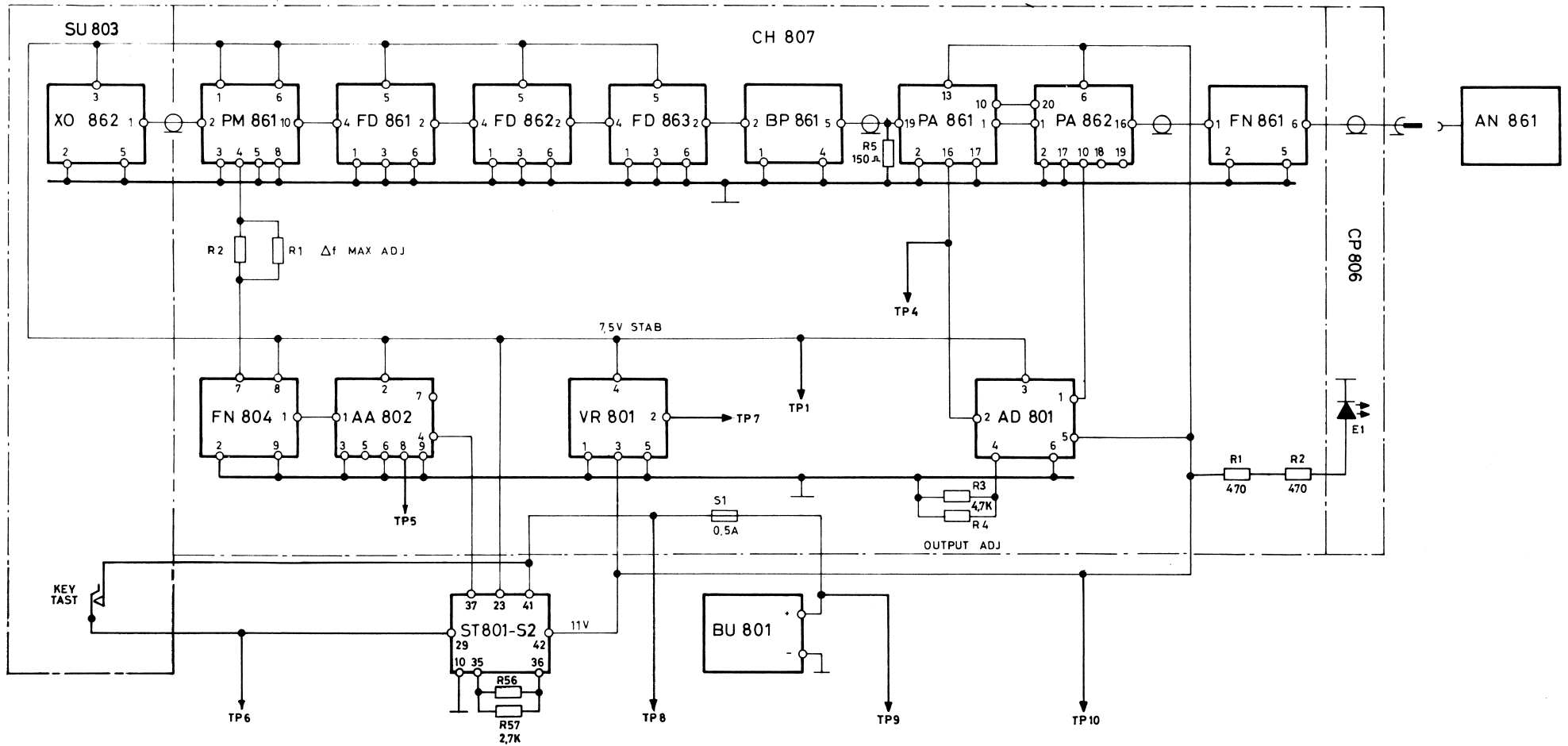
- TP
- TP ← 1.75V TX STAB
- 3DC GROUND
- 4ADC VOLTAGE
- 16 - PA861 ← 5MICROPHONE INPUT
- 8 - AA ← 6 TONE KEY
- 28 - ST ← 7.5V STAB. GATE
- 2 - VR ← 8 + V_B AFTER FUSE
- 41 - ST ← 9 - 11V BATTERY
- 4 - BU ← 10 - 11V TX
- 3 - VR ← 15 DC GROUND



BOTTOM VIEW
TEST POINT LOCATION

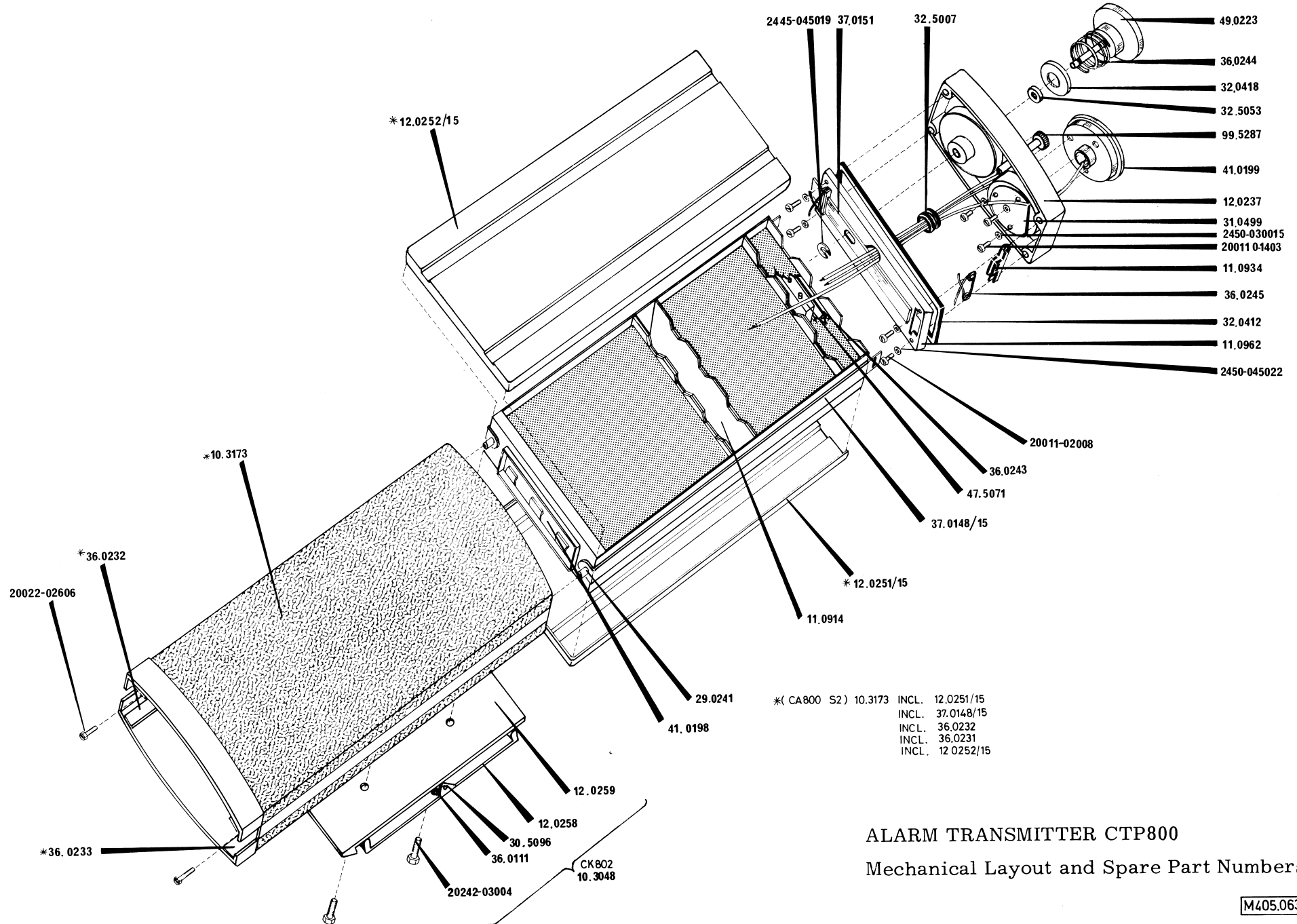


WIRING CTP860



SYSTEM LAYOUT CTP 863-S2

D 402.138



ALARM TRANSMITTER CTP800
 Mechanical Layout and Spare Part Numbers