

**MOBILE RADIOTELEPHONE
MODEL STORNOPHONE 700
TYPE CQM761
TYPE CQM763
420 - 470 MHz**

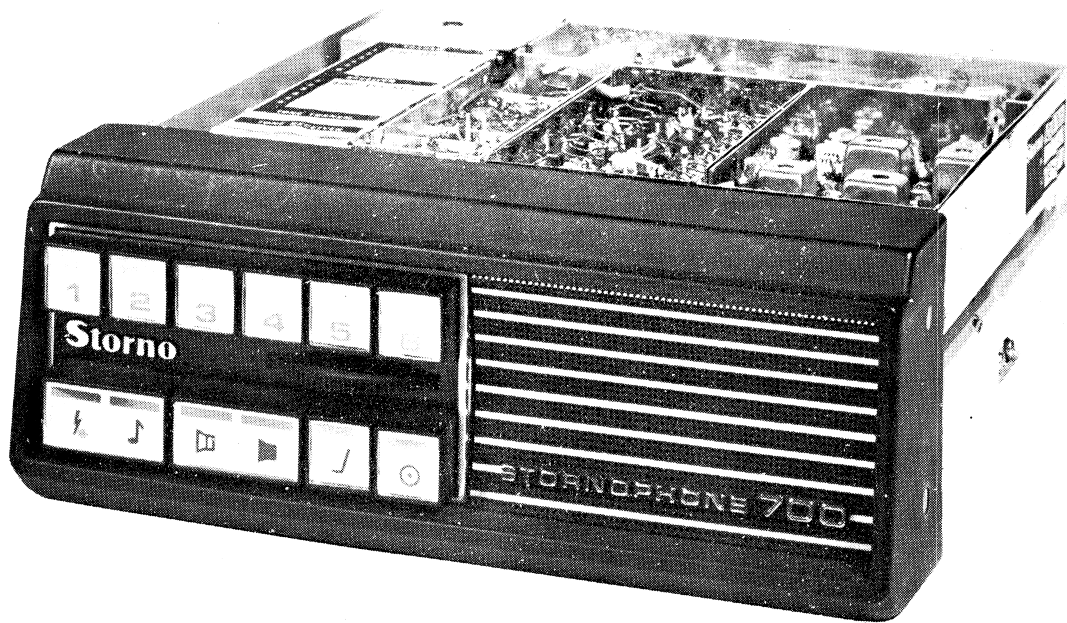
Storno

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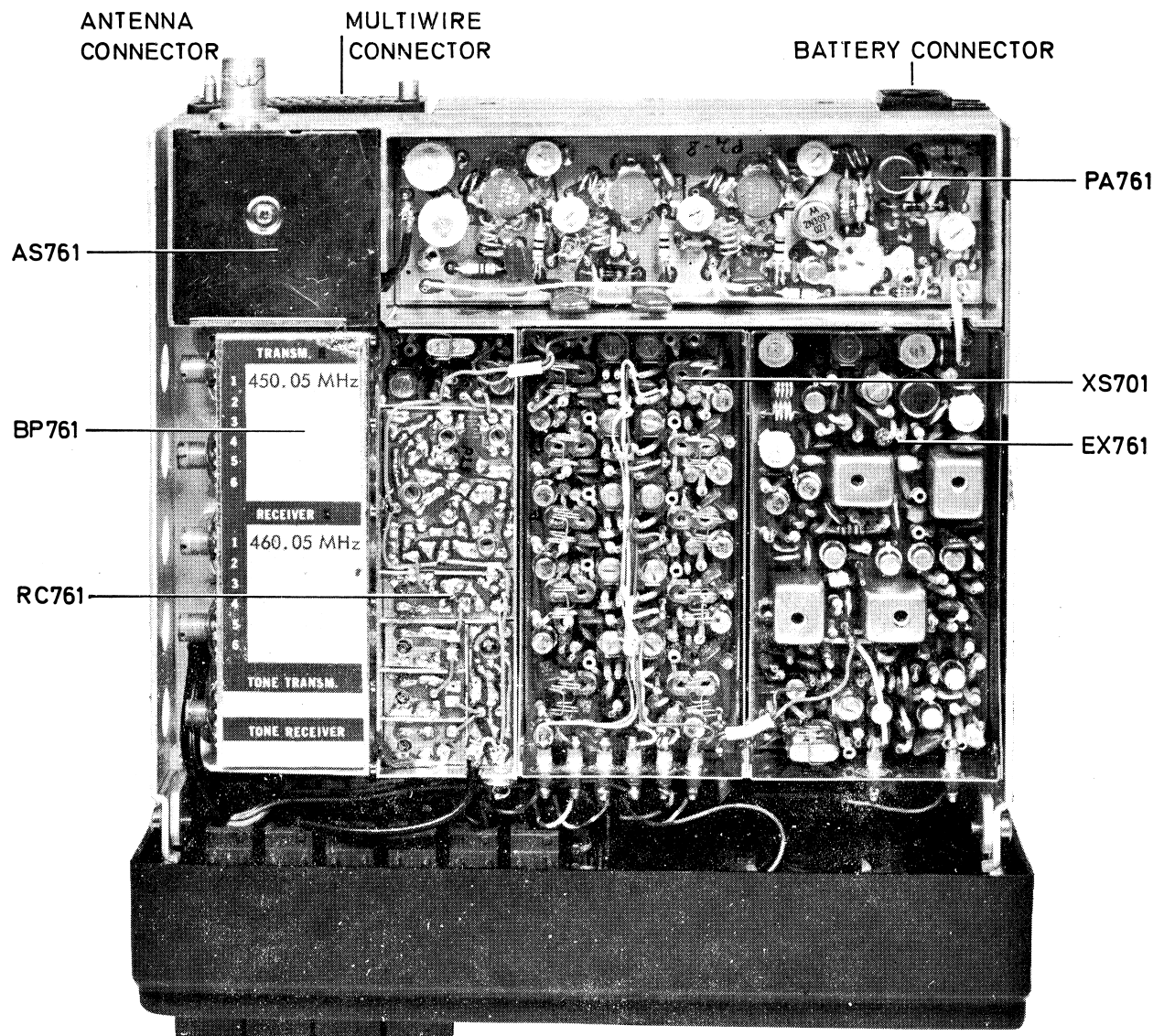
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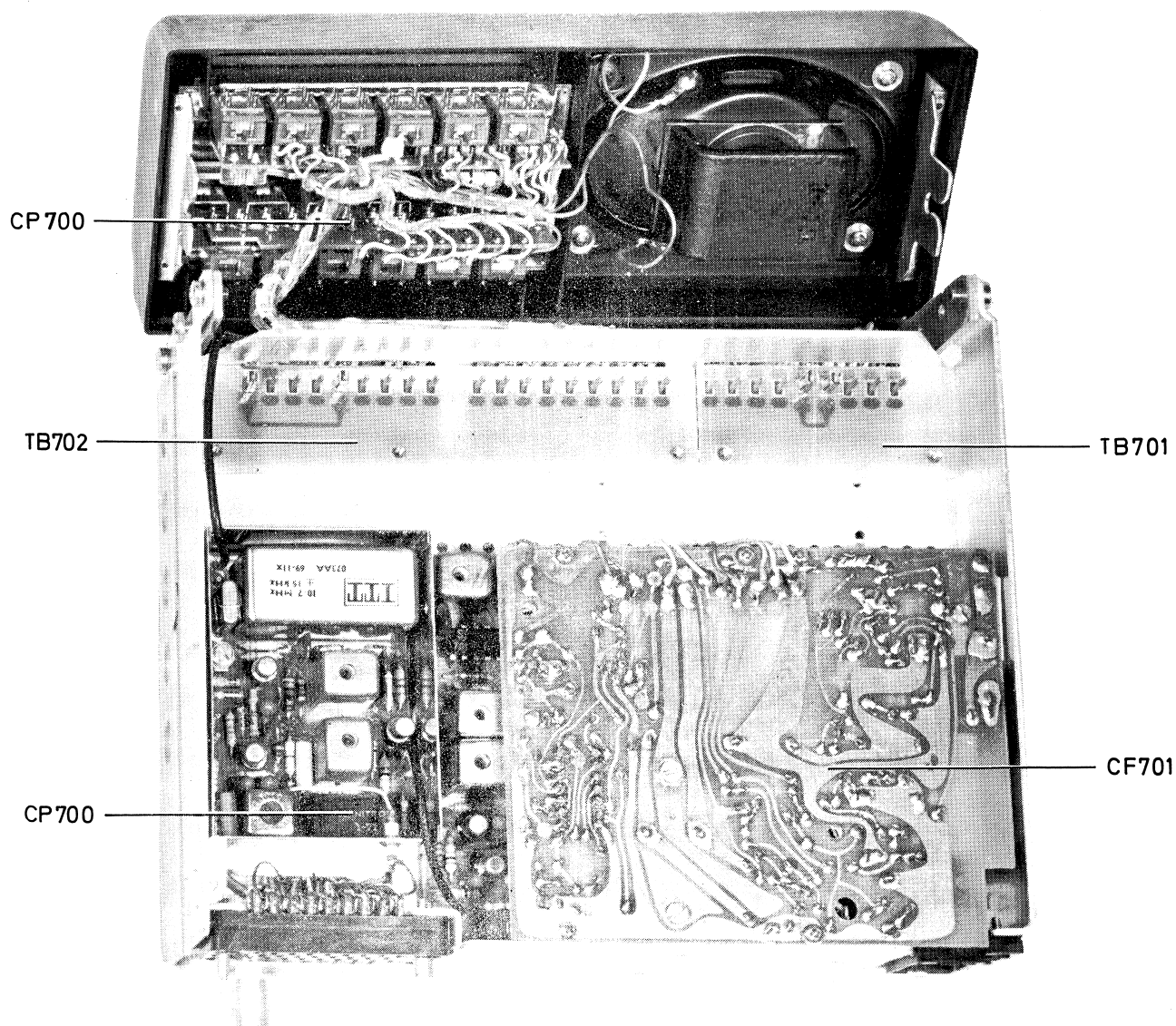
PROVISIONAL



MOBILE RADIOTELEPHONE CQM700



MOBILE RADIOTELEPHONE CQM760
TOP VIEW



MOBILE RADIOTELEPHONE CQM760

BOTTOM VIEW

GENERAL SPECIFICATIONS

Type	CQM761	CQM763
Min. Channel Separation	50 kHz	25 kHz or 20 kHz
Max. Frequency Swing	± 15 kHz	± 5 kHz or ± 4 kHz
Frequency Range	420 - 470 MHz	
Frequency Stability	Meets government specifications	
Max. Bandwidth	1000 kHz	
Antenna Impedance	50 ohms nominal	
Number of RF Channels	Max. 6 channels	
Ambient Temperature	Working range: -25°C to $+50^{\circ}\text{C}$ Function range: -30°C to $+60^{\circ}\text{C}$	
Dimensions	Local controlled version: 180 x 190 x 68 mm Extended local controlled version: 180 x 160 x 68mm Control unit CB700: 118 x 65 x 55mm	
Weight	Local controlled version: 2.1 kilos Extended local controlled version: 1.9 kilos Control unit CB700: 0.2 kilos	

TRANSMITTER SPECIFICATIONS

RF Power Output	6 watts
Type of Modulation	Phase
AF Response	6dB/octave pre-emphasis 300...3000Hz $+1/-3\text{dB}$
Modulation Distortion	3%
Modulation Sensitivity	220 mV EMF (600 Ω)
Adjacent-channel Interference	Attenuated to meet government specifications
FM Hum and Noise	45 dB
Spurious and Harmonic Radiation	Attenuated to meet government specifications

RECEIVER SPECIFICATIONS

Sensitivity	CQM761: $1.0\mu\text{V}$ e.m.f. for 12 dB SINAD CQM763: $0.8\mu\text{V}$ e.m.f. for 12 dB SINAD
Squelch	Electronic, adjustable
Adjacent-channel Selectivity	CQM761: 85 dB (EIA measuring method) CQM763: 80 dB (FTZ measuring method)
Intermodulation	75 dB EIA, 70 dB FTZ
Spurious Radiation	Attenuated to meet government specifications
Spurious Response Attenuation	90 dB
AF Output Power	2 watts EIA

GENERAL DESCRIPTION

Introduction

The mobile radiotelephone CQM760 is a transmitter/receiver combination for simplex operated FM radio communication in the frequency range 420-470 MHz. Within this frequency range the radiotelephone is available in two versions:

CQM761 Having a minimum channel separation of ± 50 kHz.

CQM762 Having a minimum channel separation of either ± 20 kHz or ± 25 kHz.

The radiotelephone can be equipped with a maximum of 6 RF channels and it is intended for as well local operation as extended local operation.

CQM760 is operated from a 12-volt DC power supply, and when installed in a vehicle the negative potential of the battery, from which the radiotelephone is powered, must always be connected to chassis.

Construction

The radiotelephone is housed in a drawer-type cabinet consisting of an outer section designed as a housing, and an inner section that is similar to a drawer. The two sections are held together by a number of screws. The outer section is a box made of 2-mm aluminium sheet.

The drawer section consists of two trays made of cadmium-plated steel sheet. The upper tray designated RF761 contains all the circuits which are not common to the various frequency bands covered by the CQM700 programme. These are:

Antenna filters

Receiver UHF circuits

Crystal shift unit (if any)

Exciter

Transmitter power output amplifier.

The lower tray designated BA701 contains the units that are common to all the frequency bands covered by the CQM700-programme. These are:

Audio amplifier

Intermediate frequency amplifier

Squelch circuit

Voltage regulators

Tone equipment (if any).

Operation of a local controlled station is performed from the front panel of the radio cabinet.

Extended local control is performed from a control unit CB7000 which connects to the radiotelephone through a multiconductor cable provided with crimp-pins for solderless connection to the multi-way connector located on the rear of the radio cabinet.

Space is provided in the radio cabinet for installation of tone equipment and a line of tone calling units makes it possible to choose between various forms of selective tone calling systems. All types of the units are provided with cabling terminating in sockets for connection to associated plugs in the radio cabinet thereby making soldering unnecessary.

Depending on whether the radiotelephone is intended for local or extended local control and on the number of RF channels required CQM760 may be provided with the following types of front panels:

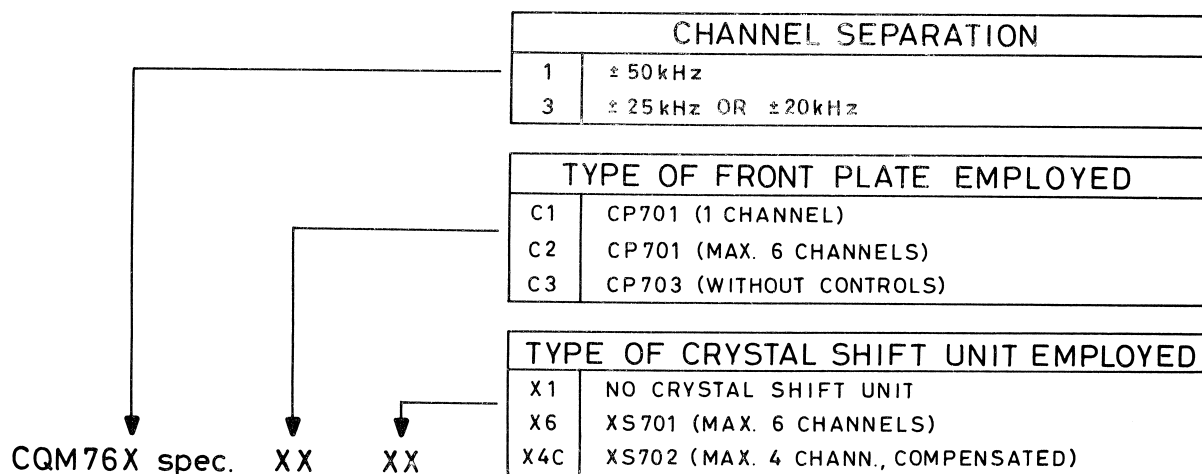
- CP701 Front panel with controls and built-in loudspeaker. This type of panel has no channel selector thus allowing the radiotelephone to be equipped with only one channel.
- CP702 Front panel with controls including channel selector for switching between a maximum of 6 channels. The panel has built-in loudspeaker.
- CP703 Front panel without controls or loudspeaker. Used in extended local controlled radiotelephones.

The radiotelephone may be equipped with one of the below types of crystal shift units if more than one RF channel is required.

- XS701 Channel shift unit for a maximum of 6 channels.
- XS702 Channel shift unit for a maximum of 4 channels with temperature compensated oscillators.

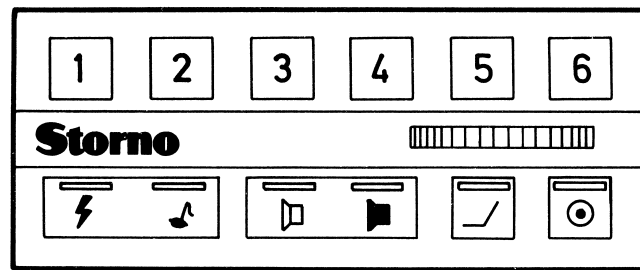
A type plate located on the radio cabinet states the type designation of the radiotelephone besides the operation and the maximum number of channels for which it is intended.

Reading of the type plate:



Operation

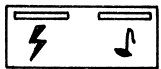
The controls located on the front panel are as follows:



CP 702 FRONT PANEL



Push-buttons for channel selection.



Tone button with lamp indicating if the channel is occupied (in radiotelephone with built-in tone transmitter).

Transmit button with transmit pilot lamp (in radiotelephone without built-in tone transmitter).



Button for cutting the loudspeaker in and out, provided with pilot lamp indicating received tone call. (This button is used in conjunction with built-in tone receiver only).



Squelch button for cutting the squelch function in and out.



On/off switch with start lamp.



Volume control.

Notice: In radiotelephones with built-in tone transmitter an external key (e. g. steering column switch or microphone button) must be used as transmit button as the internal button on the front panel is then used for keying the tone transmitter.

The CP701 front panel corresponds to type CP702 with the exception of the channel switching unit which is replaced by a dummy chassis.

Control Equipment and Accessories

The list below covers the types of control equipment and accessories that are available for the CQM760 radiotelephone. Some of them, such as installation materials, antenna, and microphone, are necessary for installing and operating the equipment.

Microphones

- MC701 Fixed microphone with built-in amplifier. Hardware for fixed mounting is supplied.
- MC702 Fist microphone with built-in amplifier, transmit button, and retainer. Mounting hardware is applied.
- MC703 Fixed microphone for mounting on steering column.
- MT701 Handset with built-in amplifier and transmit button. Retainer and mounting hardware is supplied.

All the above types of microphones and handset are provided with cables terminating in crimp-pins for solderless mounting in a multiway connector which provides for connection of accessories to the radiostation.

Antennas

The radiotelephone is designed for operation with a 50-ohm antenna. Storno can supply the following types which have bases designed to permit mounting from the outside without damaging the car upholstery.

- AN69-3 1/4 wavelength whip antenna for the frequency range 420-470 MHz.
- AN69-4 5/8 wavelength whip antenna for the frequency range 420-470 MHz.

Control Units

One of the following control units, which are intended for installation in or below the dashboard, can be employed for extended local control of the radiotelephone:

- CB701 Control unit housed in a cast plastic cabinet containing controls for the operation of the radiotelephone. This control unit has no channel selector.
- CB702 Control unit housed in a cast plastic cabinet containing controls for the operation of the radiotelephone including a channel selector for switching between a maximum of 6 RF channels.

Both types of control units are provided with a multiconductor cable terminating in crimp-pins for solderless mounting in a multiway connector which provides for connection of the control unit and other accessories to the radio station.

Loudspeakers

When using CQM760 as an extended local controlled station it is necessary to connect an external loudspeaker. The following types are available:

- LS701 Loudspeaker contained in a plastic housing provided with cable terminating in crimp-pins for solderless mounting in a multiway connector which provides connection of accessories to the radiostation.
- LS702 Weatherproof loudspeaker featuring the same facilities as type LS601.

Steering-Column Switches

Steering-Column Switches which are used as external transmitter keys are available in two versions, types SU601 and SU602.

Installation Kits

In addition to the accessories listed above, the installation of a CQM760 radiotelephone requires a number of installation kits. These are specified below:

- MN701 Mounting frame for radio cabinet, complete with fixing screws.
- CC701 Cable kit containing battery cable and antenna cable required for installation of a radiotelephone.
- MK701 Mounting kit containing connectors for connection of battery, antenna, and accessories to the radiostation besides fusebox and fuses for installation in the battery cable.

In conjunction with extended local control of the radiotelephone the distance between the control unit and the radiostation may be extended further by means of the below kit:

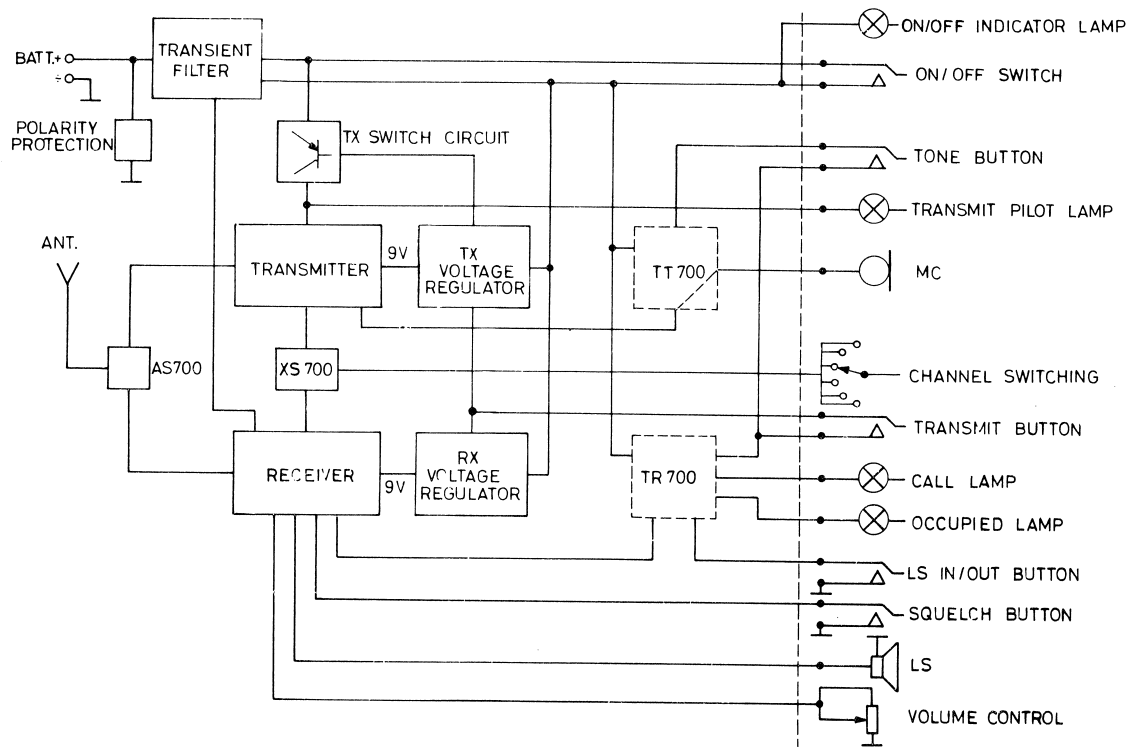
- CC703 Extension cable kit with connectors.

For radiotelephones with built-in tone receiver the following accessories for connection of external alarm devices are available:

- AC701 Alarm circuit.
- SU703 Auto relay.

CIRCUIT ANALYSIS

Principle of Operation



The 13.6 volts supply voltage from the battery is applied to the battery connector designated "BATT.". A zenerdiode connected in the back direction across the battery input serves the purpose of protecting the radiotelephone against the consequences of incorrect battery-voltage polarity. This polarity protection diode is followed by a transient filter from the output of which the supply voltage is applied partly to the on/off switch, and partly to the output stage of the transmitter through a switch transistor.

When activating the on/off switch voltage is fed to two 9-volt voltage regulator circuits for the transmitter and receiver section respectively. Furthermore supply voltage is delivered to the audio output amplifier of the receiver and built-in tone equipment, if any.

The antenna signal is passed to the antenna switching circuit and further to the input of the receiver. The antenna switching operation is controlled by the stabilized 9-volt voltages from the transmitter and receiver voltage regulators.

The local oscillator signal to the receiver is delivered from the channel shift unit XS700 which is controlled from the channel selector. However, in the version of CQM700 intended for one channel only, the radiotelephone contains no channel shift unit as the single pair of crystal oscillators required for that purpose will be incorporated in the transmitter and receiver sections.

The audio output from the receiver is applied to the loudspeaker (LS). The output level is adjusted by means of the volume control.

The squelch function of the receiver may be cut out by means of a squelch button.

As may be seen from the simplified functional diagram the receiver may be connected to a tone receiver TR700, which is used in selective tone calling systems. The tone receiver serves the purpose of cutting the AF circuitry of the receiver in and out.

In systems using selective call the loudspeaker output will normally be cut out by means of the "Loudspeaker In/Out" button.

On receiving a tone call for which the tone receiver is set this will automatically cut in the loudspeaker. A "call lamp" and a "occupied lamp" indicating that a call to the radio station has been received and that the frequency channel is occupied are also controlled by the tone receiver.

These lamps are not used in radiotelephones without tone receiver.

The oscillator signal to the exciter of the transmitter is delivered by the channel shift unit, and the modulating signal to the transmitter modulator is applied from the microphone (MC) through the tone transmitter TT700, if any.

During transmission of tone calls the microphone will be cut out automatically so that the transmitter is modulated only by the tone signal from TT700.

The transmitter is keyed by depressing the transmit button. This will block the receiver's voltage regulator and cancel the blocking of the transmitter's voltage regulator. When the transmitter's voltage regulator starts operating supply voltage is delivered to the exciter and the switch circuit. The switch circuit, in its turn, passes current to the output power amplifier and the entire transmitter is functioning.

The "transmitter on" condition is indicated by a transmit pilot lamp.

In radiotelephones with built-in tone receivers the transmitter cannot be operated until the loudspeaker has been cut in manually by means of the "loudspeaker in/out" button.

Receiver Section

The CQM760 receiver section is a double-conversion superheterodyne using intermediate frequencies of 10.7 MHz and 455 kHz. The very high input selectivity characterizing the receiver is obtained by means of a five-element helix filter having a low insertion loss.

The necessary channel selectivity is accomplished by means of two block filters, viz. a 10.7 MHz crystal filter, and a 455 kHz ceramic filter.

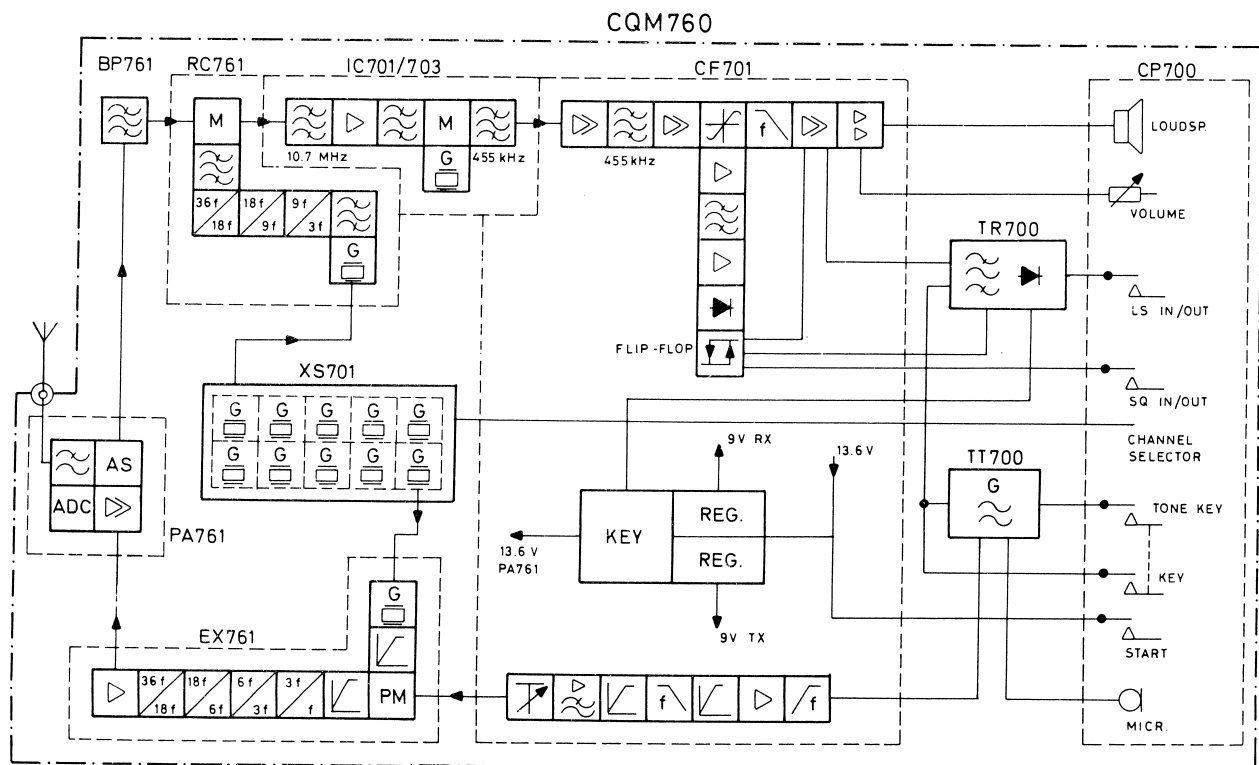
A maximum of 6 crystal controlled oscillators - one for each frequency channel - can be provided.

The oscillators are connected in parallel and channel switching is performed by switching the DC chassis connection between the oscillators.

The receiver is composed of the following subunits:

Antenna switching unit	AS761
Helix filter (RF input filter)	BP761
Receiver converter with multiplier and 1st mixer	RC761
Intermediate-frequency converter with 10.7 MHz crystal filter, 2nd mixer, and 455 kHz ceramic filter:	
For 50 kHz channel separation	IC701 or
For 25 kHz and 20 kHz channel separation	IC703
455 kHz intermediate-frequency amplifier, squelch, audio amplifier, and voltage regulator. (These circuits constitute part of subunit CF701)	CF701
Channel switching unit:	
For maximum 6 channels	XS701 or
For maximum 4 channels, temp. compensated	XS702

Signal Path



The input circuits of the receiver are designed to meet the requirements for good selectivity and intermodulation characteristics.

From the antenna shift unit the input signal is passed through a helix filter and an impedance matching network directly to the mixer stage. Because of a low insertion loss in the helix filter it is possible to obtain a good receiver sensitivity without using an RF amplifier stage. The omission of an RF amplifier offers the advantages of improved blocking, selectivity, and intermodulation characteristics.

The BP761 helix filter consists of five tuned circuits which can be adjusted to cover the entire UHF band 420-470 MHz. The coupling between the helix filter and the mixer stage is performed by a tuned impedance matching network loaded with a low Q. This network transforms the output impedance of the helix filter into the input impedance required for the field-effect transistor in the mixer stage.

Both the injection signal and the antenna signal are applied to the gate of the transistor. The mixer works into a drain circuit from which the 10.7 MHz signal is taken off.

Injection signal to 1st mixer

The injection signal is produced in an oscillator working on the fundamental frequency of the crystal. The oscillator operates within the frequency range 11.35 MHz to 12.75 MHz.

In the oscillator the 3rd harmonic frequency is selected and applied to a multiplier chain consisting of a tripler and two doubler stages. The multiplier output frequency is 36 times the fundamental frequency of the oscillator.

After the last doubler stage follows a filter consisting of three tuned circuits capacitively coupled to each other. The purpose of the filter is to attenuate undesired frequencies generated by the multiplier chain thereby preventing them from reaching the mixer stage.

The injection signal is chosen to be 10.7 MHz below the antenna frequency, and it is calculated as follows:

$$f_x = \frac{f_a - 10.7}{36} \text{ MHz}$$

where f_x is the crystal frequency
and f_a is the antenna frequency.

The RC761 receiver converter includes an oscillator intended for use in receivers with only one channel. In case more than one channel is required the radiotelephone will be provided with a channel switching unit type XS701 or XS702.

XS701 contains oscillators for five RF channels thus allowing the receiver to be equipped with a maximum of 6 channels.

The oscillator switching unit type XS702 is a temperature compensated unit employed where radiotelephones are to work under extreme low temperatures. The compensation consists in heating the crystals when the ambient temperature falls below approx. -5°C .

XS702 contains oscillators for a maximum of 4 channels.

Intermediate-frequency circuitry

From the mixer in RC761 the 10.7 MHz signal is passed to the intermediate-frequency converter type IC701 or IC703 - depending on the channel separation used - which provides for the entire channel selection in the receiver.

First the 10.7 MHz IF signal is filtered in a crystal filter and afterwards amplified in an IF amplifier stage before it is applied to the transistor in the 2nd mixer stage where it is converted to 455 kHz.

The injection signal to the mixer stage is produced by a crystal-controlled oscillator the frequency of which is normally chosen to be 10.7 MHz less 455 kHz, that is 10.245 MHz, but in cases where one of the harmonics of the local oscillator coincides with the frequency of the antenna signal, which might cause interference, a crystal frequency of 10.7 MHz plus 455 kHz, that is 11.155 MHz, is chosen instead.

In the first case the crystal frequency is calculated as follows:

$$\begin{aligned}f_x + 0.455 &= 10.7 \text{ MHz} \\f_x &= 10.7 \text{ MHz} - 0.455 \text{ MHz}.\end{aligned}$$

In the second case (crystal frequency chosen to be 11.155 MHz) the crystal frequency is calculated as:

$$\begin{aligned}f_x - 0.455 &= 10.7 \text{ MHz} \\f_x &= 10.7 \text{ MHz} + 0.455 \text{ MHz}.\end{aligned}$$

Within the frequency range 420 - 470 MHz the oscillator frequency will have to be calculated according to the last mentioned formula when the below frequencies are used:

420.0 - 421.5 MHz

428.9 - 431.7 MHz

439.1 - 441.9 MHz

449.4 - 452.2 MHz

459.6 - 462.4 MHz

469.8 - 474.7 MHz

The 455 kHz intermediate-frequency signal from the mixer stage is passed through a ceramic filter in the IC701 or IC703 converter unit before it is applied to the intermediate-frequency amplifier in CF701.

The 455 kHz intermediate-frequency amplifier consists of two resistance-coupled amplifier stage followed by a double-tuned filter and a three-stage integrated amplifier. The last two stages will normally be operating as limiters.

The amplified and limited signal is next detected in a phase detector which constitutes a part of the integrated package containing the last three stages of the IF amplifier.

The detector is a so-called "Quadrature detector" or "product detector" of the balanced type which provides an effective suppression of AM signals.

As the detector has only one tuned circuit it is very simple to adjust.

AF circuitry

The detected signal from the discriminator is fed through a de-emphasis network to a potentiometer which is used for setting the AF signal level irrespective of the channel separation and thus the frequency deviation used.

The signal is then applied to a three-stage amplifier in which a field-effect transistor operating as an electronic switch has been inserted between the second and third stage. This switch serves the purpose of cutting the AF signal in and out in conjunction with the squelch circuit. The three-stage amplifier has a nominal output level of -17 dBm (600 Ω).

The signal is passed on to the loudspeaker amplifier and the tone receiver, if any.

The loudspeaker amplifier amplifies the AF input of 110 mV (600 Ω) to an output level of 2 watts (5 Ω). The input stage is coupled to an active filter which cuts off all frequencies below 250 Hz.

An adjustable resistor forming part of the collector resistance renders it possible to make a 12 dB adjustment of the amplification.

The final regulation of the amplification and thus the loudspeaker output level is performed by means of the volume control on the control panel of the radio-telephone. Electrically the volume control is connected between the first and second AF amplifier stage.

The AF output stage consists of two complementary power transistors operating in Class B push-pull.

Besides temperature compensation negative feed back is employed in the output amplifier to improve the stabilization.

By applying a positive voltage to a "muting terminal" on the AF amplifier it is possible to mute the AF output to the loudspeaker. This muting takes place during periods of transmission and in conjunction with built-in tone receiver where the loudspeaker can be cut out manually.

Squelch Circuit

The squelch circuit in CQM700 is operated by noise voltages in the output signal of the discriminator.

The AF signal from the discriminator is passed to a selective amplifier stage with a resonant circuit in the collector. The resonance frequency of this circuit can be changed in accordance with the channel separation used by means of a strapping arrangement.

The noise signal is passed through an expander circuit before it is detected and applied to a Schmitt trigger, which controls the before mentioned electronic switch in the AF circuit.

When the noise level exceeds a certain value, i.e. when the signal-to-noise ratio falls below a certain value, the trigger circuit will be activated and the AF signal cut off.

The Schmitt trigger also controls a squelch signal circuit which - via the tone receiver, if any - operates the "occupied lamp".

The squelch sensitivity is adjusted by a potentiometer located in the input of the expander circuit (amplitude selective noise amplifier).

By means of a squelch button on the control panel of the radiotelephone the Schmitt trigger can be blocked manually thus cutting off the squelch circuit.

Transmitter Section

(See block diagram on page 9).

The transmitter is phase modulated. Its output frequency is 36 times the oscillator frequency. Phase modulation is performed at the fundamental frequency.

The transmitter is composed of the following subunits:

Channel switching unit (in radiotelephones intended for more than one channel):

For maximum 6 channels	XS701
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For maximum 4 channels, (temp. compensated)	XS702
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Exciter with modulator	EX761
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RF power amplifier	PA761
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Antenna shift unit	AS761
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Modulation amplifier, switch circuits, and voltage regulator	CF701
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(These circuits constitute part of CF701).

AF Circuitry

The modulating signal from the microphone is fed through the tone transmitter unit, if any, otherwise directly to the modulation amplifier in CF701 where it is differentiated (pre-emphased), amplified, limited, integrated, and filtered. The modulation amplifier circuit serves the purpose of matching the microphone output to a signal suitable for the modulator, and to limit the amplitude of the said signal so that the maximum permissible frequency swing will not be exceeded, and the transmitter will not cause interference on adjacent channels.

The amplifier consists of an integrated dual operational amplifier. The differentiation is performed by an RC network in the input of the 1st pre-amplifier. A high degree of negative feedback secures a constant amplification in this amplifier stage. Furthermore the 1st pre-amplifier operates as an amplitude limiter which prevents the signal from exceeding a certain level. From the 1st amplifier the signal is passed through an RC network before it is applied to another limiter consisting of two dual diodes.

This extra limiter has been inserted in order to prevent the phase modulator from being overdriven at low modulating frequencies (phase clipping). During nominal frequency swing the extra clipper will be inactive.

Before being applied to the phase modulator the modulating signal is filtered in a splatter filter. The filter is designed as an active filter containing the 2nd amplifier in the integrated dual amplifier unit.

A potentiometer located in the output of the modulation amplifier circuit is used for adjusting the maximum frequency swing.

RF Circuitry

The fundamental RF signal is generated in a crystal controlled oscillator. As in the case with the receiver, channel switching is performed by switching the DC chassis connection between the oscillators. The transmitter uses one oscillator for each channel. The exciter EX761 contains an oscillator for channel 1. If more than one channel is required the transmitter will be provided with a channel switching unit.

The exciter performs two main functions: it modulates the RF oscillator signal and converts it to a frequency and a level suitable for the following power amplifier, PA761.

The RF signal from the oscillator is applied to the 1st buffer, next to the phase modulator which, in its turn, is followed by the 2nd buffer. The buffers provide for a constant input level to the modulator and correct load impedances.

The phase modulator is a so-called "transconductance modulator" as the phase modulation is produced by varying the transconductance of a transistor. The

modulating signal is applied to the emitter of the transistor whereby its operating point and thus the transconductance is changed concurrently with the modulating signal.

From the 2nd buffer the signal is fed to a frequency multiplier chain consisting of 1st tripler, 1st doubler, 2nd tripler, and 2nd doubler. The transmitter output frequency is 36 times the crystal oscillator frequency.

The first three multipliers are designed as balanced circuits resulting in suppression of certain harmonic frequencies.

The triplers suppress the even harmonics and the doublers suppress the odd harmonics.

Double-tuned bandpass filters with close-to-critical coupling between circuits are used as coupling elements between the stages. These filters limit the bandwidth of the exciter by attenuating undesired harmonics generated in the frequency multiplication process.

From the 2nd doubler the transmitter output frequency signal is fed to an amplifier stage with double-tuned bandpass filters in its input and output circuits which contributes to improved selectivity and thus attenuation of undesired frequencies. Another purpose of the amplifier stage is to amplify the exciter signal to a level suitable for the RF power amplifier unit, PA761. The nominal signal output level of EX761 is 80 mW into a 50 ohms load.

The bandwidth of the transmitter and thus the maximum frequency separation between the channels is determined by the selectivity in the exciter.

The output signal from the exciter is fed to the RF power amplifier which raises the RF signal level to the desired antenna output power.

The power amplifier contains four transistorized amplifier stages all operating on the same frequency. The coupling between the stages consists of tuned matching network loaded with a low Q.

The RF power amplifier is a Class C amplifier resulting in a high efficiency. An ADC Circuit (Automatic Drive Control Circuit) in the power amplifier unit regulates the supply voltage to the first PA stage and consequently the drive to the following power amplifier stages. The purpose of this circuit is to ensure constant current through the output transistors and so prevent them from being overloaded. The ADC circuit also causes the output of the RF power amplifier to be less dependent on variations in supply voltage and ambient temperature. By means of a potentiometer in the ADC circuit it is possible to reduce the transmitter output.

From the RF power amplifier the signal is passed through an electronic antenna shift unit and a lowpass filter to the antenna.

The antenna shift unit is composed of diodes which are forward biased during transmission and reverse biased during reception. The lowpass filter is a 7-pole Chebishev filter having a low insertion loss and low ripple. It serves the purpose

of preventing the transmitter from radiating signals at undesired frequencies, such as harmonics of the signal frequency.

The lowpass filter is not adjustable.

Power Supply Circuits and Switch Circuits

CQM700 is powered directly from a 12-volt car battery. The negative battery voltage terminal on the radiotelephone connects directly to the radio chassis, i.e. the radio cabinet.

To suppress noise and transients from the battery voltage the CQM700 is provided with a transient filter.

A polarity protection zenerdiode connected across the battery input serves the dual purpose of limiting peak voltages to approx. 20 volts and protect the radiotelephone against the consequences of incorrect battery-voltage polarity. Incorrect polarity will cause the diode to become conductive, thus blowing the battery-cable fuse.

The CQM700 contains two identical voltage regulator circuits, one for the transmitter and one for the receiver, which deliver 9-volt stabilized supply voltages for operating the transmitter and receiver sections of the radiotelephone with the exception of the loudspeaker AF amplifier and the transmitter RF power amplifier which receive their supply voltages from the battery voltage input.

The voltage regulators are protected against short-circuit by limiting their short-circuit currents so that they will not exceed the maximum currents that can be drawn from the regulators.

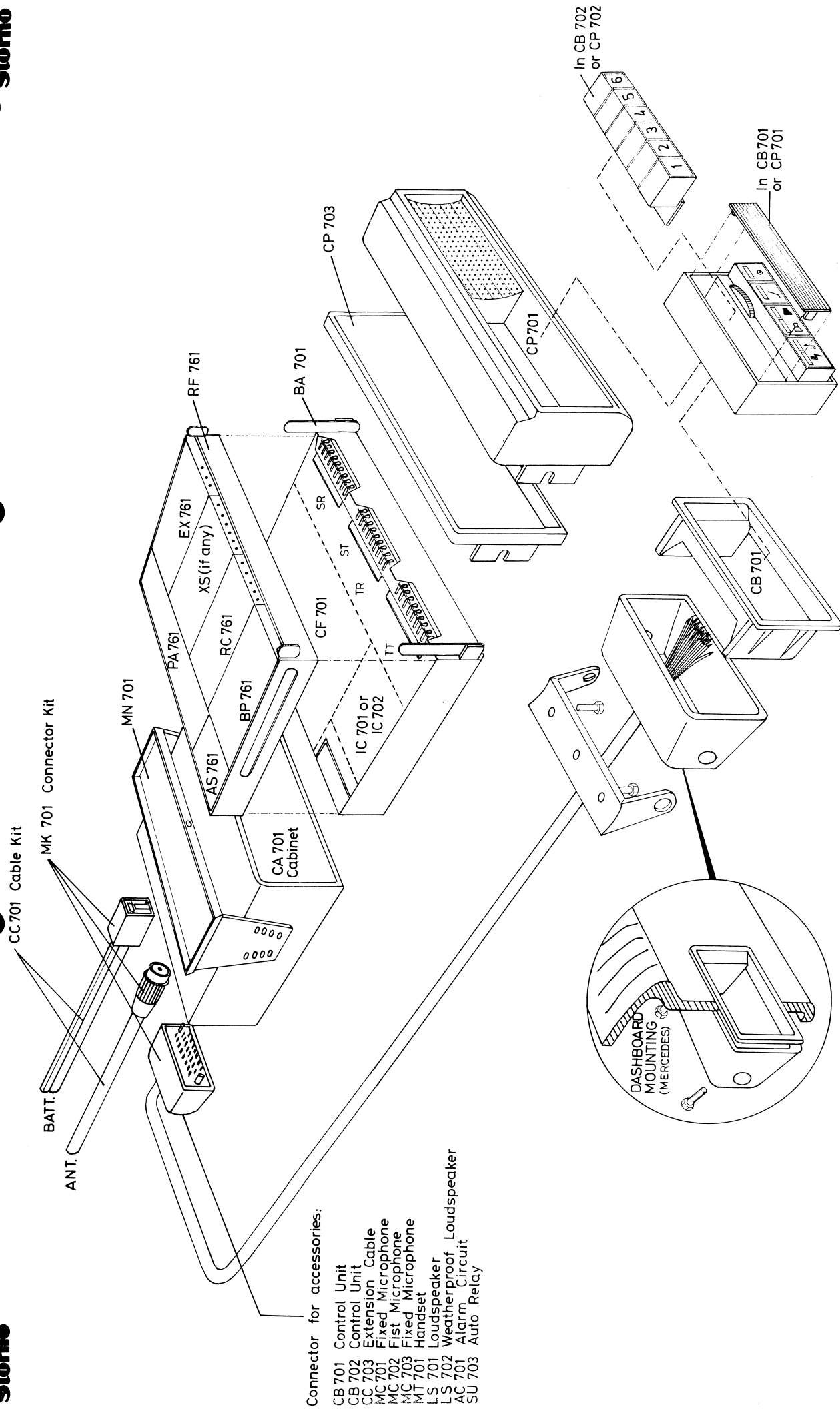
Each regulator has a built-in blocking transistor which is controlled from the transmit key button. When the key button is in its non-operated condition the transmitter voltage regulator will be blocked whereas the receiver voltage regulator will be operating, and vice versa when the transmitter is keyed.

The supply voltage for the PA761 power amplifier in the transmitter is taken directly from the transient filter and applied to the amplifier unit through a switch transistor. This switch transistor is controlled by the transmitter voltage regulator which, in its turn, is controlled from the transmitter key button.

NOTE: The voltage applied to the switch transistor cannot be turned off by means of the on/off switch on the radiotelephone.



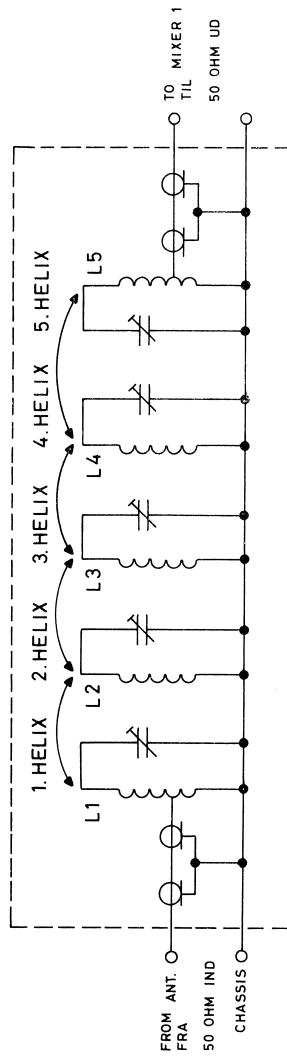
CIRCUIT DIAGRAMS AND PARTS LISTS





D401.309

NOTE : IN EXTENDED LOCAL CONTROLLED RADIOTELEPHONES ONLY
THE BELOW STRAPPING ARE INSERTED:
BETWEEN D AND J
BETWEEN W AND AA
BETWEEN EE AND KK
THE STRAPPINGS ARE LOCATED IN THE
OUTER MALE CONNECTOR PART (MM701)



HELIX FILTER BP761

BAND PASS FILTER BP761

D401.325

Storno

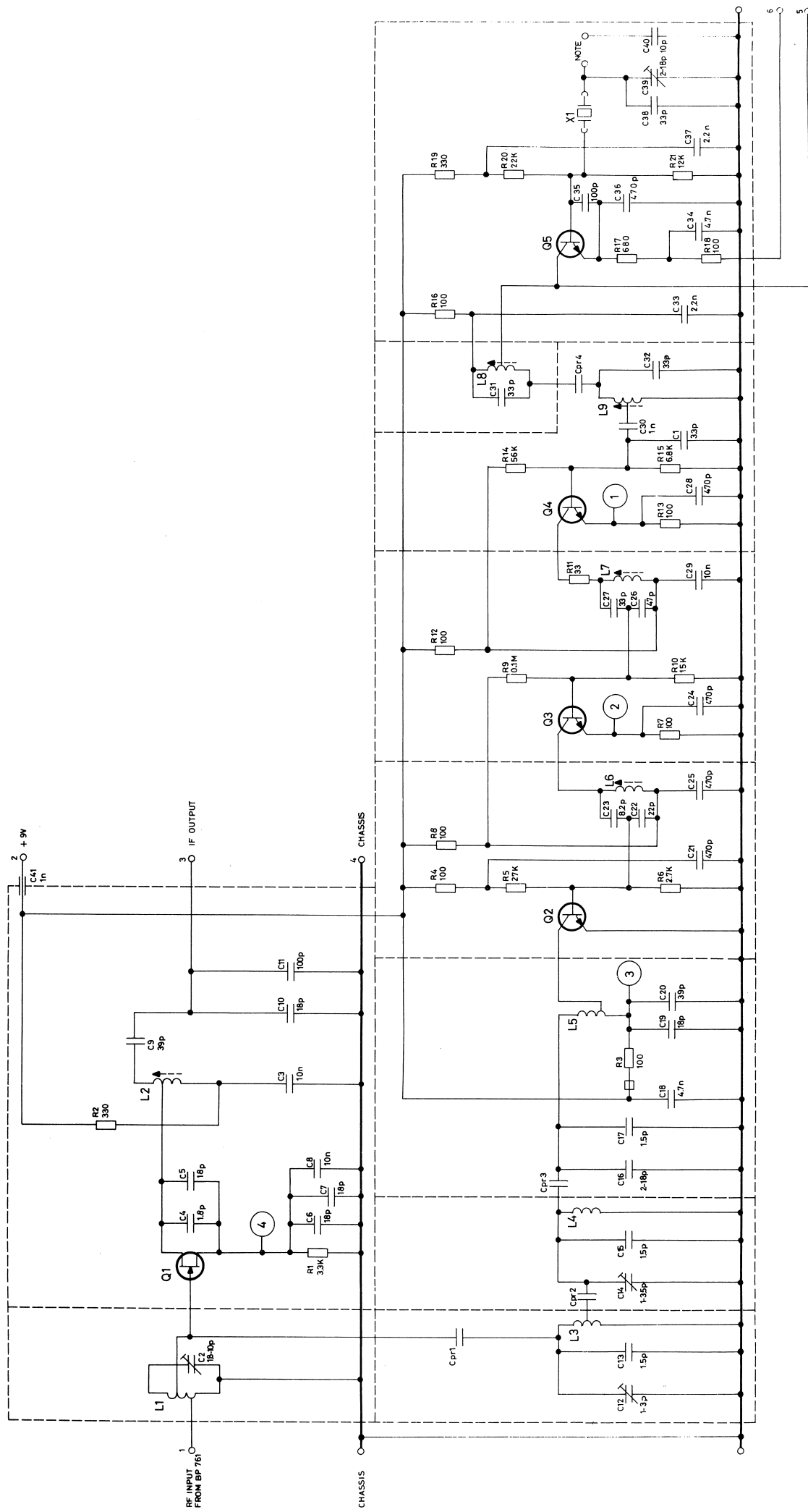
TYPE	NO.	CODE	DATA
BP761	L1 L2 L3 L4 L5	10.2426 62.0793 62.0793 62.0793 62.0793	Helical Band Pass Filter Coil Coil Coil Coil Coil

Storno

TYPE	NO.	CODE	DATA

BAND PASS FILTER BP761

X401.316



RECEIVER CONVERTER RC761

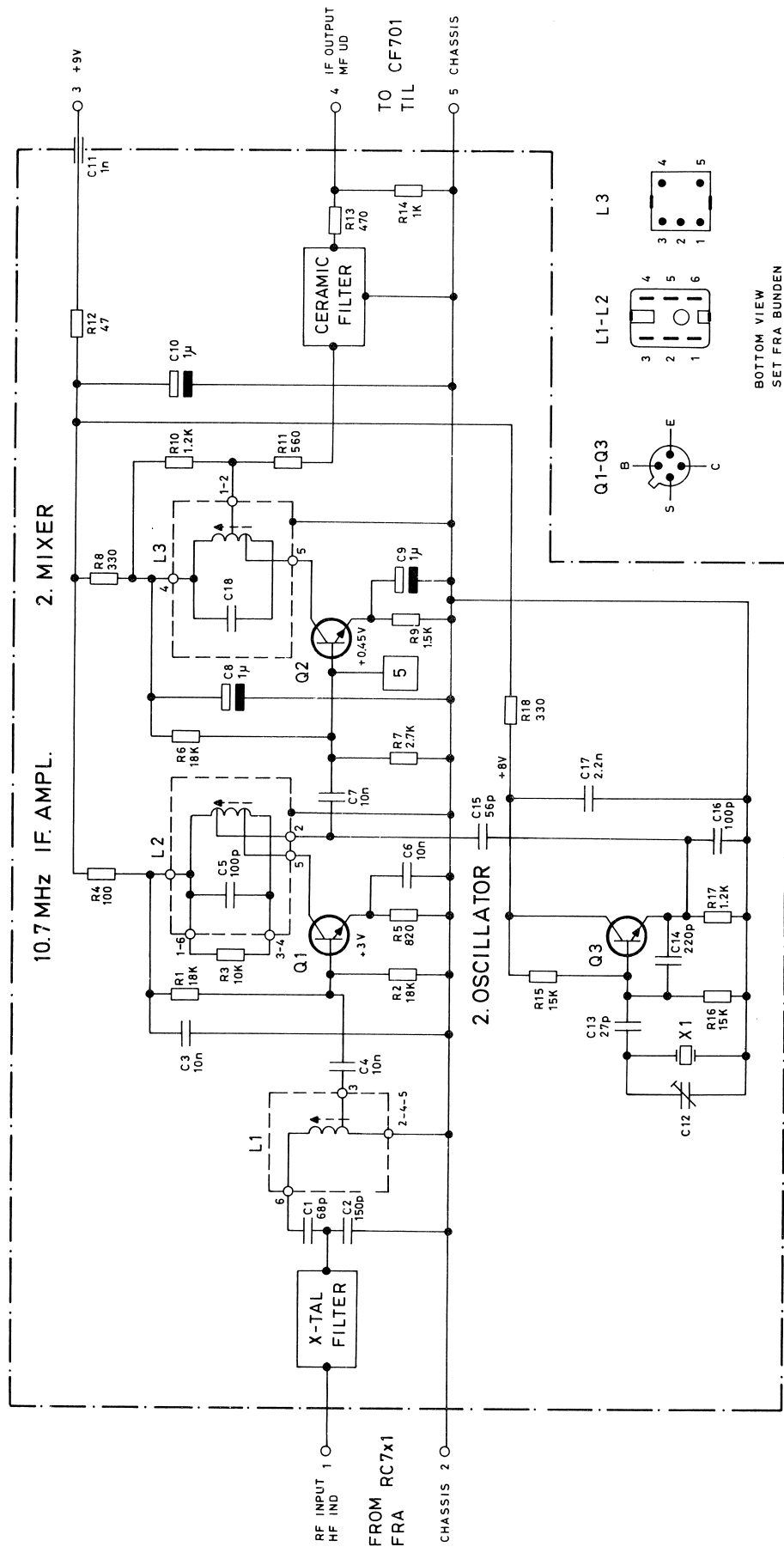
D401.333

TYPE	NO.	CODE	DATA
RC761		10.2430	Receiver Converter
C1	74.5129		3.3 pF ± 0.25 pF ceram DI
C2	78.5048		1.8 - 10 pF trimmer
C3	74.5109		10 nF -20 +80% ceram PL
C4	74.5126		1.8 pF ± 0.25 pF ceram BD
C5	74.5138		18 pF 5% ceram DI
C6	74.5138		18 pF 5% ceram DI
C7	74.5138		18 pF 5% ceram DI
C8	74.5109		10 nF -20 +80% ceram PL
C9	74.5193		39 pF 5% ceram TB
C10	74.5138		18 pF 5% ceram DI
C11	76.5102		100 pF 2.5 pF polystyr TB
C12	78.5047		1-3.5 pF trimmer
C13	74.5189		1.5 pF ± 0.25 pF ceram BD
C14	78.5047		1-3.5 pF trimmer
C15	74.5189		1.5 pF ± 0.25 pF ceram BD
C16	78.5048		2-18 pF trimmer
C17	74.5189		1.5 pF ± 0.25 pF ceram BD
C18	76.5061		4.7 nF 10% polyester. FL
C19	74.5138		18 pF 5% ceram DI
C20	74.5117		39 pF 5% ceram TB
C21	74.5161		470 pF -20 +80% ceram PL
C22	74.5106		22 pF 5% ceram TB
C23	74.5134		8.2 pF ± 0.25 pF ceram DI
C24	74.5161		470 pF -20 +80% ceram PL
C25	74.5161		470 pF -20 +80% ceram PL
C26	74.5118		47 pF 5% ceram TB
C27	74.5116		33 pF 5% ceram TB
C28	74.5116		470 pF -20 +80% ceram PL
C29	74.5109		10 nF -20 +80% ceram PL
C30	74.5155		1 nF -20 +80% ceram PL
C31	74.5116		33 pF 5% ceram TB
C32	74.5116		33 pF 5% ceram TB
C33	76.5059		2.2 nF 10% polyester. FL
C34	76.5061		4.7 nF 10% polyester. FL
C35	76.5102		100 pF 2.5% polystyr TB
C36	76.5106		470 pF 2.5% polystyr TB
C37	76.5059		2.2 nF 10% polyester. FL
C38	74.5191		33 pF 5% ceram TB
C39	78.5044		2-18 pF trimmer
C40	74.5135		10 pF 5% ceram DI
C41	74.5198		1 nF -20 +50% ceram FT
R1	80.5255		3.3 k Ω 5% carbon film
R2	80.5243		330 Ω 5% " "
R3	80.5237		100 Ω 5% " "
R4	80.5237		100 Ω 5% " "

TYPE	NO.	CODE	DATA
	R5	80.5266	27 k Ω 5% carbon film
	R6	80.5254	2.7 k Ω 5% " "
	R7	80.5237	100 Ω 5% " "
	R8	80.5237	100 Ω 5% " "
	R9	80.5273	0.1 M Ω 5% " "
	R10	80.5263	15 k Ω 5% " "
	R11	80.5231	33 Ω 5% " "
	R12	80.5237	100 Ω 5% " "
	R13	80.5237	100 Ω 5% " "
	R14	80.5270	56 k Ω 5% " "
	R15	80.5259	6.8 k Ω 5% " "
	R16	80.5237	100 Ω 5% " "
	R17	80.5247	680 Ω 5% " "
	R18	80.5237	100 Ω 5% " "
	R19	80.5243	330 Ω 5% " "
	R20	80.5265	22 k Ω 5% " "
	R21	80.5262	12 k Ω 5% " "
	L1	62.0815	RF coil 420 - 470 MHz
	L2	61.1117	IF coil 10.7 MHz
	L3	62.0812	RF coil 409.3 - 459.3 MHz
	L4	62.0815	RF coil 409.3 - 459.3 MHz
	L5	62.0813	RF coil 409.3 - 459.3 MHz
	L6	61.1118	RF coil 204 - 230 MHz
	L7	61.1119	RF coil 102 - 115 MHz
	L8	61.1120	RF coil 34 - 38.5 MHz
	L9	61.1121	RF coil 34 - 38.5 MHz
	Q1	99.5245	2N5245 Transistor FET
	Q2	99.5217	2N918 Transistor
	Q3	99.5168	BF173 Transistor
	Q4	99.5168	BF173 Transistor
	Q5	99.5139	BSX19 Transistor

RECEIVER CONVERTER RC761

X401.332



IF CONVERTER IC701

Storno

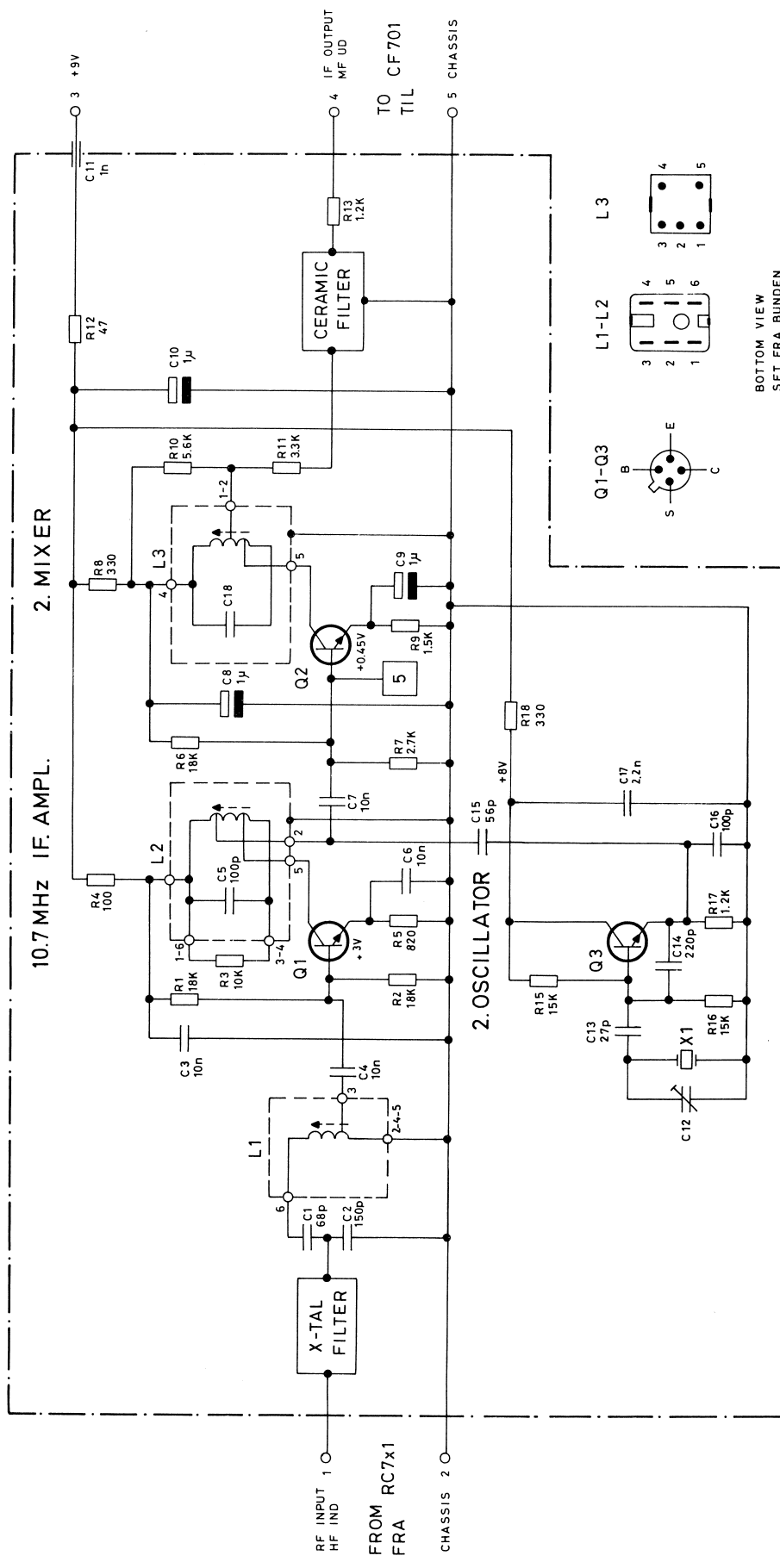
Storno

TYPE	NO.	CODE	DATA
IC701		10.2435	IF Converter
	C1	76.5101	68 pF 2.5% polystyr TB 25V
	C2	76.5103	150 pF 2.5% polystyr TB 25V
	C3	76.5070	10 nF 10% polyester. FL 50V
	C4	76.5070	10 nF 10% polyester. FL 50V
	C5	76.5102	100 pF 2.5% polystyr TB 25V
	C6	76.5070	10 nF 10% polyester. FL 50V
	C7	76.5070	10 nF 10% polyester. FL 50V
	C8	73.5114	1 μ F 20% tantal 35V
	C9	73.5114	1 μ F 20% tantal 35V
	C10	73.5114	1 μ F 20% tantal 35V
	C11	74.5167	1 nF -20 +80% ceram FT 300V
	C12	78.5044	2-18 pF trimmer 300V
	C13	74.5192	27 pF 5% ceram TB 160V
	C14	76.5104	220 pF 2.5% polystyr TB 25V
	C15	74.5111	56 pF 5% ceram 160V
	C16	76.5102	100 pF 2.5% polystyr TB 25V
	C17	76.5059	2.2 nF 10% polyester. FL 50V
	C18		See Ceramic Filter
	R1	80.5264	18 k Ω 5% carbon film 1/8W
	R2	80.5264	18 k Ω 5% " " 1/8W
	R3	80.5261	10 k Ω 5% " " 1/8W
	R4	80.5237	100 Ω 5% " " 1/8W
	R5	80.5248	820 Ω 5% " " 1/8W
	R6	80.5264	18 k Ω 5% " " 1/8W
	R7	80.5254	2.7 k Ω 5% " " 1/8W
	R8	80.5243	330 Ω 5% " " 1/8W
	R9	80.5251	1.5 k Ω 5% " " 1/8W
	R10	80.5250	1.2 k Ω 5% " " 1/8W
	R11	80.5246	560 Ω 5% " " 1/8W
	R12	80.5233	47 Ω 5% " " 1/8W
	R13	80.5245	470 Ω 5% " " 1/8W
	R14	80.5249	1 k Ω 5% " " 1/8W
	R15	80.5263	15 k Ω 5% " " 1/8W
	R16	80.5263	15 k Ω 5% " " 1/8W
	R17	80.5250	1.2 k Ω 5% " " 1/8W
	R18	80.5243	330 Ω 5% " " 1/8W
	L1	61.1122	IF coil 10.7 MHz
	L2	61.1123	IF coil 10.7 MHz
	L3		See Ceramic Filter
	X1	98.5010	Crystal 10.2450 MHz Type 98-12
	X1	98.5011	Crystal 11.1550 MHz Type 98-12
		69.5015	Crystal Filter 10.7 MHz

TYPE	NO.	CODE	DATA
		69.5013	Ceramic Filter 455 kHz L3 and C18 included
	Q1	99.5168	BF167 Transistor
	Q2	99.5173	BF173 Transistor
	Q3	99.5168	BF167 Transistor

IF CONVERTER IC701

X401.315



Storno

Storno

TYPE	NO.	CODE	DATA
IC703		10.2432	IF Converter
	C1	76.5101	68 pF 2.5% polystyr TB
	C2	76.5103	150 pF 2.5% polystyr TB
	C3	76.5070	10 nF 10% polyester. FL
	C4	76.5070	10 nF 10% polyester. FL
	C5	76.5102	100 pF 2.5% polystyr TB
	C6	76.5070	10 nF 10% polyester. FL
	C7	76.5070	10 nF 10% polyester. FL
	C8	73.5114	1 nF 20% tantal
	C9	73.5114	1 μ F 20% tantal
	C10	73.5114	1 μ F 20% tantal
	C11	74.5167	1 nF -20 +80% ceram FT
	C12	78.5044	2-18 pF trimmer
	C13	74.5192	27 pF 5% ceram TB
	C14	76.5104	220 pF 2.5% polystyr TB
	C15	74.5111	56 pF 5% ceram TB
	C16	76.5102	100 pF 2.5% polystyr TB
	C17	76.5059	2.2 nF 10% polyester. FL
	C18		See Ceramic Filter
	R1	80.5264	18 k Ω 5% carbon film
	R2	80.5264	18 k Ω 5% " "
	R3	80.5261	10 k Ω 5% " "
	R4	80.5237	100 Ω 5% " "
	R5	80.5248	820 Ω 5% " "
	R6	80.5264	18 k Ω 5% " "
	R7	80.5254	2.7 k Ω 5% " "
	R8	80.5243	330 Ω 5% " "
	R9	80.5254	2.7 k Ω 5% " "
	R10	80.5258	5.6 k Ω 5% " "
	R11	80.5255	3.3 k Ω 5% " "
	R12	80.5233	47 Ω 5% " "
	R13	80.5250	1.2 k Ω 5% " "
	R15	80.5263	15 k Ω 5% " "
	R16	80.5263	15 k Ω 5% " "
	R17	80.5250	1.2 k Ω 5% " "
	R18	80.5243	330 Ω 5% " "
	L1	61.1122	IF coil 10.7 MHz
	L2	61.1123	IF coil 10.7 MHz
	L3		See Ceramic Filter
	X1	98.5010	Crystal 10.2450 MHz Type 98-12
	X1	98.5011	Crystal 11.1550 MHz Type 98-12
		69.5016	Crystal Filter 10.7 MHz
		69.5014	Ceramic Filter 455 kHz
			L3 and C18 included

IF CONVERTER IC703

X401.314

TYPE

NO.

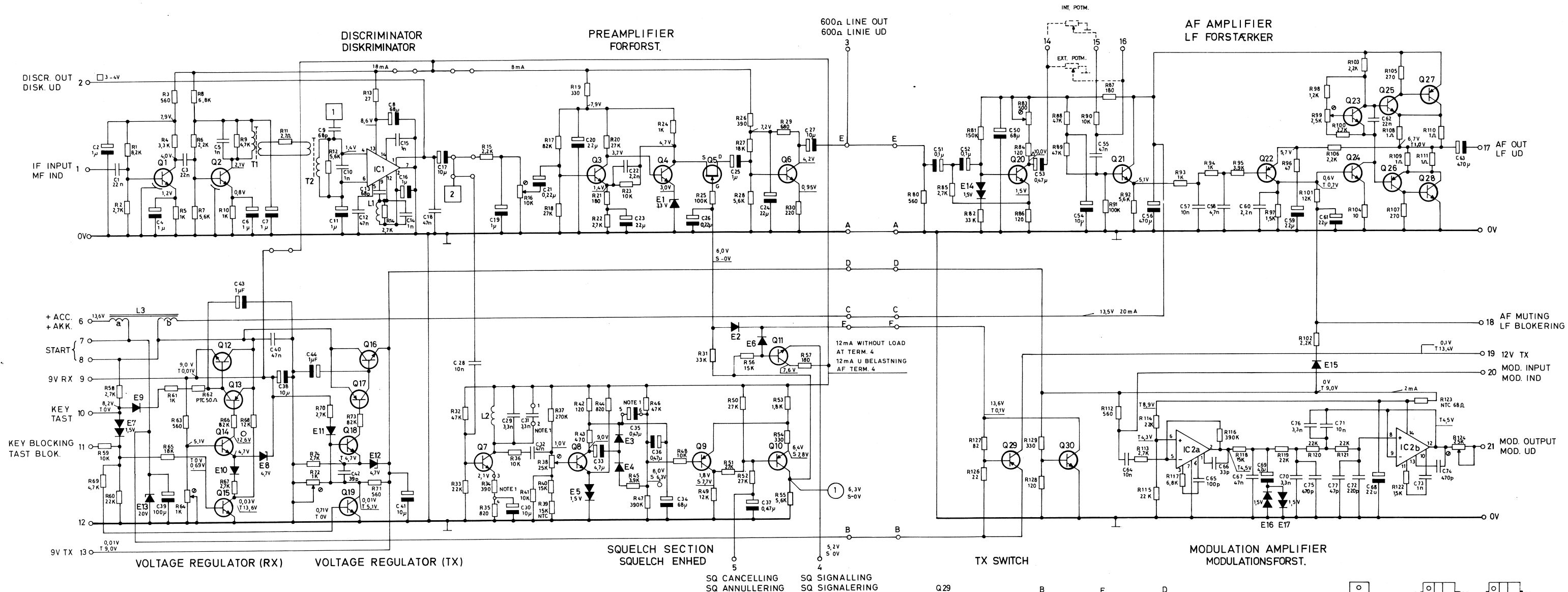
CODE

DATA

BF167 Transistor
BF173 Transistor
BF167 TransistorQ1
Q2
Q399.5168
99.5166
99.5168

LOWER PRINTED WIRING BOARD

UPPER PRINTED WIRING BOARD



DEPENDENT ON THE CHANNEL SEPARATION EMPLOYED
MAKE THE FOLLOWING ALTERATIONS:

POINTS CH. SEP.	1-2	3-4	5-6	
12.5 kHz	3.3nF	150 Ω	0.47 μ F	REPLACE R119, R120, R121, BY 27K Ω
20/25 kHz	3.3nF	390 Ω	0.47 μ F	
50 kHz	OPEN	820 Ω	OPEN	

COMMON FUNCTION UNIT CF701
FÆLLESENHED

D401. 296/2

TYPE	NO.	CODE	DATA
CF701		10. 2433	Common Functions Unit
	C1	76. 5071	22 nF 10% polyester FL
	C2	73. 5114	1 μ F 20% tantal
	C3	76. 5071	22 nF 10% polyester FL
	C4	73. 5114	1 μ F 20% tantal
	C5	76. 5109	1 nF 2.5% polystyr TB
	C6	73. 5114	1 μ F 20% tantal
	C7	73. 5114	1 μ F 20% tantal
	C8	73. 5106	68 μ F 20% tantal
	C9	76. 5101	68 μ F 2.5% polystyr TB
	C10	76. 5109	1 nF 2.5% polystyr TB
	C11	73. 5114	1 μ F 20% tantal
	C12	76. 5072	47 nF 10% polyester FL
	C13	76. 5101	68 pF 2.5% polystyr TB
	C14	76. 5109	1 nF 2.5% polystyr TB
	C15	76. 5069	1 nF 10% polyester FL
	C16	73. 5114	1 μ F 20% tantal
	C17	73. 5109	10 μ F 20% tantal
	C18	76. 5072	47 nF 10% polyester FL
	C19	73. 5114	1 μ F 20% tantal
	C20	73. 5127	22 μ F 20% tantal
	C21	73. 5118	0.22 μ F 20% tantal
	C22	76. 5059	2.2 nF 10% polyester FL
	C23	73. 5127	22 μ F 20% tantal
	C24	73. 5127	22 μ F 20% tantal
	C25	73. 5114	1 μ F 20% tantal
	C26	73. 5118	0.22 μ F 20% tantal
	C27	73. 5109	10 μ F 20% tantal
	C28	76. 5070	10 nF 10% polyester FL
	C29	76. 5060	3.3 nF 10% polyester FL
	C30	73. 5109	10 μ F 20% tantal
	C31	76. 5060	3.3 nF 10% polyester FL
	C32	76. 5072	47 nF 10% polyester FL
	C33	73. 5126	4.7 μ F 20% tantal
	C34	73. 5106	68 μ F 20% tantal
	C35	73. 5125	0.47 μ F 20% tantal
	C36	73. 5125	0.47 μ F 20% tantal
	C37	73. 5125	0.47 μ F 20% tantal
	C38	73. 5011	10 μ F -10/+100% elco
	C39	73. 5071	100 μ F -10/+100% elco
	C40	76. 5072	47 nF 10% polyester FL
	C50	73. 5106	68 μ F 20% tantal
	C51	73. 5089	0.1 μ F 20% tantal
	C52	73. 5089	0.1 μ F 20% tantal
	C53	73. 5125	0.47 μ F 20% tantal
	C54	73. 5109	10 μ F 20% tantal
	C55	76. 5072	47 nF 10% polyester FL

TYPE	NO.	CODE	DATA
	C56	73. 5138	470 μ F -10/+50% elco
	C57	76. 5070	10 nF 10% polyester FL
	C58	76. 5061	4.7 nF 10% polyester FL
	C59	73. 5127	22 μ F 20% tantal
	C60	76. 5059	2.2 nF 10% polyester FL
	C61	73. 5127	22 μ F 20% tantal
	C62	76. 5071	22 nF 10% polyester FL
	C63	73. 5137	470 μ F -10/+50 % elco
	C64	76. 5070	10 nF 10% polyester FL
	C65	74. 5165	100 pF 10% ceram PL
	C66	74. 5116	33 pF 5% ceram TB
	C67	76. 5072	47 nF 10% polyester FL
	C68	73. 5127	22 μ F 20% tantal
	C70	76. 5060	3.3 nF 10% polyester FL
	C71	76. 5070	10 nF 10% polyester FL
	C72	76. 5104	220 pF 5% polystyr TB
	C73	76. 5069	1 nF 10% polyester FL
	C74	74. 5161	470 pF -20/+80% ceram PL
	C75	76. 5106	470 pF 5% polystyr TB
	C76	76. 5060	3.3 nF 10% polyester FL
	C77	76. 5090	47 pF 5% polystyr
	R1	80. 5260	8.2 k Ω 5% carbon film
	R2	80. 5254	2.7 k Ω 5% " "
	R3	80. 5246	560 Ω 5% " "
	R4	80. 5255	3.3 k Ω 5% " "
	R5	80. 5249	1 k Ω 5% " "
	R6	80. 5253	2.2 k Ω 5% " "
	R7	80. 5258	5.6 k Ω 5% " "
	R8	80. 5259	6.8 k Ω 5% " "
	R9	80. 5257	4.7 k Ω 5% " "
	R10	80. 5249	1 k Ω 5% " "
	R11	80. 5218	2.7 Ω 5% " "
	R12	80. 5258	5.6 k Ω 5% " "
	R13	80. 5230	27 Ω 5% " "
	R14	80. 5254	2.7 k Ω 5% " "
	R15	80. 5253	2.2 k Ω 5% " "
	R16	86. 5039	10 k Ω 20% potentiometer
	R17	80. 5272	82 k Ω 5% carbon film
	R18	80. 5266	27 k Ω 5% " "
	R19	80. 5243	330 Ω 5% " "

COMMON FUNCTIONS UNIT CF701

X401.322

TYPE	NO.	CODE	DATA
	R20	80.5266	27 kΩ 5%
	R21	80.5240	180 Ω 5%
	R22	80.5254	2.7 kΩ 5%
	R23	80.5261	10 kΩ 5%
	R24	80.5249	1 kΩ 5%
	R25	80.5273	0.1 MΩ 5%
	R26	80.5244	390 Ω 5%
	R27	80.5264	18 kΩ 5%
	R28	80.5258	5.6 kΩ 5%
	R29	80.5247	680 Ω 5%
	R30	80.5241	220 Ω 5%
	R31	80.5267	33 kΩ 5%
	R32	80.5269	47 kΩ 5%
	R33	80.5265	22 kΩ 5%
	R34	80.5244	330 Ω 5%
	R35	80.5248	820 Ω 5%
	R36	80.5261	10 kΩ 5%
	R37	80.5278	0.27 MΩ 5%
	R38	86.5044	25 kΩ 20% potentiometer
	R39	89.5010	15 kΩ 2% NTC
	R40	80.5263	15 kΩ 5%
	R41	80.5261	10 kΩ 5%
	R42	80.5238	120 Ω 5%
	R43	80.5245	470 Ω 5%
	R44	80.5248	820 Ω 5%
	R45	80.5256	3.9 kΩ 5%
	R46	80.5269	47 kΩ 5%
	R47	80.5280	0.39 MΩ 5%
	R48	80.5261	10 kΩ 5%
	R49	80.5262	12 kΩ 5%
	R50	80.5266	27 kΩ 5%
	R51	80.5266	27 kΩ 5%
	R52	80.5266	27 kΩ 5%
	R53	80.5252	1.8 kΩ 5%
	R54	80.5243	330 Ω 5%
	R55	80.5258	5.6 kΩ 5%
	R56	80.5263	15 kΩ 5%
	R57	80.5240	180 Ω 5%
	R58	80.5254	2.7 kΩ 5%
	R59	80.5261	10 kΩ 5%
	R60	80.5265	22 kΩ 5%
	R61	80.5249	10 kΩ 5%
	R62	89.5046	50 Ω PTC
	R63	80.5246	560 Ω 5%
	R64	86.5068	1 kΩ 20% potentiometer
	R65	80.5264	18 kΩ 5% carbon film
	R66	80.5272	82 kΩ 5%
	R67	80.5254	2.7 kΩ 5%

TYPE	NO.	CODE	DATA
	R68	80.5262	12 kΩ 5%
	R69	80.5257	4.7 kΩ 5%
	R70	80.5254	2.7 kΩ 5%
	R71	80.5246	560 Ω 5%
	R72	86.5058	1 kΩ 20% potentiometer
	R73	80.5272	82 kΩ 5% carbon film
	R74	80.5254	2.7 kΩ 5%
	R80	80.5246	560 Ω 5%
	R81	80.5275	0.15 MΩ 5%
	R82	80.5267	33 kΩ 5%
	R83	86.5042	500 Ω 20% potentiometer
	R84	80.5238	120 Ω 5% carbon film
	R85	80.5254	2.7 kΩ 5%
	R86	80.5238	120 Ω 5%
	R87	80.5240	180 Ω 5%
	R88	80.5269	47 kΩ 5%
	R89	80.5269	47 kΩ 5%
	R90	80.5261	10 kΩ 5%
	R91	80.5273	0.1 MΩ 5%
	R92	80.5258	5.6 kΩ 5%
	R93	80.5249	1 kΩ 5%
	R94	80.5249	1 kΩ 5%
	R95	80.5256	3.9 kΩ 5%
	R96	80.5233	47 Ω 5%
	R97	80.5251	1.5 kΩ 5%
	R98	80.5250	1.2 kΩ 5%
	R99	86.5043	2.5 kΩ 20% potentiometer
	R100	80.5254	2.7 kΩ 5% carbon film
	R101	80.5262	12 kΩ 5%
	R102	80.5253	2.2 kΩ 5%
	R103	80.5253	2.2 kΩ 5%
	R104	80.5225	10 Ω 5%
	R105	80.5242	270 Ω 5%
	R106	80.5253	2.2 kΩ 5%
	R107	80.5242	270 Ω 5%
	R108	80.5213	1 Ω 5%
	R109	80.5213	1 Ω 5%
	R110	80.5213	1 Ω 5%
	R111	80.5213	1 Ω 5%
	R112	80.5246	560 Ω 5%
	R113	80.5254	2.7 kΩ 5%

COMMON FUNCTIONS UNIT CF701

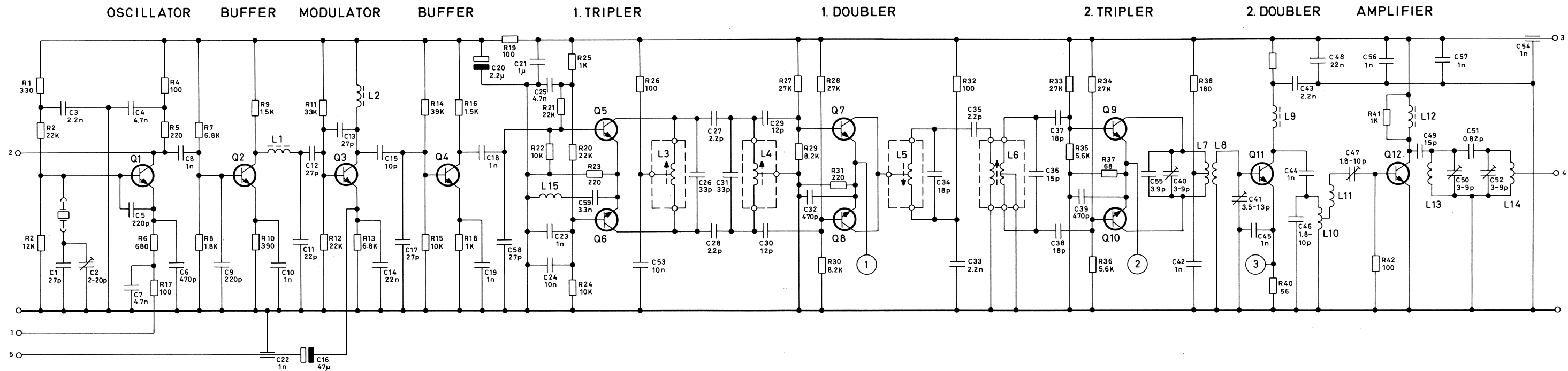
X401.322

TYPE	NO.	CODE	DATA
	R114	89.5062	22 k Ω 1% metal film
	R115	89.5062	22 k Ω 1% metal film
	R116	80.5280	0.39 M Ω 5% carbon film
	R117	80.5259	6.8 k Ω 5% " "
	R118	80.5263	15 k Ω 5% " "
	R119	89.5062	22 k Ω 1% metal film
	R120	89.5062	22 k Ω 1% metal film
	R121	89.5062	22 k Ω 1% metal film
	R122	80.5251	1.5 k Ω 5% carbon film
	R123	89.5061	68 Ω 20% NTC
	R125	86.5044	25 k Ω 20% potentiometer
	R126	80.5229	22 Ω 5% carbon film
	R127	84.5224	82 Ω 5% wire wound
	R128	80.5238	120 Ω 5% carbon film
	R129	80.5443	330 Ω 5% " "
	L1	61.1131	IF coil 455 kHz
	L2	61.1132	Coil 75 mH
	L3	60.5158	Choke
	T1	61.1130	IF Transformer 455 kHz
	T2	61.1130	IF Transformer 455 kHz
	E1	99.5210	Zenerdiode 3.3V 5%
	E2	99.5237	1N4148 Diode
	E3	99.5237	1N4148 Diode
	E4	99.5237	1N4148 Diode
	E5	99.5209	Stab. diode 1.5V
	E6	99.5237	1N4148 Diode
	E7	99.5209	Stab. diode 1.5V
	E8	99.5224	Zenerdiode 4.7V 5%
	E9	99.5237	1N4148 Diode
	E10	99.5237	1N4148 Diode
	E11	99.5237	1N4148 Diode
	E12	99.5224	Zenerdiode 4.7V 5%
	E13	99.5249	Zenerdiode BZY93/C20R
	E14	99.5209	Stab. diode 1.5V
	E15	99.5237	1N4148 Diode
	E16	99.5209	Stab. diode 1.5V
	E17	99.5209	Stab. diode 1.5V
	Q1	99.5166	BF167 Transistor
	Q2	99.5166	BF167 Transistor
	Q3	99.5143	BC108 Transistor
	Q4	99.5143	BC108 Transistor
	Q5	99.5247	2N4302 Transistor FET
	Q6	99.5143	BC108 Transistor
	Q7	99.5143	BC108 Transistor

TYPE	NO.	CODE	DATA
	Q8	99.5143	BC108 Transistor
	Q9	99.5115	BC179 Transistor
	Q10	99.5115	BC179 Transistor
	Q11	99.5143	BC108 Transistor
	Q12	99.5246	TIP 31 Transistor
	Q13	99.5244	BC214L Transistor
	Q14	99.5243	BC108 Transistor
	Q15	99.5243	BC108 Transistor
	Q16	99.5246	TIP 31 Transistor
	Q17	99.5144	BC214L Transistor
	Q18	99.5143	BC108 Transistor
	Q19	99.5143	BC108 Transistor
	Q20	99.5201	BC109 Transistor
	Q21	99.5201	BC109 Transistor
	Q22	99.5115	BC179 Transistor
	Q23	99.5143	BC108 Transistor
	Q24	99.5143	BC108 Transistor
	Q25	99.5143	BC108 Transistor
	Q26	99.5115	BC179 Transistor
	Q27	99.5236	BD136 Transistor
	Q28	99.5235	BD135 Transistor
	Q29	99.5248	SP2629 Transistor
	Q30	99.5235	BD135 Transistor
	IC1	14.5010	IF ampl./discr.
	IC2	14.5006	MC1437P dual OP amp.

COMMON FUNCTIONS UNIT CF701

X401.322



EXCITER EX761

D401.312

TYPE	NO.	CODE	DATA
EX761		10.2429	Exciter Unit
	C1	74.5192	27 pF 5% ceram TB
	C2	78.5044	2-18pF trimmer
	C3	76.5059	2.2 nF 10% polyester FL
	C4	76.5061	4.7 nF 10% polyester FL
	C5	76.5104	220 pF 2.5% polystyr TB
	C6	76.5106	470 pF 2.5% polystyr TB
	C7	76.5061	4.7 nF 10% polystyr FL
	C8	74.5155	1 nF -20/+50% ceram PL
	C9	76.5104	220 pF 2.5% polystyr TB
	C10	76.5069	1 nF 10% polyester FL
	C11	74.5106	22 pF 5% ceram TB
	C12	74.5107	27 pF 5% ceram TB
	C13	74.5107	27 pF 5% ceram TB
	C14	76.5071	22 pF 10% polyester FL
	C15	74.5135	10 pF 5% ceram DI
	C16	73.5124	47 μ F 20% tantal
	C17	74.5107	27 pF 5% ceram TB
	C18	74.5155	1 nF -20/+50% ceram PL
	C19	76.5069	1 nF 10% polyester FL
	C20	73.5129	2.2 μ F 20% tantal
	C21	73.5135	1 μ F 20% tantal
	C22	74.5167	1 nF -20/+80% ceram FT
	C23	74.5155	1 nF -20/+50% ceram PL
	C24	76.5070	10 nF 10% polyester FL
	C25	76.5061	4.7 nF 10% polyester FL
	C26	74.5116	33 pF 5% ceram TB
	C27	74.5127	2.2 pF ± 0.25 pF ceram BD
	C28	74.5127	2.2 pF ± 0.25 pF ceram BD
	C29	74.5136	12 pF 5% ceram DI
	C30	74.5136	12 pF 5% ceram DI
	C31	74.5116	33 pF 5% ceram TB
	C32	74.5161	470 pF -20/+50% ceram PL
	C33	76.5059	2.2 nF 10% polyester FL
	C34	74.5138	18 pF 5% ceram DI
	C35	74.5127	2.2 pF ± 0.25 pF ceram BD
	C36	74.5137	15 pF 5% ceram DI
	C37	74.5138	18 pF 5% ceram DI
	C38	74.5138	18 pF 5% ceram DI
	C39	74.5161	470 pF -20/+50% ceram PL
	C40	78.5050	3-9 pF trimmer
	C41	78.5025	3.5 - 13 pF trimmer
	C42	74.5155	1 nF -20/+50% ceram PL
	C43	74.5163	2.2 nF -20/+50% ceram PL
	C44	74.5155	1 nF -20/+50% ceram PL
	C45	74.5155	1 nF -20/+50% ceram PL
	C46	78.5048	1.8 - 10 pF trimmer

TYPE	NO.	CODE	DATA
	C47	78.5048	1.8 - 10 pF trimmer
	C48	76.5071	22 nF 10% polyester FL
	C49	74.5137	15 pF 5% ceram DI
	C50	78.5050	3-9 pF trimmer
	C51	74.5122	0.82 pF ± 0.1 pF ceram BD
	C52	78.5050	3-9 pF trimmer
	C53	76.5070	10 nF 10% polyester FL
	C54	74.5167	1 nF -20/+80% ceram FT
	C55	74.5130	3.9 pF ± 0.25 pF ceram DI
	C56	74.5155	1 nF -20/+50% ceram PL
	C57	74.5155	1 nF -20/+50% ceram PL
	C58	74.5107	27 pF 5% ceram TB
	C59	76.5060	3.3 nF 10% polyester FL
	R1	80.5243	330 Ω 5% carbon film
	R2	80.5265	22 k Ω 5% "
	R3	80.5262	12 k Ω 5% "
	R4	80.5237	100 Ω 5% "
	R5	80.5241	220 Ω 5% "
	R6	80.5247	680 Ω 5% "
	R7	80.5259	6.8 k Ω 5% "
	R8	80.5252	1.8 k Ω 5% "
	R9	80.5251	1.5 k Ω 5% "
	R10	80.5244	390 Ω 5% "
	R11	80.5267	33 k Ω 5% "
	R12	80.5265	22 k Ω 5% "
	R13	80.5259	6.8 k Ω 5% "
	R14	80.5268	39 k Ω 5% "
	R15	80.5261	10 k Ω 5% "
	R16	80.5251	1.5 k Ω 5% "
	R17	80.5237	100 Ω 5% "
	R18	80.5249	1 k Ω 5% "
	R19	80.5237	100 Ω 5% "
	R20	80.5265	22 k Ω 5% "
	R21	80.5265	22 k Ω 5% "
	R22	80.5261	10 k Ω 5% "
	R23	80.5241	220 Ω 5% "
	R24	80.5261	10 k Ω 5% "
	R25	80.5249	1 k Ω 5% "
	R26	80.5037	100 Ω 5% "
	R27	80.5266	27 k Ω 5% "
	R28	80.5266	27 k Ω 5% "

X401.321

EXCITER EX761

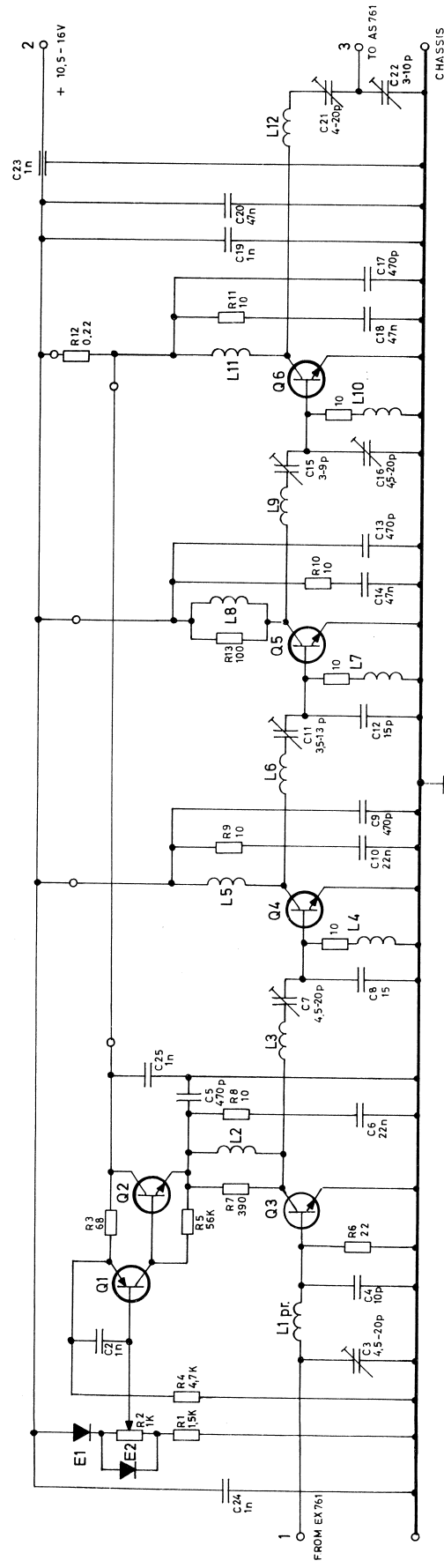
Storno

Storno

TYPE	NO.	CODE	DATA	
	R29	80.5260	8.2 k Ω 5%	carbon film
	R30	80.5260	8.2 k Ω 5%	" "
	R31	80.5241	220 Ω 5%	" "
	R32	80.5237	100 Ω 5%	" "
	R33	80.5266	27 k Ω 5%	" "
	R34	80.5266	27 k Ω 5%	" "
	R35	80.5258	5.6 k Ω 5%	" "
	R36	80.5258	5.6 k Ω 5%	" "
	R37	80.5235	68 Ω 5%	" "
	R38	80.5240	180 Ω 5%	" "
	R39	80.5225	10 Ω 5%	" "
	R40	80.5234	56 Ω 5%	" "
	R41	80.5249	1 k Ω 5%	" "
	R42	80.5237	100 Ω 5%	" "
	L1	63.5007	15 μ H RF choke	
	L2	63.5007	15 μ H RF choke	
	L3	61.1113	RF coil 37 MHz	
	L4	61.1113	RF coil 37 MHz	
	L5	61.1114	RF coil 75 MHz	
	L6	61.1115	RF coil 75 MHz	
	L7	62.0800	RF coil 210 - 235 MHz	
	L8	62.0801	RF coil 210 - 235 MHz	
	L9	63.5006	2.2 μ H 20% RF choke	
	L10		Printed coil	
	L11		Printed coil	
	L12	63.5008	0.47 μ H 20% RF choke	
	L13	62.0802	RF coil 420-470 MHz	
	L14	62.0803	RF coil 420-470 MHz	
	L15	62.0651	0.08 μ H RF choke	
	Q1	99.5139	BSX19 Transistor	
	Q2	99.5168	BF173 Transistor	
	Q3	99.5121	BC107 Transistor	
	Q4	99.5175	BF185 Transistor	
	Q5	99.5175	BF185 Transistor	
	Q6	99.5175	BF185 Transistor	
	Q7	99.5175	BF185 Transistor	
	Q8	99.5175	BF185 Transistor	
	Q9	99.5139	BSX19 Transistor	
	Q10	99.5139	BSX19 Transistor	
	Q11	99.5240	BFX89 Transistor	
	Q12	99.5229	2N4427 Transistor	

EXCITER EX761

X401.321



POWER AMPLIFIER PA761

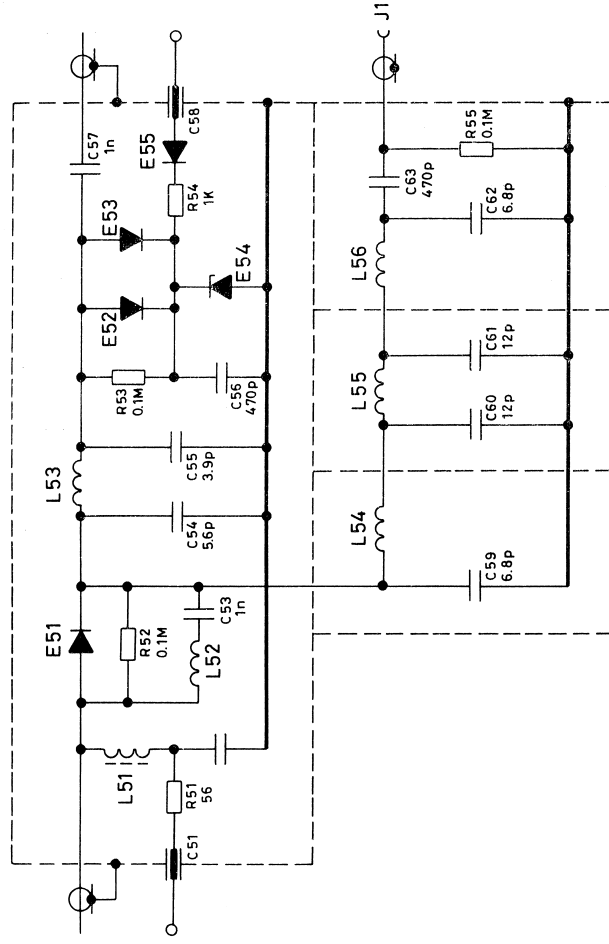
D401.324/2

TYPE	NO.	CODE	DATA
PA761		10.2428	RF Power Amplifier
C1		74.5161	470 pF -20 +80% ceram PL
C2		78.5026	4.5 - 20 pF trimmer
C3		74.5006	10 pF 5% ceram DI
C4		76.5071	22 nF 10% polyester FL
C5		74.5161	470 pF -20 +80% ceram PL
C6		78.5026	4.5 - 20 pF trimmer
C7		74.5046	15 pF 5% ceram PL
C8		76.5071	22 nF 10% polyester FL
C9		74.5161	470 pF -20 +80% ceram PL
C10		78.5025	3.5 - 13 pF trimmer
C11		74.5046	15 pF 5% ceram DI
C12		76.5072	47 nF 10% polyester FL
C13		74.5161	470 pF -20 +80% ceram PL
C14		78.5050	3-9 pF trimmer
C15		78.5026	4.5 - 20 pF trimmer
C16		76.5072	47 nF 10% polyester FL
C17		74.5161	470 pF -20 +80% ceram PL
C18		74.5155	1 nF -20 +80% ceram PL
C19		76.5072	47 nF 10% polyester FL
C20		74.5155	1 nF -20 +80% ceram PL
C21		74.5155	1 nF -20 +80% ceram PL
C22		74.5155	1 nF -20 +80% ceram PL
C23		74.5193	1 nF -20 +80% ceram FT
C24		78.5031	4-20 pF trimmer
C25		78.5051	3-10 pF trimmer
R1		80.5229	22 Ω 5% carbon film
R2		80.5225	10 Ω 5% "
R3		80.5244	390 Ω 5% "
R4		80.5225	10 Ω 5% "
R5		80.5225	10 Ω 5% "
R6		80.5225	10 Ω 5% "
R7		80.5237	100 Ω 5% "
R8		80.5225	10 Ω 5% "
R9		80.5225	10 Ω 5% "
R10		82.5205	0.22 Ω 10% wire wound
R11		80.5225	10 Ω 5% carbon film
R12		80.5251	1.5 k Ω 5% "
R13		86.5058	1 k Ω 20% potentiometer
R14		80.5257	4.7 k Ω 5% carbon film
R15		80.5235	68 Ω 5% "
R16		80.5270	56 k Ω 5% "
L1		63.5008	Printed coil
L2			RF coil 420 - 470 MHz
L3		62.0794	RF coil 420 - 470 MHz

TYPE	NO.	CODE	DATA
	L4	62.0795	RF coil 420 - 470 MHz
	L5	62.0796	RF coil 420 - 470 MHz
	L6	62.0797	RF coil 420 - 470 MHz
	L7	62.0795	RF coil 420 - 470 MHz
	L8	62.0798	RF coil 420 - 470 MHz
	L9	62.0797	RF coil 420 - 470 MHz
	L10	62.0795	RF coil 420 - 470 MHz
	L11	62.0799	RF coil 420 - 470 MHz
	L12	62.0797	RF coil 420 - 470 MHz
	E1	99.5028	1N914 Diode
	E2	99.5028	1N914 Diode
	Q1	99.5229	2N4427 Transistor
	Q2	99.5242	BLX67 Transistor
	Q3	99.5242	BLX67 Transistor
	Q4	99.5243	BLX68 Transistor
	Q5	99.5230	BC178 Transistor
	Q6	99.5128	2N3053 Transistor

POWER AMPLIFIER PA761

X401.323



ANTENNA SWITCH AS761

D401.334

Storno

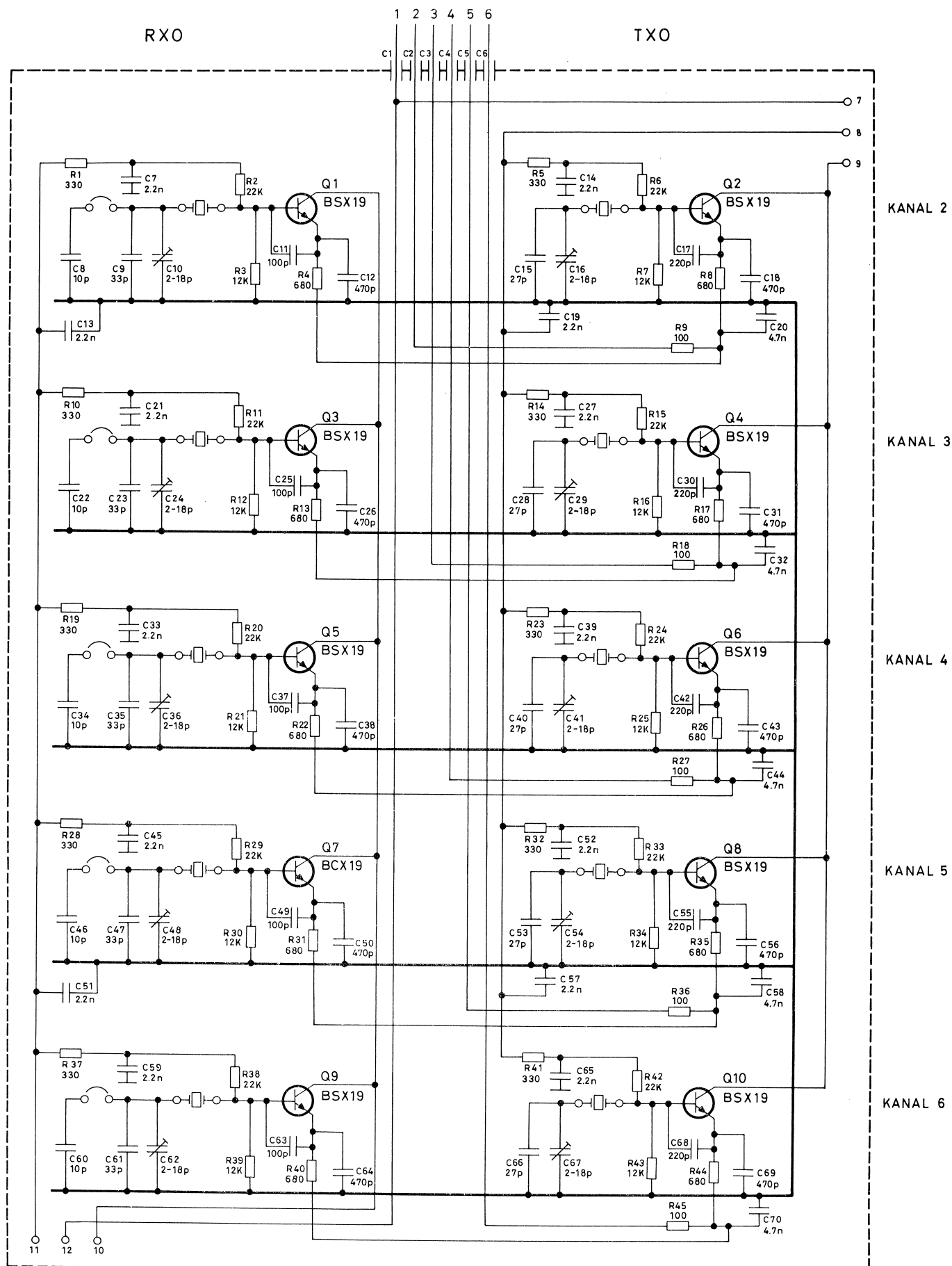
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TYPE	NO.	CODE	DATA
AS761		10.2427	Antenna Switching Unit
	C51	69.5007	VHF Filter FT
	C52	74.5155	1 nF -20 +80% ceram PL 63V
	C53	74.5155	1 nF -20 +80% ceram PL 63V
	C54	74.5004	5.6 pF ± 0.25 pF ceram DI 400V
	C55	74.5130	3.9 pF ± 0.25 pF ceram DI 250V
	C56	74.5162	470 pF -20 +50% ceram DI 400V
	C57	74.5155	1 nF -20 +80% ceram PL 63V
	C58	69.5007	VHF Filter FT
	C59	74.5021	6.8 pF ± 0.25 pF ceram DI 400V
	C60	74.5194	12 pF 5% ceram DI 400V
	C61	74.5194	12 pF 5% ceram DI 400V
	C62	74.5021	6.8 pF ± 0.25 pF ceram DI 400V
	C63	74.5094	470 pF 20% ceram DI 400V
	R51	80.5234	56 Ω 5% carbon film 1/8W
	R52	80.5273	0.1 M Ω 5% " " 1/8W
	R53	80.5273	0.1 M Ω 5% " " 1/8W
	R54	80.5049	1 k Ω 5% " " 1/8W
	R55	80.5073	0.1 M Ω 5% " " 1/8W
	L51	63.5008	0.47 μ H 20% RF choke 2.2A
	L52	62.0809	RF coil
	L53	62.0810	RF coil
	L54	62.0811	RF coil
	L55	62.0811	RF coil
	L56	62.0811	RF coil
	E51	99.5244	BA182 Diode
	E52	99.5244	BA182 Diode
	E53	99.5244	BA182 Diode
	E54	99.5224	Zenerdiode 4.7V 5%
	E55	99.5237	1N4148 Diode 0.25W

TYPE NO. CODE DATA

ANTENNA SWITCH AS761

X401.317



CRYSTAL SWITCH UNIT XS701

D401.328

TYPE	NO.	CODE	DATA
XS701		10.2436	Crystal Switching Unit
	C1	74.5167	1 nF -20 +80% ceram FT
	C2	74.5167	1 nF -20 +80% ceram FT
	C3	74.5167	1 nF -20 +80% ceram FT
	C4	74.5167	1 nF -20 +80% ceram FT
	C5	74.5167	1 nF -20 +80% ceram FT
	C6	74.5167	1 nF -20 +80% ceram FT
	C7	76.5059	2.2 nF 10% polyester. FL
	C8	74.5135	10 pF 5% ceram DI
	C9	74.5191	33 pF 5% ceram TB
	C10	78.5044	2-18 pF trimmer
	C11	76.5102	100 pF 2.5% polystyr TB
	C12	76.5106	470 pF 2.5% polystyr TB
	C13	76.5059	2.2 nF 10% polyester. FL
	C14	76.5059	2.2 nF 10% polyester. FL
	C15	74.5192	27 pF 5% ceram TB
	C16	78.5044	2-18 pF trimmer
	C17	76.5104	220 pF 2.5% polystyr TB
	C18	76.5106	470 pF 2.5% polystyr TB
	C19	76.5059	2.2 nF 10% polyester. FL
	C20	76.5061	4.7 nF 10% polyester. FL
	C21	76.5059	2.2 nF 10% polyester. FL
	C22	74.5135	10 pF 5% ceram DI
	C23	74.5191	33 pF 5% ceram TB
	C24	78.5044	2-18 pF trimmer
	C25	76.5102	100 pF 2.5% polystyr TB
	C26	76.5106	470 pF 2.5% polystyr TB
	C27	76.5059	2.2 nF 10% polyester. FL
	C28	74.5192	27 pF 5% ceram TB
	C29	78.5044	2-18 pF trimmer
	C30	76.5104	220 pF 2.5% polystyr TB
	C31	76.5106	470 pF 2.5% polystyr TB
	C32	76.5061	4.7 nF 10% polyester. FL
	C33	76.5059	2.2 nF 10% polyester. FL
	C34	74.5134	10 pF 5% ceram DI
	C35	74.5191	33 pF 5% ceram TB
	C36	78.5044	2-18 pF trimmer
	C37	76.5102	100 pF 2.5% polystyr TB
	C38	76.5106	470 pF 2.5% polystyr TB
	C39	76.5059	2.2 nF 10% polyester. FL
	C40	74.5192	27 pF 5% ceram TB
	C41	78.5044	2-18 pF trimmer
	C42	76.5104	220 pF 2.5% polystyr TB
	C43	76.5106	470 pF 2.5% polystyr TB
	C44	76.5061	4.7 nF 10% polyester. FL
	C45	76.5059	2.2 nF 10% polyester. FL
	C46	74.5135	10 pF 10% ceram DI

TYPE	NO.	CODE	DATA	
	C47	74.5191	33 pF 5% ceram TB	160V
	C48	78.5044	2-18 pF trimmer	300V
	C49	76.5102	100 pF 2.5% polystyr TB	25V
	C50	76.5106	470 pF 2.5% polystyr TB	25V
	C51	76.5059	2.2 nF 10% polyester. FL	50V
	C52	76.5059	2.2 nF 10% polyester. FL	50V
	C53	74.5192	27 pF 5% ceram TB	160V
	C54	78.5044	2-18 pF trimmer	300V
	C55	76.5104	220 pF 2.5% polystyr TB	25V
	C56	76.5106	470 pF 2.5% polystyr TB	25V
	C57	76.5059	2.2 nF 10% polyester. FL	50V
	C58	76.5061	4.7 nF 10% polyester. FL	50V
	C59	76.5059	2.2 nF 10% polyester. FL	50V
	C60	74.5135	10 pF 5% ceram DI	125V
	C61	74.5191	33 pF 5% ceram TB	160V
	C62	78.5044	2-18 pF trimmer	300V
	C63	76.5102	100 pF 2.5% polystyr TB	25V
	C64	76.5106	470 pF 2.5% polystyr TB	25V
	C65	76.5059	2.2 nF 10% polyester. FL	50V
	C66	74.5192	27 pF 5% ceram TB	160V
	C67	78.5044	2-18 pF trimmer	300V
	C68	76.5104	220 pF 2.5% polystyr TB	25V
	C69	76.5106	470 pF 2.5% polystyr TB	25V
	C70	76.5061	4.7 nF 10% polyester. FL	50V
	R1	80.5243	330 Ω 5% carbon film	1/8W
	R2	80.5265	22 k Ω 5%	1/8W
	R3	80.5262	12 k Ω 5%	1/8W
	R4	80.5247	680 Ω 5%	1/8W
	R5	80.5243	330 Ω 5%	1/8W
	R6	80.5265	22 k Ω 5%	1/8W
	R7	80.5262	12 k Ω 5%	1/8W
	R8	80.5247	680 Ω 5%	1/8W
	R9	80.5237	100 Ω 5%	1/8W
	R10	80.5243	330 Ω 5%	1/8W
	R11	80.5265	22 k Ω 5%	1/8W
	R12	80.5262	12 k Ω 5%	1/8W
	R13	80.5247	680 Ω 5%	1/8W
	R14	80.5243	330 Ω 5%	1/8W
	R15	80.5265	22 k Ω 5%	1/8W
	R16	80.5262	12 k Ω 5%	1/8W
	R17	80.5247	680 Ω 5%	1/8W

CRYSTAL SWITCH UNIT XS701

X401.313

Storno

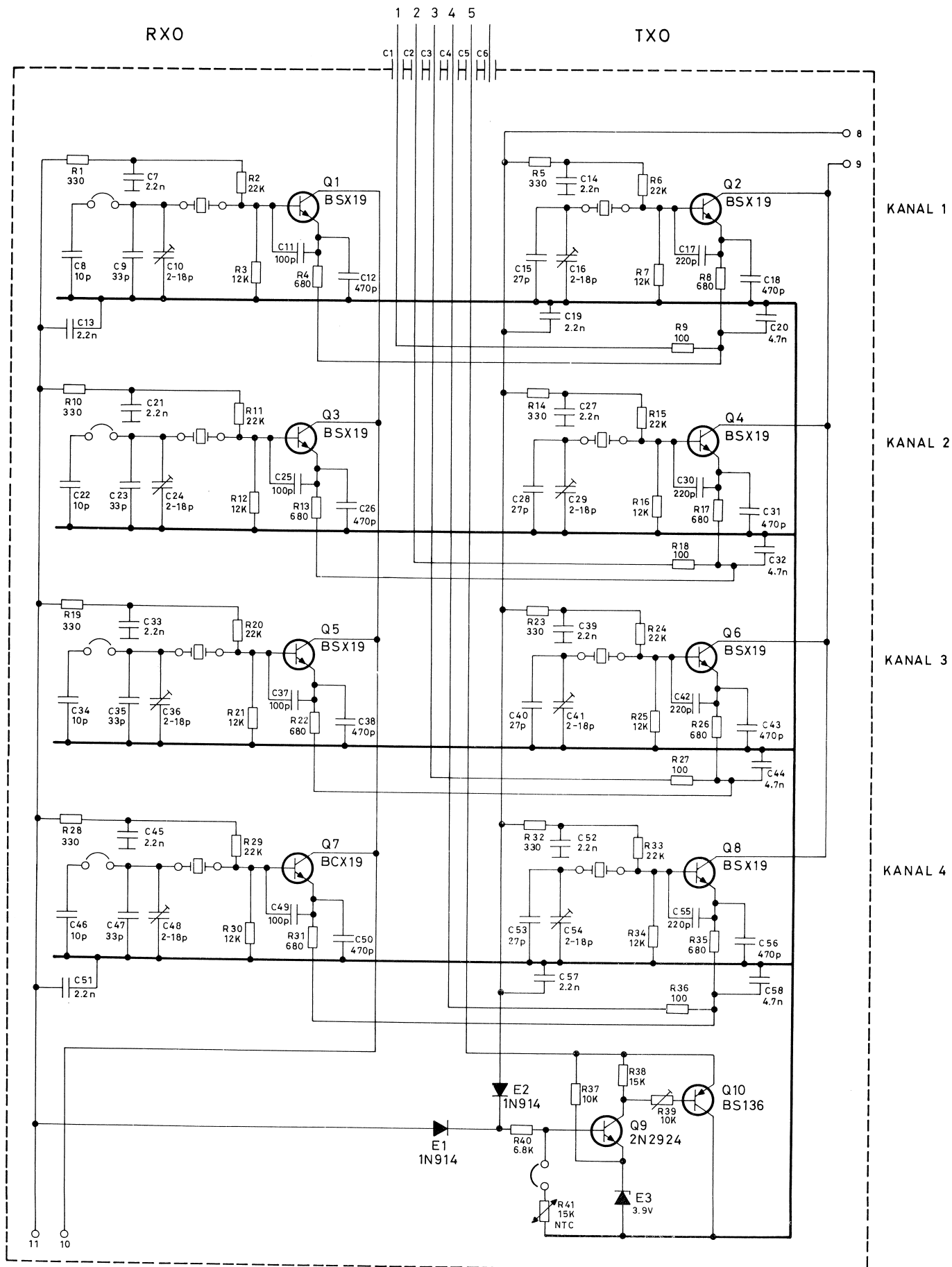
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	R18	80.5237	100 Ω 5%	carbon film
	R19	80.5243	330 Ω 5%	" "
	R20	80.5265	22 kΩ 5%	" "
	R21	80.5262	12 kΩ 5%	" "
	R22	80.5247	680 Ω 5%	" "
	R23	80.5243	330 Ω 5%	" "
	R24	80.5265	22 kΩ 5%	" "
	R25	80.5262	12 kΩ 5%	" "
	R26	80.5247	680 Ω 5%	" "
	R27	80.5237	100 Ω 5%	" "
	R28	80.5243	330 Ω 5%	" "
	R29	80.5265	22 kΩ 5%	" "
	R30	80.5262	12 kΩ 5%	" "
	R31	80.5247	680 Ω 5%	" "
	R32	80.5243	330 Ω 5%	" "
	R33	80.5265	22 kΩ 5%	" "
	R34	80.5262	12 kΩ 5%	" "
	R35	80.5247	680 Ω 5%	" "
	R36	80.5237	100 Ω 5%	" "
	R37	80.5243	330 Ω 5%	" "
	R38	80.5265	22 kΩ 5%	" "
	R39	80.5262	12 kΩ 5%	" "
	R40	80.5247	680 Ω 5%	" "
	R41	80.5243	330 Ω 5%	" "
	R42	80.5265	22 kΩ 5%	" "
	R43	80.5262	12 kΩ 5%	" "
	R44	80.5247	680 Ω 5%	" "
	R45	80.5237	100 Ω 5%	" "
	Q1	99.5139	BSX19 Transistor	
	Q2	99.5139	BSX19	" "
	Q3	99.5139	BSX19	" "
	Q4	99.5139	BSX19	" "
	Q5	99.5139	BSX19	" "
	Q6	99.5139	BSX19	" "
	Q7	99.5139	BSX19	" "
	Q8	99.5139	BSX19	" "
	Q9	99.5139	BSX19	" "
	Q10	99.5139	BSX19	" "

Storno

TYPE	NO.	CODE	DATA

CRYSTAL SWITCH UNIT XS701

X401.313



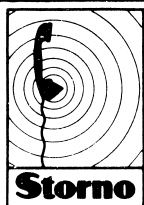
CRYSTAL SWITCH UNIT XS702

TYPE	NO.	CODE	DATA
XS702		10.2437	Crystal Switch Unit
	C1	74.5167	1 nF -20 +80% ceram FT
	C2	74.5167	1 nF -20 +80% ceram FT
	C3	74.5167	1 nF -20 +80% ceram FT
	C4	74.5167	1 nF -20 +80% ceram FT
	C5	74.5167	1 nF -20 +80% ceram FT
	C6	74.5167	1 nF -20 +80% ceram FT
	C7	74.5167	1 nF -20 +80% ceram FT
	C8	76.5059	2.2 nF 10% polyester. FL
	C9	74.5135	10 pF 5% ceram DI
	C10	74.5191	33 pF 5% ceram TB
	C11	78.5044	2-18 pF trimmer
	C12	76.5102	100 pF 2.5% polystyr TB
	C13	76.5106	470 pF 2.5% polystyr TB
	C14	76.5059	2.2 nF 10% polyester. FL
	C15	76.5059	2.2 nF 10% polyester. FL
	C16	74.5192	27 pF 5% ceram TB
	C17	78.5044	2-18 pF trimmer
	C18	76.5104	220 pF 2.5% polystyr TB
	C19	76.5106	470 pF 2.5% polystyr TB
	C20	76.5059	2.2 nF 10% polyester. FL
	C21	76.5059	4.7 nF 10% polyester. FL
	C22	76.5061	2.2 nF 10% polyester. FL
	C23	74.5135	10 pF 5% ceram DI
	C24	74.5191	33 pF 5% ceram TB
	C25	78.5059	2-18 pF trimmer
	C26	76.5102	100 pF 2.5% polystyr TB
	C27	76.5106	470 pF 2.5% polystyr TB
	C28	76.5059	2.2 nF 10% polyester. FL
	C29	74.5192	27 pF 5% ceram TB
	C30	78.5044	2-18 pF trimmer
	C31	76.5104	220 pF 2.5% polystyr TB
	C32	76.5106	470 pF 2.5% polystyr TB
	C33	76.5061	4.7 nF 10% polyester. FL
	C34	76.5059	2.2 nF 10% polyester. FL
	C35	74.5135	10 pF 5% ceram DI
	C36	74.5191	33 pF 5% ceram TB
	C37	78.5044	2-18 pF trimmer
	C38	76.5102	100 pF 2.5% polystyr TB
	C39	76.5106	470 pF 2.5% polystyr TB
	C40	76.5059	2.2 nF 10% polyester. FL
	C41	76.5059	2.2 nF 10% polyester. FL
	C42	74.5192	27 pF 5% ceram TB
	C43	78.5044	2-18 pF trimmer
	C44	76.5104	220 pF 2.5% polystyr TB
	C45	76.5106	470 pF 2.5% polystyr TB
	C46	76.5061	4.7 nF 10% polyester. FL
		74.5135	10 pF 5% ceram DI

TYPE	NO.	CODE	DATA	
	C47	74.5191	33 pF 5% ceram TB	160V
	C48	78.5044	2-18 pF trimmer	300V
	C49	76.5102	100 pF 2.5% polystyr TB	25V
	C50	76.5106	470 pF 2.5% polystyr TB	25V
	C51	76.5059	2.2 nF 10% polyester. FL	50V
	C52	76.5059	2.2 nF 10% polyester. FL	50V
	C53	74.5192	27 pF 5% ceram TB	160V
	C54	78.5044	2-18 pF trimmer	300V
	C55	76.5104	220 pF 2.5% polystyr TB	25V
	C56	76.5106	470 pF 2.5% polystyr TB	25V
	C57	76.5059	2.2 nF 10% polyester. FL	50V
	C58	76.5061	4.7 nF 10% polyester. FL	50V
	R1	80.5243	330 Ω 5% carbon film	1/8W
	R2	80.5265	22 k Ω 5%	1/8W
	R3	80.5262	12 k Ω 5%	1/8W
	R4	80.5247	680 Ω 5%	1/8W
	R5	80.5243	330 Ω 5%	1/8W
	R6	80.5265	22 k Ω 5%	1/8W
	R7	80.5262	12 k Ω 5%	1/8W
	R8	80.5247	680 Ω 5%	1/8W
	R9	80.5237	100 Ω 5%	1/8W
	R10	80.5243	330 Ω 5%	1/8W
	R11	80.5265	22 k Ω 5%	1/8W
	R12	80.5262	12 k Ω 5%	1/8W
	R13	80.5247	680 Ω 5%	1/8W
	R14	80.5243	330 Ω 5%	1/8W
	R15	80.5265	22 k Ω 5%	1/8W
	R16	80.5262	12 k Ω 5%	1/8W
	R17	80.5247	680 Ω 5%	1/8W
	R18	80.5237	100 Ω 5%	1/8W
	R19	80.5243	330 Ω 5%	1/8W
	R20	80.5265	22 k Ω 5%	1/8W
	R21	80.5262	12 k Ω 5%	1/8W
	R22	80.5247	680 Ω 5%	1/8W
	R23	80.5243	330 Ω 5%	1/8W
	R24	80.5265	22 k Ω 5%	1/8W
	R25	80.5262	12 k Ω 5%	1/8W
	R26	80.5247	680 Ω 5%	1/8W
	R27	80.5237	100 Ω 5%	1/8W
	R28	80.5243	330 Ω 5%	1/8W
	R29	80.5265	22 k Ω 5%	1/8W

CRYSTAL SWITCH UNIT XS702

X401.331



konstr./tegn.
HJS/ KSP
godk.
komp.liste

AF-AMPLIFIER
LF-FORSTÆRKER

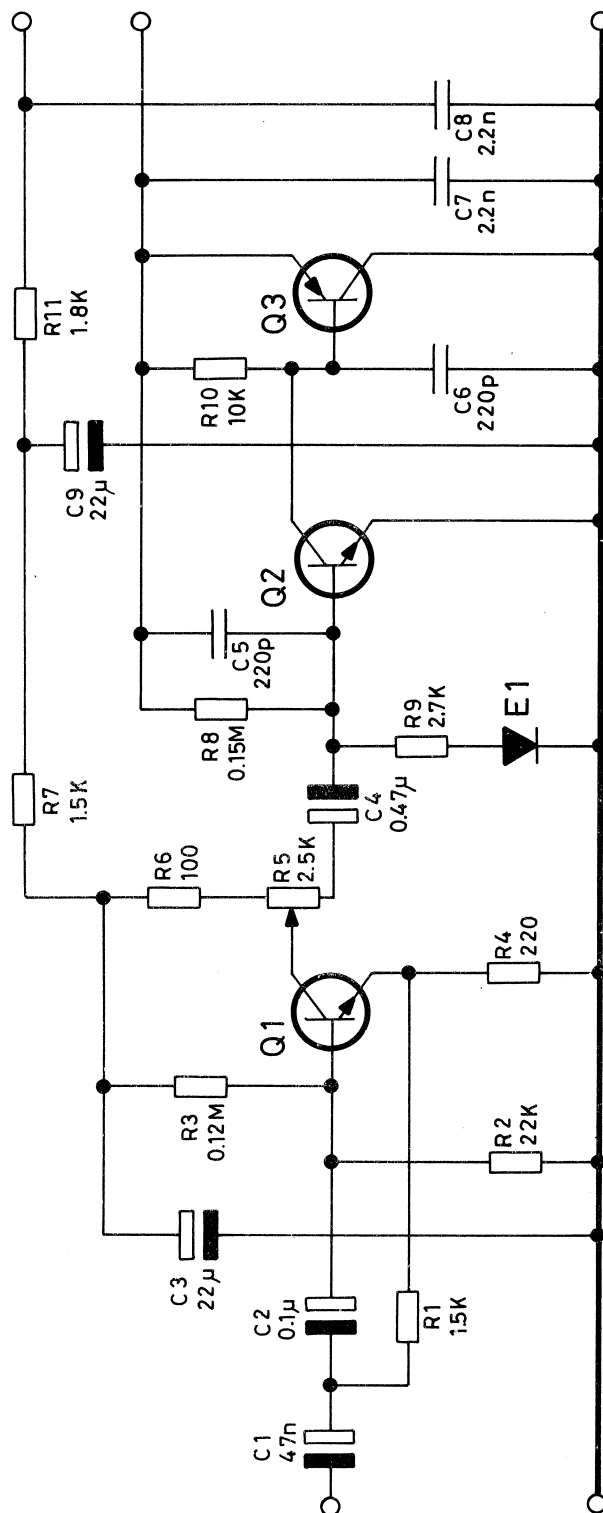
AA701

KODE

TEGN. NR.

D401.216

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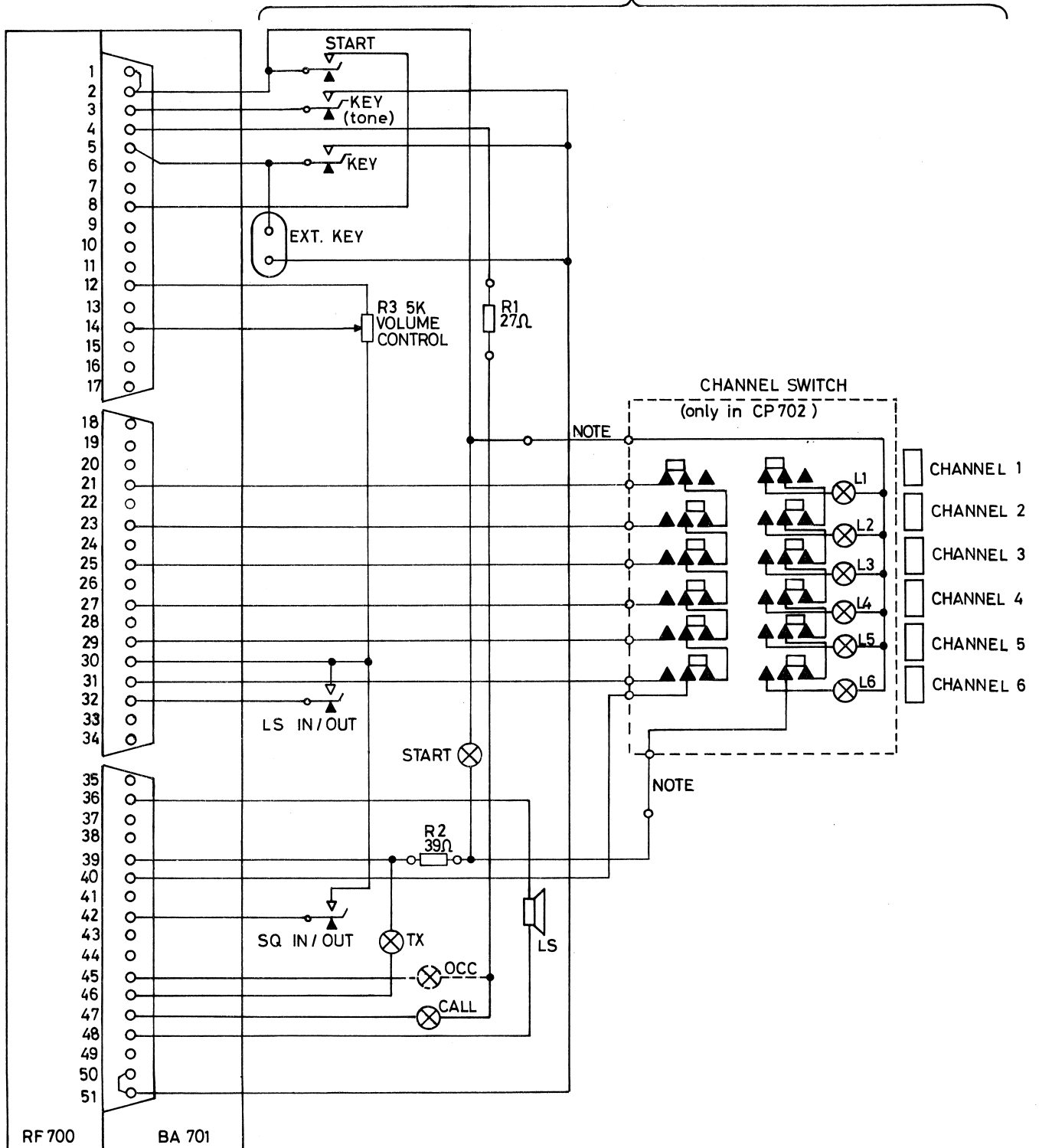
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TYPE	NO.	CODE	DATA
AA701		10.2488	Microphone Amplifier
	C1	73.5130	0.1 μ F -20 +60% tantal
	C2	73.5130	0.1 μ F -20 +60% tantal
	C3	73.5127	22 μ F 20% tantal
	C4	73.5134	0.47 μ F -20 +60% tantal
	C5	76.5106	470 pF 2.5% polystyr TB
	C6	76.5104	220 pF 5% polystyr TB
	C7	76.5059	2.2 nF 10% polyester. FL
	C8	76.5059	2.2 nF 10% polyester. FL
	C9	73.5127	22 μ F 20% tantal
	C10	74.5161	470 pF -20 +80% ceram PL
	R1	80.5251	1.5 k Ω 5% carbon film
	R2	80.5265	22 k Ω 5% " "
	R3	80.5274	0.12 M Ω 5% " "
	R4	80.5241	220 Ω 5% " "
	R5	86.5067	2.5 k Ω 20% potentiometer
	R6	80.5037	100 Ω 5% carbon film
	R7	80.5251	1.5 k Ω 5% " "
	R8	80.5272	82 k Ω 5% " "
	R9	80.5254	2.7 k Ω 5% " "
	R10	80.5261	10 k Ω 5% " "
	E1	99.5028	1N914 Diode
	Q1	99.5121	BC107 Transistor
	Q2	99.5121	BC107 Transistor
	Q3	99.5043	NS6063 Transistor

MICROPHONE AMPLIFIER AA701

X401.318

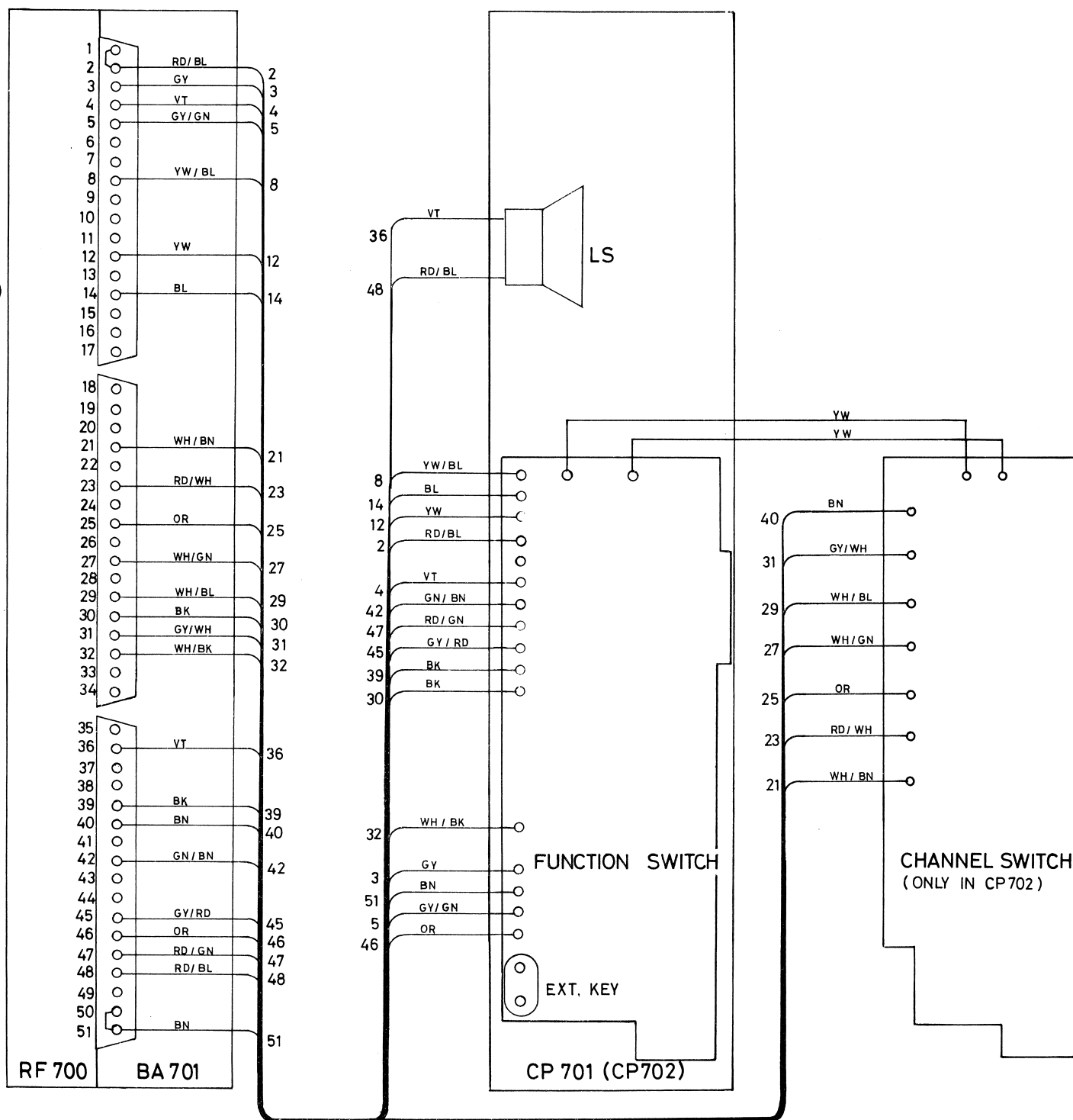
CP 701 OR CP 702



NOTE: CONNECTIONS IN CP 702.

FRONT PANEL CP 701, CP 702

D401.320



CABLING BETWEEN RADIO SECTION AND CONTROL PANEL.