2255

CB-MASTER

INSTRUCTION MANUAL

FOR

SOLID STATE AM/FM 40 CHANNEL

CITIZENS BAND 2-WAY RADIO

MODEL: UNIFON Nr. 1

Printed in Korea

SPECIFICATIONS

TRANSMITTER SECTION

POWER OUTPUT	4 Watt Max (AT 13.8V DC)
EMISSION	6A3 (AM), F3E (FM)
SPURIOUS RESPONSE REJECTION	All harmonic and spurious suppression greater than F.C.C. and D.O.C. requirements
MODULATION	AM. 90% typical
FM DEVIATION	±1.5KHz typical

RECEIVER SECTION

CIRCUIT TYPE	Dual conversion superheterodyne with RF stage and 455 KHz ceramic filter
FREQUENCY	1 crystal-controlled PLL, 40 channels in the 27 MHz Citizens Band
SENSITIVITY	1.0μV for 10 dB S/N
SQUELCH RANGE	1mV
SELECTIVITY	60 dB down at + 10 KHz
IF FREQUENCY	1st IF: 10.695 MHz 2nd IF: 455 KHz
IMAGE REJECTION	55 dB
AUDIO OUTPUT	2.5 W maximum at 8 ohm load
CURRENT DRAIN	250 mA on standby (no signal)
CURRENT DRAIN (MAXIMUM)	Less than 1.5A
ANTENNA	Nominal 50 ohms impedance
POWER SOURCE	Operates from nominal 13.8 volts DC, negative ground system
DIMENSIONS (HOUSING)	5.12"W x 6.85"D x 1.34"H
WEIGHT	1.9 lbs

DESCRIPTION

This model is an all-transistor 2-way radio transceiver for mobile operation. A frequency synthesizer circuit provides 40 crystal controlled PLL transmit and receive channels in the 27 MHz Band, engineered for trouble-free performance. Your transceiver uses heat resistant transistors in all critical areas. Current drain on 12 volts DC is exceptionally low. Operation over long periods is feasible even with your engine turned off. The transceiver may also be operated from A.C. when used with an optional Power Supply.

RECEIVER

The receiver is a sensitive and highly selective dual-conversion superheterodyne type providing crystal-controlled PLL operation on all 40 CB channels. The circuit incorporates an effective full time Automatic Noise Limiter in the audio stages. A ceramic filter provides sharp selectivity and high adjacent channel rejection. As a result, transmissions on adjacent channels cause minimum interference.

A variable squelch control is incorporated to "silence" the receiver when no signals are being received. The squelch circuit is adjustable providing varying degrees of sensitivity to incoming signals.

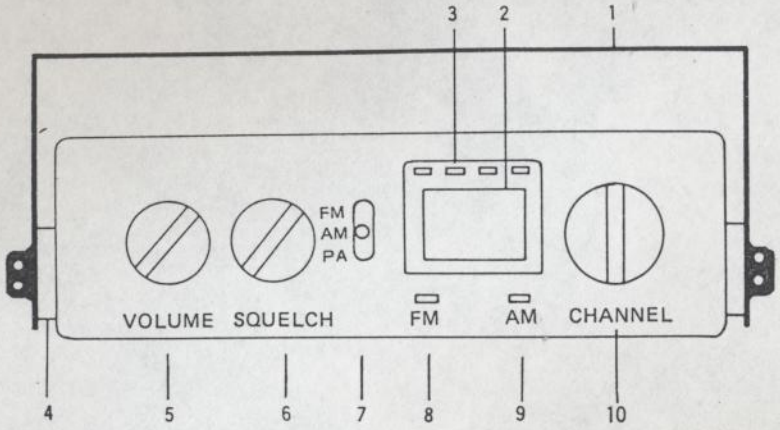
TRANSMITTER

The transmitter offers crystal-controlled operation on all 40 CB channels, 5 watt DC power input to the final RF with average modulation capabilities is possible by the use of high-efficency Transistors and low loss components, wiring, and mounting boards, The legal limit of power for this service is provided.

POWER SUPPLY

The transceiver is ready for connection to a 12 volt DC, negative ground system. DC power is provided to the transceiver by means of a fused power lead.

OPERATING CONTROL AND FEATURES



(1) MOUNTING BRACKET . . . . . Bracket simplifies installation for removal of unit.

(2) L.E.D. DISPLAY . . . . . L.E.D. (Light Emitting Diode) indicates the channel selected by 40 position rotary-switch.

(3) TX/RX SIGNAL METER . . . . . At receive mode, some or all of the LEDs will light up indicating the strength of the incoming signals by the number of LEDs. In the transmit mode, it indicates the relative RF power output.

(4) MICROPHONE INPUT . . . . . 4 pin socket for push-to-talk microphone.

(5) ON-OFF/VOLUME . . . . . Controls output from the built-in speaker, or external speaker connected to the "EXT SP" or PA jack (rear of transceiver). Incorporates "ON-OFF" power switch at the extreme counter-clockwise position.

(6) SQUELCH CONTROL . . . . . Used to quiet the receiver during absence of receive signals. Sensitivity to incoming signals is fully adjustable.

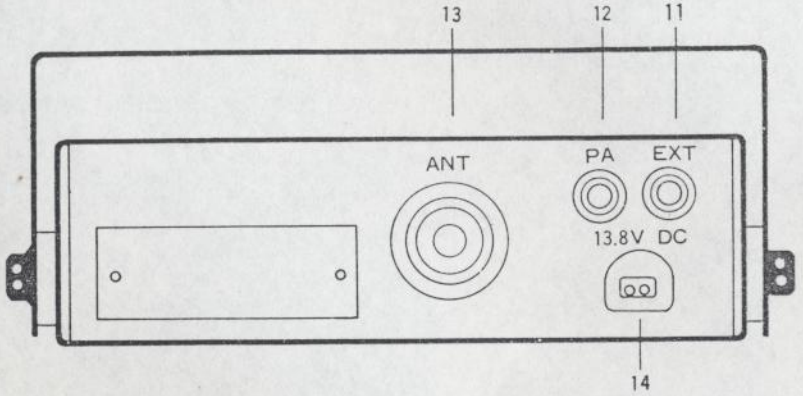
(7) FM/AM/PA SWITCH . . . . . Changes your CB system from a CB function, using the internal speaker, to a Public Address function.

FOR FM OPERATION: set the front slide switch (FM/AM/PA) to FM position and the unit will be fixed to FM mode.

FOR AM OPERATION: set the front slide switch (FM/AM/PA) to AM position and the unit will be fixed to AM mode.

(8) FM LAMP . . . . . When FM/AM/PA switch select FM mode FM LAMP will be lighted.

(9) AM LAMP . . . . . When FM/AM/PA switch select AM mode AM LAMP will be lighted.



(10) CHANNEL SWITCH . . . . . This rotary switch selects one of 40 channels for transmit and receive operation.

(11) EXTERNAL SPEAKER JACK . . Impedance of any device such as headphone connected to this jack should be 8-16 ohms. Insertion of plug into jack automatically silences the transceiver internal speaker.

(12) PA SPEAKER JACK . . . . . For Public Address (PA) operation. Horn impedance should be in 8-16 ohm range.

(13) ANTENNA CONNECTION . . . . To match antenna lead-in cable (RG-58/U or RG-8U) with PL-259 type coaxial connector.

(14) DC POWER CABLE . . . . . 12 volts DC for transceiver supplied.

TRANSCEIVER INSTALLATION

MOUNTING

Always mount where controls are readily accessible, Unit may be mounted to the underside of the dashboard of a car, truck, etc., utilizing special bracket included with transceiver.
Attach bracket to the underside of dashboard using the self-tapping screws supplied. Attach the transceiver to the bracket using the two knurled securing screws at the side.
Tilt the unit to the most convenient angle before tightening securing screws.

DC POWER CONNECTIONS

The transceiver is designed to operate from a battery source of 11.5 to 14.5 volts DC, employing negative or ground electrical systems.

The fused DC power cable supplied is used to make the necessary power connection to the transceiver. Red lead is connected to the positive (+) side of the electrical system and the black lead is connected to the negative (–) side of the system.

In a negative ground vehicle, connect the Red lead to the "hot" point in the electrical system (battery positive), and the Black lead to any point connected to the vehicle chassis (battery negative).

For connection to the "hot" battery side a suitable post can usually be found on the fuse block. The transceiver draws a maximum of 1.5 ampere of current, therefore you can use a terminal which supplies power to the Radio or other accessory (Use the unfused input side. The DC power cable is equipped with its own fuse). Connection at this point will ensure DC power is automatically cut off to the transceiver when the ignition is turned off.

IMPORTANT: DC VOLTAGE AT THE TERMINAL SELECTED ON THE FUSE BLOCK MUST BE AT LEAST 11.5 VOLTS FOR PROPER OPERATION.

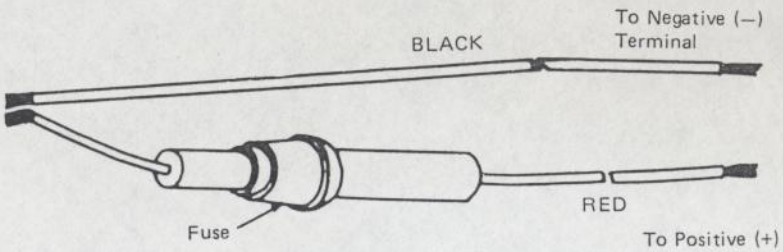


FIGURE4. CONNECTING DC POWER CORD

ANTENNA CONNECTION

The lead-in cable from the CB antenna must be terminated with a PL-259 type male connector. Attach to the matching antenna input connector at the rear of the transceiver.

MICROPHONE BRACKET

Attach the microphone bracket provided to any convenient location.

MICROPHONE CONNECTION

Insert the 4-pin plug at the end of the coiled cord into the microphone socket.

DO NOT TRANSMIT WITHOUT AN ANTENNA CONNECTED TO THE TRANSCEIVER.

IGNITION INTERFERENCE

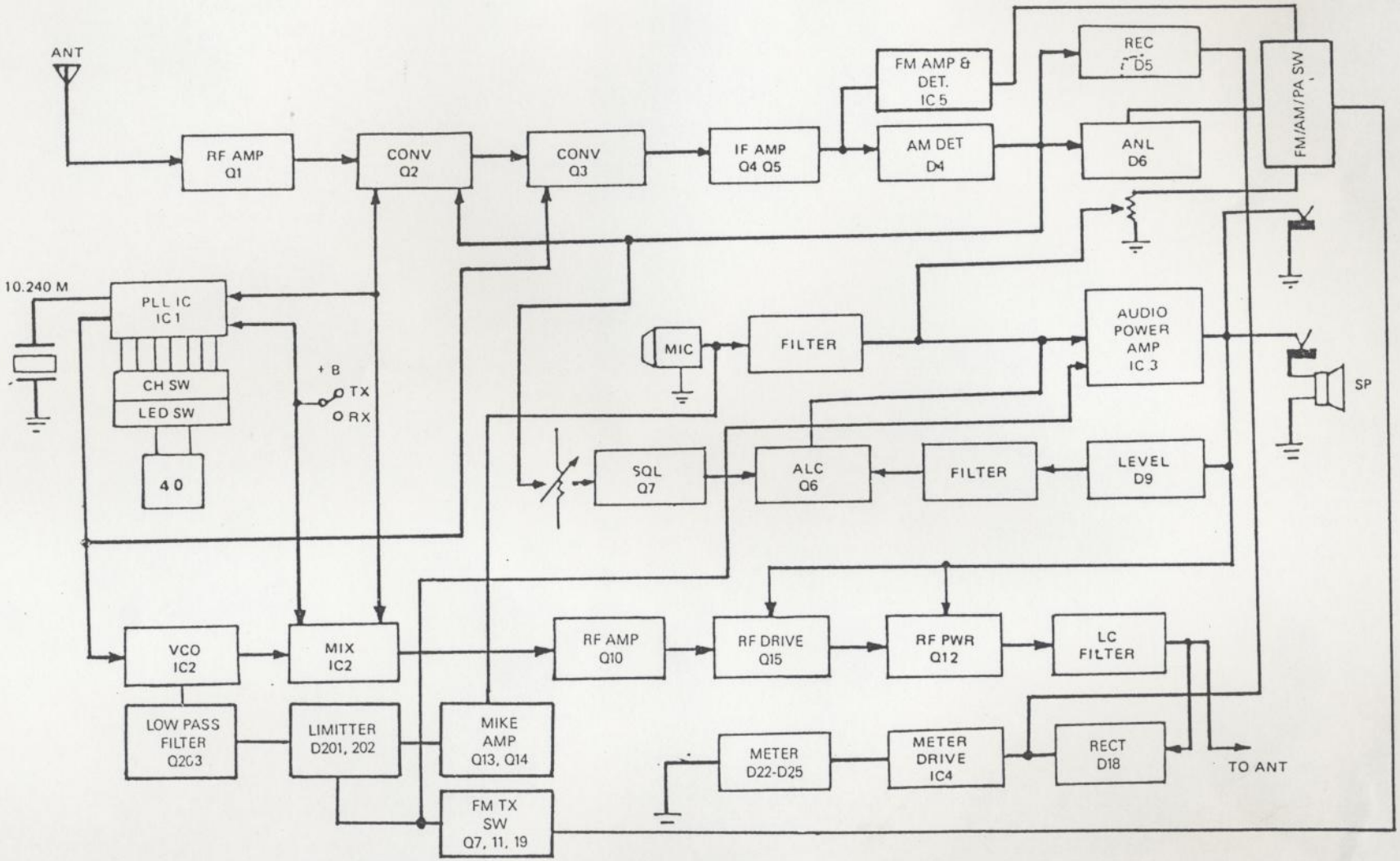
Normally the suppression on modern automotive engines is adequate to prevent annoying interference to your CB transceiver. If it does not, consult your dealer who will recommend additional suppression measurements.

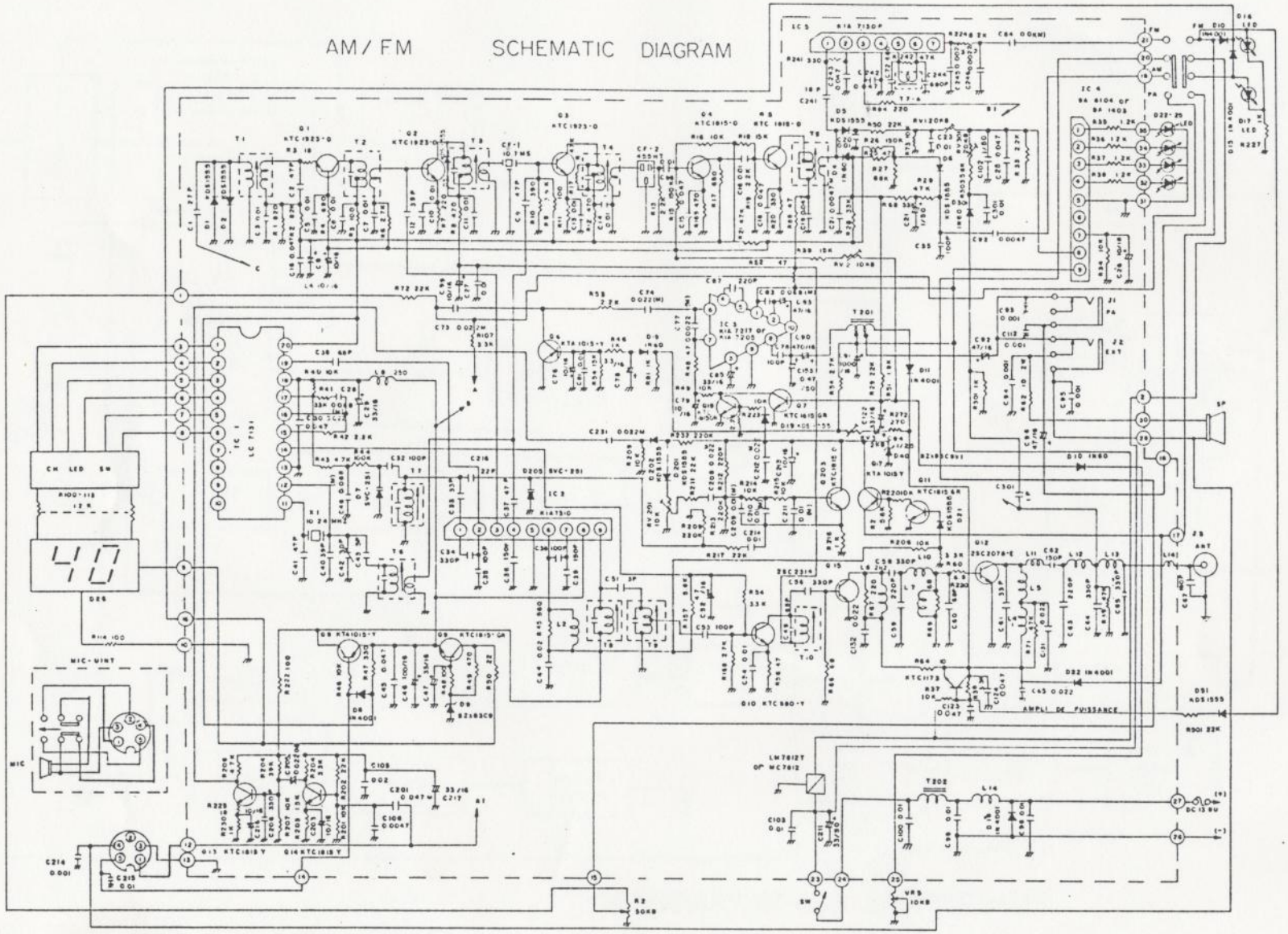
RECEIVING

1. Select desired channel using the channel Selector Switch.
2. Rotate "squelch" control to the extreme counter-clockwise position.
3. Rotate the "VOLUME/ON-OFF" switch clockwise, to apply power. Operation will be instantaneous.
4. Set the "VOLUME/ON-OFF" switch clockwise to a comfortable listening level (approximately 1/3 setting). The receiver is now ready to operate.

SQUELCH ADJUSTMENT

The Squelch control eliminate annoying background noise in the absence of signals. To adjust the SQUELCH control properly turn up VOLUME until background noise is heard. Rotate the SQUELCH slowly clockwise until the background noise just disappear. At this point the receiver will be quiet under "no-signal" conditions, however a reasonable strength incoming signal will overcome the squelch action and be heard. As the control is advanced the squelch action is progressively increased and stronger incoming signals are needed to overcome it. To receive weak signals or to disable the squelch circuit turn the control fully counter clockwise.



FUNCTIONAL BLOCK DIAGRAM

AM / FM SCHEMATIC DIAGRAM