

# C.B. 4-WATT, 40-CHANNEL WALKIE-TALKIE



## TRC-1001

### OWNER'S MANUAL

PLEASE READ BEFORE  
USING THIS EQUIPMENT

# REALISTIC®

CUSTOM MANUFACTURED FOR TANDY CORPORATION

CAT. NO.  
**21-9110**

Your **Realistic TRC-1001** belongs to the latest generation in our famous line of walkie-talkie styled CB transceivers. This rugged 40 channel unit uses a digital phase lock loop synthesizer to generate all 40 operating frequencies with the very highest accuracy and stability.

The all-solid state circuit incorporates many more special features you can't see-but the sure make a difference in the performance!

- \* Full 40 channel operation from innovative Phase Lock Loop system.
- \* Dual C-MOS Field Effect Transistor in the critical mixer stage assures freedom from cross-modulation and other undesirable RF distortion products.
- \* All-silicon solid-state circuitry (for minimum noise products and maximum circuit efficiency).
- \* Low-distortion IC audio circuit
- \* Ceramic filter for superior selectivity and freedom from adjacent channel interference

There are plenty of controls for top performance and convenience, too:

- \* Bright red LED channel readout
- \* Unique Range-Boost side panels couple your body to the antenna system for extended range
- \* High/Low power switch lets you reduce your power output (and battery drain) for short-range transmissions
- \* Battery condition/RF power meter
- \* Separate built-in condenser mic and speaker
- \* Jacks for external power source, battery charger, push-to-talk mic, speaker and even for an external CB antenna (all optional extra)

For your own protection, we urge you to record the Serial Number of this unit in the space provided. You'll find the Serial Number on the bottom of the unit.

Serial Number

## ASSIGNED FREQUENCY AND CHANNEL

Channel	1	27.60125 MHz	Channel	21	27.80125 MHz
"	2	27.61125 "	"	22	27.81125 "
"	3	27.62125 "	"	23	27.82125 "
"	4	27.63125 "	"	24	27.83125 "
"	5	27.64125 "	"	25	27.84125 "
"	6	27.65125 "	"	26	27.85125 "
"	7	27.66125 "	"	27	27.86125 "
"	8	27.67125 "	"	28	28.87125 "
"	9	27.68125 "	"	29	28.88125 "
"	10	27.69125 "	"	30	28.89125 "
"	11	27.70125 "	"	31	27.90125 "
"	12	27.71125 "	"	32	27.91125 "
"	13	27.72125 "	"	33	27.92125 "
"	14	27.73125 "	"	34	27.93125 "
"	15	27.74125 "	"	35	27.94125 "
"	16	27.75125 "	"	36	27.95125 "
"	17	27.76125 "	"	37	27.96125 "
"	18	27.77125 "	"	38	27.97125 "
"	19	27.78125 "	"	39	27.98125 "
"	20	27.79125 "	"	40	27.99125 "

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## BEFORE YOU CALL FOR HELP...

Our repair centers receive many returned products which are actually **working perfectly**. Maybe the owner just didn't read the instructions, or overlooked something. Or perhaps the problem was merely weak batteries!

So read this manual carefully and be sure **you** understand all the basic features of this Transceiver—and the special ones, too! And before you assume it needs repair, refer to the Service and Maintenance section of this manual, to see if the problem is something **you** can eliminate.

Enjoy you Realistic TRC-1001!

# SPECIFICATIONS

## RECEIVER

<b>Frequency Coverage</b> .....	27.60125 MHz to 27.99125 MHz
<b>Sensitivity</b> .....	0.5 $\mu$ V for 10 dB (S+N)/N
<b>Selectivity</b> .....	$\pm$ 4.5kHz at -6dB
<b>Adjacent Channel Rejection</b> ..	60dB
<b>Audio Distortion at 1000Hz</b> ...	Less than 10% at 1 watts output (8 $\Omega$ )
<b>I.F.</b> .....	1st 10,695 MHz, 2nd 455 KHz
<b>Squelch</b> .....	Adjustable from 0.3 $\mu$ V

## TRANSMITTER

<b>Frequency Coverage</b> .....	27.60125 MHz to 27.99125 MHz
<b>Power Output</b> .....	3.5 watts in HI Power Position 0.3 watts in LOW Power Position
<b>Modulation</b> .....	1.5 kHz — 2.0 kHz deviation
<b>Spurious Output</b> .....	0.25 $\mu$ W or better
<b>Emission</b> .....	FM
<b>Frequency Tolerance</b> .....	$\pm$ 0.002%
<b>Current Drain (12.5V DC)</b> .....	65 — 1000mA (from no-signal receive, to transmit)

# GENERAL

## Power Requirements:

8 type AA Penlight Cells (or 10 rechargeable Ni-Cad cells)

12 Volts DC, with external adapter. Rechargeable Ni-Cads can be charged while in the unit, using an external Charger/Adapter and the CHG Jack

## Speaker:

2 1/4" (5.7cm) permanent magnet dynamic type

## Microphone:

Built-in electret-condenser type with FET amplifier

Provision for external Mic with Push-to-Talk capability via the 5-pin DIN Jack

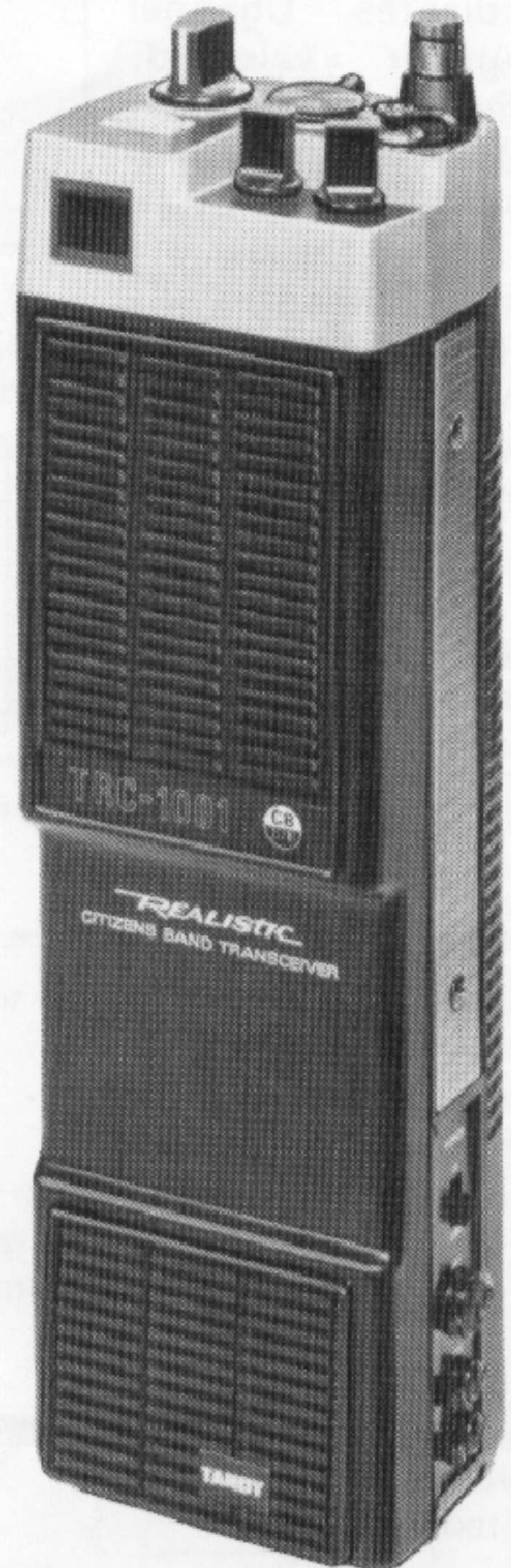
## Meter:

Provides indication of Battery Condition in Receive Mode

Provides indication of relative RF power output in Transmit Mode

## Antenna:

Built-in telescopic antenna



# CONTROLS

**Channel Display**  
Indicates Channel number selected. (Press Channel Check Switch to turn on Display).

**Channel Check Switch**  
Press to turn on LED channel display.

**Talk Button**  
Press to transmit. Release to listen.

**Range Boost Side Panels**  
for extended range (body functions as part of antenna system).

**Battery Compartment**  
Load batteries as noted on page 8.

**Antenna**  
Extend fully.

**Built-in Dynamic Speaker**  
Listen here.

**Built-in Electret Condenser Microphone**  
Talk here.



### Channel Selector

Select any one of 40 Channels. Each time you change channels, display will light up for a few seconds.

### RF/BATTERY Meter

Indicates condition of Batteries when Receiving. Shows relative RF Power when Transmitting.

### SQUELCH Control

Adjust to eliminate background noise.

### OFF—VOLUME Control

Turn clockwise to apply power. Adjust for desired listening level.

### EXTERNAL MIC Jack

Connect external Mic here (5-pin DIN plug). Can be used with Push-to-Talk mics. Built-in Mic is automatically disconnected.

### External SPEAKER Jack

Connect external speaker or earphone (8-16 ohm impedance). Internal speaker is automatically disconnected.

### HI/LOW POWER Switch

Switch to LOW when transmitting a short distance and/or to conserve batteries.

### ANT Jack

Connect external antenna (50 ohm) here for mobile or base use—or just to extend range. Keep telescopic antenna collapsed.

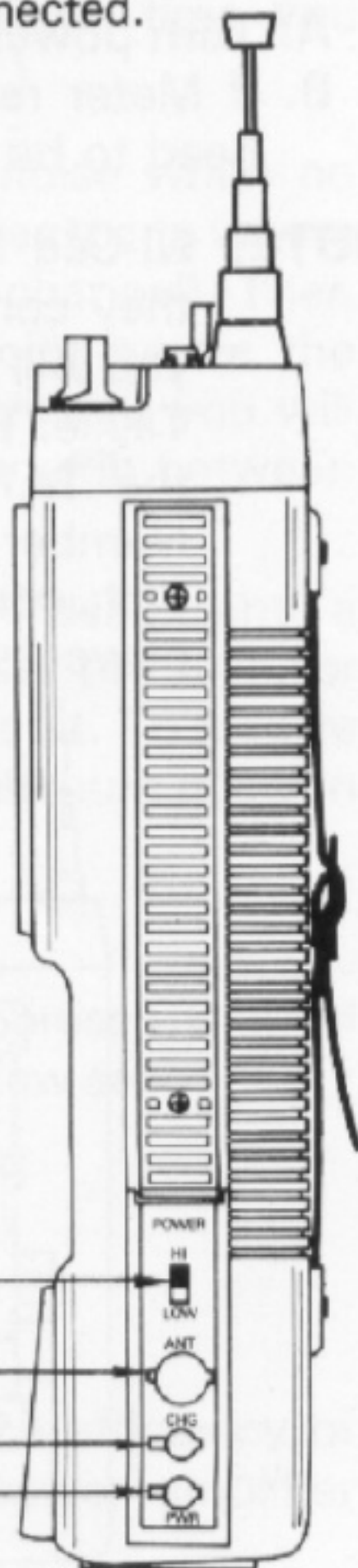
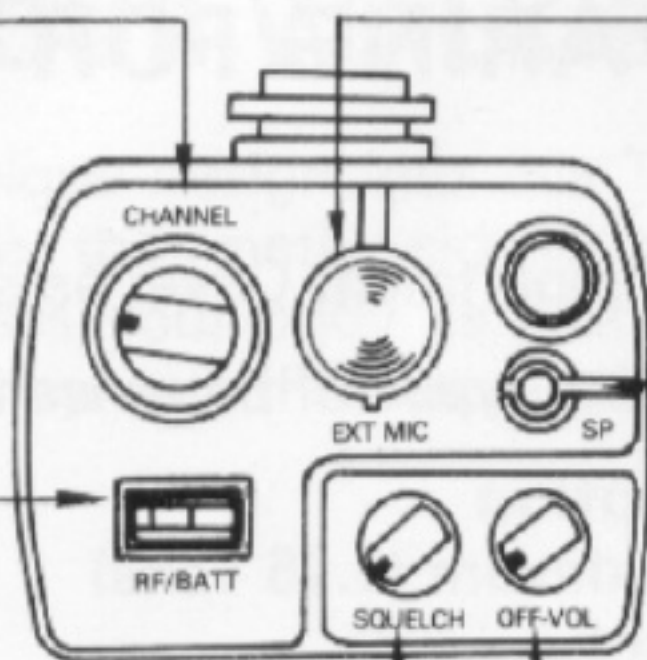
### CHG Jack

Connect charger (such as TANDY Catalog Number 21-516) to recharge Nickel Cadmium batteries while they're in the unit.

**NOTE:** Do not attempt to operate unit while batteries are being recharged.

### PWR Jack

Connect a 12-volt DC source (TANDY 270-1533). Batteries will be automatically disconnected.



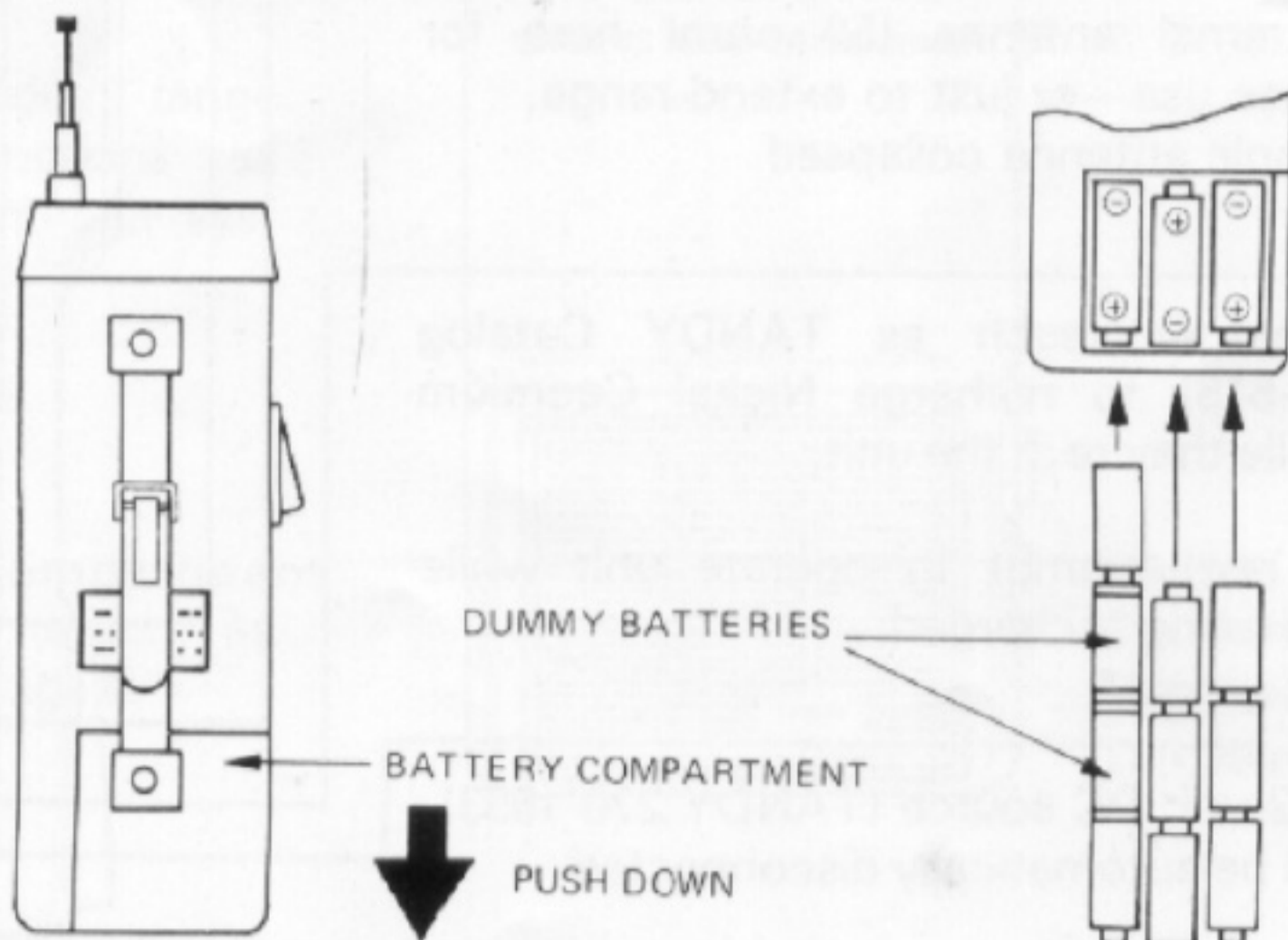
# PREPARING FOR USE

1. Remove the Battery Compartment Cover as shown below.
2. You can use the following types of batteries (size AA "penlight").

Description	Quantity Required
Rechargeable Nickel Cadmium (1.25 volts)	10
Alkaline type (1.5 volts)	8
Standard type (1.5 volts)	8

3. Install batteries **with polarity** as shown in the **Compartment**.
4. **If you are using Alkaline or standard type AA "penlight" batteries, use the dummy batteries as shown.**
5. Check battery condition as follows:
  - A. Turn power "on" by rotating **VOLume** clockwise.
  - B. If Meter reads in the blue range, the batteries are OK. Batteries need to be recharged or replaced if meter reads in the red range.

**NOTE:** Ni-Cad batteries are typically in a discharged condition when they come from a store. Therefore, if you are using Ni-Cad's, you will probably have to charge them before using your Walkie-Talkie. The best way to do this is to charge them in the set, using the TANDY Battery Charger designed for this unit (Catalog Number 21-516). Plug it into the **CHG** Jack on the side of the unit; connect the other end to a source of 240 volts, 50 Hz AC power (standard AC power).



# USING YOUR WALKIE-TALKIE

We've incorporated a unique design into this Transceiver: with special techniques, we've made the metal side panels into a capacitive-coupling circuit which uses your body as part of the antenna system. This increases its efficiency and thus increases your range of reliable communications.

## TO RECEIVE

1. Extend Antenna fully and keep it in a vertical position.
2. Turn power "on" by rotating **VOLume** clockwise.
3. Check the Battery condition (see page 8).
4. Set **SQUELCH** control to maximum counterclockwise.
5. Set **CHANNEL Selector** to the desired channel. (Each time you change channels, display will light up for a few seconds.)
6. Adjust **SQUELCH** to cut out annoying background noise when no signal is being received. To do this, set **CHANNEL Selector** to where no signals are present (or wait till signals cease on your channel). Then rotate **SQUELCH** in a clockwise direction to the point where the background noise just stops. Now, when a signal is present you will hear it, but will not be disturbed by noise on the channel in between signals.

When properly set, **SQUELCH** will keep the receiver "dead" until a signal comes in on that channel. Do not set **SQUELCH** too high, or weak signals will not be able to "open" the Squelch circuit. To receive weak signals, it is best to leave **SQUELCH** set to the minimum position (maximum counterclockwise).

7. Adjust **VOLume** for a suitable listening level.
8. Whenever you need to check what channel you're on, press **Channel Check switch** and release. Display will remain lit for a few seconds.

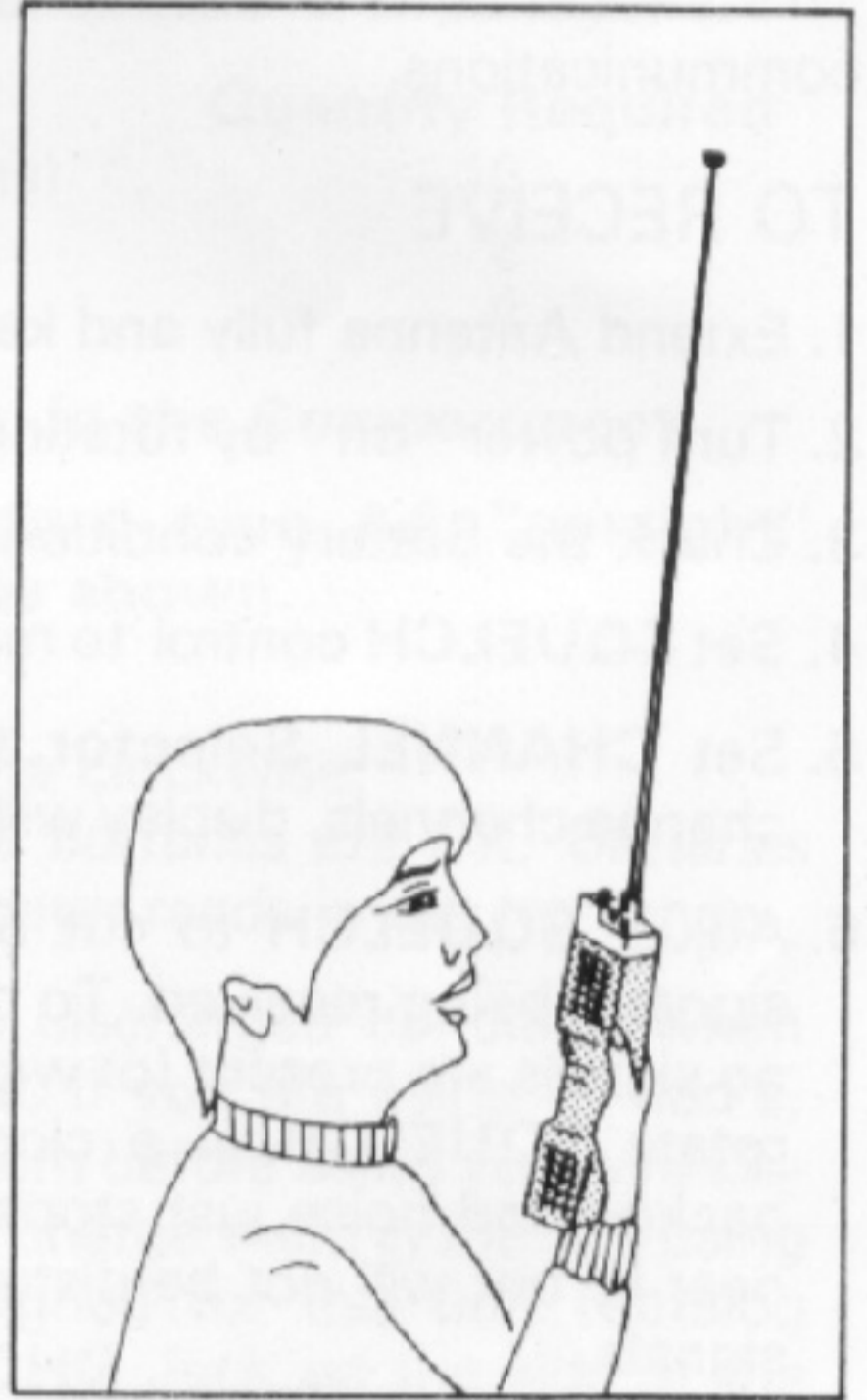
## TO TRANSMIT

1. Extend Antenna fully and keep it in a vertical position.

**IMPORTANT:** If the Antenna is not fully extended, the efficiency of the transmitter is reduced and the power amplifier transistor could be damaged.

2. Turn power "on" by rotating **VOLUME** clockwise.
3. Check the Battery condition (see page 8).
4. Set **CHANNEL Selector** to desired channel of operation.
5. To Transmit, press the **Talk** button. Speak slowly and clearly in a normal voice, 2" or 3" (5–7.5cm) from the Microphone. A built-in modulation limiter circuit allows the Microphone to adjust automatically to a wide variety of voice levels. No need to shout or speak loudly—the built-in circuitry automatically compensates for voice levels.

If you are Transmitting only a short distance, or want to conserve battery power, set **HI/LOW** switch to the **LOW** position. As a courtesy on-the-air, you should always use only the required amount of power (**LOW** if possible), this will avoid unnecessary interference with other CBer's.



6. To Receive, release the **Talk** button.
7. To use an external/remote microphone, such as TANDY's 21-1172, just plug it into the 5-pin DIN **EXT MIC** Jack. Then, you can press the Push-to-Talk bar on the mic and talk there; release and listen to the sound from the Walkie-Talkie's built-in Speaker. As you will note, the built-in mic will be disconnected when you use an external mic.

When using such an external mic, hold it 2–3" (5–7.5cm) from your mouth (hold at a slight angle—don't talk straight into it) and speak slowly at a normal voice level.

**NOTE:** Your Walkie-Talkie has more than adequate mic gain so a pre-amp mic is not an advantage. As a matter of fact, if you do use a pre-amp mic and set its gain too high, you can end up with audio distortion and other undesired problems. Thus, we do not recommend a pre-amp mic with this Walkie-Talkie.

## OPERATING HINTS

**EXTERNAL MICRophone Jack:** You can plug a remote microphone into the 5-pin DIN **EXT MIC** jack. Use an optional microphone such as TANDY's 21-1172. Your Walkie-Talkie features a new locking type microphone jack. This insures that you won't accidentally pull out or loosen the plug connection (when extending the Mic cable while moving about).

**SPEAKER Jack:** Plug an external speaker or earphone into this jack and enjoy the advantage of avoiding annoying background noise when trying to listen to weak or distant stations. When you push a plug into this jack, it automatically disconnects the internal Speaker (but not the microphone function).

**Power HI-LOW Switch** is for reducing the battery drain when transmitting over short distances. If the switch is set to HI, the power output is 4 watts maximum. About 60% of the current is saved if the switch is set to LOW.

**External ANT Jack** is for connecting an external antenna. When using an external antenna the telescopic antenna should be left collapsed within the unit.

**CHG Jack** is for charging Nickel Cadmium batteries (if you are using them).

**PWR Jack:** You can power your Walkie-Talkie from an external 12 Volt DC source (and thus conserve battery power) by using an optional AC to 12-Volt DC Power Supply such as TANDY's 22-9124. Or, you can use our 12V DC Power Cord 270-1533 in your vehicle and power your Walkie-Talkie directly from the battery in your vehicle.

To insure maximum range, always keep fully charged batteries in the unit. As the voltage decreases it directly affects range. Use only quality batteries such as TANDY ENERCELLs (23-582) which will last three times longer than "regular" batteries, or TANDY Alkaline ENERCELLs (23-552) which will last six times longer. If you dislike those trips to the store for replacement batteries, we suggest TANDY Nickel Cadmium ENERCELL (23-125) rechargeable batteries. Use these together with TANDY's Power Supply/Charger, Catalog Number 21-516 (plugged into **CHG** jack for charging). They can be recharged up to 500 times to save your time, trips and money.

**NOTE:** Do not try to use 270-1533 for charging batteries (it's intended only for DC operation, not charging).

**Caution:** Do not attempt to operate the Transceiver when charging Ni-Cad batteries. Wait till batteries are fully charged and then operate from the batteries.

# SERVICE AND MAINTENANCE

Your Transceiver has been built in accordance with TANDY electronic's exacting quality control standards. However, it should be treated with reasonable care accorded any electronic equipment. Avoid exposing it to severe shock, dirt or moisture.

If you run into problems with the unit, we recommend you check the following:

1. If trouble is experienced with receiving.

- Check batteries for weak or discharged condition. Replace or recharge if necessary.
- Check the **OFF/VOLUME** switch setting.
- Be sure **SQUELCH** is adjusted properly. Is it over-squelched?
- Check if the unit is switched to an active channel.

2. If trouble is experienced with transmitting.

- Check if the antenna is fully extended for proper operation.
- Make sure you are fully pressing the Push-to-Talk button.

If these checks don't solve the trouble, do NOT attempt repairs or adjustments yourself. The unit should be serviced only by a qualified radio service technician. Whenever possible, return the unit to the store from which it was purchased.

## 10-CODES

Citizens band radio operators have largely adopted the 10-code for standard questions and answers. Its use permits faster communication and better intelligibility in noisy areas. The following table lists some of the more common codes and their meanings.

Code	Meaning	Code	Meaning
10-1	Receiving poorly	10-10	Standing by
10-2	Receiving well	10-13	Advise road/weather conditions
10-3	Stop Transmitting	10-20	What is your location?
10-4	OK	10-33	Emergency traffic
10-7	Out of Service	10-36	Correct time
10-8	In Service	10-41	Switch to Channel
10-9	Repeat	10-62	Cannot copy you

# ACCESSORIES

Your Realistic TRC-1001 has a wide array of jacks to let you connect many useful accessory devices—all of which are available at your local TANDY Store.

## PUSH-TO-TALK MIC...

Lets you operate your walkie-talkie just like a fullsize CB rig. Get our Dynamic communications Mic, 21-1172.

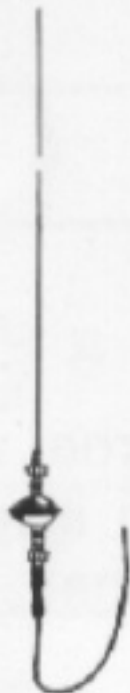


21-1172

## EXTERNAL ANTENNA...

Greatly extends your range on transmit and receive. There are a wide variety of Archer base and mobile antennas to choose from. Connect the coax antenna lead-in cable to the ANT jack by using a PL-259-to-RCA plug adapter.

21-990



21-940

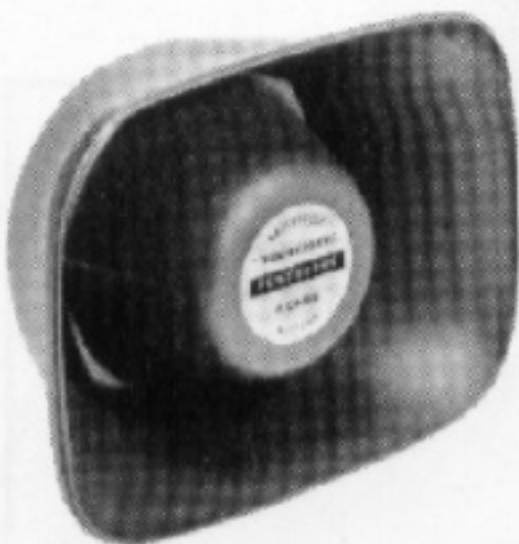


21-926



## EXTERNAL SPEAKER...

So you can enjoy excellent sound from any 8-ohm extension or PA-type speaker. Or connect a set of communications-headphones for private listening even in noisy areas.



40-1244



21-549



20-200

# SOME HINTS TO HELP YOU ENJOY YOUR C.B.

- \* Wait for a pause in transmission before asking for a Break.
- \* If you don't receive an answer after a second call to another station, sign off and allow others to use the channel—wait a while, ask for a break and try again.
- \* Do not Dead Key (hold transmitter button in).
- \* Assist callers with directions, road conditions or other requested information.
- \* Keep harassment off the air. This is unnecessary and causes problems for everyone including you.
- \* Be courteous—treat others the way you wish to be treated.

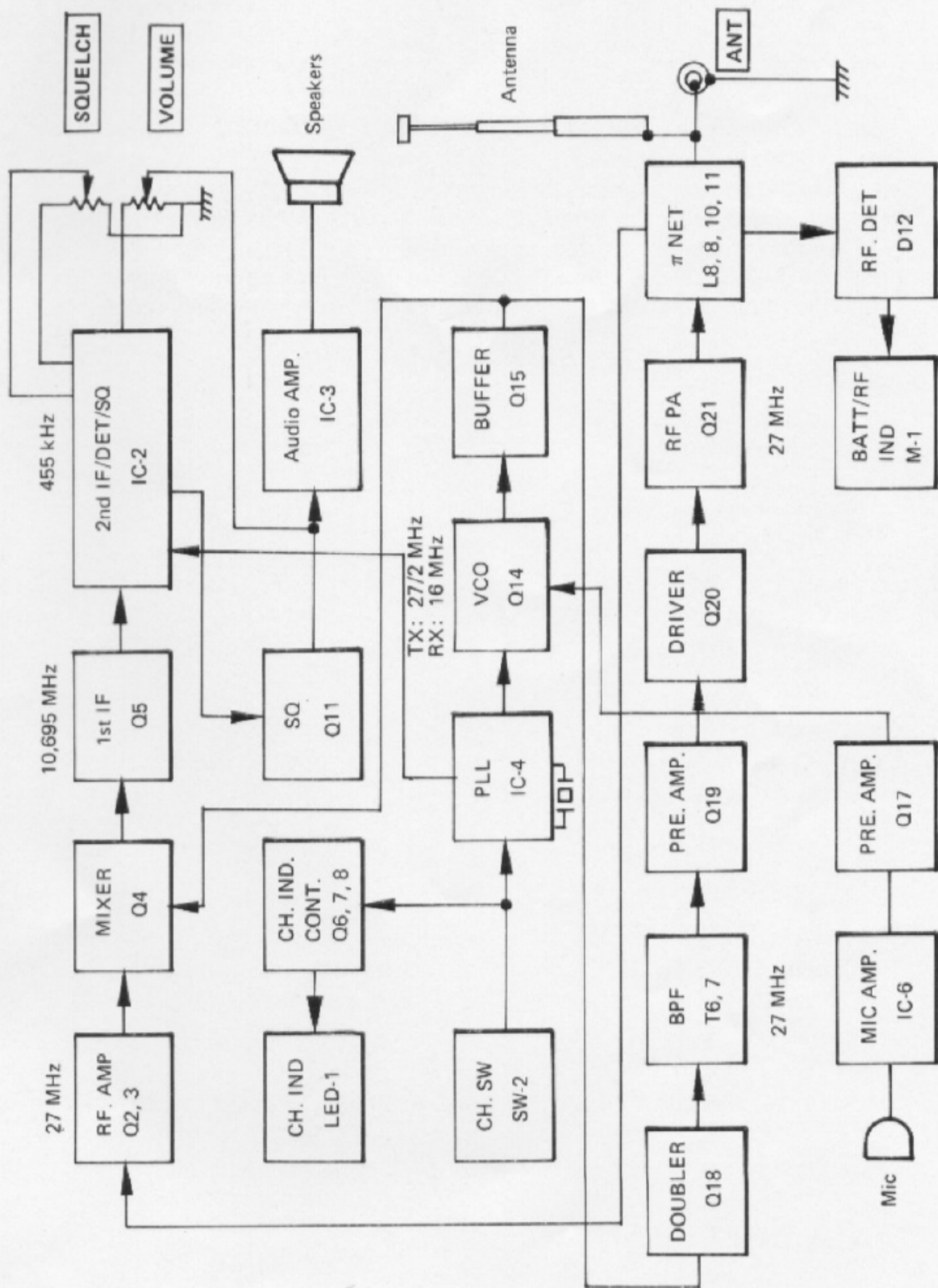
## WARNING

- \* Do not open up the Transceiver to make any internal adjustments. Internal adjustments and/or modification can lead to illegal operation as defined by licence term, and other regulations. Such illegal operation can lead to prosecution.
- \* MPT1320 specifies that if an antenna is mounted at a height exceeding 7 meters the licence will require a reduction in transmitter power of 10 dB. This transceiver provides power Hi/Low switch to meet the requirement.

### **TO BE SAFE AND SURE:**

1. You should never open up the case of your Transceiver.
2. Never change or replace anything in your Transceiver.

# BLOCK DIAGRAM



## **TANDY LIMITED WARRANTY**

This equipment is warranted against defects for 90 days from date of purchase. Within this period, we will repair it without charge for parts and labor. Simply bring your sales slip as proof of purchase date to any TANDY store. Warranty does not cover transportation costs. Nor does it cover equipment subjected to misuse or accidental damage.

***We Service What We Sell***

For service, return this set to your nearest TANDY electronics store.

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