

Owner's Manual



Regency Scanners Model M100

Regency.

Packing List

- 1-Receiver Unit
- 1-Wall-mounted AC Power Supply
- 1-DC Power Cord
- 1-Telescopic Antenna with Right-angle Adaptor
- 1-Mounting Bracket
- 1-Instruction Manual
- 1-Warranty Card to be filled out and returned to:
Regency Electronics, Inc.
7707 Records St.
Indianapolis, IN 46226

Index

Description	1
Preparation for Use	2
Front Panel Controls	2
Program Panel	3
Prompting Messages	4
Programming Channels	5, 6
Scanning	7
Searching	8, 9
Priority	10
Weather Broadcasts	11
120 VAC Installation	11
Mobile (12 VDC) Installation	11
Memory Battery	12
Memory Lock Switch	13
Day-Night Switch	13
External Antenna	13
External Speaker	13
Specifications	14
Trouble Shooting Guide	15
Birdie List	16
Warranty	17

Please record Serial Number and Date of Purchase:

Serial No. _____ Date Purchased _____

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD,
DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.**

Maintenance

All servicing should be referred to a qualified electronic technician.

UNAUTHORIZED ADJUSTMENTS MAY DAMAGE THE EQUIPMENT OR RESULT IN IMPROPER OPERATION AS WELL AS INVALIDATE THE WARRANTY.

IMPORTANT

The sections on Preparation for Use and Operation should be thoroughly read before operating the unit. Reading the instructions will result in maximum performance and enjoyment of your radio.

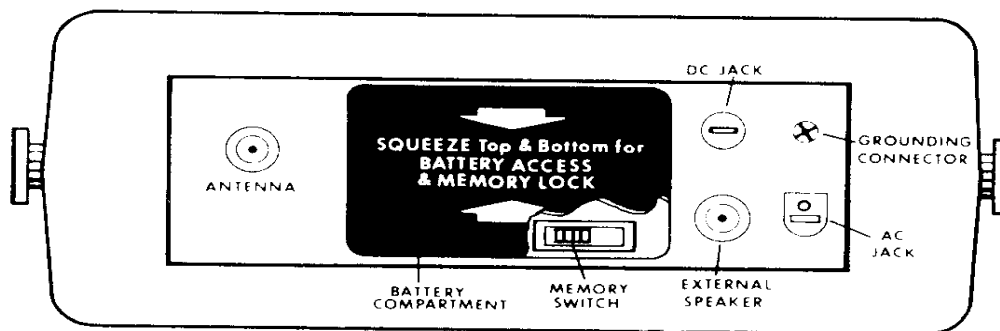
Description

Your Regency M100 is a compact, programmable 10 channel, three band, FM monitor receiver for use at home or on the road. It is a double conversion, superheterodyne used to receive the narrow band FM communications in the amateur, public safety and business bands: 30-50, 144-174 and 440-512 MHz.

Sophisticated microprocessor-controlled circuitry eliminates the need for crystals. Instead, the frequency for each channel is programmed through the numbered keyboard similar to the one used on a telephone. A "beep" acknowledges contact each time a key is touched.

Any combination of two to ten channels can be scanned automatically, or the unit can be set on manual for continuous monitoring of any one channel. In addition, the search function locates unknown frequencies within a band.

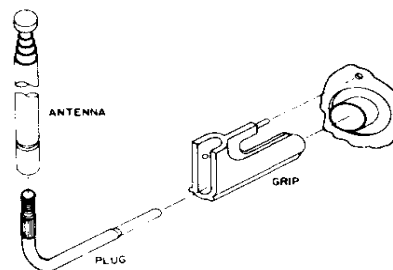
Other features include scan delay, priority and a day/night switch to control the brightness of the 12-digit Vacuum-Fluorescent display. The M100 can be operated on either 120 VAC or 12 VDC.



Preparation for Use

Before operating your M100, read the following directions carefully.

1. Unpack the unit from the carton and check for damage. If the unit is damaged, contact the place of purchase immediately as required by the warranty agreement.
2. Insert one end of the AC power cord into the AC jack provided on the rear panel of your scanner. See rear panel diagram on page 1. Plug the wall-mounted power supply into a 120VAC outlet (DC operation is covered on page 11).
3. Insert the telescopic antenna into the antenna jack on the back of the scanner using diagram (right).



4. Before turning on the receiver, turn the "SQ" knob counterclockwise all the way.
5. Now turn the "OFF/VOL" knob clockwise to apply power to the receiver. A "click" indicates the power is on. Further clockwise turning of the "OFF/VOL" knob increases the volume. Set the knob just above the "click" prior to programming.
6. Set the squelch by turning the "SQ" knob clockwise until static is heard. Turn the knob back (counterclockwise) until the static just disappears.

Front Panel Controls

OFF/VOLUME

When turned clockwise, the OFF/VOL knob provides power to the unit and increases the audio level to the desirable or most comfortable listening level.

SQUELCH

Eliminates background noise while the unit is scanning or searching until a transmission is received.

OFF/PRIORITY

Selects the priority feature when in the SCAN or MANUAL mode (see page 10).

NIGHT/OFF/DAY

Controls the brightness of the vacuum-fluorescent digital display. When in the NIGHT (left) position, the display dims for night use and also illuminates the keyboard. When in the DAY (right) position, the display is brightest for easier visibility in the daytime. The OFF (center) position turns off the display while the unit remains operating; see page 13.

Program Panel

The M100 has 16 touch-entry keys for easy operation.

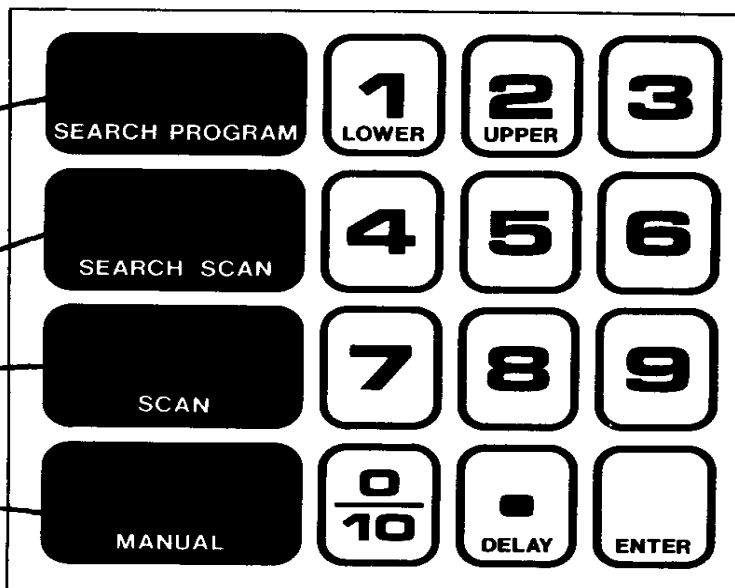
MODE KEYS

Use this key prior to entering lower and upper frequencies into the search mode.

Starts the search process.


Puts the unit into the scan mode.



Provides for manual selection of any channel.





PROGRAM KEYS

The numbered keys are used for entering frequencies as well as selecting the channel number during programming.

NOTE: The  key has 2 functions: it is a '0' (zero) when it is part of a frequency and a 10 (ten) when selecting channel 10 during programming.

In addition,  and  are used to enter a frequency as the lower or upper limit to the search. The following program keys provide special functions:

 Provides the decimal point when entering frequencies and allows for a delay in the resumption of the SCAN or SEARCH processes. (see pages 5, 7).

 For entering a frequency into one of the 10 channels or as a search limit.

Prompting Messages



P. LOSS

Will be displayed upon initial power up or when unit is turned on after power has been disconnected during which time the memory battery was either not installed or low in voltage (see page 12).


The following memories will be lost and will have to be re-entered.

1. All channel frequencies
2. Both search limits.



Error

Frequency entered is not within a band (see specifications on page 14 for band limits) or search limits are not within the same band. Also if the upper search limit is lower than lower limit (see pages 6, 8).



no ch.

All channels have been locked out during scan mode (see page 7).



Ch.

Blinking "Ch" — Frequency keyed in has been entered during programming but channel has not yet been selected (see page 5).

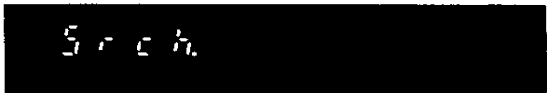


LO



UP

Blinking "LO" or "UP" — Frequency has been entered into search program but search limit (lower or upper) has not been selected (see page 8).



Search

Indicates unit is in the search mode (see page 9).



L

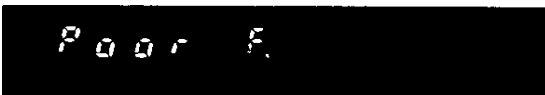
When "L" appears following the channel number and frequency in the manual mode, it indicates that the channel is locked out of the scan sequence (see page 8).



Delay feature has been selected in either search or scan mode (see pages 7, 9). An ‘H’ in this position indicates HOLD while in SEARCH mode only (see page 9).



Priority feature has been selected (see page 10).



Invalid frequency beyond radio’s coverage.

Programming Channels

The M100 has 10 channels available for entering your personal choice of frequencies. The sophisticated microprocessor-controlled circuitry eliminates the need for crystals and allows easy fingertip touch entry of all data.

Programming is done while in the Manual Mode.

Example: Entering the frequency 465.250 into Channel 1.



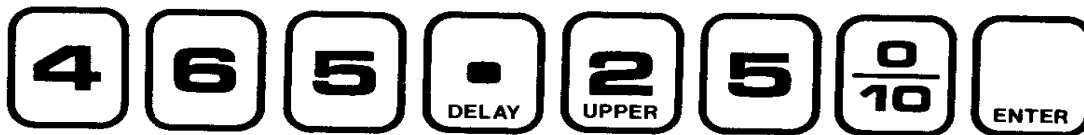
- PRESS:** (a ‘beep’ verifies contact.)
Each key will ‘beep’ when touched.



Display:

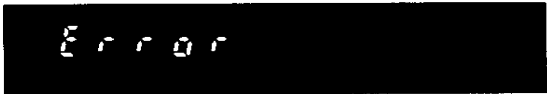
Note: When programming the unit for the first time you will notice that each of the 10 channels has been pre-programmed with the frequency 492.850. Entering your choice of frequencies will erase the pre-programmed frequencies.

- PRESS:**



‘Ch’ will blink indicating the unit is waiting for you to put the frequency into a specific channel.

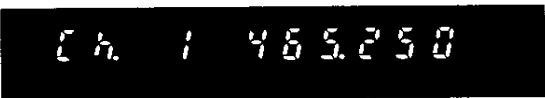
Programming Continued




If you enter an invalid frequency, will appear in the display.

Press  and begin again.



3. **PRESS:** 


Display:  Frequency 465.250 is now in Channel 1.
Repeat this procedure for each channel to be programmed.



NOTE: Each time  is selected for the purpose of entering a frequency, the scanning process immediately stops. The channel and frequency displayed in the digital readout will in no way be affected when you enter the new frequency, unless it is the one you wish to change.

PROGRAMMING HINTS



1. When programming consecutive channels,  does not have to be pressed before keying in each frequency. Simply begin with step 2 to enter additional frequencies.
2. If an invalid frequency is made (step 2), you may enter the correct frequency without pressing  first.
3. If you wish to move a frequency from one channel to another such as from channel 1 to channel 8:


PRESS:  Repeatedly touch manual until channel 1 is reached.

PRESS:  followed by 
Now the frequency that was in channel 1 is in channel 8.

NOTE: The frequency is in both channels, 1 and 8. It has not automatically been erased from Channel 1. You must re-program channel 1 to change the frequency.


Scanning

After you have programmed the frequencies of your choice, you can scan each one automatically when in the scan mode. To start the scan-

ning process, press . If necessary, adjust the squelch control by turning counterclockwise until proper scanning action is obtained.

The display will show the NUMBER of each channel as it is scanned. If a transmission is found, the scanner will stop and the display will show both the channel number and the frequency:


Example:



Ch. 3 153.000

At the conclusion of the transmission, scanning will resume automatically.

If, while scanning, you wish to omit a channel from the scan process, simply touch the channel number. This is referred to as "locking out" a channel. A channel can ONLY be locked out while the unit is scanning. If all channels are locked out, the display will show



no ch

To put the channel(s) back in, simply touch the channel number(s).

SCAN DELAY

During the SCAN mode, you may want to delay resumption of the scan process in order to hear a reply that might otherwise be missed once the unit has gone on to scan other channels. To do this, press



WHILE THE UNIT IS SCANNING. A "d." will appear in the display:



d.

Now, whenever a signal is received, the unit will stop on the channel, display the channel number and frequency and broadcast the message. At the conclusion of the message, the unit will wait approximately 2 seconds before scanning. To de-activate DELAY, press



MANUAL OPERATION

If at any time you wish to monitor one channel continuously, press



The unit will stop on a channel at random.

Repeatedly press



until the desired channel is reached. Any

channel selected in manual that had previously been "locked out" during scan will have an "L" after the frequency in the display.

Example:

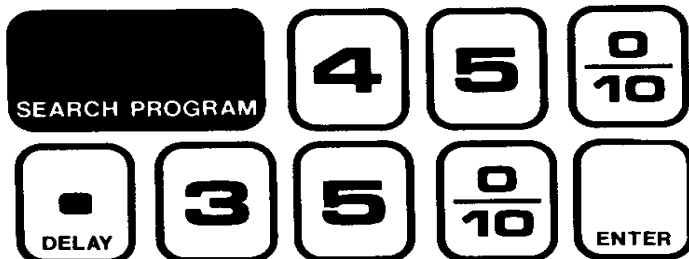


Searching

The Touch M100 includes a SEARCH function that enables you to locate new frequencies in addition to those you already know. It can locate active frequencies anywhere within a band. See page 16 for Low VHF band ranges.

Two frequencies (lower and upper) are used in the SEARCH mode. For example, to search for unknown active frequencies between 450.350 and 455.550 MHz:

PRESS:



If you enter an invalid frequency,



will appear in the display. Simply re-enter a valid frequency. "LO" will blink indicating the unit is waiting for you to select a limit (lower or upper).

Then, PRESS:



Display:



Frequency 450.350 is now

entered as the lower limit to the search.

Searching Continued

Press:



Display: 

Frequency 455.550 is entered as the upper limit to the search.

NOTE: Programming the SEARCH frequencies has no effect on the frequencies that have been programmed into SCAN or MANUAL channels 1 and 2.

To start the search, press



SEARCH SCAN

The display will initially show






Srch 450.350d

NOTE: Be sure squelch control is set to eliminate background noise.

The M100 will now automatically sample every frequency within the limits you have selected. When an active frequency is found, the unit will stop searching, display the frequency and broadcast the message.

With the "d." in the display, the unit will wait approximately 4 seconds following the conclusion of the message before it resumes searching. If you

wish to select HOLD instead, simply press . An "H" replaces the "d." in the display. Now, when the unit finds a frequency during search, it will hold or stay on that frequency and not resume searching until you:

1) press  to step it off the frequency, or 2) press  to re-activate the 4 second delay.

NOTE: You cannot eliminate both DELAY and HOLD.


When the unit reaches the upper limit of the search it will automatically return to the lower limit and begin again. If at any time you wish to verify the limits you have set for the search, press



SEARCH PROGRAM

(twice to see
both limits)



Searching Continued


If you decide to change modes (i.e. Manual or Scan) while the unit is searching, you may do so. The M100 will remember at what frequency the search was interrupted. To resume the search, press  and

the M100 will continue the search from that frequency.

You also have the option of entering frequencies found while searching directly into one of the 10 scan channels. For example: entering a frequency found in search into channel 5.

When the unit stops on an active frequency,

PRESS:   **NOTE: You must press “ENTER” while the Search is still stopped on the frequency.**

Now the frequency found in search is entered into channel 5. Other frequencies found while searching can be entered into any of the other scan channels the same way. Press  to resume the search.

NOTE: In the Search mode it is recommended that you limit the search range to 1 MHz or less. Your chances of catching an unknown active frequency will be considerably greater since transmissions are usually short.

Priority

This is a special feature that lets you program your favorite frequency to be sampled approximately once every two seconds and also to have it override calls on other channels. Channel 1 has been set aside for this function. Enter your favorite frequency into channel 1 then move the OFF/PRIORITY switch to PRIORITY (right).

NOTE: PRIORITY is active only in the MANUAL or SCAN modes.
The display will indicate priority with a “P”:



While the unit is in MANUAL or scanning, the display will blink each time channel 1 is sampled. Any audio will also be briefly interrupted. Should a transmission begin on channel 1, the unit will go immediately to it and receive the message. After the message, the unit will resume scanning or return to the other channel. To de-activate priority, push the switch to OFF (left).

Weather Broadcasts

The National Weather Service provides a continuous (24-hour) broadcast of local and area weather conditions. These weather messages are repeated until the next or updated report is issued. The Weather Service has broadcast facilities in many metropolitan areas of the country.

If you are located within 25 or 30 miles of one of these cities, reception can usually be obtained with the telescopic antenna supplied with the unit. Your local Regency dealer can advise you about your specific antenna requirement.

Note: When set to automatic scan, the M100 will stop and remain on the Weather Channel (because it broadcasts continuously). Thus, this channel should only be activated when you desire to hear the current weather report.

120 VAC Installation

Plug one end of the AC cord into the AC receptacle on the rear of the radio. Plug the wall-mounted power supply into a 120 volt wall outlet. The M100 requires very little ventilation, however very warm locations such as near radiators or heating vents should be avoided.

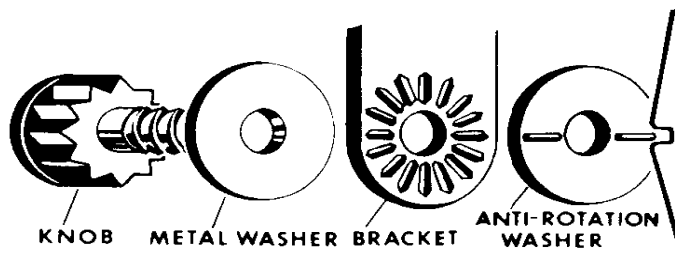
Mobile (12 VDC) Installation

NOTE: Mobile reception of a POLICE frequency by UNAUTHORIZED personnel is ILLEGAL in some areas. It is the responsibility of the person making the installation to be sure that the user of this receiver is authorized or cleared through the local police department. Under no conditions can Regency Electronics, Inc., the manufacturer of this set, be held responsible for its unauthorized installation or use.

The M100 receiver may be used in any car, truck, boat, etc., that has a 12 VDC negative ground system. For permanent DC operation in a vehicle, it will be necessary to use the DC cord. The red lead with the fuse holder must be connected to the positive terminal side of the battery. The female quick-connect terminal is then pushed on to the male terminal in the DC power connector (RED).

An 18-gauge conductor, preferably stranded, must be connected to the grounding screw located on the rear panel and run to the nearest negative or ground point of the system. To prevent the possibility of memory loss during engine starting, be sure a 9 volt battery is installed in the receiver.

**MOUNTING BRACKET
INSTALLATION DIAGRAM**



Mobile Installation Continued

Temporary installation can be obtained by using the accessory MA-18 Cigarette Lighter Power Cord and making two connections to the receiver (both are located on the unit's rear panel; see diagram on page 1). First, connect the unshielded spade lug to the grounding screw. This provides the "ground" connection to the receiver. The shielded female quick-connect terminal is then pushed on to the male terminal in the DC power connector (RED). After both of these connections are secured, plug the Cigarette Lighter Plug end of the power cord into the vehicle's lighter receptacle. This completes the required connections. This cord will permit the unit to be operated while sitting on the seat. The telescopic antenna will usually be sufficient for this type of operation.

A coupling harness, Regency part number MA-5, is available to allow the AM auto antenna to be used with the M100.

Memory Battery

A battery can be installed to prevent loss of memory (channel and search frequencies) in the event of a power failure or the power cord is unplugged. A 9 volt alkaline battery or heavy duty battery of the same type used in transistor radios is recommended because of their longer life in this type of operation.

Batteries suitable for use in this receiver are readily available at electronic stores and other places that carry a line of batteries. A partial list of available batteries is:

Alkaline Batteries

Eveready #522DB
Mallory MN1604

Heavy-Duty Batteries

Eveready 222
Burgess 2MN6

Without a battery, a power failure will be indicated by the digital display:



The battery is not intended for long term memory storage. If the unit is going to be unplugged for an extended period of time, several months or longer, it is recommended that the battery be removed. Also it is recommended that a dead battery be removed or replaced as soon as possible.

BATTERY INSTALLATION

To install the 9 volt battery, follow these steps:

1. Squeeze battery compartment cover at top and bottom.
2. Lift out at bottom, then at top.
3. Attach battery connector to the two terminals on the battery.
4. Fit battery inside cover.
5. Replace cover by sliding top tab in first then snap in bottom tabs.

Memory Lock Switch

After programming the channels you want, you have the option of locking in those frequencies using the Memory Lock Switch located behind the battery compartment (see rear panel diagram on page 1). Follow steps 1 and 2 on page 12 to gain access to the switch located behind the battery compartment inside the unit. With the switch in the right position, the keyboard is disabled so that channel or search frequencies cannot be inadvertently changed. The unit will continue to operate in the SEARCH, SCAN or MANUAL modes on those frequencies previously entered into the unit's memory. Pushing the switch to the left restores the keyboard to normal operation. Channel or search frequencies may now be changed if desired.

Night/Off/Day

When operating the unit in a dark location, such as in a vehicle at night, push the Day/Night switch to be NIGHT (left) position. The digital display will dim and the keyboard becomes back-lighted for easy nighttime operation. You also have the option of turning off the display as well as the back lighted program panel by setting the switch into the OFF (center) position. The unit will otherwise continue to operate normally. Moving the switch to the DAY (right) position, illuminates the digital display to its maximum brightness for easy visibility during daytime operation.

External Antenna

In areas of very low signal strength, it may be necessary to use an antenna system better than the telescopic one for proper reception. An external antenna mounted as high above the ground as practical will greatly increase the signal strength. If it is determined that proper reception will require an external or outside antenna, then it is suggested that a tri-band antenna (it covers both VHF bands, 30-50 MHz and 144-174 MHz, and UHF) be used. There are several manufacturers of tri-band, monitor type antennas. They are usually available at the source from which the receiver was purchased.

For proper input matching, 50 ohm coaxial cable such as RG 58/U should be used. A Motorola type antenna plug (Cinch-Jones No. 13B or H.H. Smith No. 1200) will have to be installed on the receiver end of the cable in order to utilize the antenna socket located on the rear panel of the unit. (See rear panel diagram on page 1).

External Speaker

An external (or remotely mounted) 8 ohm speaker, such as Regency's MA-108, can be used by merely inserting the mating phone plug into the 3.5mm jack on the unit's rear panel. (See rear panel diagram on page 1). An 8 ohm speaker is recommended for optimum performance; do NOT use a 3-4 ohm speaker. The internal speaker is automatically disconnected when an external speaker is used.

Specifications

Frequency Ranges:

VHF (Low Band)	30-50 MHz
VHF (Amateur)	144-148 MHz
VHF (High Band)	148-174 MHz
UHF (Amateur)	440-450 MHz
UHF (Standard)	450-470 MHz
UHF (Extended)	470-512 MHz

Search Frequency Increments:

VHF	5 KHz
UHF	12.5 KHz

Sensitivity (12 DB Sinad; at tune-up)

LO VHF (30-50 MHz)	0.35 μ V
HI VHF (144-174 MHz)	0.45 μ V
UHF (440-512 MHz)	0.5 μ V

Sensitivity (12 DB Sinad; maximum)

LO VHF (30-33 MHz)	1.0 μ V
LO VHF (33-48 MHz)	0.5 μ V
LO VHF (48-50 MHz)	0.6 μ V
HI VHF (144-146 MHz)	0.7 μ V
HI VHF (146-170 MHz)	0.5 μ V
HI VHF (170-174 MHz)	0.7 μ V
UHF (440-450 MHz)	0.9 μ V
UHF (450-495 MHz)	0.7 μ V
UHF (495-512 MHz)	1.5 μ V

Selectivity	± 7.5 KHz @ 6 DB
	± 18 KHz @ 50 DB

Spurious Rejection (except Primary Image) 50 DB

Modulation Acceptance ± 7.5 KHz

I.F. Frequencies 1st IF: 10.7 MHz; crystal filter
2nd IF: 455 KHz; ceramic filter

Reference Oscillator

(Synthesizer) Crystal Controlled

Scanning Rate approx. 15 channels per second

Search Scanning Rate

VHF approx. 17 seconds per megaHertz

UHF approx. 6 seconds per megaHertz

Scan Delay

Normal approx. 0.6 seconds

With Delay Option approx. 2 seconds

Search Delay approx. 4 seconds

Priority Sampling Rate approx. 2 seconds

Audio Output 2W @ 10% , or less distortion

Speaker (Internal) 8 Ohms, 4" square

Speaker (External) 8 Ohms, min.

Power Requirements 110-130 VAC, 60 Hz; 18 Watts max.
11.5-15 VDC; 10 Watts max.

Specifications Continued

Memory Saver Battery (optional)	9 volt, transistor radio type
Display (Frequency & Message Readout) 12 Digits, 7-Segment, VFD type	
FCC Certified	Part 15, Subpart C
Size	5¾" Wide x 2¾" High x 9¼" Deep
Weight	3½ lbs.

Troubleshooting Guide

NOTE: Please perform the simple checks indicated for improper operation before returning the unit for service.

TROUBLE	CHECK
No display, no sound	OFF/VOL knob should be turned clockwise. Night/Day Switch should be in Night or Day position (not OFF). Power Cord (AC or DC Connection). See also specifications for power requirements. DC cord — Replace 1.5 AMP fuse if blown.
Display, no sound	Volume Control Setting — check by turning clockwise.
No reception (no station heard)	Squelch Control Setting — see page 2.
Weak or poor reception	Antenna should be fully extended. Stations too far away — external antenna may be needed. See page 13. Incorrect frequencies entered.
Does not scan	If in Manual mode, press SCAN. Channels locked out — see page 7.
Search Scan stops on channels without stations	Birdies — see page 16.
“Error” appears in readout	Invalid frequency entered — see pages 6, 8.
“P. Loss” appears in readout	Initial power up, proceed with programming. Power failure — no memory battery or battery low in voltage.

Birdie List

Every complex receiver has frequencies that are difficult or impossible to receive because of internally generated signals. These frequencies are called ‘birdies’. The following is a partial list of such frequencies that may occur in the M100.

Low VHF (30-50 MHz)	High VHF (144-174 MHz)	UHF (440-512 MHz)
33.600	145.600	502.200
39.200	156.800	
44.800	173.600	
46.360		
46.385		

In addition, there are other frequencies that are difficult to receive because of interference from externally generated signals, such as T.V. stations, other receivers nearby and various other sources of man-made noise. These frequencies vary from location to location and are therefore impossible to list. When this type of interference is encountered, it can sometimes be eliminated by moving the Squelch Control knob counterclockwise (increase squelch action).

Low VHF Search Ranges

When searching the Low VHF Band (30-50MHz), the maximum search range (upper and lower limit separation) is 635KHz. The following chart lists each 635KHz range. If other limits are selected, the unit will automatically revert to one of these ranges when one of the upper limits listed below is reached. The 635KHz range does NOT apply to searching through the High VHF (144-174MHz) or UHF bands.

Lower Limit (MHz)	Upper Limit (MHz)	Lower Limit (MHz)	Upper Limit (MHz)	Lower Limit (MHz)	Upper Limit (MHz)
29.585	30.220	36.625	37.260	43.665	44.300
30.225	30.860	37.265	37.900	44.305	44.940
30.865	31.500	37.905	38.540	44.945	45.580
31.505	32.140	38.545	39.180	45.585	46.220
32.145	32.780	39.185	39.820	46.225	46.860
32.785	33.420	39.825	40.460	46.865	47.500
33.425	34.060	40.465	41.100	47.505	48.140
34.065	34.700	41.105	41.740	48.145	48.780
34.705	35.340	41.745	42.380	48.785	49.420
35.345	35.980	42.385	43.020	49.425	50.060
35.985	36.620	43.025	43.660		

Regency Scanners Limited Warranty

1. The warranty applies to the original or subsequent owners of the product for a period of 1 year from the original purchase date.
2. We agree to repair or replace all parts showing defects in material or workmanship.
3. Warranty service will be provided free of charge if unit is delivered to us intact, transportation charges prepaid, within one year of the date of sale to the original purchaser.
4. The warranty does not apply to units subject to misuse, neglect, accidents, incorrect wiring not our own, improper installation, or units used in violation of the instructions furnished by us. Nor does the warranty apply to units: damaged by lightning, excess current, repaired or altered outside the factory, or units with altered or removed serial numbers.
5. To have your unit serviced under the warranty return it, freight prepaid, to:

Customer Service Department
Regency Electronics, Inc.
7707 Records St.
Indianapolis, IN 46226

Only factory personnel are authorized to perform warranty service.

6. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



ELECTRONICS, INC.

7707 Records St.

Indianapolis, IN 46226