



FAIRMATE HP100E Handheld 100E Scanner Radio User Manual

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FAIR MATE

FAIRMATE HP100E Handheld 100E Scanner Radio



UNDERSTANDING THE FAIRMATE HP-100E CONTROLS



1. Power on off volumem control. Switches HP-100E on or off and also controls the audio output level
2. Squelch control. Used to cut out background noise Slowly rotate clockwise to the point where the background noise just stops Do not set the squelch control to tar clockwise, or weak signals will not open squelch circuit. The squelch mode must be ON tor the HP-100E to operate in scan or search modes

3. Attenuator reduces received signals by -10 dB
4. Rotary UP-DOWN switch used for changing channels frequency up or down
5. BNC Antenna socket
6. External speaker or earphone socket 35 mm
7. External 12 volt DC supply socket 1.3mm
8. LCD (liquid crystal display) window
9. Keyboard
10. Internal loudspeaker
11. Lamp switch
12. Key lock switch

INTRODUCTION TO THE FAIR MATE HP-100E 1000 CHANNEL SCANNING COMMUNICATIONS RECEIVER

The Fairmate HP-100E is the world's first 1000-channel programmable scanner monitor receiver. The HP-100E offers very wideband frequency coverage from 15-600 MHz with NO gaps and also from 805-1300 MHz NO gaps. The HP-100E offers also, as a first in a pocket scanner, a choice of 3 modes ie; Amplitude modulation (AM), Narrowband FM (NFM) and also Wideband FM (WFM) on all frequency ranges! The HP-100E comes complete with 2 different antennas, which allows for the best reception over the very wideband frequency coverage. The short antenna is most suited for the 805-1300 MHz band. A wide range of accessories is included with the HP-100E as standard! (not as optional extra cost items as many other brands). They include a carrying case, belt clip, 2 antennas, DC 12 volt cable with cigar plug for car use, the shoulder strap, earphones, and 4 AA size NICADS.

Features

The Fairmate HP-100E uses the latest state-of-the-art microcomputer technology with 1000 programmable channels.

Search Bands

The HP-100E offers the choice of 10 separate search bands. Each search band can have its own upper and lower frequency limits. Free selection of modes ie, AM-NFM-WFM and also free selection of channel steps may be used on all bands.

1000 Memory Channels

The HP-100E offers 1000 channels, which may be programmed into 10 banks of 100 channels each bank. Any mode AM-NFM-WFM may be used on any channel. Clear indication of which band and which channel is in use is shown on the LCD (liquid crystal display) window.

AM-NFM-WFM Modes

The HP-100E allows you to listen on either AM-NFM-WFM on any channel from 15-600 MHz and also on 805-1300 MHz. The WFM mode is most suitable for FM-TV broadcast stations for music etc.

Attenuator

In case of very strong signals interference etc. you may bring into circuit an attenuator with about -10 dB of attenuation via LOC-DX switch.

Up-Down Rotary Switch

The HP-100E is the world's first pocket scanner that offers the state-of-the-art UP or DOWN frequency step or channel step rotary switch. In manual or search modes you may step UP or Down within the range of 5 to 995 kHz, in multiples of 5 or 12.5 kHz ie; 5, 10, 15, 20, 25, 30, 35, 40, 45, 50 kHz up to 995 kHz. In the scan mode you may use this rotary switch to go UP or DOWN the channels. NO more key pressing.

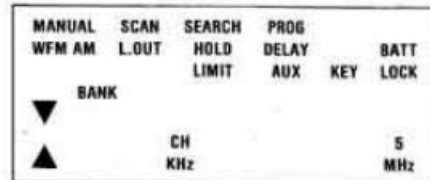
Power Source

The HP-100E has 3 power sources. 1. Using 4 pcs. AA-size NICAD batteries. 2. Using 4 pes. AA-size DRY batteries. 3. Using a direct 12 volt DC supply via the DC socket on the HP-100E. The 12 volt DC supply may be from a car supply or from a 220 V to 12V DC supply In the case of the NICADs running low BATT will appear on the LCD indicating recharging is required. Please NOTE into Power sources on front cover page 1

High Scan Speed

The HP-100E scans over 20 channels a second ! thereby offering very test coverage of the frequency spectrum. The fastest pocket scanner around

UNDERSTANDING THE FAIRMATE HP-100E LCD liquid crystal display) WINDOW



The LCD uses indicators that show the HP-100E current operating modes. The illustration shows the HP-100E LCD with ALL the mode indicators switched on

Manual: Indicator on when the HP-100E is in the manual mode

Sca: Shows the scan mode is selected

Prog: This is a multi-function indicator. For scan, search, channel numbers etc

WFM-FM-AM: Shows which mode is selected ie, Wideband FM, Narrow FM and Amplitude modulation

Lockout: Multi-function indicator for Channel, Bank and band lockout.

UP-DOWN arrows: indicate channel or frequency changes up or down

Bank: First digit under bank shows bank-band numbers 0 to 9.

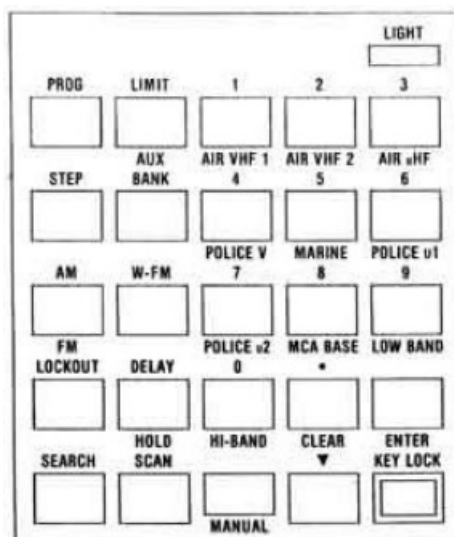
CH: 2 digits show channel numbers from 00 to 99.

KHz: 3 digits show frequency steps from 5 to 995 kHz in 5 kHz or 12.5 kHz multiples

MHA: Up to 8 digits show the frequency the HP-100E is tuned ta

Batt: Flashes when the NICAD batteries need recharging or dry cells need replacing.

UNDERSTANDING THE HP-100E KEYBOARD



Number Keys: The number keys are single-digit marked from 1 to 0. They are used to enter a frequency in formation. Channel numbers Frequency steps. For selecting search bands and scan banks.

Clear: Use this key to delete an incorrect entry.

Lockout: You may lockout a channel from the scanning mode ie, Continuous weather channels etc

Manual: This key is used to stop search and scan modes and to advance channels

Limit: This key is used to decide the frequency range when on search or for selecting search band coverage

Bank: The bank key is used to program or select any of the 10 different 100 channel scan banks or the Search

bands.

Prog: The program key has secondary functions and is used for search range programming. bank programming and calling up channel numbers etc

Key Lock: When the key lock is pressed all other keys are locked out of function. This feature is most useful when carrying the HP-100E as it prevents any accidental entries

Step: The step key allows you to choose a frequency step in the range from 5 kHz to 995 kHz or any multiple of 12.5 kHz. This function may be used in Manual, Scan or Search modes. **Light:** The light key is used for the illumination of the LCD display. After pressing the key once the light will stay on for about 6 seconds and then automatically switch off.

Scan: By pressing the scan key the HP-100OE will start scanning through the channels in the banks that are programmed and not locked out.

Search: The search key allows you access to 10 independent search bands, with your own choice of mode and frequency steps

Aux: The aux position is for calling up a priority channel of your own choice either in scan or search mode The aux-priority channel will be sampled every 2 seconds

AM-FM-WFM: These keys select the MODE for reception on any channel. AM (amplitude modulation) is used mainly for the Aircraft band but is used by some other services. FM (narrow band FM-NFM) is used by most public services, Amateur radio etc. WFM (wideband FM) is used mainly by FM-TV broadcast stations for music etc

Delay Hold: When a Signal-carrier appears on a frequency programmed into the HP-100E with sufficient signal strength then the SCAN or SEARCH mode will STOP. In the delay mode after the signal carrier stops there will be a 2-second delay before scan or search resumes. If hold mode is selected then after the signal-carrier stops then the HP-100E will stay continuously on that channel-frequency

Dows Ney (): By pressing the () key you may lower a memory channel or lower a search frequency If the key is depressed for more than 1 second it will automatically count down in scan or search.

THE HP-100E IN OPERATION SCAN MANUAL MODES

The HP 100E may be used in 3 basic ways as follows

1. Single frequency operation with free selection of MODE ie, AM FM or WFM
2. 1000 channel selection in 10 memory banks of each 100 channels Free selection of MODE in AM-FM or WFM
3. 10 search bands with a selection of 1. Frequency coverage 2. MODE 3. Frequency steps

SINGLE-FREQUENCY ENTRY

EXAMPLE 1 you wish to listen to 97500 MHz in WFM

1. Press MANUAL
2. Enter 97.500
3. Press WFM key
4. Press ENTER

You may now change this frequency UP or DOWN by turning the UP-DOWN rotary switch. The frequency step is automatically set at 12.5 KHz. You may however select a frequency step of your own choice between 5 995 KHz as follows

EXAMPLE You wishes to use 100 KHz steps

1. Press STEP (KHz sign flashes).
2. Enter 100
3. Press ENTER (KHz sign will stop flashing)

if you now turn the UP-DOWN rotary switch the frequency will change in 100 KHz steps. As you change the frequency UP or DOWN there is a small arrow on LCD that shows (A) As you go DOWN in frequency small arrow

prints ()

SCAN FUNCTION-MEMORY BANKS

The HP-100E offers you 1000 channels of fixed frequencies with three choices of MODE ie; AM, FM or WFM. The 10 memory banks read from 0 to 9. The channel number read from 00 to 99. (Please refer to LCD window display information)

EXAMPLE 2 Programming scan memory ie Frequency 121.000 MHz. Scan bank 1. Channel 00 mode AM.

1. Press MANUAL
2. Key in 121.000
3. Press ENTER
4. Press the AM-FM key so that AM shows on LCD
5. Press PAOG
6. Key in 1 (bank)
7. Key in 00 (channel)

EXAMPLE 3. You wish to program 79.0125 MHz into scan bank 1. Channel 01 with mode NFM

1. Press MANUAL
2. Key in 79.0125 MHz
3. Press ENTER
4. Press AM-FM key so that FM shows
5. Press PROG F. Key in 1 (bank) 6. Key in 01 (channel)

CHANNEL CHANGE IN SCAN MODE

If you turn the UP-DOWN rotary switch during scan mode you may change CHANNEL UP or DOWN. If you press MANUAL during scan mode you may change FREQUENCY. YOU will notice that 12.5 kHz appears on LCD You may however choose any step between 5 and 95 kHz in multiples of 5 KHz or 12.5 kHz.

EXAMPLE 4. bu wish to change fo 100 kHz steps

1. During scan press MANUAL (KHz sign will flash)
2. Press STEP
3. Key in 100
4. Press ENTER (KHz sign will stop flashing)

You may now go UP or DOWN in frequency by 100 kHz steps

CALLING UP A CHANNEL NUMBER

To call up a fixed channel in the scan mode you must make sure you are on the correct Memory bank. EXAMPLE 5 you are using Dank 5 and you wish to listen to bank 4 channel 01. Firstly you must move from bank 5 to bank 4 as follows

1. Press SCAN
2. Press BANK
3. Press PROG
4. Key in 4(bank)
5. Press LiMIT

6. Key in 4
7. Press ENTER

You are now on BANK 4 and will now have to get to channel 01 as follows Press MANUAL B Press BANK C Key in 4 (bank) D Key in 01 (channel)

BANK SCANNING

The HP-100E allows you to scan over a single bank or you may make a selection of any of the 10 banks to scan over EXAMPLE 6. You wish to scan over bank 4 only

1. Press SCAN
2. Press BANK
3. Press PROG
4. Key in 4
5. Press LIMIT
6. Key in 4
7. Press ENTER

The HP-100E will now only scan over the frequencies you have programmed into bank 4. Those channels which are LOCKED OUT or have not been programmed will be automatically bypassed. EXAMPLE 7. You wish to listen to bank 00 to bank 03 only

1. Press SCAN
2. Press BANK
3. Press PROG
4. Key in 00
5. Press LIMIT
6. Key in 03
7. Press ENTER

The HP-100E will now scan over Bank 00, 1, 2 and 3 and then start off bank from bank 00 again.

TO ERASE A FREQUENCY IN A MEMORY BANK

EXAMPLE8 You wish to delete channel 12 in memory bank 2. First, you must make sure that you are on bank 2 (note into calling up a channel number page 6) When you are on bank 2 proceed as follows

1. Press MANUAL
2. Press CLEAR
3. Press ENTER
4. Press PROG
5. Key in 2 (bank)
6. Key in 12 (channel)

Channel 12 in bank 2 is now deleted and neither channel number or frequency will be shown.

LOCKOUT OF CHANNELS-BANKS

If you wish to lockout channels in the scan mode you may do so You may also cancel lockout at any time

EXAMPLE 9. you wish to lockout channel 89 and memory 2

1. Press MANUAL
2. Press BANK
3. Key in 2 (bank)
4. Key in 89 (channel)
5. Press LOCKOUT

Manual lockout manual, To cancel lockout of the above channel

1. Press MANUAL
2. Press BANK
3. Key in 2 (bank)
4. Key in 89 (channel)
5. Press LOCKOUT

It lockout flashes, press lockout key until lockout on LCD stops flashing.

LOCKING OUT A WHOLE MEMORY BANK

EXAMPLE 10. You wish to lockout memory bank 2.

1. Press MANUAL
2. Press BANK
3. Key in 2 (bank)
4. Key in 2 digits (channel)
5. Press BANK
6. Press LOCKOUT

To cancel Bank lockout: A Press MANUAL B Press LOCKOUT

AUX-PRIORITY

You may allocate a specific channel either during search or scan as your priority channel. This means in practice that the priority channel will be checked (sampled) about every 2 second as the scanner goes through SCAN or SEARCH modes EXAMPLE 11. You wish to choose channel 07 in bank 4 as your priority channel. First make sure you are on bank 4.

1. Press AUX
2. Press PROG (this must be done quite quickly) the frequency shown on the LCD will disappear and the BANK sign will flash.
3. Key in 4 (bank)
4. Key in 07 (channel)
5. Press ENTER
6. Press SCAN

To cancel priority: Press AUX key.

UNDERSTANDING AUX PRIORITY SCAN SEARCH

If you had changed from memory bank scan mode into search band mode and at the same time had an active priority channel programmed then the following would occur EXAMPLE 12. you are listening to a station on search bank 1 and a signal appears on the frequency that have programmed into channel 07 memory 4 at the same time, then the HP-100E will automatically switch from search band 1 to memory bank 4 channel 07 As soon as the transmission ends on channel 07 then the HP-100E will automatically revert to the search bank.

DELAY-HOLD IN SCAN OR SEARCH MODES

You may select either DELAY or HOLD modes by pressing the DELAY-HOLD key Delay or Hold will appear on the LCD DELAY: When a Signal-carrier appears on a frequency programmed into the HP-100E with sufficient signal strength then the SCAN or SEARCH mode will STOP In the delay mode after the signal carrier stops there will be a 2 second delay before Scan or search resumes HOLD: If hold mode is selected then after the signal carrier stops then the HP-100E will stay continuously on that channel frequency

LOCKOUT OF A FREQUENCY IN SEARCH MODE

Whilst in search mode you may wish to lockout a frequency because it contains a continuous carrier. EXAMPLE: Whilst searching bank 2 a continuous carrier is heard on 228.45 and the search automatically stops Press LOCKOUT and the set will continue scanning missing this frequency on the next pass.

BAND BANK FREQUENCY TABLE

Bank	Band	Frequency (MHz)	Step (KHz)	Mode
1	AIR VHF 1	108.0 to 142.0	10	AM
2	AIR VHF 2	225.0 to 281.5	50	AM
3	AIR UHF	275.0 to 364.0	50	AM
4	POLICE V	142.0 to 159.5	10	FM
5	MARINE	156.0 to 162.0	5	FM
6	POLICE U1	347.7125 to 354.525	12.5	FM
7	POLICE U2	361.95 to 363.0	12.5	FM
8	MCA	850.0 to 859.975	12.5	FM
9	LOW BAND	25.0 to 550.0	10	FM
0	HIGH BAND	850 to 1300.0	12.5	FM

The HP-100E has 10 separate search banks. The search bands are pre-programmed from the factory as per the search bank frequency table above Please NOTE you may re-program these search bands to your own choice. You may decide upper and lower frequency limits also MODE ie, AM, NFM or WFM and also the search frequency steps in kHz from 5 to 995 kHz in multiples of kHz or 12.5 kHz. EXAMPLE 1. You wish to select Band 8 (MCA BASE), YOU wish to program the HP-100E with the following information: Frequency 936.0125 MHz. MODE NFM. Frequency steps 12.5 KHz.

- A. Press SEARCH
- 8. Press PROG
- C. Key in 936.0125
- D. Press LIMIT
- E. Key in 940.0125
- F. Press ENTER
- G. Key in 12.5 KHz
- H. Press AM-FM key so that FM appears on the LCD
- J. Press ENTER
- K. Key in 8
- L Press ENTER
- M. Press SEARCH

The above example 1 has shown you how to program a specific band of your own choice The HP-100E has however 10 separate search bands which are pre-programmed from factory the access to these bands is such that the HP-100E will start at band 1 through to band 2 all the way to band 0 and back again. This obviously wi

take some time and also may be of no interest to you. If you program the HP-100E to search over a single band then you will not be able to access the other bands. If you wish to search over other bands at the same time you must program "in-between band searching": This will give you access to search bands of your own choice

SELECTION OF "PRE-PROGRAMMED" SEARCH BAND

EXAMPLE 2. Nou wishes to search over band 8 ony

1. Press SEARCH
2. Press BANK
3. Press PRO0G
4. Press LIMIT
5. Press ENTER

The HP-100E will now search through band 8 from the lowest to the highest frequency and then back again.

6. Key in 8
7. Key in 8

SELECTION OF "INBETWEEN BAND SEARCHING"

EXAMPLE 3. You wish to search between band 1 and band 3.

1. Press SEARCH
2. Press BANK
3. Press PROG
4. Key in 1
5. Press LiMIT
6. Key in 3
7. Press ENTER

The HP-100E will now start searching on band 1 to band 2 then band 3 and back to band 1 again. During the above search, you may manually select either band 1, 2, or 3 by pressing those respective keys. During the above search, you may also STOP the search by either pressing the V key or by turning UP-DOWN rotary witch. You may now if you wish change the frequency step as follows: Stop search by 1. Pressing the V key or 2. by turning UP-DOWN rotary switch. Now press STEP (KHz sign wil flash on LCD). You must now decide what channel step you wish to use? Example 100 KHz. Kay in 100 (KHz sign an LCD will stop flashing). You may now either go UP or DOWN in frequency manually by rotating UP DOWN Switch or by using the V key. By pressing the V key you may go DOWN in frequency by the 100 kHz you have selected manually or it you keep the V key depressed for 2 seconds it will automatically count down the frequency by 100 kHz.

NOTE. MODE Selection may be changed at any time by simply pressing AM-FM or WFM kays

EXAMPLE 4, you wish to search or select any band from band 1 to band 9.

1. Press SEARCH
2. Press BANK
3. Key in 1
4. Key in 9
5. Press PROG
6. Press LIMIT
7. Press ENTER

MEMORY BANK TRANSFER

During the search mode, you receive an interesting frequency that you wish to immediately transfer to one of the 10 memory banks without the need to enter the frequency or mod then this may be done as follows:

EXAMPLE 5.

1. Press HOLD (hold to appear on LCD)
2. Press ENTER
3. Key in a bank number (your choice)
4. Key in channel number (your choice)
5. Press ENTER

To continue search mode: A. Press SEARCH B Press HOLD (delay will return to LCD)

HP-100E TECHNICAL SPECIFICATIONS

Frequency Range:	15-600 MHz (Low Band) and 805-1300 MHz (High Band)
Receiving Modes:	AM•NFM•WFM (all bands)
Receiving Sensitivity:	15-600 MHz less than 0.5 uV for 12 dB SINAD (NFM) 805-1300 MHz less than 0.5 uV for 12 dB SINAD (NFM) 15-600 MHz less than 2 uV for 20 dB QAM 60% modulation 15-600 MHz less than 3 uV for 30 dB S/N (WFM)
Scan Speed:	Over 20 channels per second
Antenna:	BNC 50 ohms
Channels:	1000
Scan Banks:	10 Banks of 100 channels each
Search Bands:	10 freely programmable Bands
Power Sources:	4 pcs. AA size NICAD or 4 pcs. DRY CELL AA size. External 12 V DC supply also used for charging.
Power Consumption:	Standby with Squelch on: apx. 83 mA Receive mode 1/2 power: apx. 87 mA Receive mode Maximum audio: apx. 105 mA
Temperature Range:	- 20 oc to + 50 oc
Size and Weight:	170H × 35D × 65W mm. Weight without batteries: 280 g
Audio Output:	Over 100 mW for 10% or less THD
Search Increments:	Any channel step between 5 KHz and 995 KHz in multiples of 5 KHz or 12.5 KHz
Display Type:	LCD Liquid Crystal Display
Priority Sampling:	2 seconds
Delay Time:	2 seconds
IF Frequencies:	

Band	1st	2nd	3rd
15-49.995 MHz	+ 561.225 MHz	58.075 MHz	455 KHz WFM 10.7 MHz
50-107.995 MHz	+ 561.225 MHz	58.075 MHz	
108-169.995 MHz	+ 561.225 MHz	58.075 MHz	
170-296.995 MHz	+ 561.225 MHz	58.075 MHz	
297-600.000 MHz	+ 251.575 MHz	58.075 MHz	
805-1109.495 MHz	- 251.575 MHz	58.075 MHz	
1100-1300 MHz	- 561.225 MHz	58.075 MHz	

Documents / Resources

**Guide to the
FAIRMATE HP100E**



[FAIRMATE HP100E Handheld 100E Scanner Radio](#) [pdf] User Manual

HP100E, Handheld 100E Scanner Radio, 100E Scanner Radio, HP100E, Scanner Radio, Radi
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