

**FM900 series Hardware and Software codes:**

*Adapted from the Series 1 FM92 service manual, with additional options appearing in the FPP programming software.  
Notes by VK3BYI*

Original hardware codes can be found on the silver label on the side of the radio, and printed on one of the labels stuck to the inside of one cover. All codes have the Prefix 9502 followed by an 8 digit option number. Only the last 8 digits are entered into the FPP programming software.

A typical ex-CFA FM900 hardware code is 9502 92440000  
Some early sets using a 10.7 MHz IF have the H/W code 9502 92420000

| SERIES | MODEL<br>Note 1           | BAND/<br>FREQ.            | BAND-<br>WIDTH,<br>CONTROL    | MECHANICAL,<br>TCXO, EXT'D<br>TEMP KITS. | SIGNALLING<br>HARDWARE          | SELCALL<br>SYSTEM                       | OPTION                       |
|--------|---------------------------|---------------------------|-------------------------------|--|---------------------------------|---|------------------------------|
| 0      |                           |                           |                               | STD<br>10ppm                             | STD (none)                      | STD<br>(No Selcall)                     | STD                          |
| 1      | FM91<br>HIGH<br>Simplex   |                           | Local<br>10.7 IF<br>25kHz ??? | Ext'd temp<br>range, 5ppm<br>xtal heater | CTSS Enc<br>only                | CCIR<br>Selcall                         | Reverse<br>Tone<br>Burst     |
| 2      | FM92<br>MED<br>simplex    | E band.<br>66-<br>88MHz   | Remote<br>10.7 IF<br>25kHz    | Waterproof                               | CTSS<br>Enc/Dec                 | ZVE 1<br>Selcall                        | Talk<br>Through              |
| 3      | FM93<br>LOW<br>simplex    | B band.<br>132-<br>153MHz | WL25<br>Local<br>25kHz        | Waterproof<br>+Ext'd temp                | Selcall 1,<br>No CTSS           | EEA Selcall                             | Dual<br>Front-<br>end *      |
| 4      |                           | A band.<br>148-<br>174MHz | WR25<br>Remote<br>25kHz       | TCXO                                     | Selcall 1,<br>CTSS Enc.<br>only | EIA Selcall                             | Ignition<br>noise<br>blanker |
| 5      |                           | T band.<br>403-<br>440MHz |                               | Ext'd temp<br>+ TCXO<br>2.5ppm           | Selcall 1,<br>CTSS Enc/<br>Dec  | I/O expander<br>kit only,<br>No Selcall |                              |
| 6      |                           | U band.<br>440-<br>470MHz |                               |  | Selcall 2,<br>No CTSS           | CCIR type 2<br>Enc only                 |                              |
| 7      | FM91 with<br>FM92 PCB     | W1<br>470-<br>500MHz      | WL12.5<br>Local<br>12.5kHz    | Waterproof<br>+Ext'd temp<br>+TCXO       | Selcall 2,<br>CTSS Enc.<br>only | ZVEI type 2<br>Enc only                 |                              |
| 8      |                           | W2<br>500-<br>520MHz      | WR12.5<br>Remote<br>12.5kHz   |  | Selcall 2,<br>CTSS Enc/<br>Dec  | EEA type 2<br>Enc only                  |                              |
| 9      | Fm900<br>series<br>MOBILE |                           |                               |  |                                 | EIA type 2<br>Enc only                  |                              |

Note 1: Receiver may be programmed up to 30 MHz outside specified band, however VCO may not tune that way.

TCXO = Temperature controlled crystal oscillator.

STD = Standard

Dual Front End = extended frequency range

??? = unconfirmed speculation based on incomplete information.

Band B may be chosen when programming Band A sets to work below 148 MHz for amateur working.

Software Codes:

| 1               | 2                                      | 3                   | 4        | 5            | 6                    | 7                         | 8        | 9                         | 10          | 11       |
|-----------------|--|---------------------|----------|--------------|----------------------|---------------------------|----------|---------------------------|-------------|----------|
| CHANNEL DISPLAY | MUTE                                   | ECONOMISER          | Tx TIMER | Tx INHIBIT   | Tx POWER             | SCAN                      | VOTE     | CTCSS                     | ZONE PERIOD | MODE     |
| 0               | INTERMITTENT<br>FIXED                  | NONE                | NONE     | NONE         | 25 W                 | NONE                      | NONE     | NONE                      | N/R         | SIM-FLEX |
| 1               | CONTINUOUS<br>VARIABLE                 | REQ. ALL CHANNELS   | 1 min    | ALL CHANNELS | 5 W                  | VACANT, PRE-PROG BLOCKS   | ENAB LED | VARIABLE PER CHAN         | 100ms       |          |
| 2               | INTERMITTENT<br>& 8Hr timer (Auto Off) | OPERATOR SELECTABLE | 3 min    |              | 1 W                  | OCCUPYD, PRE-PROG BLOCKS  |          | VARIABLE VIA KEYPAD       | 40ms        |          |
| 3               | CONTINUOUS<br>& 8Hr timer              | PER CHANNEL         | 5 min    |              | OPERATOR SELECTABLE  | OCCUPYD, OPERATOR SELECT. |          | VARIABLE PER CHAN RTB     | 70ms        |          |
| 4               |  |                     | 10 min   |              | PER CHANNEL          |                           |          | VARIABLE BY KEYPAD RTB    | 20ms        |          |
| 5               |  |                     |          |              |                      |                           |          | COMMUNITY PER CHAN        | 33ms        |          |
| 6               |  |                     |          |              | FIXED 5-25W ALL CHAN |                           |          | COMMUNITY RPTR VIA KEYPAD |             |          |
| 7               |  |                     |          |              | 1-25W ADJUSTABLE     |                           |          | COM. RPTR PER CHAN & RTB  |             |          |
| 8               |  |                     |          |              |                      |                           |          |                           |             |          |

NOTE:

- RPTR = Repeater
- RTB = Reverse Tone Burst
- DIGITS 12 & 13 indicate SELCALL Encode features (see separate tables)
- DIGITS 14 & 15 indicate SELCALL Decode features (see separate tables)

Type 2 SELCALL Encode functions, S/W code digits 12 & 13:  
 (Additional type-1 and type-2 codes available in Series-II radios)  
 Set to 00 if no SELCALL encode required.

| Digit 12 | Digit 13 | Status | ANI code | Send Code | Memory | Tones /Code | Decode |
|----------|----------|--------|----------|-----------|--------|-------------|--------|
| 0        | 0        | N      | NA       | V         | NA     | 5           | Y      |
| 0        | 3        | N      | S        | F         | NA     | 7           | N      |
| 0        | 4        | N      | S        | F         | NA     | 7           | Y      |
| 0        | 5        | N      | E        | F         | NA     | 5           | N      |
| 0        | 7        | N      | E        | F         | NA     | 7           | N      |
| 0        | 8        | N      | E        | F         | NA     | 7           | Y      |
| 1        | 1        | N      | S        | V         | NA     | 7           | N      |
| 1        | 2        | N      | S        | V         | NA     | 7           | Y      |
| 1        | 5        | N      | E        | V         | NA     | 7           | N      |
| 1        | 6        | N      | E        | V         | NA     | 7           | Y      |
| 5        | 3        | N      | NA       | V         | NA     | 5           | N      |

Legend:

- Y = Required
- N = Not Required
- NA= Not Applicable
- E = End of Transmission
- F = Fixed Code
- S = Start of Transmission
- V = Variable Code

Type 2 SELCALL Decode functions, S/W code digits 14 & 15  
 Set to 00 if no SELCALL decode required

| Digit 12 | Digit 13 | Standard Call | Urgent Call | Group Call | Alarm Timed | Alarm On & OFF |
|----------|----------|---------------|-------------|------------|-------------|----------------|
| 0        | 0        | N             | N           | N          | N           | N              |
| 0        | 1        | F             | N           | N          | N           | N              |
| 0        | 2        | F             | N           | Y          | N           | N              |
| 0        | 3        | F             | Y           | N          | N           | N              |
| 0        | 4        | F             | Y           | Y          | N           | N              |
| 0        | 5        | F             | N           | N          | N           | Y              |
| 0        | 6        | F             | Y           | N          | N           | Y              |
| 0        | 7        | F             | N           | Y          | N           | Y              |
| 0        | 8        | F             | Y           | Y          | N           | Y              |
| 0        | 9        | F             | N           | Y          | Y           | N              |

Legend:

- Y = Required
- N = Not Required
- F = Fixed Code

