The MCS 2000™ Model I is Motorola’s state-of-the-art mobile radio solution, ergonomically designed to meet your communication demands.

The MCS 2000 mobile uses Motorola’s FLASHport® technology. FLASHport gives you the ability to choose a radio that meets your needs today, then upgrade for increased flexibility and control as your needs change. You can easily add the latest features to your existing system or upgrade to new operating system packages as they become available. This helps prevent obsolescence by extending the useful life of your investment.

FEATURES/ADVANTAGES

MODEL I

▸ APCO 16 Compliant Trunking
  Offers standard SMARTNET features for advanced functionality.

▸ Companion Product to the MTS 2000™ Portable
  Permits easy transfer of operational knowledge as users alternate between mobiles and portables.

▸ Standard 48 Modes
  With up to 150 mode options to meet your system needs.

▸ Data Capability
  Expands your communications capabilities.

▸ 8 Character Alphanumeric Display with Indicators
  For easy to read information that is illuminated for clearer visibility.

▸ 5 Programmable Buttons
  Allows you to program your radio to meet your business needs.

▸ Removable Control Head Buttons
  Allows you the flexibility to locate your radio control head buttons based on your preferences.

▸ Dual Mode Operation
  Provides you with the flexibility of Conventional and Trunked features.

▸ Telephone Interconnect Preprogrammed List
  Allows you to program up to 10 telephone numbers in your mobile.

▸ Private Call and Call Alert
  Can be programmed for up to 10 radio IDs.

▸ Status/Message List
  Allows for 4 Status/8 Message programming to permit you to quickly send information to the dispatcher.

▸ Remote or Dash Mounting
  Permits optimal use of limited vehicle space.

▸ NPSPAC Frequency Operation
  Allows you to operate on 821-824 MHz frequencies.

▸ Four Programmable One-Touch Buttons (Optional)
  Allows you to select the trunking features you need with the touch of a button.

▸ SECURENET Digital Encryption Capability
  Allows confidential communications when added to your radio. (Not available in 900 MHz models)
**Encryption Type:** Digital  
**Coding Method:** Multi-register non-linear combiner  
**Synchronization:** Self synchronizing or counter addressing  
**Code Key Initialization:** Internally derived pseudo-random initializing vector  
**Code Key Generation:** External hand held microprocessor controlled key variable loader  
**Code Storage:** Volatile electronic memory  
**Analog to Digital Conversions:** Continuously variable Slope Delta Modulation  
**Voice Sample Rate:** 12 kBit/Sec

---

**TRANSMITTER**

<table>
<thead>
<tr>
<th>Channel Spacing</th>
<th>800 MHz</th>
<th>900 MHz</th>
<th>VHF (1-25W)</th>
<th>UHF1 (10-25W)</th>
<th>UHFII (10-20W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 kHz</td>
<td>25 kHz</td>
<td>12.5 kHz</td>
<td>12.5/30 kHz</td>
<td>12.5/25 kHz</td>
<td>12.5/25 kHz</td>
</tr>
</tbody>
</table>

**Frequency Stability (PPM) of assigned center frequency -30º to +60º degrees C ambient:**
- 851-866 MHz: ±2.5
- 806-821 MHz: ±2.5
- 866-886 MHz: ±1.5
- 886-902 MHz: ±1.5
- 136-147 MHz: ±2.0
- 403-450 MHz: ±2.0
- 450-512 MHz: ±2.0

**Modulation Limiting:**
- 851-866 MHz: 5.0 kHz
- 806-821 MHz: 5.0 kHz
- 866-886 MHz: 4.0 kHz
- 821-824 MHz: 4.0 kHz

**Data Mode System Deviation (kHz)**
- SECURENET 12 KB:
  - 800 MHz: 4.0 kHz
  - 900 MHz: 2.4 kHz

**Audio Distortion:**
- 3%  
- 3%  
- 3%  
- 3%  
- 3%  

**Audio Response:**
- +1 to -3 dB  
- +1 to -3 dB  
- +1 to -3 dB  
- +1 to -3 dB  
- +1 to -3 dB  

**Conducted Spurious Emissions:**
- -70 dBc  
- -65 dBc  
- -80 dBc  
- -80 dBc  
- -80 dBc  

**Radiated Spurious Emissions:**
- -13 dBm  
- -13 dBm  
- -13 dBm  
- -13 dBm  
- -13 dBm  

**Output Impedance:**
- 50 Ohms  
- 50 Ohms  
- 50 Ohms  
- 50 Ohms  
- 50 Ohms  

**Modulation:**
- **800 15W**  
- 16K0F2D*, 16K0F3E, 16K0F1D, 16K0F3E, 16K0F3E  
- **900 12W**  
- 16K0F3E, 16K0F3E, 16K0F1D, 16K0F3E, 16K0F3E  
- **800 15W**  
- 16K0F3E, 16K0F1D, 16K0F3E, 16K0F1D, 16K0F3E  
- **900 30W**  
- 16K0F3E, 16K0F3E, 16K0F1D, 16K0F3E, 16K0F1D

**Audio Sensitivity for 60% max. dev. @ 1000 Hz:**
- 0.080V ±3 dB  
- 0.080V ±3 dB  
- 0.080V ±3 dB  
- 0.080V ±3 dB  
- 0.080V ±3 dB  

**FM Hum and Noise:**
- -40 dB  
- -40 dB  
- 12.5 kHz - 39 dB  
- 12.5 kHz - 39 dB  
- 12.5 kHz - 39 dB  
- 30 kHz - 45 dB  
- 12.5 kHz - 39 dB  
- 25 kHz - 45 dB  
- 25 kHz - 45 dB

**Maximum Frequency Separation:**
- 12 MHz  
- 6 MHz  
- 38 MHz  
- 38 MHz  
- 47 MHz  
- 62 MHz

---

**SECURITY**

Encryption Type: Digital  
Coding Method: Multi-register non-linear combiner  
Synchronization: Self-synchronizing or counter addressing  
Code Key Initialization: Internally derived pseudo-random initializing vector  
Code Key Generation: External hand held microprocessor controlled key variable loader  
Code Storage: Volatile electronic memory  
Analog to Digital Conversions: Continuously variable Slope Delta Modulation  
Voice Sample Rate: 12 kBit/Sec
## RECEIVER

<table>
<thead>
<tr>
<th></th>
<th>800 MHz</th>
<th>900 MHz</th>
<th>VHF (1-25W)</th>
<th>UHF (10-25W)</th>
<th>UHF (10-20W)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Channel Spacing:</strong></td>
<td>25 kHz</td>
<td>12.5 kHz</td>
<td>12.5kHz</td>
<td>12.5kHz</td>
<td>12.5kHz</td>
</tr>
<tr>
<td><strong>Sensitivity (µV):</strong></td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>20 dB Quieting:</strong></td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td><strong>Adjacent Channel Selectivity:</strong></td>
<td>-75 dB</td>
<td>-65 dB</td>
<td>12.5 kHz - 65 dB</td>
<td>12.5 kHz - 60 dB</td>
<td>12.5 kHz - 60 dB</td>
</tr>
<tr>
<td><strong>Intermodulation:</strong></td>
<td>-75 dB</td>
<td>-65 dB</td>
<td>-70 dB</td>
<td>-70 dB</td>
<td>-70 dB</td>
</tr>
<tr>
<td><strong>Spurious &amp; Image Rejection:</strong></td>
<td>-75 dB</td>
<td>-70 dB</td>
<td>-80 dB</td>
<td>-80 dB</td>
<td>-80 dB</td>
</tr>
<tr>
<td><strong>Rated Audio:</strong></td>
<td>4W Internal Speaker</td>
<td>4W Internal Speaker</td>
<td>4W Internal Speaker</td>
<td>4W Internal Speaker</td>
<td>4W Internal Speaker</td>
</tr>
<tr>
<td></td>
<td>7.5W/13W External Speaker</td>
<td>7.5W/13W External Speaker</td>
<td>7.5W/13W External Speaker</td>
<td>7.5W/13W External Speaker</td>
<td>7.5W/13W External Speaker</td>
</tr>
<tr>
<td><strong>Max. Freq. Separation:</strong></td>
<td>18 MHz</td>
<td>6 MHz</td>
<td>38 MHz</td>
<td>47 MHz</td>
<td>62 MHz</td>
</tr>
<tr>
<td><strong>Frequency Stability (PPM) of assigned center frequency:</strong></td>
<td>851-866 MHz ±2.5</td>
<td>866-869 MHz ±2.5</td>
<td>±1.5</td>
<td>±2.0</td>
<td>±2.0</td>
</tr>
<tr>
<td><strong>Input Impedance:</strong></td>
<td>50 Ohms</td>
<td>50 Ohms</td>
<td>50 Ohms</td>
<td>50 Ohms</td>
<td>50 Ohms</td>
</tr>
<tr>
<td><strong>Audio Output:</strong></td>
<td>4W @ 3% distortion</td>
<td>4W @ 3% distortion</td>
<td>4W @ 3% distortion</td>
<td>4W @ 3% distortion</td>
<td>4W @ 3% distortion</td>
</tr>
<tr>
<td>Optional:</td>
<td>7.5W @ 3% distortion</td>
<td>7.5W @ 3% distortion</td>
<td>7.5W @ 3% distortion</td>
<td>7.5W @ 3% distortion</td>
<td>7.5W @ 3% distortion</td>
</tr>
<tr>
<td>Optional:</td>
<td>13W @ 5% distortion</td>
<td>13W @ 5% distortion</td>
<td>13W @ 5% distortion</td>
<td>13W @ 5% distortion</td>
<td>13W @ 5% distortion</td>
</tr>
</tbody>
</table>

### SPEAKER (Optional) 7.5W/13W
- **Dimensions:** 5" H x 5" W x 2.7" D
- **Weight:** 20.4 ounces

### FCC INFORMATION

<table>
<thead>
<tr>
<th>Power</th>
<th>Service</th>
<th>Acceptance Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>25W</td>
<td>VHF</td>
<td>A2492FT3791</td>
</tr>
<tr>
<td>25W</td>
<td>UHF R1</td>
<td>A2492FT4819</td>
</tr>
<tr>
<td>20W</td>
<td>UHF R2</td>
<td>A2492FT4820</td>
</tr>
<tr>
<td>15W</td>
<td>800 MHz</td>
<td>A2492FT5765</td>
</tr>
<tr>
<td>35W</td>
<td>800 MHz</td>
<td>A2492FT5773</td>
</tr>
<tr>
<td>12W</td>
<td>900 MHz</td>
<td>A2492FT5766</td>
</tr>
<tr>
<td>30W</td>
<td>900 MHz</td>
<td>A2492FT5780</td>
</tr>
</tbody>
</table>

For additional environment specification information refer to the MIL-STD 810 document R0-1-193.

* Emissions are not applicable for frequency band 821-824 and 866-869 MHz.

NOTE: The MCS 2000 Model I Specifications are Typical Performance Specifications.
## SPECIFICATIONS

### STANDARD SPECIFICATIONS

<table>
<thead>
<tr>
<th>Channel Capability</th>
<th>Standard</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>15W</td>
<td>48</td>
<td>150</td>
</tr>
<tr>
<td>35W</td>
<td>1-25W</td>
<td>3.89 lbs</td>
</tr>
<tr>
<td>1-15W</td>
<td>3.89 lbs</td>
<td></td>
</tr>
<tr>
<td>30-35W</td>
<td>4.04 lbs</td>
<td></td>
</tr>
<tr>
<td>Dimensions VHF &amp; UHF:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transceiver 15W</td>
<td>1.73' H x 6.61' W x 6.31' D</td>
<td></td>
</tr>
<tr>
<td>Transceiver 10-15W</td>
<td>1.73' H x 6.61' W x 6.31' D</td>
<td></td>
</tr>
<tr>
<td>Transceiver 30-35W 800 &amp; 900</td>
<td>1.73' H x 6.61' W x 7.76' D</td>
<td></td>
</tr>
<tr>
<td>Control Head-Dash Mt</td>
<td>1.75' H x 6.61' W x 1.81' D</td>
<td></td>
</tr>
<tr>
<td>Weight: 1-25W</td>
<td>3.89 lbs</td>
<td></td>
</tr>
<tr>
<td>Weight: 10-15W</td>
<td>3.89 lbs</td>
<td></td>
</tr>
<tr>
<td>Weight: 30-35W</td>
<td>4.04 lbs</td>
<td></td>
</tr>
</tbody>
</table>

### GENERAL SPECIFICATIONS

- **Standby @ 13.8 (open):** 0.55A
- **Transmit at Rated Power:**
  - 800 MHz 15W: 6.5A
  - 35W: 13.5A
  - 900 MHz 12W: 6.5A
  - 30W: 14.5A
  - VHF 1-25W: 9.5A
  - UHF I 10-25W: 9.5A
  - UHF II 10-20W: 9.5A
- **Maximum Battery Drain Received @ 4W Rated Audio @ 13.8V:** 1.5A
- **Operation:** 12V DC Negative Ground

### DURABILITY

The VHF & UHF 25W mobiles meet only those durability specs shaded in gray. The 800 and 900 MHz mobiles meet all the durability specs listed.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Pressure</td>
<td>500.1 Proc I</td>
<td>500.1 Proc I</td>
</tr>
<tr>
<td>High Temperature Storage</td>
<td>501.1 Proc I</td>
<td>501.2 Proc I Cat A1</td>
</tr>
<tr>
<td>High Temperature Operational</td>
<td>501.1 Proc II</td>
<td>501.2 Proc II Cat A1</td>
</tr>
<tr>
<td>Low Temperature Storage</td>
<td>502.1 Proc I</td>
<td>502.2 Proc I Cat C1</td>
</tr>
<tr>
<td>Low Temperature Operational</td>
<td>502.1 Proc II</td>
<td>502.2 Proc II Cat C1</td>
</tr>
<tr>
<td>Temperature Shock</td>
<td>503.1 Proc I</td>
<td>503.2 Proc I</td>
</tr>
<tr>
<td>Solar Radiation</td>
<td>505.1 Proc I</td>
<td>505.2 Proc I</td>
</tr>
<tr>
<td>Rain Blowing</td>
<td>506.1 Proc I</td>
<td>506.2 Proc I</td>
</tr>
<tr>
<td>Rain Steady</td>
<td>506.1 Proc II</td>
<td>506.2 Proc II</td>
</tr>
<tr>
<td>Humidity Cycling</td>
<td>507.1 Proc I</td>
<td>507.2 Proc I</td>
</tr>
<tr>
<td>Salt Fog</td>
<td>509.1 Proc I</td>
<td>509.2 Proc I</td>
</tr>
<tr>
<td>Dust Blowing Dust</td>
<td>510.1 Proc I</td>
<td>510.2 Proc I</td>
</tr>
<tr>
<td>Dust Blowing Sand</td>
<td>510.1 Proc II</td>
<td>510.2 Proc II</td>
</tr>
<tr>
<td>Vibration Minimum Integrity</td>
<td>514.2 Proc I</td>
<td>514.3 Proc I Cat A1</td>
</tr>
<tr>
<td>Vibration Loose Cargo Transport</td>
<td>514.2 Proc X</td>
<td>514.3 Proc II Cat 3</td>
</tr>
<tr>
<td>Shock Functional</td>
<td>516.2 Proc I</td>
<td>516.3 Proc I</td>
</tr>
<tr>
<td>Shock Bench Handling</td>
<td>516.2 Proc V</td>
<td>516.3 Proc VI</td>
</tr>
<tr>
<td>Shock Crash Hazard</td>
<td>516.2 Proc M</td>
<td>516.3 Proc V</td>
</tr>
<tr>
<td>Vibrational Sinusoidal</td>
<td>514.2 Proc W</td>
<td>514.3 Proc W</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice.

---

Support Services

Wherever Motorola sells, our products are serviced throughout the world by a wide network of company or authorized independent distributor service organizations.