

HF Radio Options For Datron HF Transceivers

- **7000-Series & PRC1099A Internal Options**
- **Plug-In Capability, Field Installable**
- **FED-STD-1045A ALE**
- **Voice Encryption**
- **DSP-Based Voice Enhancement**
- **Multiple Remote Control Options**
- **Interoperability Between Models**
- **Ground-to-Air SELCAL Interoperability**

Datron offers a complete line of HF transceivers covering the 1.6 to 30 MHz frequency band. Its 7000-series transceivers are used throughout the world and are admired for their functionality and versatility. Included in this family are the **RT7000**, a rugged, MIL, 125W transceiver for mobile or fixed-station usage, the **TW7000**, a 125W professional base-station transceiver, and the **TW7000F**, a transportable 125W unit with remote control head and deployable automatic antenna tuner. Datron also offers the **PRC1099A**, a 20W waterproof tactical manpack radio for either manpack or mobile usage.

All of these transceivers are interoperable with one another, and all have available a comprehensive line of optional internal features that add considerable functionality to the standard product. A list giving the part number of each option and a description of its functionality is shown in Figure 1 (the description of the option indicates which transceiver(s) the option works with). All of the options listed can be ordered either with the radio or added on later as a simple field upgrade to units already in use. The options are all contained on individual PC assemblies and can be installed in the field using standard tools.

| <u>Option Name</u> | <u>Option Description</u> |
|--------------------|---|
| 7000ALE or 1099ALE | The ALE option (available for both the 7000-series radios and the PRC1099A) provides all the functions of FED-STD-1045A ALE including high-speed scanning, sounding, link quality analysis, selective calling, and orderwire (AMD) message capability. All channel and ALE parameters can be programmed into the radios either from the front panel or using Datron's custom RC2 radio control software program. The radio keypad or external PC-style keyboard can be used for message composition. All messages, whether transmit or receive, are displayed on the radio's custom LCD display and stored in memory. |
| 7000ACH | A 7000-series option that increases the number of available programmable memory channels from 256 to 1000. |
| 7000ENCR | A 7000-series option that provides high-level digital encryption of all voice transmissions. A three-tiered key system with provision for up to 200 locals encryption keys programmable either from an external keyfill device or from the front panel of the radio. A separate crypto management system is available to allow user selection and programming of encryption keys from an external PC. (Note: the PRC1099A has an external encrypted handset (DSP9000HS) that is completely interoperable with the internal 7000-series PC module.) |

| Option Name | Option Description |
|--------------------|--|
| 7000HS | A 7000-series option that provides a reference frequency stability of 0.1 parts per million. It replaces the standard reference with a precision OCXO. (Note: the standard frequency stability of the 7000 transceivers is 0.5 ppm) |
| 7000NB | An impulse-type noise blanker that is designed to allow operation of the 7000-series transceivers in a high-noise environment, as in the presence of vehicle ignition noise. The noise blanker circuitry can be externally controlled from the front panel. |
| 7000RS | The 7000-series radios have two external COM ports, both of which are configured for RS232 operation. The 7000RS option allows configuring the second port for RS422/423/485 protocols depending on the user requirements for external control of the radio by a computer. |
| 7000VEM | A DSP speech processing module for the 7000-series radios that improves the quality of received speech signals. It allows the operator to select one of two available signal enhancement modes, either adaptive peaking or spectral subtraction, designed to remove less coherent forms of noise and/or subtract extraneous signals from the received audio to improve the overall signal-to-noise ratio. |
| 7000WB1 | A 7000-series option that adds a second IF filter specially designed for the passage of data. This is a wideband, 300 - 3300 kHz filter with specially tailored group delay characteristics (meets the requirements of STANAG 4285). The filter is selectable from the front panel of the radio (data mode). |
| 7000CW | A 7000-series option that adds a narrowband IF filter specially designed for the passage of CW. |
| 7000GPS | An internal GPS receiver option. All GPS data can be displayed on the front panel of the radio. |
| 7000RF | An FSK modem for the 7000-series radios that allows communication with an external FSK remote control head. It permits control of the radio either locally from the front panel or remotely from the RT7201F Control Console over an audio 2-wire or 4-wire pair (with the radio being the "master"). Used when long-range remote control is required. This option is standard in the "7000RF" models of the transceiver and permits "remote-only" operation. |
| 7000RI | An ISDN modem for the 7000-series radios that allows communication with an external ISDN remote control head. It permits control of the radio either locally from the front panel or remotely from the RT7201I Control Console. When installed, it permits reliable "real-time" remote control up to 2 km. This option is standard in the "7000RI" models of the transceiver and permits "remote-only" operation. |
| 7000AIRSELCAL | Permits the 7000 radios to operate with the Motorola N1304 SELCAL device and Datron power amplifiers. It allows compliance with the ICAO-mandated Ground-to-air SELCAL 3-tone system. The operator selects the aircraft's ID on the N1304, and presses the call button automatically placing the radio in transmit mode and initiating the sending of the appropriate call sequence to unlock the squelch of the target aircraft's HF radio. Once the sequence is set, the radio returns to normal SSB mode. |
| 1099AAME | A PRC1099A option that allows the radio to operate in AME mode (Note: 7000-series radios have this feature built-in as standard). |
| 1099IBC | A PRC1099A option that permits charging of an attached NiCd battery from an external 11- 30 Vdc source. |

Figure 1. 7000-series and PRC1099A internal options



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