



USSOCOM SBIR Transition Success Story

The Sierra Monolithics SMP2000 (on the left) is shown alongside the legacy PPN-19 that it replaced.



Innovative Technology

Topic Number | SOCOM04-001

Topic Title | Miniature Multi-band Radar Beacon (MMRB)

Recent combat experiences have highlighted the necessity of properly discriminating between enemy and friendly targets and personnel under conditions of reduced visibility from stand-off weapons engagement range. Sierra Monolithics' SMP2000 provides a small, portable radar transponder beacon for hand emplacement and orientation that can be used to designate locations for accurate delivery of ordnance by air support aircraft, to designate locations for enroute navigation and drop zone marking, and to identify friendly forces in circumstances where identification is critical. The predecessor PPN-19 unit, shown alongside the SMP2000, did not meet present or future beacon requirements due to issues including size, weight, GPS capability, Joint-STARS compatibility, and radar reflectivity. The successful SMP2000 MMRB, developed by Sierra Monolithics and leveraged from the single-band SMP1000 product version, is a miniaturized unit providing the necessary capabilities in a small, rugged, and lightweight form that can fit into a user's pocket. It is horizontally polarized, and has a tri-dipole antenna, which provides 360-degree field of coverage. The MMRB has multiple pulse codes to ensure that it is interoperable with many different radar types, and it utilizes an agile automatic gain control to enable response to both weak and strong signals at various ranges.

Company and Contact Information

Company Name | Sierra Monolithics, Inc. (Note: Sierra Monolithics was acquired by Semtech Corporation in December 2009)
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Military and Commercial Significance

Sierra Monolithics, Inc. was awarded a Phase III contract, USZA2203D0002, from the Department of Defense (DoD), which has included orders of more than \$25 million for its SMP2000 Miniature Multi-band Beacons and associated Tester units.

Total sales of the Sierra Monolithics Miniature Radar Beacon family of equipment have exceeded \$35 million and 3500 units, with customers including a number of DoD organizations.

This system could be used in military and civilian applications where positive identification of targets or personnel is required from the air. It has broad applications for military and civilian search and rescue operations.

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