

Small, rugged, and lightweight, the multi-band Microponder™ produces a field proven, reliable beacon signal when interrogated by aircraft radar.

The **SMP2000** is the smallest and lightest multi-band radar transponder beacon available on the market today. It is the dual band extension of our single band version, the **SMP1000**. Its minimal power consumption and 'off-the-shelf' battery ensure continuous operation for almost 24 hours (in receive mode). The **SMP2000** provides a very cost-effective solution for any customer in need of a small, rugged, and long-lasting beacon that permits greater mobility and increased effectiveness in operations. Its simple and passive operation significantly enhances the security and survivability of the unit under adverse operating conditions.



Applications

The **SMP2000** is ideally suited for tough environments. It provides the same excellent performance under the scorching sun as it does in drenching rain or freezing conditions. When the Microponder™ receives a radar signal in I or J-band, it intelligently discriminates and creates a reply pulse train in the receive band coded for the radar to identify and locate the transponder. The code is operator selectable. In typical operation, the radar is equipped with a special transponder receiver. It receives the beacon signal, recognizes the pulse code, and places the Microponder's™ location as a symbol on the radar screen. Azimuth and distance is determined by the direction of the radar and the time delay of the response pulse. The codes can be customized for a variety of applications to meet specific customer requirements. The transmitter can be easily modified and delivered with or without a frequency offset from the radar frequency. Thus, it could be used without a special transponder receiver if desired.

The **SMP2000** is used as a locator beacon for personnel in distress during search and rescue missions, and also as a point designator to provide accurate delivery of ordnance by aircraft for immediate or preplanned targets. It may be used for enroute navigation or path-finder functions to guide aircraft during periods of poor visibility. It could also help to outline a drop zone so that supplies, personnel, or heavy equipment drops can be made at precise ground points.

Innovative Design

The exemplary advantage of the **SMP2000** is the simplicity of its design. Two standard 9V DC alkaline batteries, available virtually anywhere on the globe, supply power to the multi-band Microponder™. A low battery indicator helps to ensure uninterrupted operation. The transmitter and receiver sections are well isolated and the receiver is protected from overload.

It is very easy to operate and simple to maintain and repair since it uses widely available 'off-the-shelf' components. An optional in-field test unit (**SMP1000T**) ensures the Microponder™ is fully operational prior to the mission.

Features and Benefits

- Lightweight; easy to carry
- Rugged design to ensure it can be used over a wide temperature range, under varying environmental conditions
- Horizontally polarized, tri-dipole antenna provides an exceptional 360° field of coverage
- Strong, pulsed signal with corresponding long transmission range at very lower power consumption
- Agile automatic gain control allows response to weak as well as strong signals at varying ranges
- Multiple pulse codes ensure interoperability with many different radar types

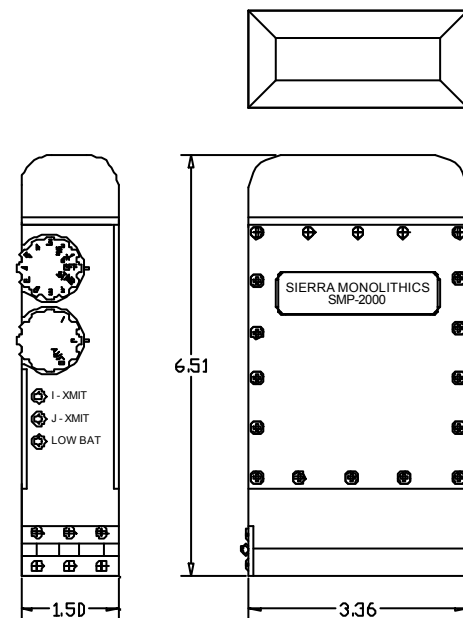


Physical Characteristics

weight (w/battery)	820 g (1 lb 13 oz)
size (LxWxH)	165 x 85 x 38 mm (6.51 x 3.36 x 1.50 in.)

Ordering Information

part no.	MMB/SMP-2000
test unit	SMP-1000T



SMP-2000/041502-1

Technical Specifications

power source	two 9 volt alkaline batteries (lithium batteries for < 0 °C operation)
battery life*	almost 24 hours of continuous operation w/new batteries
antenna mechanical	integrated; under dome
polarization	horizontal
beam pattern	omni-directional beam toward the horizon w/2 dB nominal gain
green LED indicator	flashing when transmitting both bands
red LED indicator	flashing when battery is low (< 7 volts)

Performance Specifications

RX/TX** frequency	I & J-band
RX sensitivity	-55 dBm
RX max input signal	+20 dBm
RX pulse width	0.3 µsec minimum
TX peak output power	7 Watts (nominal)
TX reply pulse codes	AN/PPN-19 codes A - G; SST-201X codes 1 - 5; strobe (test mode)
transponder delay	I-band 1.0 µsec (+/- 0.2 µsec); J-band 0.35 µsec
frequency drift	+/- 2.5 MHz (both bands) over the full temperature range

Environmental Specifications

operating temp	-40 to 65 °C (-40 to 149 °F)
storage temp	-55 to 85 °C (-67 to 175 °F)
vibration	designed to MIL-STD-810C
operating humidity	100%
altitude	-1000 to 40,000 ft

*receive only; nominal conditions **Receiver (RX), Transceiver (TX)