Users Manual
For the
SKYBITZ-2009-MTX-REV-P
L Band
Mobile Terminal

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Prepared By:

22455 Davis Drive
Suite 100
Sterling, VA 20164
703-478-3340

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1.0 Introduction

The SkyBitz Mobile Terminal (MT) can transmit and receive messages through the SkyBitz network. Its integrated design includes a software-based radio, antennas, and lithium batteries in one single rugged, environmentally tested package. The SkyBitz Mobile Terminal is the only satellite-based device on the market that enables information and tracking services without using an embedded GPS chipset. That means you get all the benefits of GPS navigation without the high battery consumption and imposing up-front hardware costs.

SkyBitz designed the MT based on its proprietary and patented Global Locating System (GLS). GLS offers uncompromising precision without an embedded GPS receiver (average accuracy is less than 12 meters). Due to the simple radio design, the low maintenance MT extends battery life for years beyond GPS-based tracking products. The flexible MT design also accommodates a suite of sensors and transmits and receives coded and alphanumeric messages.

Powered by user replaceable internal "AA" Lithium batteries, the self-contained MT is attached to the outside of the trailer using the two identical Mounting Brackets, which eliminates the need to cut a hole in the trailer roof. A safety tether is also attached to the MT and the asset. For total asset visibility and control, the Mobile Terminal can be configured and monitored through the SkyBitz Customer InSight web application giving you the tools necessary to drive operational efficiency.

2.0 Item Description

The MT consists of the following:

- Electronics Circuit Card Assembly or CCA
- Remote antenna with integral cable assembly
- Battery CCA and cable assembly
- Circular I/O connector
- Injection molded LEXAN 943 housing with vent
- Injection molded LEXAN 943 base plate
- Hot plate welded construction
- Replaceable batteries
- Injection molded battery access door/tray unit
- Injection molded conductive plastic RF shield
- I/O connector dust cover
- I/O connector protective cover

Figure 1 shows the assembled unit with remote antenna.

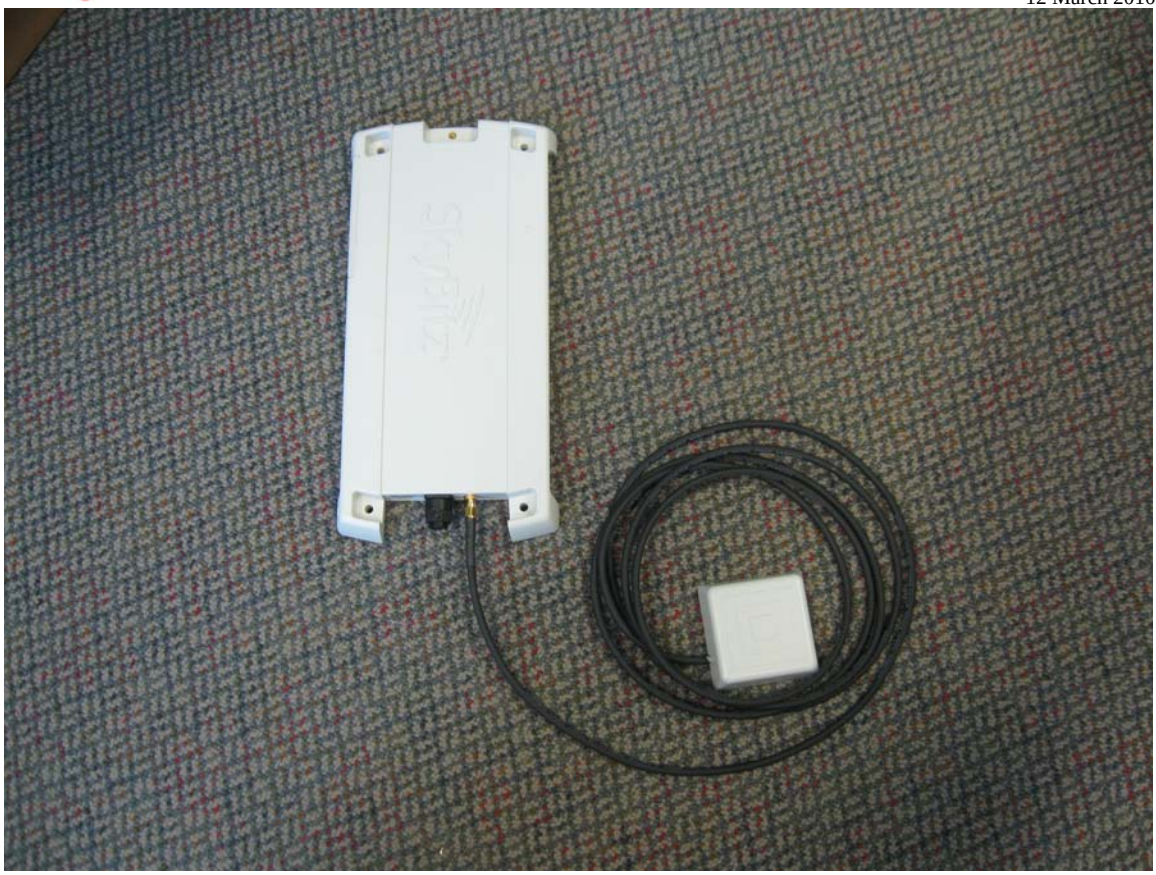

Figure 1 SkyBitz GLS-410 or REV P L Band Mobile Terminal

3.0 Additional Manuals

The following manuals are necessary for proper installation and usage of the SkyBitz Mobile Terminal. Please read them carefully.

3.1 Installation Manual

Please consult the installation manual for proper installation of the mobile terminal. Improper installation voids any warranty stated or implied.

Installation Manual GLS 410 Landstar EPM Aluminum Roof Trailer, Version 0.2

3.2 Battery Replacement Manual

Proper replacement of the battery will insure that the mobile terminal will continue to function properly. Please reference the following manual.

SkyBitz GLS 400/410 Mobile Terminal Battery Replacement Procedure, Version 1.3

3.3 InSight User Manual

The InSight User Manual introduces the user to the features of the SkyBitz InSight web site. This web site allows customers to access information on their assets that have SkyBitz mobile terminals. The manual is available for customer use only and may be accessed at www.skybitz.com.

InSight User Manual Version 7.4.0

4.0 Specifications

Specifications for the Mobile Terminal

Frequency of Operation:	L Band transmit and receive
Transmit EIRP:	< 2 Watts
Dimensions:	12.25" x 5.9" x 1.0" 311.2 mm x 149.9 mm x 25.4mm
Power:	Batteries: Internal: 8 "AA" lithium primary batteries External: Regulated 6 volt vehicle power Automatic sensing and switching of external power
Weight (w/batteries):	1.55 lb ~700 g
Operating Temperature:	-40 Deg C to 70 Deg C
Storage Temperature:	-55 Deg C to 85 Deg C
Vibration:	Random vibration from 10 to 500 Hz per Mil-Std 810-F, Figure 514.5C-1 “U.S. Highway Truck Vibration Exposure”.
Shock:	30 G, MIL-STD-810D, Method 516.3, Procedure I
Salt Fog:	Mil-Std 810F, Method 509.4
Humidity:	Mil-Std 810F, Method 5.4 for 6 full cycles as described in Figure 507.4-1.
Water Immersion:	IP67 1 Meter, 30 Minutes
Interface:	15 Pin Connector 2 open/closed switch connections 2 open/closed control lines RS-485 Interface
Mounting:	Stainless Steel Mounting Brackets Bonded to Trailer Roof With 3M VHB Tape

Table 1 Specifications

5.0 Electro-Magnetic Radiation Exposure Statement

The Skybitz, Inc. mobile terminal is an unattended, automatic, intentional radiator. In normal operation and mounting the general population or user is not exposed to any significant electro-magnetic radiation levels. Refering to 47 CFR 2.1091(c), the SkyBitz mobile terminal is considered a mobile device. The transmitter antenna is fixed to the device and is normally located 20 cm or greater from any person. The maximum ERP (Effective Radiated Power relative to 1 Watt into a half-wave dipole) of the SkyBitz mobile terminal is less than 3 Watts peak, and is therefore categorically excluded from routine environmental evaluation for RF exposure in accordance with the terms of 47 CFR 2.1091(c).

Per Industry Canada RSS-102, Paragraph 2.5.2 RF Exemption from Routine Evaluation Limits-RF Exposure Evaluation, the SkyBitz mobile terminal transmitter operates above 1.5 GHz and the maximum EIRP is less than 5 W. The SkyBitz mobile terminal does not expose the installer or general population to significant electro-magnetic radiation levels as specified by Health Canada limits found in Safety Code 6.