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Mobiltex OVPC2G
Hardware User's Manual

(GPRS Version)

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	Mobiltex OVPC2G Hardware User's Manual		
Calgary, Alberta	DOCUMENT NO.:	SHEET:	REV:
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RESTRICTED PROPRIETARY INFORMATION

REVISION HISTORY

Rev	Start Date	Approval Date	Description	Prepared By
001	3-Oct-03		Preliminary manual released for FCC certification.	Quenton Hall
002	24-Oct-03		Documented OVPC2G part number, updated SAR FCC statement (1cm)	Quenton Hall

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause interference harmful to radio communications. There is no guarantee, however, that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

This device has been evaluated for body-worn FCC RF exposure compliance with body holster, part number MOB-H7500SW-FX6. In order to comply with body-worn FCC RF exposure requirements, this device must only be operated with body holster part number MOB-H7500SW-FX6, and a minimum distance of 1.0cm should be maintained between the front of the body holster (antenna side) and user/bystander.

This device contains an internal radio transmitter with an FCC identifier. Only the FCC identifier shown on the external label of the OVPC2G is valid for this product.

This device complies with Industry Canada RSS-133 & RSS-132, under certification number 3079A-03579.

Caution: Changes or modifications not expressly approved by Mobiltex Data, Ltd. could void the user's authority to operate the OVPC2G.

Caution: No user serviceable parts inside. Return the unit to Mobiltex Data, Ltd. for servicing.

1. Introduction

The Mobiltex OVPC2G is a general-purpose body-worn device designed for fleet communications. Operation of the OVPC2G is determined by application software specific to customer requirements and it is not addressed in this document.

The OVPC2G is a body-worn device, carried in a holster (Figure 1) attached to the user's belt. This holster integrates RF shielding for user protection and is also designed to carry an additional lightweight hand-held data terminal that may be used for data collection and record maintenance purposes.

> **Note:** Contact Mobiltex Data Ltd. for a list of approved hand-held data terminal devices.

Figure 1 - OVPC2G mounted in holster

The OVPC2G has one serial IrDA port for communication with external equipment including the hand-held data terminal device and the Mobiltex CHG3 charging system. When the OVPC2G detects the presence of a hand-held data terminal device or the Mobiltex charger via the charging pins (two metal contacts on the top of the housing), the OVPC2G initiates communications and will transfer data appropriate to the customer's application.

An external RS232 port allows the user to upgrade the firmware of the OVPC2G and also may allow general data record maintenance or device configuration. An internal serial expansion port allows optional peripherals to be installed inside the OVPC2G housing. In addition, an on/off switch and four bi-color LEDs provide means for user interaction with the device.

An integrated GPRS radio provides wide-area coverage for the purpose of data communications back to a central host (application specific). Integrated power management hardware automatically places the OVPC2G in a reduced power consumption mode to conserve battery life during periods of inactivity, or as determined by the customer's application.

2. Block Diagram

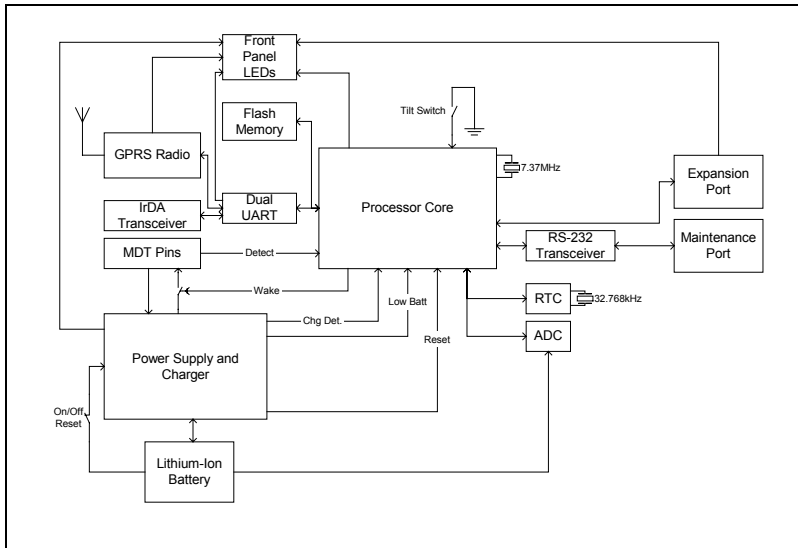Figure 2 illustrates the basic structure of the OVPC2G hardware:

Figure 2 - OVPC2G Block Diagram

3. Housing

The OVPC2G housing is a tough and durable enclosure that serves to protect the internal electronics of the device from exposure to weather, dust and other environmental use factors. Located on the outside of the housing are four LED indicators (Figure 5) a power on/off switch (Figure 4), an RS232 port (accessible only via a proprietary Mobiltex cable), an IrDA port, and two sturdy metal contacts (Figure 3) for connection to the charger or to an external hand-held mobile data terminal.
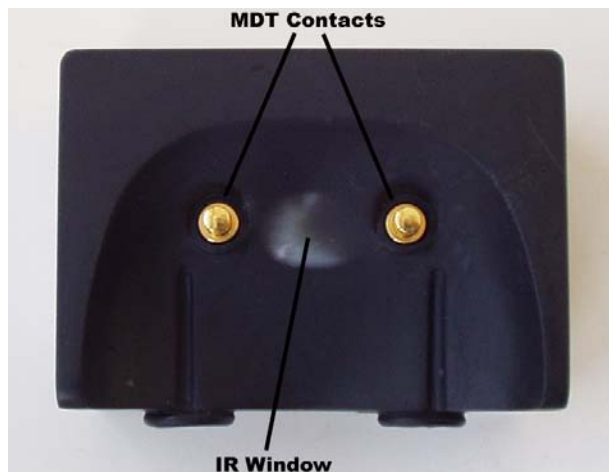

Figure 3 – OVPC2G Top View

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Figure 4 - OVPC2G Rear View - Maintenance Port and Switch

4. Indicators

The OVPC2G has four bi-color LED indicators located at the front of the OVPC2G housing that will light up red, green or both colors simultaneously. Some indicators are under software control and the application program determines their use. Other indicators are under hardware control and their function cannot be changed.

Figure 5 - OVPC Front View - LED Indicators

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4.1 LED1 – BTTX / BTRX

This LED is under control of the expansion port of the OVPC2G. Functionality of this LED is determined by the user application.

4.2 LED2 – WANTX/ WANCV

The purpose of this LED is to indicate the current status of the GPRS network as follows:

Solid green – indicates that the OVPC2G has detected GPRS network coverage.
Flashing red – indicates that the OVPC2G is transmitting data over the GPRS network.

4.3 LED3 – FLT/IR

The purpose of this LED is to indicate fault and IrDA port status as follows:

Flashing green – indicates that data transfer is occurring between the OVPC2G and another device via the IrDA port.
Solid red – indicates that a fault has occurred internal to the OVPC2G or the user application.

4.4 LED4 – LOBAT/ PWR

The purpose of this LED is to indicate the power-on state and battery status of the OVPC2G during normal operation:

Solid green – indicates that the OVPC2G is powered-up.
Flashing red – indicates that the battery has become discharged and must be re-charged prior to further use.

4.5 LED5 – CHG / OK

Only during charging, this LED indicates charge status as outlined below:

Solid green - indicates that the battery is fully charged and ready (OK) for use.
Solid red – indicates that the battery is being charged.
Flashing green/red – indicates that the battery voltage is incorrect.

5. Connectors

5.1 Maintenance Port

The maintenance port is an RS232 port that is accessible through the use of a proprietary Mobiltex serial cable. This port may be used for a variety of purposes as determined by the user application.

5.2 Antenna Port

An MMCX connector located on the left side (Figure 6) of the OVPC2G housing must be securely connected to the feed cable of the holster's internal antenna. Failure to securely connect this cable to the holster's internal antenna may cause reception problems, data loss and/or damage to the radio hardware. Do not under any circumstances connect this port to an antenna other than the antenna that was shipped as part of the approved holster.

Figure 6 - OVPC2G Side View - Antenna Port

5.3 Expansion Serial Port

The expansion serial port is a logic-level serial port complete with additional user configurable I/O. This port is not externally accessible and is intended for use with optional devices installed within the OVPC2G housing. Contact Mobiltex for application guidance prior to utilizing this connector.

6. General use guidelines

1. The OVPC2G must only be used when installed within Mobiltex holster part number MOB-H7500SW-FX6.
2. Ensure that the MMCX connector is securely connected with the holster's internal antenna feed cable prior to powering the device.
3. Ensure that the battery is fully charged prior to use. In the event that the battery fails to charge, it cannot be serviced or replaced by the end-user. Contact Mobiltex Data Ltd. for service information.
4. To turn on the OVPC2G, remove the OVPC2G from the holster and slide the switch to the "on" (right-most) position. Re-install the OVPC2G in the holster prior to use.
5. The LED indicators will automatically turn-off during normal operation. To momentarily turn-on these indicators, tilt the bottom of the holster above horizontal. Hold the holster in this position until the LED indicators turn-on. The LEDs will automatically turn-off again after a few moments to conserve battery power.
6. The OVPC2G has two modes of low-battery shutdown. In the first mode, the device will commence an orderly software shutdown when the battery has reached a pre-determined low limit. In the second mode, hardware circuitry inhibits start-up and operation of the device when the battery voltage is too low for proper operation.

Once power is applied, use of the OVPC2G is determined by end-user application software.

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7. Specifications

Dimensions:	3.0"(w) x 2.2"(d) x 2.3"(h)
Dimensions in holster:	4.1"(w) x 3.0"(d) x 10.0"(h)
Housing:	Polycarbonate
Auxiliary connectors:	1 external IrDA port, 1 external RS232 port, charging contacts
Wireless Radio:	1850-1910 & 824-849 MHz Transmit, 1930-1990 & 869-894 MHz Receive
Transmit power:	1W @ 1900MHz, 0.8W @ 850MHz
Antenna port impedance:	50 Ohms
Power:	7.4V Li-Ion internal battery (not user serviceable)
Operating temperature:	-20 to +65 °C (at 5-95% relative humidity, non-condensing)