

# *Miltel Transmitter*

*Wireless Transmitter  
for Data Collection*

FCC ID: **MLLGLXR2-TX450**

***User Manual***

*Miltel Communications Ltd.*

*MAY 2005*

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# Chapter 1

## Introduction

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### 1.1 Purpose and Use

The *Miltel Galaxy Remote 2 Transmitter* (FCC ID: MLLGLXR2-TX450) is a data link transmitter that is used for data acquisition in Miltel's telemetric data collection system. This device is installed on-site by a professional field technician, thus it includes technical terms. The equipment is not to be installed by a non-professional individual that has not been trained and authorized.

### 1.2 System General Description

The Miltel data collection system is a computerized fully system incorporating one-way transmitters that automatically collect data from utility meters and/or other sensors. The system requires no human intervention after initial installation. The system enables remote, continuous and accurate reading of water or gas consumption. The *Miltel Galaxy Remote2* transmits the data acquired from various sensors such as water meters, electric meters, to a receiver connected to a regional data concentrator. The concentrator transfers the data to the central computer for data collection and for further analysis and reporting.

## Chapter 2

# Theory of Operation

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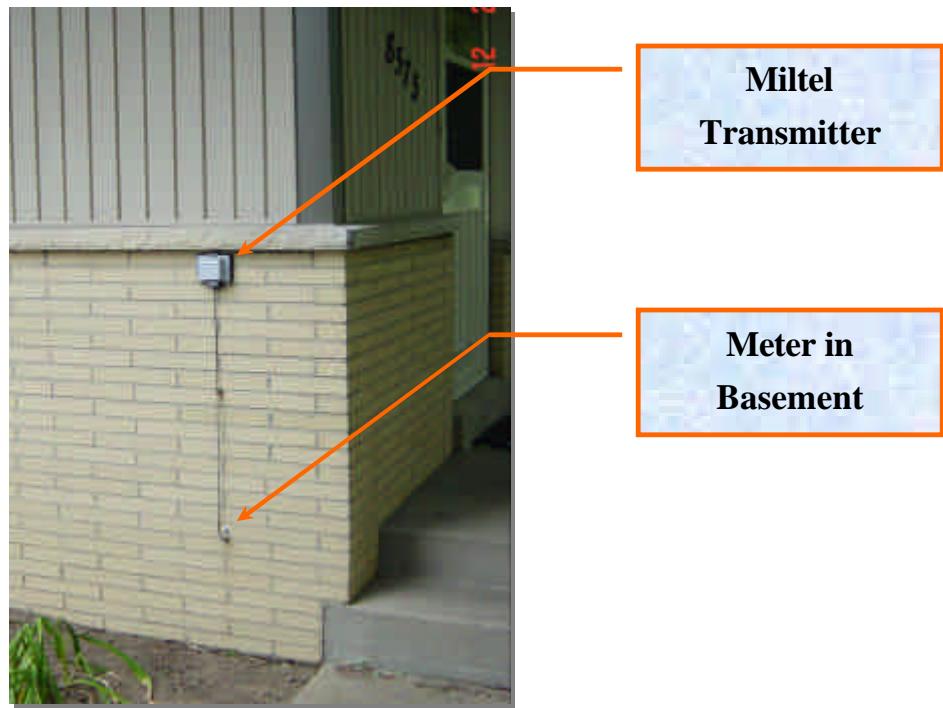
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### 2.1 General Description

The ***Miltel Galaxy Remote 2 Transmitter*** is the first link in the data collection system. It is an independent unit that does not require an external power source, wiring, or the preparation of any special infrastructure. The unit is installed in proximity to the physical sensor and can be connected to several different sensors in parallel (for example four water meters of adjacent apartment, etc).

Pictures 2-1 (see next page) show typical installations of a ***Miltel Galaxy Remote 2 Transmitter unit***. The unit can be connected to any type of sensor which has a digital output, analog output, dry contact pulsed output (a passive magnetic open/short reed relay), or any active pulse or encoded output.

The ***Miltel Galaxy Remote 2 Transmitter*** acquires the data from the sensor and stores this data in its internal memory. The unit includes a miniature RF transmitter which transmits the data on a periodic basis to a regional concentrator.



*Figure 2-1: Miltel Transmitter Typical Remote Installation*

## 2.2 Block Diagram Description

### 2.2.1 General

Figure 2-2 describes the block diagram of the **Miltel Galaxy Remote2 Transmitter**.

This device consists of two major sections, all using a common power source:

- Digital section (Micro Controller)
- RF section

A 3.6 volts Lithium battery provides power to all parts of the device. The power supply for the RF section is controlled via the Tx switch (not shown), thus cutting off power to the transmitter unless necessary for actual data transmission (standby mode).

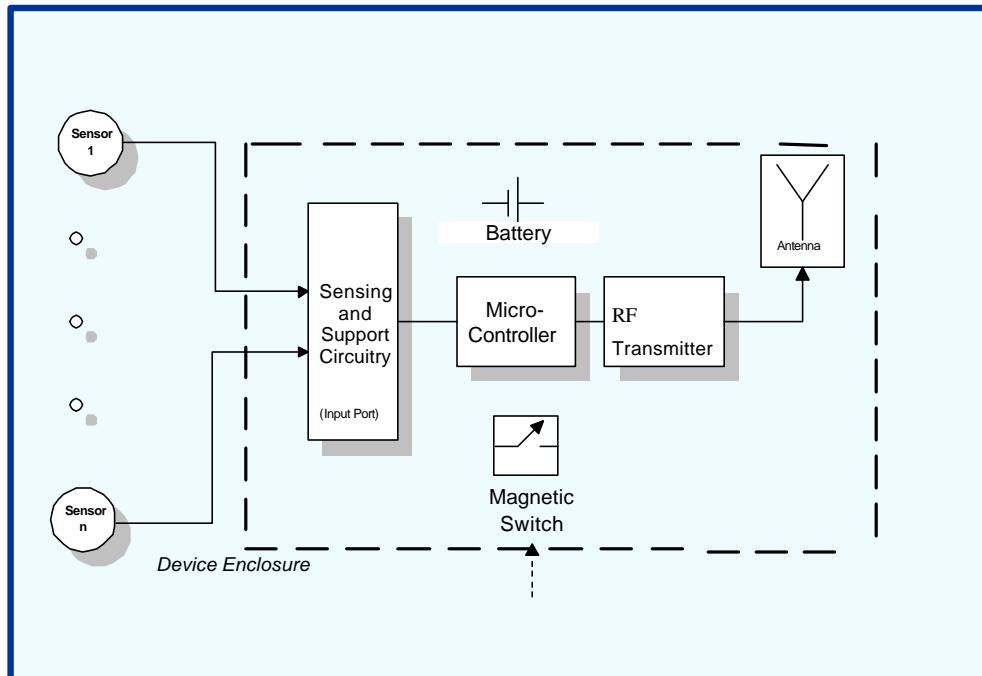


Figure 2-2: Miltel Galaxy Remote 2 Transmitter **Block Diagram**

## 2.2.2 Description of Operation

The digital section of the *Miltel Galaxy Remote 2 Transmitter* performs the following functions:

- Samples analog sensors OR communicates with digital sensors
- Accumulates data for each sensor separately
- Stores data (including alarms) in internal memory
- Interfaces the data to the RF section

The controller gathers the data for 10-240 minutes before initiating a transmission. If any of the counters/sensors has exceeded a preset value, or any alarm (such as tamper) has been received, the controller generates a single message immediately. Any further message will include alarm information along with counter data, if alarm condition still exists. Note: The duration interval between two transmissions is always greater than 60 minutes.

The messages generated by the controller are 19 bytes each (depending on the number and type of sensors connected). The messages are exported from the digital section to the RF section as serial data (RS-232 standard protocol) via the DATA OUT output of the controller.

The Tx control output of the controller is used for activating the TX switch for the duration of the message, to enable power supply to the RF section thus enabling the transmission of the message (transmit mode).

The RF section takes the message and transmits it through the RD circuitry.

## Chapter 3

# Technical Characteristics

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### 3.1 Technical Specification

#### 3.1.1 Electrical

Max Effective Radiated Power (ERP)	29.92 dBm
Output frequency	450-470 MHz
Carrier wave modulation	2 Level FSK
Power supply	Lithium battery, 3.6 Volt
Input Channels	Pulse / Analog / Digital

#### 3.1.2 Physical

Operating temperature -30°C ÷+60°C

Water Resistance IP65

Dimensions

Length 12.7 cm.

Width 12 cm.

Depth 5 cm.

## Chapter 4

# Installation Instructions

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### 4.1 General

The **Miltel Galaxy Remote 2 Transmitter** is installed by a professional technician. Several possibilities for installation have been programmed into the system in order to provide solutions for installation of various types of sensors including water, gas or electric meters.

### 4.2 Installation

For on-site installation of the **Miltel Galaxy Remote 2 Transmitter** device, proceed as follows:

- 1) Mark the 4 locality of the screws on the wall.
- 2) Splice the wires coming from the transmitter with the wires coming from the meter (**Important:** Keep the color coding consistent).
- 3) Close the box cover & screw the screws to the 4 place with screw driver, see Figure 2-3& Figure 2-4:



Mounting  
Holes x 4  
place

Figure 2-3: Miltel Galaxy Remote 2 Transmitter **mounting holes**



Mounting Holes x 4 place

*Figure 2-4: Miltel Galaxy Remote 2 Transmitter **mounting holes***

## NOTICE

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**This equipment must be installed only by a professional and certified installer that was trained in the proper installation of this device. The intended use is only for the specific application the device was designed for.**

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## Chapter 5

# Regulatory Compliance

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### 5.1 FCC Statement

The 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.

## *FCC Declaration of Conformity*

The Galaxy Remote 2 product 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.

Imported to the USA by:

**Badger Meter Inc**

4545 W. Brown Deer Road

Milwaukee, Wisconsin 53223

P.O. Box 245036

Milwaukee, Wisconsin 53224-9536

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## **Licensing Notice**

The FCC rules require the equipment user to obtain a site license before operation of this equipment. Licensing of the equipment is the user's responsibility. The user is required to contact an authorized FCC coordinator for the purpose of obtaining the proper license for the specific location/site where the equipment is to be installed. We strongly recommend that the user should obtain the proper frequency license before ordering of the equipment.

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