

# PM-15 Manual

**BALOGH**

Notes are used to call attention to information that is significant to the understanding and operation of equipment.

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# MANUAL REVISION HISTORY

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# INTRODUCTION

## BALOGH PM-15 RFID TAG READER/WRITER

### Description:

The PM-15 is a portable lightweight unit with the ability to interface with the OMA series, and OMX series Read/Write TAGS. The PM-15 can be powered by 4 AA rechargeable or alkaline batteries. (Optional contactless recharger available) The PM-15 features a four-line LCD backlit display, 64K internal buffer, programmable function keys, auto power off, optional remote Read/Write head, and a screen help menu. The PM-15 can Read or Write from 1 byte to 8K bytes of the BALOGH OMA, OMX TAGS.

### Keys:

START: Powers up unit. To STOP press SHIFT then START.

SHIFT: Allows the user to access the RED labeled keys, and functions described in this manual.

ESC: Exits a function and returns to the internal buffer.

### TAG Configuration:

You can configure the PM-15 to work with BALOGH OMA 64 byte, 2K byte, 8K byte, or OMX 8K byte Read/Write TAGS. After power up of the unit press **SHIFT K**. Use the + key on the keypad to select the TAG you are using. When you have selected the TAG press ESC to exit this function. The PM-15 will retain this configuration until changed.

### Screen Display:

To turn the LCD back light ON or OFF press **SHIFT L**.

### Help:

The PM-15 features an on screen help menu. This can be accessed by pressing **SHIFT V**, and using the Pg. Up & Pg. Dn keys the scroll through the menu. Press ESC to exit.

### PM-15 to TAG Orientation:

The Read/Write transceiver built into the PM-15 is located above the LCD display on the top of the unit. When performing a Read/Write function with the unit make sure the bi-directional arrows on the PM-15 line up with the arrows on the TAG to be read.

# TAG MEMORY ADDRESSING

Tag Type	Memory Size	Address
OMA/ GIE	Internal 64 Byte with Ferro-Electric Memory	0 - 3FH
	Internal 512 Byte with Ferro-Electric Memory	0 – 1FFH
	Internal 2K Byte with Ferro-Electric Memory	0 - 7FCH
	Internal 8K Byte with Ferro-Electric Memory	0 - 1FFCH
OMX	8K Byte Ram with Ferro-Electric Memory	0 - 1FFDH

NOTE: When using an OMA /2K TAG with a CELA-81 control board, the CELA-81 defaults to address 0700H.

## Display Modes:

The PM-15 can address a TAG in Byte or Word addressing. The unit defaults to byte addressing upon power up. To change press **SHIFT Z**. Data can be displayed in Decimal, Hex (H), Binary (B), or ASCII (\*). You can also address in Decimal or Hex. To do this, use the red arrow keys to move the cursor to the address or data part of the screen. Press **SHIFT Y** to change formats; repeat until desired format is displayed.

## TAG Status:

Press **SHIFT T**, this will display the current or last TAG status. This function is helpful if you have a problem Reading or Writing to a TAG.

## TAG Initialization:

All BALOGH Read/Write TAGS come from the factory initialized and ready for operation. Should a TAG need to be reinitialized press **SHIFT N**. Then place TAG in proper orientation to the PM-15. A beep or reappearing of the internal buffer will signify completion.

# TAG READ

Make sure your PM-15 is configured for the TAG type you wish to Read. Press **SHIFT R** screen will Read:

READ TAG BYTE	
ADDR_TAG	0
LENGTH	0
ADDR_BUF	0

Enter the starting TAG address to Read press (ENTER). When entering address in Hex put an H after number. Enter the number of bytes press (ENTER). Enter the address buffer number. If you are saving data currently in the internal buffer enter the address number beyond the data to save. If not saving data in the buffer leave at zero and press (ENTER). Screen will read:

<p style="text-align: center;"><b>READ TAG BYTE IN PROGRESS (TAG TYPE)</b></p>
--

Place TAG in Transceiver zone of the PM-15 and wait for the beep and internal buffer with data to appear. If there is an error in communication, you will receive an error message on the screen (see FAULTS section of the manual). If you have a specific Read operation that will be repeated often, consider programming a function key to easily repeat the operation (See FUNCTION KEY PROGRAMMING in this manual).

# TAG WRITE

The PM-15 allows you to Write data to an OMA or OMX TAG from 1 byte up to 8K bytes. The **SHIFT S** function will Write the same value to a selected range in the TAG. The screen will read:

WRITE TAG BYTE	
ADDR_TAG	0
LENGTH	0
BYTE	0

1. Enter the TAG address to start Writing data press (ENTER)
2. Enter the length in bytes to Write press (ENTER)
3. Byte will be the value to Write to the TAG. You can enter this value in decimal or hex. If using a hex value put an H after number press (ENTER).  
Screen will read:

<p style="text-align: center;"><b>WRITE TAG BYTE IN PROGRESS (TAG TYPE)</b></p>
---

Place TAG in PM-15 Transceiver zone and wait for the beep and internal buffer to be displayed. To check the data just Written to the TAG, follow the TAG READ instructions.



# TAG WRITE

The **SHIFT W** function allows you to Write data from the PM-15 internal 64K buffer. The buffer is displayed when you power up the unit. Enter the data you wish to Write starting at any of the buffer addresses. Press **SHIFT W**, screen will read:

WRITE TAG BYTE	
ADDR_TAG	0
LENGTH	0
ADDR_BUF	0

1. Enter the TAG address to start Writing data press (ENTER)
2. Enter the length in bytes to Write
3. The address buffer is where you started entering data to Write in the internal buffer press (ENTER). Screen will read:

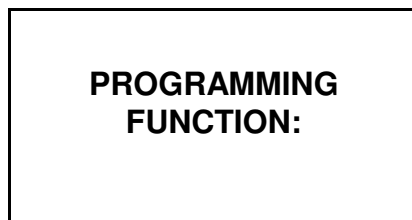
<p style="text-align: center;"><b>WRITE TAG BYTE IN PROGRESS (TAG TYPE)</b></p>
---

Place TAG in PM-15 Transceiver zone and wait for the beep and internal buffer to be displayed. To check the data just written to the TAG follow the TAG READ instructions. The **SHIFT X** function will Write the same value to a range in the 64K internal buffer. You can use this to clear a section or the entire buffer.

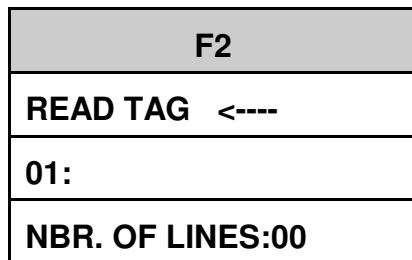
# FUNCTION KEY PROGRAMMING

The PM-15 red function keys F2-F10 can be user programmed to Read TAG, Write TAG, Set TAG, or Initialize TAG. The F1 key is programmed to repeat the last operation performed by the PM-15 and cannot be changed.

To start the programming function press (Shift) then (P).  
The screen will read:



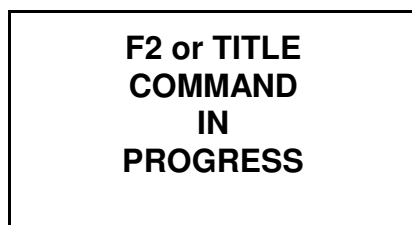
Using the numeric keypad select 2-10 for the corresponding function key to program, then press (Enter).  
The screen will display which function number you have selected, for our example we will use F2.



Use the + key to scroll through options:  
**Read TAG**, **Write TAG** from 64K Buffer, **Set TAG**; writes the same value to address range in the TAG, **Initialize TAG**, **Clear Function** will erase a current program to that function, **Clear Line** will erase the program but leave title, **Change Title**; you can add a description of the operation, **Edition** allows you to edit the command programmed.

Press (Enter) to enter a command, when finished programming  
Press (ESC) you will return to the Programming Function screen.  
You can program another function or press (ESC) to exit.

To use the function key you have programmed just press (Shift) followed by the function key.  
The PM-15 screen will display:



Place your TAG in the PM-15 transmission zone to complete instruction.

# Quick Reference Chart

## **BALOGH PM-15 Hand held:**

The PM-15 will perform the Initialization, Reading, and Writing of BALOGH OMX 8K, OMA 8K, OMA 2K, and OMA 64 Byte TAGS. The internal buffer capacity is 64K.

## **Description of Keys:**

START: Powers up unit. to STOP. Press SHIFT then START.

ESC: Exits a function and returns to the internal buffer.

SHIFT: Allows the user to access the RED labeled keys, and functions listed below.

<b>Functions:</b>	
Shift K	Configures the PM-15 for OMX 8K, OMA 8K, OMA 2K, OMA 64 byte TAGS. Use the + key to change the configuration.
Shift L	Turns the display back light ON or OFF
Shift P	Programs the PM-15 Function Keys
Shift N	Initialization of TAG
Shift R	Reads data from TAG
Shift S	Writes the same value to a range in the TAG
Shift T	Displays the current or last TAG status
Shift W	Writes data to the TAG
Shift X	Writes the same value to a range in the 64K buffer
Shift Y	Selects Dec, hex (H), bin (B), ASCII (*).
Shift Z	Selects byte, word addressing
Shift V	Help Menu

# FAULTS

Message	Possible Reason
INPUT ERROR RAM FAILURE	Invalid value or character entered Memory fault, TAG needs to be re-initialized (SHIFT N)
TAG FAILURE TAG BATTERY FAILURE	Check TAG status for fault (SHIFT T) Battery for TAG memory needs to be replaced, contact BALOGH
INADEQUATE TAG ADDRESS	TAG address doesn't correspond to the TAG type presented to the PM-15
DIALOGUE INTERRUPTED	TAG was removed from PM-15 before operation could be completed

## OPTIONAL ACCESSORIES:

Part Number	Description
SPM15	Contact less recharger for the PM-15 with 4 AA rechargeable batteries installed. (Pictured below)
PMTD71	Remote Transceiver head w/ 6 ft. cable. The remote head connects to the port located on bottom of PM-15. 40 x 40 x 28mm

