

# Pocket Tag Reader User Guide



#### Warranty

Stanley Healthcare Solutions' products are warranted against defects in materials and workmanship and shall perform in accordance with published specifications for 1 year.

Stanley Healthcare Solutions' warranty is limited solely to the repair or replacement of the defective part or product. Stanley Healthcare Solutions reserves the right to change product specifications without notice.

#### **Regulatory Statements**

#### United States - Federal Communication Commission (FCC)

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.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**Warning:** Any changes or modifications not expressly approved by Xmark could void the user's authority to operate the equipment.

#### Canada - Industry Canada

The term "IC:" before the certification/registration number only signifies that Industry Canada technical specifications were met.

#### Important Recommendation

Stanley Healthcare Solutions' systems are designed to assist staff in providing a high degree of safety for people and assets and therefore should be used as a component of a comprehensive security program of policies, procedures, and processes. As with every security system, you must perform regular system operational checks to verify functional integrity.

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# Introduction

This User Guide describes the use of the Stanley Healthcare Solutions Pocket Tag Reader. The Pocket Tag Reader is a test tool for reading, testing and configuring Stanley Healthcare Solutions active Radio Frequency Identification (RFID) tags and setting the preliminary strength of the controller exciter field. The Pocket Tag Reader can assess Radio Frequency (RF) power levels and noise levels at both controller and tag frequencies. The Pocket Tag Reader:

- Displays tag electronic serial numbers
- Provides a quick pass/fail indication for evaluating tag performance
- Automatically measures tag battery level
- Can test tags that are deployed or stored
- Enables, disables and modifies Tag Location Messages (TLM)
- Can continually listen for and can test Tag Initiated Communication (TIC) messages and Tag Location Messages

These operations can be recorded in the unit's non-volatile memory and downloaded to a separate PC for storage and analysis.

#### **Important Security Warning**

The Pocket Tag Reader is a mobile testing device intended for use by authorized, qualified personnel.

Used improperly, the Pocket Tag Reader can compromise the security system.



Ensure that adequate procedures and precautions are in place to control the movement of this device; and to prevent the use of this device by unauthorized personnel.

# **Controls and Display**

#### Figure 1 Controls and Display of the Pocket Tag Reader



## **Turning the Pocket Tag Reader On**

When you power on the Pocket Tag Reader you select either User Mode or Tech Mode. These are described later on page 8.

**User Mode:** To power on press until the screen displays:



The Pocket Tag Reader will display the self test screen and then display the top screen of the User Menu:



Note: If the battery voltage is low when the Pocket Tag Reader is turned on then a low battery message will be displayed and the Pocket Tag Reader will power off. See "Battery Replacement" on page 4. **Tech Mode:** To power on press and hold both  $\bigodot$  and  $\bigstar$  until the screen displays the following:



The Pocket Tag Reader will display the self test screen and then display the top screen of the Tech Menu:



Note: After 60 seconds of inactivity, the Pocket Tag Reader will automatically power off.

# To Turn the Pocket Tag Reader Off

Press and hold the 🕙 until the screen becomes blank.

# Backlight

To use the backlight: While either the top screen of the User Menu



or the top screen of the Tech Menu

TECH MENU USE UP/DOWN

is displayed, press and hold  $\triangleright$ .

#### **Battery Replacement**

The Pocket Tag Reader display will indicate when the battery voltage is low as follows:

- At power on, a low battery message will be displayed and the Pocket Tag Reader will power off.
- When in use, after every six keystrokes the Pocket Tag Reader will beep three times, the Green and Red LEDs will flash, and the battery low message will appear.

Install a new 9 V alkaline battery as shown in Figure 2.

#### Figure 2 Battery Installation



# **Pocket Tag Reader Operation Overview**

## **Tag and Controller Reading Range**

Tags are best read at a minimum of 12" (30 cm) below the Pocket Tag Reader. However, tags may be placed adjacent to the Pocket Tag Reader when both are on a flat surface.



Figure 3 Pocket Tag Reader in RF Field from Tag

For best results, place skin sensing tags on a shielded (e.g. metal) surface when testing. Skin sensing tags are curved to fit against the wrist or ankle and have large areas of copper visible beneath the clear plastic of the tag back.

*Note:* The performance of the Pocket Tag Reader may vary according to its surroundings. The Pocket Tag Reader should acquire the tag signal within 2 to 3 seconds but acquisition could be as long as 30 seconds.





The type of tag and radio frequency (RF) noise may affect the performance of the Pocket Tag Reader. RF noise radiates from notebook computers, PC monitors, and other devices. If performance seems slow then try the following:

- Move the tags and reader to another area away from devices radiating RF energy,
- Move the Pocket Tag Reader around the tag; or,
- Position the Pocket Tag Reader at different angles to the tag.

To find areas that are relatively free of RF noise, please see "Check RF Noise Mode" on page 12.

The ranges of door controller fields are deliberately restricted. When checking a door controller field, stand within the area where a tag would affect the door controller.

## LED Display

The Pocket Tag Reader has one green and one red LED. These display the information shown in Table 1.

#### Table 1 LED Display

Status	LED	Mode
433 MHz signal detected	Green LED blinks.	All test modes.
307 kHz signal detected	Red LED blinks.	Only in Check Field Mode, or in Check Noise Mode.
Operation Completed	Red LED blinks once.	All modes.
Additional RF activity	Both LEDs blink.	Only in Check Field Mode, or in Check Noise Mode.

#### **Functions and Modes**

The Pocket Tag Reader can be used in either User Mode or Tech Mode. User Mode provides a set of operations that are useful for maintaining a fleet of tags. Tech Mode enables and modifies advanced tag communications. Table 2 below provides a summary of the Pocket Tag Reader functions in each mode.

Table 2	Function and	Mode Summary
---------	--------------	--------------

Operating Mode	User Mode	Tech Mode
Tag Test Mode		
Reads the tag serial number by generating an RF field.	$\checkmark$	
Tests the tamper mechanism of a Supervised tag.	$\checkmark$	
Reads the battery status and firmware revision of the tag.	$\checkmark$	
Tag Revision Mode		
Queries the tag to display serial number, revision number, and expiration date.	✓	
Check Field Mode		
Checks the exciter field strength near a door controller.	$\checkmark$	
Check RF Noise Mode		
Checks for ambient RF noise in either the low or high frequency band.	✓	
TLM Mode		
Queries tag and displays tag TLM status.		✓
Enables or disables the tag pulse and sets the TLM rate.		✓
Show Tag Message Mode		
Continuously monitors for TIC or TLM and displays messages received.		✓
Data Download		
Downloads data to a PC for analysis.	$\checkmark$	$\checkmark$

#### **User Mode Operations**

User Mode is described in Table 3 and in Figure 5.

 Table 3
 User Mode Operations and Pocket Tag Reader Modes

Operation	Pocket Tag Reader User Mode
Maintain a fleet of tags	Tag Test Mode Tag Revision Mode
Check a controller RF field	Check Field Mode
Assess the ambient RF noise level	Check RF Noise Mode





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## **Tech Mode Operations**

Tech Mode is described in Table 4 and Figure 6.

#### **Table 4** Tech Mode Operations and Pocket Tag Reader Modes

Operation	Pocket Tag Reader Tech Modes
Enable, disable and set the rate for Tag Location Messages (TLM)	TLM Mode
Verify correct Tag Initiated Communication (TIC) Figure 6 Tech Mode Top-Level Menu Options	Show Tag Message Mode
Power Up Tech Mode Display	



MODE



# Working in User Mode

## Tag Test Mode

The tag testing procedure shown in Figure 7 enables you to:

- Read the tag serial number
- Test the tag alarm
- Enable and disable the Tag in Field (TIF) alarm on Staff tags only
- Check the tag battery Results are displayed ONLY if the battery fails the test.

#### Figure 7 Testing Tags in Tag Test Mode



**Testing the Tamper Alarm of an Infant tag:** Infant tags can be recognized by the large copper area visible through the clear plastic on the back of the tag.

• To test the Tamper Alarm of an Infant tag:

Hold the tag with your thumb covering the entire skin sensor for at least 10 seconds. Move your thumb off the sensor. The tag will transmit a Tamper Alarm.

**Testing the Tamper Alarm of an Asset Tag:** Asset tags can be recognized by the small pin protruding from the back of the tag.

• To test the Tamper Alarm of an Asset tag:

Hold the tag pin in for at least 10 seconds and then release the pin. The tag will transmit a Tamper Alarm.

## **Tag Revision Mode**

Using the procedure shown in Figure 8 to check the following: serial number, version number, and revision level.

#### Figure 8 Tag Revision Mode



## **Check Field Mode**

Using the following procedure you can check the strength of the RF field of the controller.

#### Figure 9 Check Field Mode



Different controllers have different uses, and as a result, the controller RF field may be deliberately limited. For example, a controller designed to lock a door when a tag approaches will have a field which is limited to an area within a few feet of the door. When checking the RF field strength, stand within the area where you would expect the tags to be recognized.

**Decreased RF Field Strength** 

when Tag Nearby: The strength of the RF field will appear to decrease by about half when a tag enters the field. This is an erroneous reading. Only test field strength when a tag is not in the field.

## **Check RF Noise Mode**

Using the following procedure, you can check for RF signals from

sources other than the Stanley Healthcare Solutions equipment.

#### CHECK RF NOISE MODE (►) 307 / 433 UP/DOWN $\mathbf{T}$ ◄ $(\blacktriangleleft)$ CHECK 433MHz CHECK 307 kHz NOISE NOISE (🔻 $(\blacktriangleright)$ $(\blacktriangleright)$ 307 kHZ NOISE 433MHZ NOISE $( \mathbf{A} )$ $(\blacktriangleleft)$

#### Figure 10 Check RF Noise Mode

Unwanted RF signals are usually termed noise. RF noise is only a problem when it occurs at the same frequencies as used by the Stanley Healthcare Solutions equipment. RF noise at these frequencies can make it difficult for you to detect the tag or controller signals when using the Pocket Tag Reader.

If you are having difficulty using the Pocket Tag Reader to check your tags, then you have two possible solutions to your problem:

- Move your work area to a spot that is relatively free of RF noise; or,
- Remove devices which make RF noise from your work area.

By using the Check RF Noise Mode, you can identify equipment that is producing RF noise, and you can find areas that are relatively free from RF noise.

**What is Displayed:** When using Check RF Noise Mode at 307 kHz, the display shows both noise and the Stanley Healthcare Solutions controller exciter signals. Noise will appear as random illumination of the red LED. Exciter signals will appear as periodic blinking of the red LED. You will likely see both patterns while using this mode.

# **Working in Tech Mode**

# TLM Mode

In Tag Location Message (TLM) Mode, you can enable and disable the TLM and set the TLM rate.

You can set a TLM rate ranging from once every 16 seconds, to once every 24 hours. The tag will then automatically transmit the TLM at the set rate.

The TLM is received by receivers or controllers. In some applications, if a TLM is not detected at the appropriate time then an alarm will begin.

TLM MODE  $(\blacktriangleright)$ TLM MENU USE UP/DOWN (▲)  $(\mathbf{v})$  $(\mathbf{v})$ (▲) TLM TLM TLM FNABI F QUERY DISABLE

Figure 11 TLM Mode Three Main Functions

The TLM feature may be referred to as 'Tag Pulse' or as 'Beacon' depending on the application.

A test tag that emits TLM messages when its test button is pressed can be used to perform RF coverage tests.

The TLM Mode has three main functions that can be accessed from the Tech Mode top menu. These are shown in Figure 11.



**TLM Query:** Use TLM Query Mode shown in Figure 12 to discover the tag's TLM rate. **Figure 12 TLM Query Mode** 



**TLM Enable:** Use the TLM Enable function to activate TLM messages and to set the TLM rate.

Different types of tags support different TLM rates. See Table 5.

 Table 5
 TLM Rates Possible with Different Tag Types

TLM Rate	Wrist	Staff	Asset
16 seconds	✓	$\checkmark$	$\checkmark$
1 minute	Х	$\checkmark$	$\checkmark$
5 minutes	Х	$\checkmark$	$\checkmark$
30 minutes	Х	$\checkmark$	$\checkmark$
60 minutes	Х	$\checkmark$	$\checkmark$
4 hours	Х	$\checkmark$	$\checkmark$
12 hours	Х	$\checkmark$	$\checkmark$
24 hours	х	$\checkmark$	$\checkmark$



In Figure 13 the TLM rate is shown as 16 seconds, however, any of the rates in Table 5 on page 16 could be used depending on the tag type queried.

**Choosing a TLM Rate:** The TLM rate depends on the type of tag and its use. Infant and Wrist tags are set at 16 seconds. Staff tags and Asset tags can be set at any rate. In choosing a TLM rate, consider:

- The need for real-time tracking
- How important is it to know where a staff person is at any moment
- The value of assets as well as their mobility — Small, mobile assets will require a more rapid TLM rate than will large, or comparatively immobile assets.

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TLM Disable: Use TLM Disable to deactivate the TLM as shown in Figure 14.

#### Figure 14 TLM Disable



#### Show Tag Message Mode

Show Tag Message Mode has three main functions:

- Show TLM
- Show TIC
- Show TIC or TLM

All of these functions display information that is automatically and periodically transmitted by the tag. In each function, a counter is displayed that records the number of messages received. Use these functions as shown in Figure 15.

# *Note:* The Pocket Tag Reader will NOT automatically power off in Show Tag Message Mode.



**Show TLM:** Displays the actual TLM and counts the number of TLMs received. For information about TLM see "TLM Mode" on page 14 or the Glossary. The procedure is shown in Figure 16.





**Show TIC:** Displays the TIC (Tag Initiated Communication) message and the number of TIC messages received. For a description of the TIC message, see "Glossary" on page 26. The **Show TIC** procedure has the same keystrokes as the **Show TLM** procedure. Use Figure 16 and substitute "TIC" for "TLM".

**Show TIC or TLM:** Displays the number of TLM or the TIC messages received and the actual TLM or TIC message. If both messages are received the display will alternate between the two message types. Again, use the same keystrokes as in Figure 16.

# **Downloading Data to a PC**

By downloading data from the Pocket Tag Reader to a PC you can display, sort, and analyze the data using spreadsheet programs such as Microsoft® Excel®. You can also use the data to create a tag maintenance log.

This information downloaded from the Pocket Tag Reader is organized as a group of records. Each record is identified by its own number.

All records contain the same types of information. Each information type is called a data field. Table 6 lists the data fields in each record.

When the records are downloaded, they are stored as a text file. An example of such a file, displaying data fields and records, is shown in Figure 17 on page 23.

Storing data for later analysis is called data logging. When data logging is enabled, the Pocket Tag Reader will store 800 records. Each record will contain the information about a single transaction with a tag as detailed in Table 6.

Table 6 Information in Each Record

Data Field	Description
Record#	The number identifying a unique record.
Tag ID	The serial number of the tag.
Batt V	Tag battery voltage.
Action	The function that was performed by the tag in the transaction. For example, Show TLM.
Result	What was displayed or what occurred as a result of the function performed.
Version	The tag firmware version where applicable.
Expires	The tag expiry date where applicable.

Data logging is enabled and disabled by the same utility program that downloads the data: Tag Reader. Data logging is disabled when the Pocket Tag Reader is shipped.

## Installing and Using the Tag Reader Program

A serial cable is required to connect the Pocket Tag Reader with a PC. The cable connects to one of the COM ports on a PC and to the serial port at the top of the Pocket Tag Reader.

To install Tag Reader:

1 From the Tag Reader CDROM, copy tgV1.01 to your hard drive. You can put this program in any folder; however we suggest you put it into a folder labelled "Tag Reader".

- *Note:* Although you can start Tag Reader by double-clicking the file while it is still on the CD, you will not be able to download data.
- 2 Attach a serial cable between your PC COM port and the Pocket Tag Reader. Note the number of the COM port.
- 3 Power on the Pocket Tag Reader.
- 4 In Windows Explorer double-click the tgV1.01.exe file. A DOS window will open.



- 5 Enter the COM port number from step 2.
- 6 Immediately after you key in the COM port, the screen will display the following:



7 To enable data logging press E. The screen will display as follows:



Pressing any of the keys listed in Table 7 will run the associated command. The DOS window containing Tag Reader must be the active window.

 Table 7
 Functions Available in Tag Reader

Function	Key- stroke	Description				
Enable logging	E	Commands the Pocket Tag Reader to log data internally.				
Disable logging D		Commands the Pocket Tag Reader to <i>NOT</i> log data internally.				
Retrieve tag records	R	Download the data log from the Pocket Tag Reader to the PC.				
Get Status S		Check voltage, firmware, logging, and number of records.				
Quit Program the "Esc" key		Exits the Tag Reader program.				

**Retrieving Records:** When the Tag Reader DOS window is active, pressing the "R" key will download records from the Pocket Tag Reader to the PC. The records will be in a file named TAGREADER.txt in the same folder as the file tgV1.01.exe.

After a successful download, the downloaded records will be deleted from the Pocket Tag Reader memory.

Figure 17 shows a Tag Reader text file. A description of the fields is given in Table 6 on page 20.

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Figure 17 Sample Tag Reader Text File

lecord#	Tag ID	Batt V	Action	Result	Version	Expires	
101	A000AC	ок	TEST	ENABLED	_	_	-
102	A000AC	ок	TAMPER	OK			
<b>103</b>	A000AC	OK	TEST	ENABLED			
<b>104</b>	A000AC	ок	TEST	ENABLED			
<b>005</b>	A000AC	OK	TLM-CHK	1 MIN	V2.2	JUN-2006	
<b>006</b>	A000AC	OK	TLM-CHK	1 MIN	V2.2	JUN-2006	
<b>307</b>	F01076	OK	TEST	ENABLED			
<b>308</b>	F01076	ок	TEST	ENABLED			
<b>30</b> 9	FØ1076	ок	TEST	ENABLED			
<b>310</b>	FØ1076	ок	TEST	ENABLED			
ð11	FØ1076	ок	TEST	ENABLED			
ð12	FØ1076	ок	TEST	ENABLED			
ð13	A000AC	ок	TEST	ENABLED			
ð14	A000AC	ок	TAMPER	ок			
ð15	A000AC	ок	TLM-CHK	1 MIN	V2.2	JUN-2006	
ð16	A000AC	ок	TEST	ENABLED			
017	A000AC	ок	TAMPER	OK			
ð18	B0841D	ок	TEST	ENABLED			
<b>319</b>	B0841D	ок	TEST	ENABLED			
<b>320</b>	B0841D	ок	TEST	ENABLED			
<b>421</b>	D1155A	ок	TEST	ENABLED			
122	D1155A	ок	TAMPER	ок			
423	D1155A	ок	TEST	ENABLED			
124	FØ1076	ок	TEST	ENABLED			
	RMT 076	OK	11251	ENGREEN			

Importing into a Spreadsheet: The text of the Tag Reader text file can be imported into an Excel spreadsheet program as follows: In the Excel menu bar, click **Data > Get Exter**nal **Data > Import Text File**. Select the file: TAGREADER.txt. In the Import Wizard, select **Delimited** and click **Next**. Select **Tabs** and click **Next**. Continue to the end of the wizard.

Other spreadsheet programs capable of importing tab delimited text files should work as well. Look in the spreadsheet help file for instructions.

The file shown in Figure 17 was imported into an Excel spreadsheet program. The unformatted results are shown in Figure 18.

Figure 18 TAGREADER.txt file Imported into an Excel Spreadsheet

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Be Edit View Insert Format Iools Data RoboPDF Window Help								
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Aria	al • 10 • B	ΙU	= =	=	\$%,	€≡ m	- 🕭 - 🖊	- »
	A1 🔹 =					. –		
	A	В	С	D	E	F	G	H
1								
2	To: 24-OCT-2005 13:35:13							
3								
4	Record#	Tag ID	Batt V	Action	Result	Version	Expires	
5								
6	1	A000AC	OK	TEST	ENABLED	-	-	
7	2	A000AC	OK	TAMPER	OK	-	-	
8	3	A000AC	OK	TEST	ENABLED	-	-	
9	4	A000AC	OK	TEST	ENABLED	-	-	
10	5	A000AC	OK	TLM-CHK	1 MIN	V2.2	Jun-06	
11	6	A000AC	OK	TLM-CHK	1 MIN	V2.2	Jun-06	
12	7	F01076	OK	TEST	ENABLED	-	-	
13	8	F01076	OK	TEST	ENABLED	-	-	
14	9	F01076	OK	TEST	ENABLED	-	-	
15	10	F01076	OK	TEST	ENABLED	-	-	
16	11	F01076	OK	TEST	ENABLED	-	-	
17	12	F01076	OK	TEST	ENABLED	-	-	
18	13	A000AC	OK	TEST	ENABLED	-	-	
19	14	A000AC	OK	TAMPER	OK	-	-	
20	15	A000AC	OK	TLM-CHK	1 MIN	V2.2	Jun-06	
21	16	A000AC	OK	TEST	ENABLED	-	-	
22	17	A000AC	OK	TAMPER	OK	-	-	
23	18	B0841D	OK	TEST	ENABLED	-	-	
24	19	B0841D	OK	TEST	ENABLED	-	-	
25	20	B0841D	OK	TEST	ENABLED	-	-	
26	21	D1155A	OK	TEST	ENABLED	-	-	
27	22	D1155A	OK	TAMPER	OK	-	-	
28	23	D1155A	OK	TEST	ENABLED	-	-	
29	24	F01076	OK	TEST	ENABLED	-	-	
30	25	F01076	OK	TEST	ENABLED	-	-	
31		1 10 /						-
H   1	Sheet1 / Sheet2 / S	neet3 /		-	<u> </u>			
Rea	ady					NUM		

# **Tag Serial Number Formats**

Tag serial numbers distinguish between tags and between types of tags. Tag types are indicated by the letter which begins the serial number.

Different tag types have different uses and functions. Table 8 shows the different tag types and their functions.

Tag Serial Number	Тад Туре	Tamper	TLM Rate Select
AXXXXX	Pendant	Y	Y
BXXXXX	Asset	Y	Y
FXXXXX	Wrist	No	There are two sub-types: one has no rate; one has a 16 second rate.

Table 8 Tag Types and Functions

# Glossary

Term	Definition
307 kHz	The exciter antenna transmission frequency. The exciter sig- nal causes the tags to initiate communication with the sys- tem.
433 MHz	The tag transmission frequency.
Exciter Field	The field of RF coverage generated by a Controller. The Con- troller transmits a "wakeup word" and waits for the response from any transponder tags that are present in the field.
kHz	Kilohertz is a measure of frequency equal to 1,000 cycles per second.
LED	Light Emitting Diode. A type of indicator light.
MHz	Megahertz is a measure of frequency equal to 1,000,000 cycles per second.
PC	Personal Computer. For example, a desktop computer, a notebook, and a laptop.
RF	Radio Frequency. An RF signal is an electromagnetic signal at radio frequencies. RF energy is electromagnetic energy at radio frequencies.
RFID	Radio Frequency Identification. Identifying an object by its radio signal. Stanley Healthcare Solutions active tags are RFID devices.
Tag	An RFID transponder that can be attached to assets or worn by people.
Tag — Asset tag	A tag that is attached to assets such as wheelchairs and lap- tops. If removed, Asset tags transmit TIC messages. The tag also supports TLM and TIF messages.
Tag — Infant tag	A waterproof ergonomically shaped tag. If removed from the infant's skin, Infant tags transmit TIC messages. The tag also supports TIF and TLM messages.

Term	Definition
Tag — Staff tag	Staff tags are capable of TIF, TLM, and TIC messages. The tags can be programmed to bypass protected exit points. TIC communication occurs when the distress button is pressed.
Tag — Supervised tag	A tag that transmits a message when it is removed. For example, Infant tags, and Asset tags.
Tag — Wrist tag	For wandering and pediatric patients. The tag transmits TIF messages and optional TLMs.
TIC	Tag Initiated Communication. Infant or Asset tags transmit their serial number when the tag is removed. This feature is also called a "Tamper" alarm. Staff tags transmit their serial number when the distress button is pressed.
TIF	Tag in Field. Communication between the tag and the con- troller that occurs when the tag enters the controller's exciter field. All Stanley Healthcare Solutions tags have this ability.
TLM	Tag Location Message. A message containing the tag's serial number transmitted at set intervals. The TLM feature is also called "Beacon" or "Tag Pulse".

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