Release Notes For FX7400 version 2.2.0.5
Compatible with ETSI 1.4.1

Release Notes
Released 12 Oct 2011

Contents

Introduction

This *Release Notes* is meant for Motorola customers. The *Release Notes* lists new features, any specific usage instructions, and any known issue.

The release notes document cover changes since Falcon 1.1 release. The features and the issues mentioned in this document are applicable for the following products (unless mentioned explicitly in the feature)

- FX7400

Software Download

FX-7400

This version **2.2.0.5** software update package includes the files required to update FX7400 RFID Reader.

Contents of the release package:

IMAGE TYPE	VERSION	FILE NAME	DATE
ARM Firmware	2.0.26		
ARM Loader	0.0.1	FalPlat2205.hex	10/12/11
OEM Configuration	1.0.0		
Main Reader Server Application	2.2.0.5	FalPlat2205.hex	10/12/11
Monitor	1.23.274	FalMon0123.hex	10/12/11
Operating System	5.2.3	FalOS50203.hex	10/12/11
Backup OS	5.1.1	FalBkupOS50101.hex	10/12/11
Config Area	0.4	FalConfig004R#A.hex	10/12/11
Reader Configuration Partition	0.5	FalRConfig005.hex	10/12/11
Partition Table	0.7	FalParTbl007.hex	10/12/11

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Flash Update Utility	2.1	FlashUpdateUtility.dll	10/12/11
OsUpdate Utility	2.2	OSUpdFalcon.exe	10/12/11
Response	N/A	Response.txt	10/12/11
Application	0.6	FalApp006.hex	10/12/11
RFID API3 Dll	5.2.0.10	RFIDAPI32.dll	10/12/11
Motorola USB RNDIS Setup	N/A	Motorola RNDIS.msi	10/12/11

New Features summary

The following new features have been added in Falcon as part of the current release. Please refer to the Integrator Guide for more information about these features.

- Fujitsu Custom command support
- ETSI EN 302.208 v. 1.4.1
- QT Custom Command support for Monza 4QT Tag
- ChangeConfig Custom Command support for NXP G2iL / G2iL+
- BlockWrite operation patched to support number of words to write per operation
- XPC Word support
- BAP tag inventory range improved by a factor of about 1.5 in FX7400
- Optimization of data transfer to support faster tag reads.
- Increased the maximum number of select filters to 8.
- Changes to stop transmitting RF continuously in EU Readers if no tag is seen for more than 20 seconds
- Optimizations to improve the time taken for single access operations (particularly write operations).
- RFID3 API Support for 64 bit processor for the Host C Dll
- Additional MIB elements supported in RM SNMP for FX7400
- Multi-lingual support in RNDIS Installer

Major Issues Addressed

- In FX7400 EU Reader the reader used to transmit at 866.1 MHZ in some scenarios. This has been addressed.
- Some Time zones noticeably US Eastern and Central time zone were missing in release 1.1.0 for FX7400.
- Optimizations in RFID3 API .NET Dll to run the threads in background mode for better user experience with the applications (like Biztalk).
- Access operations being performed on multiple tags with same EPC even though the Opspec has a stop trigger with operation count 1.
- Default select command has been removed which means that customer is fully in control as to when to enable select commands.

New Features Description

Fujitsu Custom command support

Support for Fujitsu custom commands for 64K and 8K tags have been added as part of the current release. The following Fujitsu custom commands are supported in FX7400.

For Fujitsu 64KB Tag

1. Change Word Lock
2. Change Block Lock
3. Read Block Lock
4. Change Block group password
5. Burst Write
6. Burst Erase

For Fujitsu 8KB Tag

1. Area Read Lock
2. Area Write Lock
3. Area Write Lock without password
4. Change area group password

QT Custom Command support for Monza 4QT Tag:

Support has been added in LLRP as well as RFID3 API to support QT Custom feature on Monza 4QT Tag. This is added as a Custom OpSpec extension as part of the LLRP Access Spec. This command is honored only when reader sets CanSupportImpinjCustomCommandsparameter to TRUE in GET_READER_CAPABILITIES_RESPONSE Message. Reader Management as well as the web interface have been extended to provide the success / failure statistics of QT Operations.

ChangeConfig Custom Command support for NXP G2iL / G2iL+:

Support has been added in LLRP as well as RFID3 API to support ChangeConfig Custom feature on NXP G2iL / G2iL+.. This is added as a Custom OpSpec extension as part of the LLRP Access Spec. This command is honored only when reader sets CanSupportNXPCustomCommandsparameter to TRUE in GET_READER_CAPABILITIES_RESPONSE Message. Reader Management as well as the web interface have been extended to provide the success / failure statistics of Change Config Operations.

BlockWrite:

The number of words that can be written at one time varies from tag chip vendor. This number usually depends on the block size supported by a particular tag. We also found that the more words are sent at one time, the least reliable the block write operation becomes. To overcome these two issues we have defined a new register to specify the number of words used in block write operation: MOT_HST_BLOCKWRITE_SIZE at address 0xD203 is the new register, and its default value is 8 words.

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XPC Word:

There were two issues: XPC was not being reported, and secondly, the issue was that when app using RFID API3 tries to access tag data from a specific XPC tag by calling the synchronous access method of API3 (ReadWait, WriteWait, etc.), Reader executes the corresponding access operation unsuccessfully. This issue happened because the MAC post filter was not taking XPC words and XI/XEB bits into account when comparing EPC ID data which was created based on TagSpec. Both issues have been addressed.

BAP range improvement:

To improve the inventory range, a profile using Miller 8 was created. This profile also contains other changes that improve receiver sensitivity. For example, DRM filter was disabled which implies that the performance in dense reader environment may be compromised when using this profile
The new miller 8 LLP RFmode indexes are:
For ETSI readers:
-    LLRP RFmode index 6 is Miller 8 @ 300 KHz LF with pilot and DRM filter enabled
-    LLRP RFmode index 3 is Miller 8 @ 250 KHz LF with pilot and DRM filter disabled

For FCC readers:
-    LLRP RFmode index 9 is Miller 8 @ 300 KHz LF with pilot and DRM filter enabled
-    LLRP RFmode index 7 is Miller 8 @ 250 KHz LF with pilot and DRM filter disabled

Please note that to accommodate the miller 8 profiles, the following profile has been removed (it used to be LLRP RFmode index 7, 3 for FCC and ETIS, respectively): Miller 4 @ 250 KHz LF with no pilot and DRM enabled

Multi-lingual support in RNDIS Installer:

RNDIS Installer has been modified to support multiple languages.

Regulatory compliance

This updated software on an EU will allow the device to operate in ETSI EN 302.208 v 1.4.1 standard compliant mode. Software also addresses a compliance issue existing in Falcon software release 1.3, 2.0 and 2.1 in US readers. Customers using these versions are suggested to upgrade to this release.