

Baltimore USB Firmware Version 4.xx

Version 4.63, 01/19/2011, Checksum CEA7, File Name: SCv463.tsk

Section Summary:

Engineer: Chuck Kurtz

Version: 01/24/2011

EC#:

CQ/PMH#:XB049225

Summary of changes:

Security Module firmware will filter coin dispenser status message 08(busy)

Fixed Self-test Function 4(USB test)

Change Details:

Security Module firmware will filter coin dispenser status message 08(busy)

Reason for change/reported problem:

The lane software was not expecting a unsolicited coin dispenser message 08(busy) between a coin dispense command and a coin dispense complete message. This lane software was treating this message as an error.

Problem details:

After each dispense command is sent to the coin dispenser the coin dispense status is updated to a busy status (bit 3 set). This new status is then sent to the software as a updated status.

Re-create problem:

- 1) Using CVS test and a CX25
- 2) Dispenses coins.
- 3) Notice a status message of 08 is returned "A1:08"
- 4) Following then a 20 message (dispense complete)

Fix: COINDISP.asm

Remove code that allows a status update between a dispense command and dispense complete (except for a error status or request of status).

Added code that will set the coin dispense status bit 3 to 0

Testing:

- 1) Using CVS test and a CX25
- 2) Dispenses coins.
- 3) Notice no other message before the 20 (dispense complete) is returned

Change detail:

Fixed Self-test Function 4(USB test)

Reason for change/reported problem:

Manufacturing report self-test is failing test 4(USB test)

Problem Detail:

Due to USB touch screen fix the security module USB was in disconnect mode when self-test was running. This cause USB enumeration to fail and generated self-test error 4.

Re-create problem:

Run self-test procedure and notice it will fail test 4 every time

Fix: SMOD.asm

The code to decide if to branch to the self-test procedure was after the USB disconnect process. The decision process to branch or not was move to before the USB disconnect.

Testing:

Run self-test procedure for 5 minutes without any errors.

End of 4.63 *****

Section Summary:

Engineer: Chuck Kurtz

Version: 01/24/2011

EC#:

CQ/PMH#:

Summary of changes:

Added support for CX25 coin dispenser to stir any low coin bin.

Added support to allow lane software to dispense while the coin dispenser is in a low coin condition.

Fixed coin dispenser status request from returning a non-filter low coin message.

Change details:

Added support for CX25 coin dispenser to stir any low coin bins.

Reason for change/reported problem:

Customers using the CX25 coin dispenser are reporting coin low errors even while the unit is full of coins.

Problem details:

The coin low process for the CX25:

- 1) low coin condition must repeat for 5 consecutive dispenses before a load coin message is sent to the software.
- 2) If at anytime a non low condition occurs during dispense the counter is reset back to 0.

The idea is if one bin is low then on the next dispense that bin will be re-stirred and resolve the low coin condition. The problem is if a bin is in a low coin condition and no dispense is required to that bin it will remain low and after 5 dispenses the process above will signal low coin.

Re-create problem:

- 1) Using "US CX25" and CVS Test, Disabling even depletion will make this easier
- 2) Fill CX25 bins to a level that they are not in a low condition
- 3) Using CVS Test dispense quarters until red LED on CX25 is on.
- 4) Now dispense pennies 5-6 times, make sure red LED is on after each dispense.
- 5) CVS Test will report a status of 30 (coin low)

Fix: COINDISP.asm

Added CX25 command resolve low coin "0x43,0x79" to be sent after each coin dispense command (CX25 only). This command will stir any bin that is in a low coin condition in order to resolve the low coin.

Testing:

Repeat "re-create problem" above, will not see low coin message in step 5.

Watch bins after each dispense and look for a extra stirring of bins to resolve low coin.

Change details:

Added support to allow lane software to dispense while the coin dispenser is in a low coin condition.

This is allowed only for the CX and CX25 hoppers.

Reason for change/reported problem:

When cash counting is enabled the software is expecting to be able to dispense until the dispenser is empty.

Problem detail:

The security module firmware tracks the low coin signal from the coin dispenser.

When a command from the software to dispense coins is received the security module firmware will reject the command but does not re-return a low coin message.

Re-create problem:

This is a software/security module firmware issue, but will describe how to re-create problem using CVS Test.

- 1) Using "US CX25" and CVS Test, Disabling even depletion will make this easier
- 2) Fill CX25 bins to a level that they are not in a low condition
- 3) Using CVS Test dispense quarters until you see a status of 30 (coin low)
- 4) You should not be able to dispense more coins

Fix: COINDISP.asm

Removed code that checks for coin low and blocks command to coin dispenser.

Testing:

- 1) Using "US CX25" and CVS Test, Disabling even depletion will make this easier
- 2) Fill CX25 bins to a level that they are not in a low condition
- 3) Using CVS Test dispense quarters until you see a status of 30 (coin low)
- 4) You should be able to dispense more coins

Change details:

Fixed coin dispenser status request from returning a non-filter low coin message.

Reason for change/reported problem:

Customers using the CX/CX25 coin dispenser are reporting coin low errors even while the unit is full of coins.

Problem details:

When the lane software requests coin dispenser status the security module firmware can occasionally return a non-filtered status value. This non filtered status can report a coin low status before a true coin low condition exists.

Re-create problem:

- 1) Using "US CX25" and CVS Test, Disabling even depletion will make this easier
- 2) Fill CX25 bins to a level that they are not in a low condition
- 3) Using CVS Test dispense quarters until red LED on CX25 is on.
- 4) Press "W" key (Coin dispenser status) normal response will be 00.
- 5) Repeat step 4 until you see status 10 (coin low)

Fix: COINDISP.asm

Fixed code that allowed a non-filtered status message being sent.

Testing:

- 1) Using "US CX25" and CVS Test, Disabling even depletion will make this easier
- 2) Fill CX25 bins to a level that they are not in a low condition
- 3) Using CVS Test dispense quarters until red LED on CX25 is on.
- 4) Press "W" key (Coin dispenser status) normal response will be 00.
- 5) Repeat step 4 you should only see status 00

End of 4.62 *****

 Version 4.61, 10/29/10, Checksum C254, File Name:SCv461.tsk

Updated USB code to fix SB touch problem

- 1) added on power up a USB disconnect/re-connect and PC shutdown 3 seconds repower

2) Fixed repowering of lane when flashing from any version < 4.61

Version 4.60, 10/27/10, Checksum 16ED, File Name:SCv460.tsk
Updated Coin Acceptor timing to allow shorter coin clock pulses.
This update fixes the coin acceptor missing coins.

Version 4.59, 08/12/10, Checksum 167D, File Name:SCv459.tsk
Added support for Checkpoint EAS control. Must use SecModule_Utility 4.12.00
Added support for Linux toggle bit
Removed extra <CR> of Datalogic scanner only and dual cable scanner/scale packets

Version 4.58, 06/21/10, Checksum 4123, File Name:SCv458.tsk
Updated coin dispenser code to retry coin dispenser errors 3 times.

Version 4.57, 04/26/10, Checksum 4C58, File Name:SCv457.tsk
Added code to extend external bus I/O read/write timing.
This opens a larger window for slower PAL chips
Devices connected to PAL chip and use extended timing
Red LED, EPS lights, Conveyor control, Coupon LED, Power control. Lane light, All RS232 devices, USB,
Curtains
Cash pocket

Version 4.56, 01/22/10, Checksum 4B61, File Name:SCv456.tsk
Added Hungary bill and coin support

Bill dispenser cassette ID to note size

B - 500
C - 1000
D - 2000
E - 5000
F - 10000
G - 20000

Bill acceptor bit pattern

0x18 - 500
0x20 - 1000
0x28 - 2000
0x30 - 5000
0x38 - 10000
0x80 - 20000

Coin Acceptor bit pattern

0x01 - 1
0x21 - 2

0x02 - 5
0x03 - 10
0x22 - 20
0x05 - 50
0x06 - 100
0x23 - 200

Version 4.55, 11/24/09, Checksum 3C21, File Name:SCv455.tsk

Updated coin dispenser counting command A9 to hold process until coin dispenser has reported data.
Extended coin dispenser off-line counts
Remove coin dispenser re-try on coin dispense since software is now doing retry and did not complete fix the problem.

Version 4.54, 11/13/09, Checksum xxxx, File Name:SCv454.tsk

Never Released

Version 4.53, 09/23/09, Checksum 1FC7, File Name:SCv453.tsk

Added support for Fujitsu bill dispenser retry(5 times) on error 8200 on bin 2
Added support for coin dispenser retry(1 time) on dispense errors
Fixed cash pocket beeper time-out
Added support for CX25 coin dispenser and coin low problem.
Added support for CX25 to request INI file version

Version 4.52, 08/13/09, Checksum 12A4, File Name:SCv452.tsk

Fixed remote monitoring b1,06 error

Version 4.51, 06/10/09, Checksum 1C53, File Name:SCv451.tsk

Added support for Bulgaria bills and coins.
Added new cassette ID "I" for 2 Leva note

Added support for GS1 barcodes up to 250 bytes long.
this has added new command type 0x07 and 0x08
0x07 = this is a multi-packet type
0x08 = last packet of this type.

Fixed bill dispenser reject count error

Changed Carousel default rounding to .02lbs

Changed Coin Dispenser command A5

Will report
0000 - T-Flex

0100 - Hopper
0201 - CX25/Hopper

Version 4.50, 05/14/09, Checksum DD70, File Name:SCv450.tsk

Added Costco support for top eas light to act as lane light
Added Costco support for all 3 eas lights to flash if lane light is flashing,
If both options are enabled the top eas light will act like the lane light and the bottom 2 will flash
only when the lane light is flashing

Version 4.49, 03/25/09, Checksum 3F5E, File Name:SCv449.tsk

Changed bd_light.asm
Fixed remote monitoring and cash pocket code

changed scalec.asm
Added support in carousel code to lock default E-box values

Version 4.48, 02/04/09, Checksum 80B1, File Name:SCv448.tsk

Restored original SysMon functions.

Changed Coindisp.asm
Added support to config coin dispense coin delay.
This value will be set to the coin dispenser on each power on.
Need SecModule_Utility.exe version 4.11.23

Version 4.47, 01/19/09, Checksum E94A, File Name:SCv447.tsk

Fixed on new EOL security module FTP/RTP sensors from stopping conveyors

Version 4.46, 01/12/09, Checksum 55F4, File Name:SCv446.tsk

Updated firmware to support both current main PCB and new EOL main PCB

Version 4.45, 01/06/09, Checksum 810E, File Name:SCv445.tsk

Changed Curtain.asm
Fixed FP,FTP,RTP sensor initialize problem

Changed Fujitsu.asm
fixed support for bill cash counting

Version 4.44, 10/23/08, Checksum 967F, File Name:SCv444.tsk

Added new coin dispenser function A,9

This function will report by coin type total dispensed

Changed scalec.asm

Changed auto zero value from 6 to 1, this fixes a EBOX bug that would zero up to .75lbs

Now will zero upto .10lbs only.

Changed COINDISP.asm

Fixed problem with T-Flex reporting correct configuration data

Version 4.43, 08/20/08, Checksum 5653, File Name:SCv443.tsk

Changed billacc.asm

Added for Swedish bill (20,50,100,500,1000)

Changed fujitsu.asm

Added support to dispense Swedish bills (20,50,100,500)

Changed Coin_par.asm

Added support for Swedish 10 Kronor coin, reports as 0x25

Changed CoinDisp.asm

added support for 4 bytes to be sent as a dispense command.

this will allow a 19.99 dispense for Sweden.

Version 4.42, 08/08/08, Checksum AE92, File Name:SCv442.tsk

Changed fujitsu.asm

Added support for long delay between status request and dispense request.

If delay was too long system could lose dispense response.

Version 4.41, 04/25/08, Checksum AA9A, File Name:SCv441.tsk

Changed coindisp.asm

Fixed problem with coin hopper and coin low not resetting after coin were added.

Version 4.40, 03/10/08, Checksum AAE1, File Name:SCv440.tsk (NOT RELEASED)

Changed Billacc.asm

Added support for Poland bills (10,20,50,100,200)

Changed fujitsu.asm

Added support for Poland bills (10,20,50,100,200)

Changed Coindisp.asm

Changed coin dispenser error reporting

Before on a failed dispense the security module would report dispenser okay

Then 8-10 seconds later report dispense fail.

Now in 4.40 the security module will not report dispense okay or fail until the dispense is complete.

Version 4.39, 02/25/08, Checksum 5B56, File Name:SCv439.tsk

Changed Coindisp.asm

Added support for coin dispenser status

Added support for config the coin dispenser for low coin enable/disable

Added support for config the coin dispenser for even depletion off/on

Changed JMC.asm

Added support for COstco and all 3 EAS lights acting as the lane light

Changed Bill_Acc.asm

Updated Serbia note ISO code

Changed scalec.asm

Changed firmware update for faster boot-up times.

Version 4.38, 01/02/08, Checksum B894, File Name:SCv438.tsk

Changed: Bill_ACC.ASM

Added support for Serbia notes.

Changed: Fujitsu.asm

Added support for Serbia bills 10,20,50,100 and 500 Dinar

Added support for Croatia 200 and 500

Added support for Euro 200 and 500

Changed Selftest.asm

Added test for security scales error code 6

Version 4.37, 12/12/07, Checksum C5BC, File Name:SCv437.tsk

Changed: RAMCHECK.asm

Fixed problem with curtain break windows initialization

Version 4.36, 11/01/07, Checksum C04E, File Name:SCv436.tsk

Changed: Bill_ACC.ASM

Added support to display both base code and variant version number, if support by MEI's firmware

Changed: scalec.asm

Added support to config E-Box on power-up to filter mode 6 and weight rounding of .05

Added support for new SecModule_Utility.exe functions to config/test E-box and Carousel

Version 4.35, 09/28/07, Checksum 88AA, File Name:SCv435.tsk

Changed: COINDISP.ASM

Fixed off-line error. Old off-line count was set to zero, new count is 5

Version 4.34, 09/10/07, Checksum 844E, File Name:SCv434.tsk

Changed: COINDISP.ASM

Added support to configure the coin dispenser dispense speed.

Default value was 50ms, new value is 2000ms

Security module will set new value on each power-up/reset of the system

Changed: JMC.ASM,CURTAIN.asm

Fixed problem with safety sensor and conveyor moving slightly with each new conveyor command.

Also changed operation of safety sensor and conveyor return to old state after sensors are clear.

Now conveyors will not return to running state after a safety sensor block to clear.

Version 4.33, 08/22/07, Checksum 1714, File Name:SCv433.tsk

Changed: Port6.asm

changed A3 command to include conveyor safety sensors status

format:

aF4HHHHTTTT

aR4HHHHTTTT

aS4<status>

Changed: RugStat.asm

Fixed power down reporting error

Changed: Bill_Acc.asm

Added support to report Application and Variant versions

Changed: CoinDisp.asm

Added support for Model,Firmware Version and Cassette config data

Added support to set cassette config data

Changed: Port5.asm

Added support for above commands

Changed: Port6.asm

Added support for above commands

Version 4.32, 08/13/07, Checksum 2FFB, File Name:SCv432.tsk

Changed: Fujitsu.asm

Changed Canada,Euro,UK,Australia bill parameters as follows

1 - Long/short values to +/- 10mm

Added support for Croatia Bills 5,10,20,50,100 Kuna

Changed: Bill_acc.asm

Added support for Croatia bills 5,10,20,50,100,200,500

See new bit patterns (will require SecModule_Utility.exe version 4.11.6)

Bits 7-5-4-3 Equals

0-0-0-0	None
0-0-0-1	\$1.00
0-0-1-0	\$2.00
0-0-1-1	\$5.00
0-1-0-0	\$10.00
0-1-0-1	\$20.00
0-1-1-0	\$50.00
0-1-1-1	\$100.00
1-0-0-0	\$200.00
1-0-0-1	\$500.00

Changed: Port6.asm

Added support for Open coupon box with no LED on COMmand P,3

Added support for new dump coupon led values command Z,H

Returns z,H,<Status>,<Top array><Bottom Array>

<Status> byte: bit 0:1=Top array low/blocked

bit 1:1=Bottom array low/blocked

<Top array> UWORD: Top array LED value

<Bottom array> UWORD: Bottom LED value

Added support for Sensormatic commands (requires SecModule_Utility.exe version 4.11.6)

X,5 - force enable of controller

X,6 - force disable of controller

Changed: Coupon.asm

To support above Port6 commands

Changed: Coin_par.asm

Added support for the 5 Kuna coin, bit pattern is 0x24

Changed: Sensor.asm

Added support for force turn on and off Sensormatic controller.

Changed: Port5.asm

Allow for 9.99 coin dispense.

Version 4.31, 06/21/07, Checksum 1C4D

Changed: Fujitsu.asm

Changed US bill parameters as follows

1 - Long/short values from 148,162 to 146,166

2 - MAX reject count from 3 to 9

3 - Pick retries from default value 2 to 9

Version 4.30, 04/25/07, Checksum 1C29

Added support for cash device packet tracing.
New packet format: zF<Type><Direction><TTT><Data>

Changed: Port5.asm

Added support for zF tracing

Port0.asm

Added support for enabling/disabling cash tracing

Port6.asm

Added support for enabling/disabling cash tracing

Cashtx.asm

Added support for zF tracing

UTI.asm

Added support for zF tracing and 10ms counter

Defs.asm

Added variables to support tracing

Smod.asm

initialize cash tracing variables, cash tracing is disabled on each security module power on / reset.

Fixed case when curtain emitters may be left on during a red button shutdown, UPS shutdown or flash upload.

Changed: UTI.asm

Fixed red button and UPS shutdown from leaving emitters on during shutdown/restart.

Port0.asm

Fixed flash upload to not leave emitters on during the upload/restart.

Version 4.29, 03/22/07, Checksum 9A9F

Changed: Curtain.asm

Changed front curtain, flat-pack and rear exit sensor so that if saturated by sun it will default to clear

Changed saturated value to 0xff

Support SecModule_Utility.exe version 04.11.01 and set saturation windows function

Changed "aS<status>" command by or'ing the status byte with 0x30.

Changed red LED power off flash rate from 32ms rate to 24ms rate.

Version 4.28, 02/02/07, Checksum 3951

Changed: Curtain.asm

Changed BAF sensor that if saturated by sun it will default to clear

Version 4.27, 02/01/07, Checksum f19f

Fixed problem with remote monitoring and cashless lanes

Changed: Coindisp.asm

on startup set variable coin_dispense_version_length to 0

Changed: Port7.asm

changed open port7 procedure to not send coin dispenser version if length is 0

Version 4.26, 01/29/07, Checksum 0b95

Changed: Curtain.asm

Fixed problem with front/rear transition plate sensors oscillating open/closed
Added delay of 1000ms from open to closed

Changed: Defs.asm

Added delay variable for curtain.asm

Changed UTI.asm

Added support for front/rear transition plate delay

Version 4.25, 01/15/07, Checksum 1532

Changed: Curtain.asm

Added new reporting packet "a,S,<Status>" Conveyor safety sensors status

Changed: Defs.asm

expanded buffer size for bill acceptor and SIO RX.
This fixed the BJ's sensormatic problems
also added lane open/closed status byte

Changed UTI.asm

Added support for quick power off by monitoring USB SOF packets

Changed Sensor.asm

Added support for sensormatic control to only work when both
front conveyor and lane light are on

Version 4.24, 12/18/06, Checksum 8a1f

Changed Port6.asm

fixed possible problems with conveyors turning on/off randomly

Version 4.23, 09/06/06, Checksum 2236

Added support for remote monitoring

Version 4.22 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (08.17.2006)

- This version is built off v4.21 of Baltimore lane code.
- DEFS.ASM, were updated to
slowed down the red led flash rate when the security controller is in
a power down state. It is now 4 times slower then when the on flash rate,
- fujitsu.asm updated to send a capture line for any fujitsu error codes.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with
PLD microcode v2.12 or later.
- Checksum - 63B1

Version 4.21 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (08.03.2006)

- This version is built off v4.20 of Baltimore lane code.
- CURTAIN.ASM, PORT6.ASM, DEFS.ASM, RAMCHECK.ASM were updated to
reduce the break threshold of the Transition Plate Sensors,
Curtain 0.25" Sensor, and Security Conveyor Exit Sensor to 1/2
the clear value as opposed to 3/4. Also, updated to contain
setable features if enabled.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with
PLD microcode v2.12 or later.
- Checksum - 21F6

Version 4.20 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (06.20.2006)

- This version is built off v4.19 of Baltimore lane code.
- SELFTEST.ASM was updated to allow the Baltimore Security
Controller to be functionally tested.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with
PLD microcode v2.12 or later.
- Checksum - 2658

Version 4.19 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (06.08.2006)

- This version is built off v4.18 of Baltimore lane code.
- SCALEC.ASM was changed to allow the firmware version of the
carousel scale be checked.
- FUJIDISP.ASM was changed to update the bill sizes & thicknesses
for AUS bills. Also, changes were made to correct the bug that
induced the system to hold onto bill dispenser errors after the

- error was corrected.
- SELFTEST.ASM was updated to allow the Baltimore Security Controller to be functionally tested.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum - AD26

Version 4.18 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (05.23.2006)

- This version is built off v4.17 of Baltimore lane code.
- SCALEC.ASM was changed to make the filtering on the scale much stricter to try and address issues with the carousel responding erratically as items were placing on the scale. This filter change induces a tradeoff with response time of weights from the scale since as the filter becomes stricter, the weight response time increases.
- FUJIDISP.ASM was changed to update the bill sizes for the UK 20 and the AUS 10.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum - 43AB

Version 4.17 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (05.09.2006)

- This version is built off v4.11 of Baltimore lane code.
- SCALEC.ASM, PORT6.ASM, DEFS.ASM was changed to fix potential issues with carousel scale communication loss and automatic soft resetting of the carousel if the scale does not respond to a maximum of 10 weight requests in a row.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum - 5BDA

Version 4.16 Description (not generally released)

by Jonathan K. Lupton, Chuck Kurtz & James White (xx.xx.2006)

- This version is built off v4.14 of Baltimore lane code.
- Self Test updates for Baltimore.
- This version of Security Controller firmware must be used with

PLD microcode v2.12 or later.

- Checksum -

Version 4.15 Description (not generally released)

by Jonathan K. Lupton, Chuck Kurtz & James White (05.04.2006)

- This version is built off v4.09 of Baltimore lane code.
- CURTAIN.ASM, DEFS.ASM, MACROS.ASM were changed to reduce the transition plate sensitivity to sunlight interference. This change reduces the sensitivity of both transition plate sensors substantially, and is currently only incorporated into this firmware version for a specific customer issue due to sunlight.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum - 6839

Version 4.14 Description (not generally released)

by Jonathan K. Lupton, Chuck Kurtz & James White (xx.xx.2006)

- This version is built off v4.13 of Baltimore lane code.
- Remote Monitoring updates.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum -

Version 4.13 Description (not generally released)

by Jonathan K. Lupton, Chuck Kurtz & James White (xx.xx.2006)

- This version is built off v4.12 of Baltimore lane code.
- Remote Monitoring updates.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum -

Version 4.12 Description (not generally released)

by Jonathan K. Lupton, Chuck Kurtz & James White (xx.xx.2006)

- This version is built off v4.09 of Baltimore lane code.
- First version that incorporated Remote Monitoring.
- This version of Security Controller firmware must be used with

PLD microcode v2.12 or later.

- Checksum -

Version 4.11 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (04.21.2006)

- This version is built off v4.10 of Baltimore lane code.
- FUJIDISP.ASM was updated to fix the bill size tables for the Australian \$5 and UK \$20 that were initially reported incorrectly by Arcatech.
- PROX.ASM, UTI.ASM, PORT6.ASM were updated to add the ability to calibrate the proximity sensor using SecModule_Utility. Using polarization material and a red lens, the proximity sensor can be calibrated to ~2ft. Using only the red lens, the proximity sensor can be calibrated to ~3ft. Version 0.4.10.2 of SecModule_Utility is required to calibrate the proximity sensor.
- SCALEC.ASM, DEFS.ASM, PORT6.ASM were modified so that the latest carousel electronics performed comparable or better than the previous systems.
- CURTAIN.ASM, DEFS.ASM were changed to allow recognition of more odd items, triggering the possible multibreak message to be sent to the Lane Application.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum - C474

Version 4.10 Description (not generally released)

by Jonathan K. Lupton, Chuck Kurtz & James White (03.06.2006)

- This version is built off v4.09 of Baltimore lane code.
- DEFS.ASM, RUGSTAT.ASM, UTI.ASM were changed to incorporate a 800ms beep from the cash pocket buzzer after a short (~1s) Green Button press. Also, after a Red Button press or a 5 second Green Button depression, the cash pocket buzzer emits 2 short 300ms beeps. The beeps occur after a button event message has been sent to the Lane Application.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum - 8BA7

Version 4.09 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (02.15.2006)

- This version is built off v4.08 of Baltimore lane code.
- BILL_ACC.ASM was updated to include bill acceptor reset capability when the acceptor stops responding.
- FUJIDISP.ASM was updated to fix a bill dispenser cycling bug as well as added support for E and F cassettes.
- BILLDISP.ASM was added and FUJIDISP.ASM, SMOD.ASM, PORT5.ASM, BD_LIGHT.ASM were changed in order to support both the Diebold and Fujitsu bill dispensers and cash pocket sensors. This change allows the Security Controller to detect which bill dispenser is supported based on which TOP PCBA is installed in the Security Controller.
- SCALEC.ASM was added and PORT6.ASM, UTI.ASM, SCALE.ASM, DEFS.ASM, WPO.ASM, SMOD.ASM were changed in order to support the carousel security scale.
- PORT0.ASM was updated to fix a number of hidden bugs and to change the blinking speed of the status LED during upload and setup.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum - D8DD

Version 4.08 Description

 by Jonathan K. Lupton, Chuck Kurtz & James White (12.21.2005)

- This version is built off v4.07 of Baltimore lane code.
- COINDISP.ASM was changed to fix a lost dispense command problem and to fix a bug with the soft reset procedure for the hopper.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum - 0AD4

Version 4.07 Description

 by Jonathan K. Lupton, Chuck Kurtz & James White (12.08.2005)

- This version is built off v4.06 of Baltimore lane code.
- COINDISP.ASM, DEFS.ASM were changed to support advanced processing of the hopper low coin warning. The hopper now allows more coins to be dispensed before the low coin warning is given to the lane application. Also, the hopper will now reset itself after the bins are refilled after a low coin warning or after a machine error normally caused by the hopper bin timing out on a dispense.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with

PLD microcode v2.12 or later.

- Checksum - DF3F

Version 4.06 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (11.28.2005)

- This version is built off v4.05 of Baltimore lane code.
- FUJIDISP.ASM, DEFS.ASM were changed to fix the PTR's submitted by the software group with relation to cash machine functionality.
- CURTAIN.ASM, DEFS.ASM were changed to increase the sensitivity of the transition plate sensors, the security conveyor exit sensor, and the front curtain 0.25" sensor. The 0.25" sensor sensitivity was increased so that it would see the same objects as the exit sensor. This was done to allow the Security Controller to recognize a possible multibreak situation in the exit sensor and send a multibreak message to the Item Handler so that the lane can handle oddly shaped items more readily. The dynamic threshold values can be reset with Diags by changing the model of the lane to a 15x and then changing the model back to a 171 lane. This resets all dynamic sensor thresholds, therefore it is necessary that all sensors are clear when the thresholds are reset.
- COINDISP.ASM was changed to increase the wait time before an offline error occurs so that the hopper will not produce errors when dispensing larger numbers of coins.
- PORT6.ASM was changed to send a 'B' at the end of the complete Security Controller version string to identify that the Security Controller was running a Baltimore lane.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum - D4DB

Version 4.05 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (11.04.2005)

- This version is built off v4.04 of Baltimore lane code.
- FUJIDISP.ASM, PORT5.ASM were changed to allow emulation of the Fujitsu TestPoint application that monitors the status of the bill dispenser. FUJIDISP.ASM was also changed to fix EURO 20 length which caused EURO 20's to always reject.
- CURTAIN.ASM, PORT6.ASM, SMOD.ASM, RAMCHECK.ASM were changed to allow support for optical transition plate sensors.
- WPO.ASM, RUGSTAT.ASM were changed to reintroduce support for the Red Button Power Off Button.
- DEFS.ASM was changed to add some memory location constants and

- use some additional registers.
- USB.ASM was updated with new version and string descriptors.
- This version of Security Controller firmware must be used with PLD microcode v2.12 or later.
- Checksum - 111D

Version 4.04 Description

by Jonathan K. Lupton, Chuck Kurtz & James White (09.27.2005)

- This version is built off v4.03 of Baltimore lane code.
- Firmware update code has been changed to allow use of the 64KB of ROM and RAM.
- This and subsequent versions of Security Controller firmware must be used with PLD microcode v2.12 or later.
- PORT0.ASM, the location of the firmware update code, was changed significantly from previous versions to allow for the new upload procedure.
- DEFS.ASM was changed to add some memory location constants.
- USB.ASM was updated with new version and string descriptors.
- SMOD.ASM was changed so that the A16 (P2.5) line for the RAM is set as an output and initialized to logic 0.
- Checksum - 93E8