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| 1. Manufacturer | CashCode |
| 2. Product | GX Bill Validator |
| 3. Interface | CCNET Protocol |
| 4. Coin Acceptor support | G-13 |
| 5. Release Date | 23 Aug 2016 |
| 6. File Name | GXRU1123.cf2 |
| 7. Version | GX-RU1123 |
| 8. CRC in Bill Validator | 8F32 C6E5 |
| 9. Control Firmware | GXC-HOST-000132 |
| 10. Validation Firmware | GXV-RU00-000045 |
| 11. Validation Data | GXD-RU00-000045 |
| 12. Configuration File | GXU-RU01-000009 |
| 13. Notes Supported | Russian Ruble (RUB)
10, 50, 100, 500, 1000, 5000 |
| 14. Bill Set Description | BSD-RUB6-H |
| 15. Note Directions | 4 way |
| 16. Orientation | Downstacker or Upstacker |
| 17. Note Directions | 4 way |
| 18. Memory Device | A minimum of 4GB eMMC nAND FLASH memory |
| 19. Communication Protocol Features | |

- DATA SETTING SPECIFICATION:

BILL TYPE NUMBER	DENOMINATION
0	Reserved
1	Reserved
2	10 RUS
3	50 RUS
4	100 RUS
5	500 RUS
6	1000 RUS
7	5000 RUS
8	1 RUS*
9	2 RUS*
10	5 RUS*
11	10 RUS*

*- a connected G-13 Coin acceptor is required to process these denominations

20. Error Codes

Number of Status Light Flashes		Error Description
Green	Red	
0	1	Drop cassette has been removed
0	2	Recovery Mode that is caused by an error of Firmware set. Acceptance of banknotes is not possible, but firmware update is still possible through USB flash-drive or remotely by serial communication port
0	3	Drop cassette full status
0	4	Drop cassette operation error, e. g. stacker platform is jammed
0	9	Banknote jammed inside validator's bill paths
1	0	Boot error. Firmware storage area (repository) write error
1	1	Firmware updates policy error. Firmware set may be incompatible with customer authentication module
1	2	Validator's Flash memory is corrupt. Acceptance of banknotes is not possible, but firmware update is still possible through USB flash-drive or remotely by serial communication port
1	3	System crash
1	4	Communication problem between GX's mainboard and the upper optical sensor's unit
1	5	Firmware error of the upper optical sensor's unit
1	6	Calibration dataset of the upper optical sensor's unit is broken
1	7	Communication problem between GX's mainboard and the lower optical sensor's unit
1	8	Firmware error of the lower optical sensor's unit
1	9	Calibration dataset of the lower optical sensor's unit is broken
2	0	Boot error. Firmware storage area (repository) Bank 0 write error
2	1	Communication problem between GX's mainboard and the upper peripheral sensor's board
2	2	Firmware error of the upper peripheral sensor's board
2	3	Dielectric sensor error of the upper peripheral sensor's board
2	4	Barcode sensor error of the upper peripheral sensor's board
2	5	Ultraviolet sensor error of the upper peripheral sensor's board
2	6	Anti-stokes sensor error of the upper peripheral sensor's board
2	7	Communication problem between GX's mainboard and the lower peripheral sensor's board
2	8	Firmware error of the lower peripheral sensor's board
2	9	Dielectric sensor error of the lower peripheral sensor's board
3	0	Boot error. Firmware storage area (repository) Bank 0 read error
3	1	Magnetic sensor error of the lower peripheral sensor's board
3	2	Path sensor error of the lower peripheral sensor's board
3	3	Validator's front lid open
3	4	Validator's rear lid open
3	5	Connected USB Flash drive has a problem
3	6	Calibration dataset of the upper peripheral sensor's board is corrupt
3	7	Calibration dataset of the lower peripheral sensor's board is corrupt

VERSION HISTORY of GX-RU1123

GX-RU1123	
Control firmware	GXC-HOST-000132
Changes from previous version	None
Validation firmware	GXV-RU00-000045
Changes from previous version	None
Validation data	GXD-RU00-000045
Changes from previous version	Update of bill validation to adapt and support an improved calibration procedure.
Configuration file	GXU-RU01-000009
Changes from previous version	None

GX-RU1122	
Control firmware	GXC-HOST-000132
Changes from previous version	None
Validation firmware	GXV-RU00-000042
Changes from previous version	None
Validation data	GXD-RU00-000042
Changes from previous version	<ol style="list-style-type: none"> 1. Overall acceptance rate has been improved. 2. Increase of security level.
Configuration file	GXU-RU01-000009
Changes from previous version	None

GX-RU1121	
Control firmware	GXC-HOST-000132
Changes from previous version	<ol style="list-style-type: none"> 1. Internal storage for scanned bill images has been introduced. 2. Firmware update logic has been modified to prevent potential memory collisions during simultaneous updates from a flash stick and remotely from the Host controller. 3. CRC32 reported to the Host is result of calculation across Control, Configuration, Validation and Validation Data modules. 4. Sporadic GX stalls in Initialization state after RESET command have been fixed. 5. Processing of RESET command in BOX REMOVED state has been changed: unit reports INITIALIZING state first and then goes to BOX REMOVED state. 6. Protocol selection by DIP switches has been disabled. CCNET is always enabled. DIP switch 4 can still be used to choose working in standalone mode (without Host). 7. Barcode has been removed from bill table. 8. REQUEST STATISTICS command has been disabled in POWER UP, POWER UP WITH BILL IN CHANNEL and INITIALIZING states in accordance with CCNET specification. 9. Processing of SET BARCODE PARAMETERS has been changed: unit reports INVALID COMMAND rather than ACK. 10. POWER UP WITH BILL IN STACKER state (0x12) has been incorporated. The bill will be stacked with credit message reported. 11. Power recovery has been improved to fix the issue with credit loss in case when power cut event occurred between the moment when bill is stacked in the drop box and the moment when credit message is acknowledged by Host. 12. All bits in masks for Bill Enable, Bill with Escrow (ENABLE BILL TYPE command) and Bills with High Security level (SET SECURITY command) that correspond to unused entries in Bill

	<p>Table are zeroed.</p> <p>13. After insertion of “long” bill made of two or more bills attached with gap GX goes to RETURNING state followed by CHEATED message rather than to JAM state.</p> <p>14. Performance improvement to communication with peripheral boards during bill transportation to prevent device freezing in REJECTING BY OPERATION state. The issue occurred very rarely and could be caused by static discharge from the bill.</p>
Validation firmware	GXV-RU00-000033
Changes from previous version	None
Validation data	GXD-RU00-000033
Changes from previous version	<p>1. Overall acceptance rate has been improved.</p> <p>2. Performance improvement to 500, 1000 and 5000 RUB.</p>
Configuration file	GXU-RU01-000009
Changes from previous version	1. Barcode has been removed from bill table.

GX-RU1119	
Control firmware	GXC-HOST-000114
Changes from previous version	None
Validation firmware	GXV-RU00-000024
Changes from previous version	None
Validation data	GXD-RU00-000024
Changes from previous version	3. Overall acceptance rate has been improved.
Configuration file	GXU-RU01-000008
Changes from previous version	None

GX-RU1118	
Control firmware	GXC-HOST-000114
Changes from previous version	<p>1. Improved processing of capacity channel.</p> <p>2. Performance improvement to the detection of rear lid opening.</p> <p>3. STACKED message (0x81) is sent on the last stacked bill prior to report BOX FULL state (0x41).</p> <p>4.</p>
Validation firmware	GXV-RU00-000023
Changes from previous version	None
Validation data	GXD-RU00-000023
Changes from previous version	1. Overall acceptance rate has been improved.
Configuration file	GXU-RU01-000008
Changes from previous version	None

GX-RU1117	
Control firmware	GXC-HOST-000109
Changes from previous version	Initial release.
Validation firmware	GXV-RU00-000018
Changes from previous version	Initial release.
Validation data	GXD-RU00-000018
Changes from previous version	Initial release for Russian Ruble.
Configuration file	GXU-RU01-000008
Changes from previous version	Initial release.