PICOVEND EZ
MDB to PARALLEL/PULSE interface
v2020-09-11

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I. Introduction

This device allows MDB payment systems to be connected on parallel or pulse systems (vending machines, self service systems, etc.)
Depending on the configuration, the device can be operated in pulse or parallel mode, with 10pin or 16pin standard interface vending machines.
The configuration application is working on any computer and operating system and requires Java 8 JRE/JDK installation.
Also, it requires an USB B cable and for some Windows operating system versions, the driver installation. The driver can be downloaded on our website at:
http://picovend.com/downloads/CH34x_Install_Windows_v3_4.zip

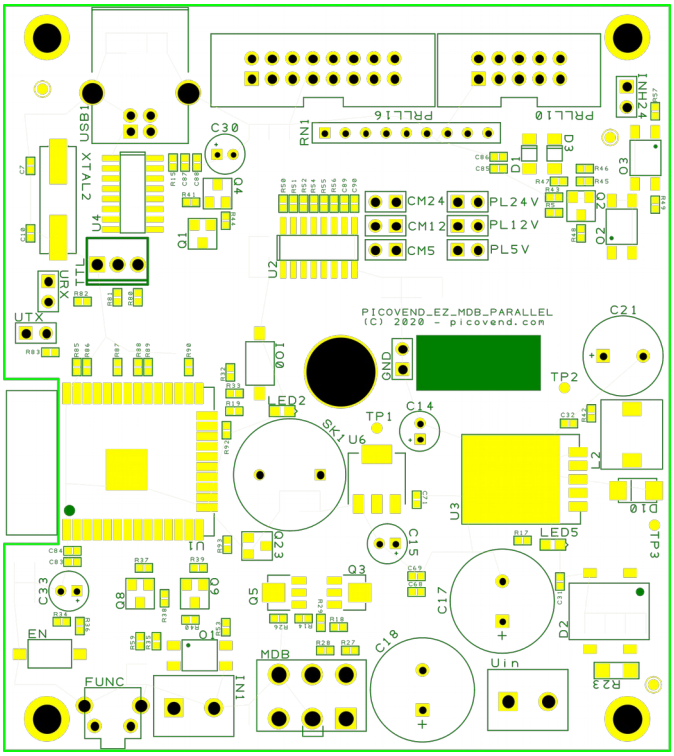
USB B and the flat cables are not included in the package.
Also, the interface can be connected to a computer or to a SBC (like Raspberry Pi) over USB, to send credit from an external application.

Standard package content:
- PICOVEND EZ MDB PARALLEL/PULSE interface

NOTE!!! - this device can handle one MDB bill validatory, one MDB coin acceptor/changer and one MDB cashless devices (Level 2 or Level 3 with always idle cashless device).

II. Hardware

A. Board overview



B. Connectors description

1. Uin – connect your external power supply to this connector in order to power the device and, also, the connected peripherals (MDB payment systems, ccTalk payment systems, etc.). You need to make sure your power supply is matching the connected MDB power requirements (voltage and current). The maximum momentary drained current simultaneously drained from MDB should not exceed 4A.
This interface can be powered with 24VDC or 24VAC, directly from the vending machine power supply.
2. MDB – this connector allows the device interfacing with MDB peripherals (bill validator/recycler, coin acceptor/changer and cashless device);
3. IN1 – is an isolated input, reserved for future options.
4. PRLL16 allows to connect to a 16pin standard parallel interface (24VDC interface) on the vending machine, using a 16 wires flat cable.
- pin #1 – N/C
- pin #2 – N/C
- pin #3 – N/C
- pin #4 – N/C
- pin #5 – N/C
- pin #6 – inhibit
- pin #7 – channel 3
- pin #8 – GND
- pin #9 – channel 4
- pin #10 – channel 5
- pin #11 – channel 6
- pin #12 – channel 2
- pin #13 – channel 1
- pin #14 – N/C
- pin #15 – N/C
- pin #16 – 24VDC

5. PRLL10 - allows to connect to a 10 pin standard parallel interface (12VDC interface) on the vending machine, using a 10 wires flat cable.
- pin #1 – GND
- pin #2 – 12VDC
- pin #3 – channel 5
- pin #4 – channel 6
- pin #5 – N/C
- pin #6 – inhibit
- pin #7 – channel 1
- pin #8 – channel 2
- pin #9 – channel 3
- pin #10 – channel 4

6. FUNC is a button to set the inhibit input mode in field. It will be described below.
7. USB1 connector to use on USB hosts – requires some drivers to install on host, to emulate a virtual serial interface (default baudrate is 115200).
8. CM24 and PL24V – you need to place jumpers on this pins if you are connecting the interface to a 16pin parallel port on a vending machine
9. CM12 and PL12V – you need to place jumpers on this pins if you are connecting the interface to a 10pin parallel port on a vending machine
10. CM5 and PL5V – you need to place jumpers on this pins if you are connecting the interface to a 5V parallel port (such as a microcontroller based board).

C. Communication interface

USB serial interfaces are using same communication parameters:
- baudrate – 115200bps;
- data bits – 8;
- stop bits – 1;
- parity – none;
- flow control – no flow control (either hardware or software).

USB interface is using a driver for Windows OS. For Raspberry Pi (or compatible) and most of the Linux distributions with new kernels, the OS will automatically load the correct kernel modules.

All commands must end with <CR> and <LF> (0x13, 0x10)
Also, all answers have <CR> and <LF> at the end. If you are using non-buffered serial interface reading, make sure your application reads until <LF>.

Sometimes, more than one message will be received (for example, a response to your command and an unsolicited message or an answer with the reason of the command fail). You need to receive the entire message and parse it by checking against all command answers related to your last command and also against all available unsolicited message (see unsolicited messages description below).

III. Using the interface as a simple MDB to parallel/pulse converter

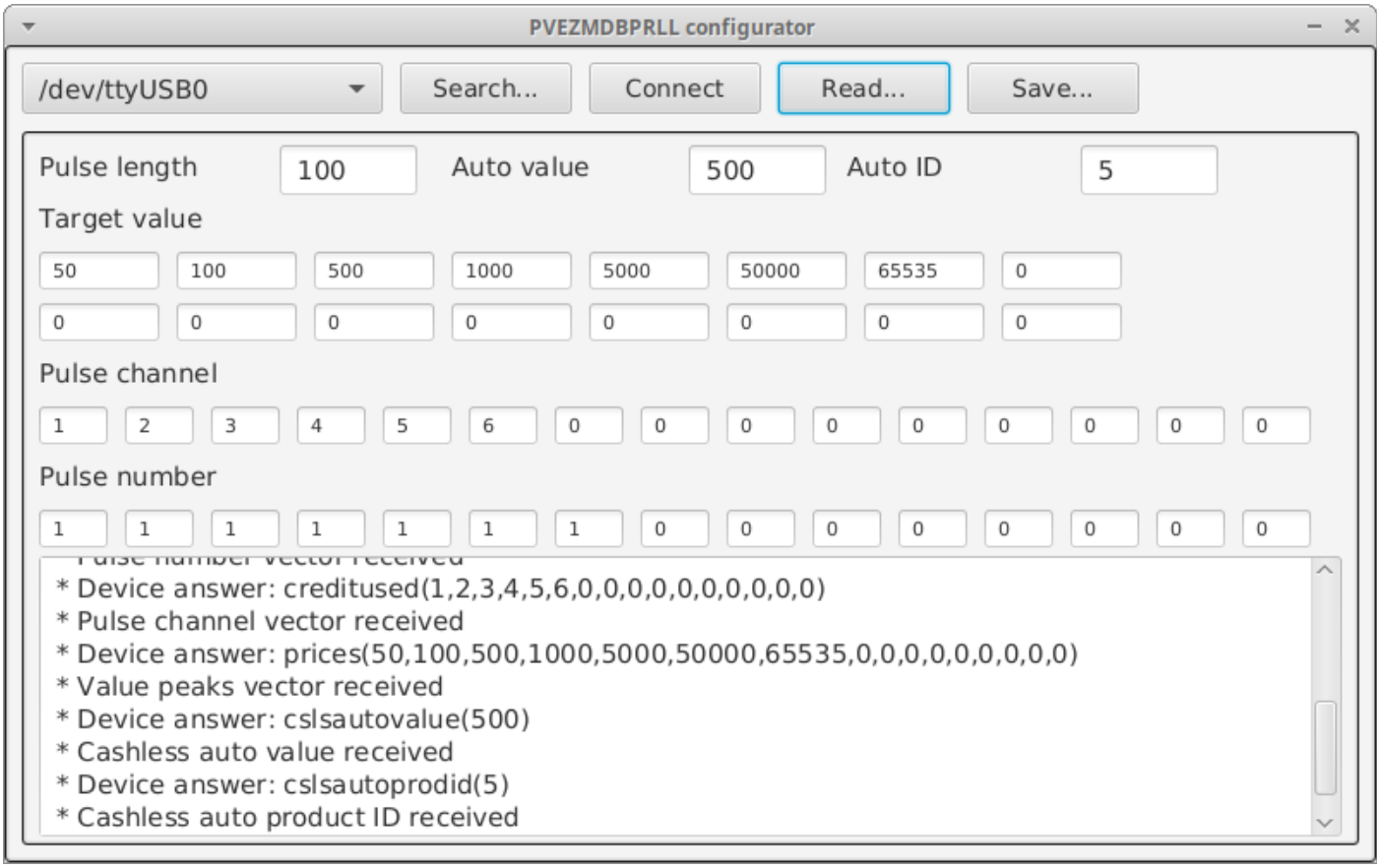
A. Connecting MDB payment systems to 16 pin standard parallel port (24VDC interface).

1. Initial preparations

To connect the interface, first you need to place a a jumper on CM24 and PL24V pins. Then, you need to provide a 16pin flat cable, pin-to-pin, with the desired length and use it to connect the interface to the vending machine.
Connect 24VDC or 24VAC on Uin connector and the desired MDB payment systems. If you apply 24VAC on Uin, make sure that the MDB payment systems are rated to at least 36VDC.
Power up the machine and wait until the machine is ready to operate. Make sure the machine is not in service mode (configuration menu mode).
When the machine is up and running, press the FUNC button. the interface will send a short beep and it will save the current inhibit signal on pin #6 as a level corresponding with payment systems active. Attached MDB payment systems should be active and ready to receive money.

2. Configuring the interface using the configuration software.

Download the configuration application from:
http://picovend.com/downloads/picovend_ez_mdb_parallel_v1.jar
Make sure your system has Java 8 JRE/JDK already installed. You may also use a newer version, but you need to make sure the installed version also supports JavaFX.
Connect an USB B cable between your computer and the interface. Check if the correct driver is installed (on Windows, you can find a COMx port in the device manager).
Launching the application will show an empty screen. Click on “Search button” and wait until the application is showing a list of available serial ports. Select from the combo box the correct serial port and click “Connect” button. After receiving the port open success message, click on “Read” button and wait for the application to finish reading the current configuration.
A screen similar with the below one should appear:



Set the proper values in the desired fields as follows:
- **Pulse length** – is the desired pulse length for parallel/pulse signaling (milliseconds). Default value is 100ms and should work for most of the vending machines. If you set the interface in pulse mode and some pulses are lost bu the vending machine, you may try to slightly increase this value.
- **Auto value** – this value represents the automatic credit request value sent by the interface when it detects a new cashless session (for example, when an RFID key is inserted in the RFID reader. The value is in cents (500 means 5.00EUR). You set this to a value that want to be automatically authorized by the interface and sent to the vending machine.
- **Auto ID** - - this is the ID of the product that will be automatically requested for authorization by the interface when it detects a cashless session. you can set any value here, and it has only statistical purposes (for attached telemetry systems or for fiscal devices).
- **Target value** – represents the accepted denominations/currencies that will trigger one or multiple pulses to the vending machine. The last value should be always 65535. Other value will lead to unexpected results.
- **Pulse channel** – this represents the channel that interface will send one or multiple pulses when a target value is reached.
- **Pulse number** – this represents the number of the pulses that interface will send when a target value is reached.

For the above picture, the settings are representing the following:
- Pulse length – 100ms;
- Auto value and auto ID (when the user's key is detected) the interface will try to authorize a credit of 5.00EUR with the product ID 5;
- Target values – the interface will trigger some pulses when the following targets are reached:
    - 0.50EUR will send one pulse to channel 1
    - 1.00EUR will send one pulse to channel 2
    - 5.00EUR will send one pulse to channel 3
    - 10.00EUR will send one pulse to channel 4
    - 50.00EUR will send one pulse to channel 5
    - 500.00EUR will send one pulse to channel 6

If you want to use the interface in pulse mode (use one channel for all target values) you need to set Pulse channel to the same value (for example 1) and set the proper number of pulses to send for each target value.
For example, you can set all pulse channel values to 1 and for pulse number set as follows:
- for 0.50EUR – 1 pulse
- for 1.00EUR – 2 pulses
- for 5.00EUR – 10 pulses
- etc.

For both parallel or pulse working mode, you need to make sure the validator/coin lines are correctly set in you vending machine configuration menu.

After setting the desired values, click on “Save” button and wait for the confirmation in the lower text box.

Close the configuring application and reset the vending machine (power off/power on).
When the vending machine becomes up and running, your payment systems will be enabled and you are ready to operate it.

B. Connecting MDB payment systems to 10 pin standard parallel port (12VDC interface).

1. Initial preparations

To connect the interface, first you need to place a a jumper on CM12 and PL12V pins. Then, you need to provide a 10pin flat cable, pin-to-pin, with the desired length and use it to connect the interface to the vending machine.
Connect 24VDC or 24VAC on Uin connector and the desired MDB payment systems. If you apply 24VAC on Uin, make sure that the MDB payment systems are rated to at least 36VDC.
Power up the machine and wait until the machine is ready to operate. Make sure the machine is not in service mode (configuration menu mode).
When the machine is up and running, press the FUNC button. the interface will send a short beep and it will save the current inhibit signal on pin #6 as a level corresponding with payment systems active. Attached MDB payment systems should be active and ready to receive money.

2. Configuring the interface using the configuration software.

This task is identical with the one on chapter III.A.2. Please check this chapter to get the desired information.

IV. Communication protocol

This chapter refers only if you want to use the interface connected to a computer or a SBC like Raspberry Pi. If you are using this interface to simply attach MDB payment systems on a parallel/pulse vending machine, you may stop reading this manual here. Continue reading this manual if you are planning to develop your own application to send credit and manage peripherals.

A. MDB master related commands and answers

Commands are case-sensitive and you must use all upper case or all lower case for a command. No mixed characters accepted.
For simplicity, we will only use upper case in our documentation.
Answers are always upper case.

B. Bill validator/recycler related commands

1. Reset bill validator

Command	
BILLRESET	This command will reset the bill validator. The interface will automatically initialize the bill validator again and your application needs to enable or selective enable it do make it available for receiving bills. After issuing this command, you will receive some unsolicited messages while the interface is initializing the bill validator. You may receive the following messages: - BILLSTACKNOTFULL(X) - BILLREADY - BILLOK Please check the unsolicited messages information below in the “Interface unsolicited messages” section.
Possible answers	
- BILLRESETFAIL	- If the bill validator could not be reset when the BILLRESET is received, you will receive this answer. Possible reasons (but not limited to those) could be: bill validator was not initialized, bill validator already disabled, MDB communication error, etc.
- BILLRESETOK	- If the command is correctly received and interpreted by the interface.

2. Get last 10 bill status codes

Command	
BILLSTATUS?	This command will ask for the last 10 bill validator status codes. You application can use this to periodically ask the bill validator status, if it missed some unsolicited messages.
Possible answers	
- BILLSTATUS(A,B,C,D,E,F,G,H,I,J)	- A to J are some byte values, corresponding with the bill validator status bytes received on bill poll. You need to check with MDB documentation for the bytes interpretation. For example, 8 means “cashbox removed”. This vector is a FIFO loop and you may need to read it periodically.

3. Check if the bill validator was initialized by the interface

Command	
BILLINITED?	This command will check if the bill validator was initialized by the interface after power-up or after issuing BILLRESET command
Possible answers	
- BILLINITEDOK - BILLNOTINITED	- The bill validator was successfully initialized - The bill validator was not initialized (missing or not initialized, yet).

4. Check if the bill validator was enabled

Command	
BILLACTIVE?	This command will check if the bill validator was previously activated by a BILLENABLE or a BILLSELECTENABLE command.
Possible answers	
- BILLACTIVEOK - BILLNOTACTIVE	- The bill validator is currently enabled - The bill validator is not currently enabled

5. Get the bill validator configured bills values

Command	
BILLVALUES?	This command will read the bill validator configured bills values. This vector is read during automatic bill validator initialization phase, after a power-up or after issuing BILLRESET command.
Possible answers	
- BILLVALUES(A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P)	- A to P are the scaled values of the bills recognized and accepted by the bill validator. You can use this to obtain necessary information for selective bill activation in order to avoid accepting bills values higher thatn the maximum accepted credit.
- BILLNOTINITED	- The bill validator was not previously initialized and the bills values information is not available.

6. Get the bill validator information

Command	
BILLINFOREQ?	This command will read the bill validator information for statistics and payment systems inventory tracking. This information is read during automatic bill validator initialization phase, after a power-up or after issuing BILLRESET command.
Possible answers	
- BILLINFOREQ(A,B,C)	- A is the bill validator manufacturer code, fixed length – 3 characters (ASCII) - B is the bill validator internal serial number, fixed length, 12 characters (ASCII) - C is the bill validator internal model number, fixed length, 12 characters (ASCII)
- BILLNOTINITED	- The bill validator was not previously initialized and the information is not available

7. Get the bill validator settings

Command	
BILLSETTINGS?	This command will read the bill validator settings. This information is read during automatic bill validator initialization phase, after a power-up or after issuing BILLRESET command.
Possible answers	
- BILLSETTINGS(A,B,C,D,E,F)	- A is the bill validator feature level (decimal) - B is the bill validator country code (HEX) - C is the bill validator scaling factor (decimal) - D is the bill validator decimal places (decimal) - E is the bill validator stacker capacity (decimal) - F is the bill validator escrow support (1 if the bill validator supports escrow function or 0 if the bill validator does not support escrow function)
- BILLNOTINITED	- The bill validator was not previously initialized and the information is not available

8. Get the bill recycler bill type values

Command	
RECYCLERBILLS?	This command will read the bill recycler accepted bills values. This information is read during automatic bill recycler initialization phase, after a power-up or after issuing BILLRESET command.
Possible answers	
- RECYCLERBILLS(A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P)	- A to P is the flag for the bills that the bill recycler can recycle (can give back to the customers for payout/change). If the value is 0, the corresponding bill value is not available for recycling. If the value is 1, the recycler can use the corresponding bill For recycling. Use BILLVALUES to obtain the real bills value.
- BILLNOTINITED	- The bill validator was not previously initialized and the information is not available

9. Get the bills set for recycling by the user application

Command	
RECYCLERSETBILLS?	This command will read the bills enabled for recycling, by the user application
Possible answers	
- RECYCLERSETBILLS(A,B,C,D,E,F,G,H,I,J,K,L, M,N,O,P)	- A to P is the value for recycling mode: - 0 – this bill is not enabled for recycling; - 1 – only high quality bills are enabled for recycling; - 2 – only high and medium bills are enabled for recycling; - 3 – use all possible bills for recycling (this is the recommended option)

10. Set the bills set for recycling by the user application

Command	
RECYCLERSETBILLS(A,B,C,D,E,F,G,H,I,J,K,L, M,N,O,P)	This command will set the bills enabled for recycling, by the user application - A to P is the value for recycling mode: - 0 – this bill is not enabled for recycling; - 1 – only high quality bills are enabled for recycling; - 2 – only high and medium bills are enabled for recycling; - 3 – use all possible bills for recycling (this is the recommended option)
Possible answers	
- RECYCLERSETBILLSOK	- The bill enabled for recycling were successfully set.

11. Get tot total value of bills available for recycling

Command	
RECYCLERSTOCKVALUE?	This command will read the total value of the bill available for recycling in the bill recycler
Possible answers	
- RECYCLERSTOCKVALUE(X)	- X is total value of the bills available for recycling in the bill recycler

12. Dispense bills as a change to customer

Command	
BILLDISPENSEVALUE(X)	This command will start the bill dispensing operation. - X is the value that bill recycler should dispense to the customer.
Possible answers	
- BILLDISPENSEVALUEOK - BILLDISPENSEVALUEFAIL	- If the command is successfully sent to the bill recycler - If the command fails while sending to recycler

13. Get current bill stacker status

Command	
BILLSTACKER?	This command will read the current bill stacker status
Possible answers	
- BILLSTACKER(X) - BILLSTACKEROK - BILLSTACKERFAIL	- X is the number of bills currently in the bill validator stacker. - If the command is successfully sent to the bill validator. - If the command fails while sending to the bill validator.

C. Coin acceptor/changer related commands

1. Reset coin acceptor

Command	
COINRESET	This command will reset the coin acceptor/changer. The interface will automatically initialize the coin acceptor/changer again and your application needs to enable or selective enable it do make it available for receiving coins. After issuing this command, you will receive some unsolicited messages while the interface is initializing the bill validator. You may receive the following messages: - COINREADY - COINOK Please check the unsolicited messages information below in the “Interface unsolicited messages” section.
Possible answers	
- COINRESETFAIL	- If the coin acceptor/changer could not be reset when the COINRESET is received, you will receive this answer. Possible reasons (but not limited to those) could be: coin acceptor was not initialized, coin acceptor already disabled, MDB communication error, etc.
- COINRESETOK	- If the command is correctly received and interpreted by the interface.

2. Get total value of coins in tubes (for coin changers only)

Command	
COINTBSTATUS?	This command will get the total coins value in changer’s tubes. For changers with more than 255 same type coins on a tube or multiple tubes, the changer always returns 255 for a tube. Do not use this command for inventory management.
Possible answers	
- COINTBSTATUS(X)	- X is the total scaled value of the coins in the coin changer tubes.
- COINTBSTATUSOK	- If the command is correctly received and interpreted by the interface.
- COINTBSTATUSFAIL	- If the command was not correctly received and interpreted by the interface.

3. Dispense some coins (change) to the customer – obsolete, try to use COINAP command whenever the coin acceptor/changer supports it.

Command	
COINDISPENSE(X)	This command will start coin dispensing for the X value (for example, COINDISPENSE(120) will dispense 1.20EUR. Use this command instead of COINDISPENSE whenever the coin changer is supporting it.
Possible answers	
- COINDISPENSEOK	- If the command is correctly received and interpreted by the interface and, also, the changer managed to successfully or not dispensed the coins
- COINPAYBUSY	- You will receive this message until the changer manages to return the entire amount or fails for some reason (not enough change,
- COINDISPENSEFAIL	- If the command was not correctly received and interpreted by the interface or if the changer is returning an error.
- REMAINING(X)	- X is the total value that could not be dispensed by the changer (due to an internal error, missing coins stock, etc.)

4. Dispense some coins using MDB alternative payout method

Command	
COINAP(X)	This command will start coin dispensing for the X value (for example, COINDISPENSE(120) will dispense 1.20EUR. This command is obsolete end you must use COINAP instead it the coin changer supports it. Using this command is much slower than the COINAP command since it will dispense one coin at a time.
Possible answers	
- COINAPOK	- If the command is correctly received and interpreted by the interface and, also, the changer managed to successfully or not dispensed the coins
- COINPAYBUSY	- You will receive this message until the changer manages to return the entire amount or fails for some reason (not enough change,
- COINAPFAIL	- If the command was not correctly received and interpreted by the interface or if the changer is returning an error.
- REMAINING(X)	- X is the total value that could not be dispensed by the changer (due to an internal error, missing coins stock, etc.)

5. Check if the coin acceptor/changer was initialized by the interface

Command	
COININITED?	This command will check if the coin acceptor was initialized by the interface after power-up or after issuing COINRESET command
Possible answers	
- COININITEDOK - COINOTINITED	- The bill validator was successfully initialized - The bill validator was not initialized (missing or not initialized, yet).

6. Check if the coin acceptor/changer was enabled

Command	
COINACTIVE?	This command will check if the coin acceptor/changer was previously activated by a COINENABLE or a COINSELECTENABLE command.
Possible answers	
- COINACTIVEOK - COINNOTACTIVE	- The coin acceptor/changer is currently enabled - The coin acceptor/changer is not currently enabled

7. Get last 10 coin acceptor/changer codes

Command	
COINSTATUS?	This command will ask for the last 10 coin acceptor/changer status codes. You application can use this to periodically ask the coin acceptor/changer status, if it missed some unsolicited messages.
Possible answers	
- COINSTATUS(A,B,C,D,E,F,G,H,I,J)	- A to J are some byte values, corresponding with the coin acceptor/changer status bytes received on coin poll. You need to check with MDB documentation for the bytes interpretation. For example, 7 means “tube jam”. This vector is a FIFO loop and you may need to read it periodically.

8. Get the coin acceptor/changer configured coins values

Command	
COINVALUES?	This command will read the coin acceptor/changer configured coins values. This vector is read during automatic coin validator initialization phase, after a power-up or after issuing COINRESET command.
Possible answers	
- COINVALUES(A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P)	- A to P are the scaled values of the coins recognized and accepted by the coin acceptor/changer. You can use this to obtain necessary information for selective coin activation in order to avoid accepting coins values higher than the maximum accepted credit.
- COINNOTINITED	- The coin acceptor/changer was not previously initialized and the coins values information is not available.

9. Get the coin acceptor/changer information

Command	
COININFOREQ?	This command will read the coin acceptor/changer information for statistics and payment systems inventory tracking. This information is read during automatic coin acceptor/changer initialization phase, after a power-up or after issuing COINRESET command.
Possible answers	
- COININFOREQ(A,B,C)	- A is the coin acceptor/changer manufacturer code, fixed length – 3 characters (ASCII) - B is the coin acceptor/changer internal serial number, fixed length, 12 characters (ASCII) - C is the coin acceptor/changer internal model number, fixed length, 12 characters (ASCII)
- COINNOTINITED	- The coin acceptor was not previously initialized and the information is not available

10. Get the coin acceptor/changer settings

Command	
COINSETTINGS?	This command will read the bill validator settings. This information is read during automatic bill validator initialization phase, after a power-up or after issuing COINRESET command.
Possible answers	
- COINSETTINGS(A,B,C,D,E,F,G,H,I,J,K,L, M,N,O,P,Q,R,S)	- A is the coin acceptor feature level (decimal) - B is the coin acceptor country code (HEX) - C is the coin acceptor scaling factor (decimal) - D is the coin acceptor decimal places (decimal) - E to S are tube flags. Each coin type where the corresponding flag is set to 1, can be stored in changer's tubes and used for change. Each coin type where the corresponding flag is 0, cannot be stored in changer's tubes.
- COINNOTINITED	- The coin acceptor/changer was not previously initialized and the information is not available

11. Get the token values

Command	
TOKENVALUES?	This command will read coin tokens set into the interface memory.
Possible answers	
- TOKENVALUES(A,B,C,D,E,F,G,H,I,J,K,L, M,N,O,P)	- A to P are the value set for each token. These values are used if you have connected a coin acceptor/changer that is sending 0XFF for coin values if a token is accepted. You don't need to use ththat if your coin acceptor/changer is directly reporting the token value.
- COINNOTINITED	- The coin acceptor/changer was not previously initialized and the information is not available

12. Set the token values

Command	
- TOKENVALUES(A,B,C,D,E,F,G,H,I,J,K,L, M,N,O,P)	This command will set the token values in the interface. - A to P are the value set for each token. These values are used if you have connected a coin acceptor/changer that is sending 0xFF for coin values if a token is accepted. You don't need to use ththat if your coin acceptor/changer is directly reporting the token value.
Possible answers	
- TOKENVALUESOK - COINNOTINITED	- The coin acceptor/changer have been set. - The coin acceptor/changer was not previously initialized and you cannot set this value.

D. Cashless related commands

1. Reset cashless device

Command	
CSLSRESET	This command will reset the cashless device After issuing this command, you will receive some unsolicited messages while the interface is initializing the cashless device. You may receive the following messages: - CSLSREADY - CSLSOK Please check the unsolicited messages information below in the “Interface unsolicited messages” section.
Possible answers	
- CSLSRESETFAIL	- If the cashless device could not be reset when the CSLSRESET is received, you will receive this answer. Possible reasons (but not limited to those) could be: cashless device was not initialized, MDB communication error, etc.
- CSLSRESETOK	- If the command is correctly received and interpreted by the interface.

2. Request cashless current revalue limit

Command	
CSLSREVALLIMITREQ?	This command will read the current revalue limit.
Possible answers	
- CSLSREVALLIMIT(X)	- X is the maximum revalue amount accepted by the cashless device for further CSLSREVALREQ (cashless revalue request) command.
- CSLSNOSESSION	- Cashless device is not in session so, the revalue is not available.
- CSLSNOREVALSUPPORT	- If the cashless device or media does not support revalue command
- CSLSREVALLIMITFAIL	- Revalue limit request command was not successfully excuted.

3. Request approval for a vend

Command	
CSLSVNDREQ(A,B)	This command will request a vend approval from the cashless device - A is the scaled price (16bit value maximum) - B is the item ID/selection number (16bit value maximum)
Possible answers	
- CSLSNOSESSION	- You will receive this answer if you are requesting for a vend approval and the cashless device is Level 2 or Level 3 without Always Idle support and a cashless session is not opened.
- CSLSVNDREQOK	- If the interface successfully received and parsed the command.
- CSLSVNDREQFAIL	- If the interface was not able to successfully receive and parse the command.

4. Confirm a success vend to the cashless device

Command	
CSLSVNDSUCC(A)	This command will confirm the product dispensing was successful - A is the item ID/selection number (16bit value maximum) that was successfully dispensed
Possible answers	
- CSLSNOSESSION	- You will receive this answer if you are trying to send ca vend success in a stage that is not expecting this command
- CSLSVNDSUCCOK	- If the interface successfully received and parsed the command.
- CSLSVNDSUCCFAIL	- If the interface was not able to successfully receive and parse the command.

5. Report a vend failure to the cashless device

Command	
CSLSVNNDFAIL	This command will report a vend failure to the cashless device. Usually, the cashless device must restore funds to the customer's account.
Possible answers	
- CSLSNOSESSION	- You will receive this answer if you are trying to send ca vend failure in a stage that is not expecting this command
- CSLSVNDFAILOK	- If the interface successfully received and parsed the command.
- CSLSVNDFAILFAIL	- If the interface was not able to successfully receive and parse the command.

6. Report a cash sale to the cashless device

Command	
CSLSCASHSALE(A,B)	This command will report a cash sale to the cashless device. This is used for statistic purposes and not all cashless devices may recognize this command. You should test with the cashless device prior to use that. - A is the scaled price (16bit value maximum) - B is the item ID/selection number (16bit value maximum)
Possible answers	
- CSLSNOCASHSALESUPPORT	- You will receive this answer if you are trying to send a cashless cash sale command, but the cashless device is not supporting this sale subcommand.
- CSLSCASHSALEOK	- If the interface successfully received and parsed the command.
- CSLSCASHSALEFAIL	- If the interface was not able to successfully receive and parse the command.

7. Send a revalue request (the customer's account amount refill)

Command	
CSLSREVALREQ(A)	This command will add some amount to customer's account. - A is the scaled amount your application needs to add to customer's account (16bit value maximum)
Possible answers	
- CSLSNOREVALSUPPORT	- You will receive this answer if you are trying to send a cashless revalue command, but the cashless device is not supporting revalue (is not able to load the amount to the customer's account)
- CSLSNOSESSION	- If there is no cashless session opened, the cashless device will not be able to load any amount to customer's account.
- CSLSREVALOVER	- The specified amount exceeds the cashless maximum revalue capacity for the current session.
- CSLSREVALREQOK	- If the interface successfully received and parsed the command.
- CSLSREVALREQFAIL	- If the interface was not able to successfully receive and parse the command.

8. Get last 10 cashless device codes

Command	
CSLSSTATUS?	This command will ask for the last 10 cashless device status codes. You application can use this to periodically ask the cashless device status, if it missed some unsolicited messages.
Possible answers	
- CSLSSTATUS(A,B,C,D,E,F,G,H,I,J)	- A to J are some byte values, corresponding with the cashless device status bytes received on cashless poll. You need to check with MDB documentation for the bytes interpretation. For example, 8 means "cashbox removed". This vector is a FIFO loop and you may need to read it periodically.

9. Check if the cashless device was initialized by the interface

Command	
CSLSINITED?	This command will check if the cashless device was initialized by the interface after power-up or after issuing CSLSRESET command
Possible answers	
- CSLSINITEDOK - CSLSNOTINITED	- The cashless device was successfully initialized - The cashless device was not initialized (missing or not initialized, yet).

10. Check if the cashless device was enabled

Command	
CSLSACTIVE?	This command will check if the cashless was previously activated by a CSLSENABLE.
Possible answers	
- CSLSACTIVEOK - CSLSNOTACTIVE	- The cashless device is currently enabled - The cashless device is not currently enabled

11. Get the cashless device information

Command	
CSLSINFOREQ?	This command will read the cashless device information for statistics and payment systems inventory tracking. This information is read during automatic coin acceptor/changer initialization phase, after a power-up or after issuing CSLSRESET command.
Possible answers	
- CSLSINFOREQ(A,B,C)	- A is the cashless device manufacturer code, fixed length – 3 characters (ASCII) - B is the cashless device internal serial number, fixed length, 12 characters (ASCII) - C is the cashless device internal model number, fixed length, 12 characters (ASCII)
- CSLSNOTINITED	- The cashless device was not previously initialized and the information is not available

12. Get the cashless device settings

Command	
CSLSSETTINGS?	This command will read the cashless device settings. This information is read during automatic cashless device initialization phase, after a power-up or after issuing CSLSRESET command.
Possible answers	
- CSLSSETTINGS(A,B,C,D,E,F)	- A is the cashless device feature level (decimal) - B is the cashless device country code (HEX) - C is the cashless device scaling factor (decimal) - D is the cashless device decimal places (decimal) - E is the cashless device maximum application time (decimal) - F is the cashless device option bits as described in the MDB specifications: - b0 – if set, the payment media is able to accept revalue command; - b1 – if set, the cashless device is multivend capable; - b2 – if set, the cashless device has it's own display; - b3 – if set, the cashless device is supporting cash sale reporting
- CSLSNOTINITED	- The bill cashless device was not previously initialized and the information is not available

E. Interface (VMC) system related commands

1. Get VMC settings

Command	
VMCSETTINGS?	This command will read interface internal settings.
Possible answers	
- VMCSETTINGS(A,B,C,D)	- A is the VMC configured feature level (this interface can only work as a Level 2 and level 3 VMC) - B is number of characters on display/columns (maximum 16). If this value is set to 0, the VMC will inform cashless devices that it is not supporting display messages. - C is the number of rows on display - D is the display type, according to MDB specifications, cashless display message section.

2. Set VMC settings

Command	
- VMCSETTINGS(A,B,C,D)	This command will set interface internal settings - A is the VMC configured feature level (this interface can only work as a Level 2 and level 3 VMC) - B is number of characters on display/columns (maximum 16). If this value is set to 0, the VMC will inform cashless devices that it is not supporting display messages. - C is the number of rows on display - D is the display type, according to MDB specifications, cashless display message section.
Possible answers	
- FTLVLERROR - VMCSETTINGSOK	- The VMC feature level you mentioned in parameters is invalid. - Command correctly received and parsed.

3. Set VMC manufacturer code

Command	
- VMCSETMFCODE(AAA)	This command will set interface internal manufacturer code that it is reporting to cashless device during automated initialization phase. - AAA is a fixed length, 3 characters (ASCII) value
Possible answers	
- VMCSETMFCODEERR1 - VMCSETMFCODEOK	- The VMC manufacturer code length you mentioned as a parameter is invalid. - Command correctly received and parsed.

4. Set VMC internal serial number

Command	
- VMCSETSN(AAAAAAAAAAAA)	This command will set interface internal serial number that it is reporting to cashless device during automated initialization phase. - AAAAAAAAAAAA is a fixed length, 12 characters (ASCII) value
Possible answers	
- VMCSETSNERR1 - VMCSETSNOK	- The VMC interface serial number length you mentioned as a parameter is invalid. - Command correctly received and parsed.

5. Set VMC internal model number

Command	
- VMCSETMN(AAAAAAAAAAAA)	This command will set interface internal model number that it is reporting to cashless device during automated initialization phase. - AAAAAAAAAAAA is a fixed length, 12 characters (ASCII) value
Possible answers	
- VMCSETMNERR1 - VMCSETMNOK	- The VMC interface model number length you mentioned as a parameter is invalid. - Command correctly received and parsed.

6. Interface reboot

Command	
- SYSRESET	This command will force interface reboot after 3 seconds.
Possible answers	
- SYSRESETOK	- The interface correctly received and parsed the command.

7. Check if the interface is up and running

Command	
- ALIVE?	This command will request a simple ACK response from the interface, in order to check it is normally working.
Possible answers	
- ALIVEACK	- The interface correctly received the message and is running.

8. Save settings

Command	
- SAVESETTINGS	This command will save modified settings to the non-volatile memory. You must use this command after you modify at least one of the interface settings.
Possible answers	
- SAVESETTINGSOK - SAVESETTINGSFAIL	- If the interface successfully saved the settings to the non-volatile memory. - If the interface failed to save settings to non-volatile memory.

9. Load settings

Command	
- LOADSETTINGS	This command will force loading settings. It is also automatically executed on power-up.
Possible answers	
- LOADSETTINGSOK - DEFAULTSETTINGS - LOADSETTINGSFAIL	- If the interface failed to save settings to non-volatile memory. This command will return the results of the following commands, together: - VMCSETTINGS? - VMCINFOREQ? - RECYCLERSETBILLS? - TOKENVALUES? Also, it will return VMCSWVER(A,B) – the internal software version, major an minor release - If the settings file is not available. - If the settings file could not be read.

10. Factory reset

Command	
- FACTORYRESET	This command will force a complete erasure of all settings and parameters. The interface will reboot after 3 seconds and will load the default (factory) settings.
Possible answers	
- FACTORYRESETOK - FACTORYRESETFAIL	- If the command was successfully received and executed. - If the command was not successfully received and executed.

11. Sending credit to the vending machine (pulse/parallel)

Command	
- REMOTECASH(X)	This command will send one or more pulses to the vending machine, according to the configuration send using the configuring application. X must match one of the target values. Using a value that is not configured as target value can lead to an unexpected result.
Possible answers	
- REMOTECASHOK - REMOTECASHFAIL	- If the command was successfully received and executed. - If the command was not successfully received and executed.

IV. Unsolicited messages

Unsolicited messages are messages that are coming as a result of the payment systems activity and not as a result of a command from your application. They may occur at any moment so your application is responsible to constantly listen on the serial or USB interface, parse unsolicited messages and react accordingly.

1. Bill validator just reset time exceeded

Message	Description
BILLJRESETEXCEED	- The interface failed waiting for reset message from the bill validator. It will automatically reset all validator related variables and start sending bill reset message.

2. Bill validator setup time exceeded

Message	Description
BILLSETUPEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB BILL SETUP command. It will automatically restore all validator related variables and start sending bill reset message to retry the bill initialization operation.

3. Bill validator expansion ID time exceeded

Message	Description
BILLEXPIDEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB BILL EXPANSION ID command. It will automatically restore all validator related variables and start sending bill reset message to retry the bill initialization operation.

4. Bill validator expansion ID with options time exceeded

Message	Description
BILLEXPIDOPTEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB BILL EXPANSION ID WITH OPTIONS command. It will automatically restore all validator related variables and start sending bill reset message to retry the bill initialization operation.

5. Bill validator optional feature enable time exceeded

Message	Description
BILLENOPTFEATEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB BILL OPTIONAL FEATURES ENABLE command. It will automatically restore all validator related variables and start sending bill reset message to retry the bill initialization operation.

6. Bill validator with recycling support has been identified

Message	Description
BILLHASRECYCLER	- The interface identified a bill validator with recycling support during bill initialization phase.

7. Interface will try to enable the recycling support

Message	Description
BILLTRYENRECYCLER	- The interface will perform needed operations in order to enable bill recycling support for the bill validator/recycler

8. Bill recycler setup time exceeded

Message	Description
BILLRECYCLERSETUPEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB BILL RECYCLER SETUP command. It will automatically restore all validator related variables and start sending bill reset message to retry the bill initialization operation.

9. Bill device has no support to recycler any known bills

Message	Description
BILLNOAVAILRECYCLINGBILLS	- The bill validator does not support recycling for any of the known (configured) bills.

10. Bill recycler enabling time exceeded

Message	Description
BILLRECYCLERENEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB BILL RECYCLER ENABLED command. It will automatically restore all validator related variables and start sending bill reset message to retry the bill initialization operation.

11. Bill recycler enabling failed

Message	Description
BILLRECYCLERENFAIL	- The interface failed to enable the bill recycler functions.

12. Bill recycler function successfully enabled

Message	Description
BILLRECYCLERONOK	- The interface failed to enable the bill recycler functions.

13. Bill recycler answered with a NAK on enable function

Message	Description
BILLRECYCLERENACK	- The interface received a NAK while trying to enable bill recycler functions. It will retry until the bill recyler will correctly answer or until the retry time exceed.

14. Bill recycler reading dispense status time exceeded

Message	Description
BILLDISPENSESTATEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB BILL RECYCLER DISPENSE STATUS command. It will automatically restore all validator related variables and start sending bill reset message to retry the bill initialization operation.

15. Bill recycler reading dispense status returned a NAK

Message	Description
BILLDISPENSESTATNAK	- The interface received a NAK while trying to obtain a dispense status. It will retry until the bill recycler will correctly answer or until the retry time exceed.

16. Bill recycler reading dispense status returned an ACK

Message	Description
BILLDISPENSESTATACK	- The interface received a simple ACK while trying to obtain a dispense status. It will retry until the bill recycler will correctly answer or until the retry time exceed.

17. Bill recycler reading dispense status returned an ACK

Message	Description
BILLDISPENSESTATACK	- The interface received a simple ACK while trying to obtain a dispense status. It will retry until the bill recycler will correctly answer or until the retry time exceed.

18. Bill recycler remaining stock value

Message	Description
RECYCLERSTOCKVALUE(X)	- X is the scaled total bills value remaining for recycling after the bill recycler finished dispensing bills.

19. Bill dispensing command time exceed

Message	Description
BILLDISPENSEVALUEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB BILL RECYCLER DISPENSE command. It will automatically restore all validator related variables and start sending bill reset message to retry the bill initialization operation.

20. Bill dispensing command time exceed

Message	Description
BILLDISPENSETOTAL(X)	- X is the scaled total value of the bills to dispense

21. Bill dispensing command time exceed

Message	Description
BILLDISPENSED(X)	- X is the scaled total value of the dispensed bills.

22. Bill stacker status command time exceeded

Message	Description
BILLSTACKEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB BILL STACKER command. It will automatically restore all validator related variables and start sending bill reset message to retry the bill initialization operation.

23. Bill stacker status – stacker full

Message	Description
BILLSTACKFULL(X)	- X is the number of the bills in the bill validator stacker and the stacker is reported full.

24. Bill stacker status – stacker not full

Message	Description
BILLSTACKNOTFULL(X)	- X is the number of the bills in the bill validator stacker and the stacker is not full, yet.

25. Bill is not ready

Message	Description
BILLNOTREADY	- Bill validator/recycler is not ready to execute the last received command, probably because it was not initialized, enabled or it’s current status does not allow this command.

26. Bill validator/recycler failed to answer on poll command

Message	Description
BILLPOLLEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB BILL POLL command. It will automatically restore all validator related variables and start sending bill reset message to retry the bill initialization operation.

27. Bill validator – one bill stacked

Message	Description
BILLSTACKED(A,B,C)	- One bill was successfully stacked - A is the scaled value of the last stacked bill - B is the number of total stacked bill (internal non-volatile counter) - C is the total value of the stacked bills (internal non-volatile counter)

28. Bill in escrow position

Message	Description
BILLESCROW(X)	- One bill is in the escrow position - X is the scaled value of the bill in escrow position. Your application should send a BILLACCEPT or a BILLREJECT command on this stage, depending on it's flow, maximum credit, etc

29. Bill returned to customer

Message	Description
BILLRETURNED(X)	- The bill in escrow position returned to customer - X is the scaled value of the returned bill.

30. Bill received in recycler

Message	Description
BILLTORECYCLER(X)	- A bill was received and stored in the recycling box - X is the scaled value of the stored bill.

31. A disabled bill was rejected

Message	Description
BILLDISREJ(X)	- A bill was rejected because it was previously disabled by the user application. - X is the scaled value of the rejected bill.

32. A bill was manually loaded to recycler

Message	Description
BILLRECMANFILL(X)	- A bill manually loaded to recycler stock - X is the scaled value of the loaded bill.

33. A disabled bill was manually dispensed from the recycler

Message	Description
BILLMANDISP(X)	- A bill was manually dispensed from the recycler - X is the scaled value of the dispensed bill.

34. A disabled bill was transferred from the recycler to cashbox

Message	Description
BILLTRANSFER(X)	- A bill was transferred from the recycler box to the cashbox - X is the scaled value of the transferred bill.

35. Bill validator is in normal condition

Message	Description
BILLOK	- Bill was correctly initialized after reset or has been recovered after an error.

36. Bill validator have a defective motor

Message	Description
BILLDEFMOTOR	- Bill validator encountered one of it’s motors failure

37. Bill validator have a defective sensor

Message	Description
BILLSENSORFAIL	- Bill validator encountered one of it’s sensors failure

38. Bill validator is busy

Message	Description
BILLBUSY	- Bill validator is in a busy state doing something

39. Bill validator ROM error

Message	Description
BILLROMERROR	- Bill validator encountered an internal ROM error

40. Bill validator jam

Message	Description
BILLJAM	- Bill validator encountered a bill jam error

41. Bill validator was reset

Message	Description
BILLRESET	- Bill validator has just been reset.

42. Bill removed from bill validator

Message	Description
BILLREMOVED	- A bill was removed from the bill validator

43. Bill validaor cashbox has been removed

Message	Description
BILLCSBOXREMOVED	- Bill validator’s cashbox has been removed

44. Bill validaor has been disabled by your application or by an internal error

Message	Description
BILLDISABLED	- Bill validator has been disabled by your application or due an internal error

45. Bill validator has been rejected a bill

Message	Description
BILLREJECTED(X)	- Bill validator has been rejected a bill - X is the total number of rejected bills.

46. Bill removed after it was credited

Message	Description
BILLCREDITEDREMOVED	- A bill was removed from the bill validator after it was credited.

47. A bill was inserted while the bill validator is deactivated

Message	Description
BILLINSERTWHILEDISABLED	- A bill was inserted while the bill validator is deactivated

48. Recycler has received a change request

Message	Description
RECYCLERCHGREQUEST	- Recycler has received a change request

49. Cash sale reported to the cashless device

Message	Description
CSLSCASHSALE(A,B)	- Cash sale was reported to the cashless device - A is the item price - B is the item ID/selection number

50. Cash sale successfully reported to the cashless device

Message	Description
CSLSCASHSALEOK	- A cash sale was successfully reported to the cashless device.

51. Cash sale reporting to the cashless device failed

Message	Description
CSHSCASHSALEFAIL	- A cash sale reporting to the cashless device failed.

52. Cashless device setup time exceeded

Message	Description
CSLSSETUPEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB CASHLESS SETUP command. It will automatically restore all cashless device related variables and start sending cashless reset message to retry the cashless device initialization operation.

53. Cashless device max/min prices reporting time exceed

Message	Description
CSLSMAXMINEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB MAX/MIN PRICES command. It will automatically restore all cashless device related variables and start sending cashless reset message to retry the cashless device initialization operation.

54. Cashless device poll time exceed

Message	Description
CSLSPOLLEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB CASHLESS POLL command. It will automatically restore all cashless device related variables and start sending cashless reset message to retry the cashless device initialization operation.

55. Cashless device expansion request ID time exceed

Message	Description
CSLSEXPREQIDEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB CASHLESS REQUST ID command. It will automatically restore all cashless device related variables and start sending cashless reset message to retry the cashless device initialization operation.

56. Cashless device expansion enable options time exceed

Message	Description
CSLSEXPENOPTEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB CASHLESS EXPANSION ENABLE OPTIONS command. It will automatically restore all cashless device related variables and start sending cashless reset message to retry the cashless device initialization operation.

57. Cashless device have Always Idle support and it will be enabled

Message	Description
CSLSALWAYSIDLE	- The cashless device have Always Idle support and the interface will try to enable it

58. Cashless device writing date/time exceed

Message	Description
CSLSWRDTEXCEED	- The interface repeatedly failed to receive a valid answer on the MDB DATE/TIME command. It will automatically restore all cashless device related variables and start sending cashless reset message to retry the cashless device initialization operation.

59. Cashless device sent a display message

Message	Description
CSLSDISPMSG(A,B)	- The cashless device sent a display message to the interface - A is the time to keep message on display (A x 0.1sec) - B is the message to display

60. Cashless device sent a BEGIN SESSION message

Message	Description
CSLSBEGIN(A,B,C)	- The cashless device sent a BEGIN SESSION message to the interface - A is the scaled available credit value - B is the media ID (for example, the card serial number) - C is the media type

61. Cashless device sent a VEND APPROVED message

Message	Description
CSLSVNDAPP(A,B,C)	- The cashless device sent a VEND APPROVED message to the interface - A is the scaled approved value - B is the total number of cashless transactions (internal counter) - C the total scaled value of cashless transactions (internal counter)

62. Cashless device sent a VEND DENIED message

Message	Description
CSLSVNDDEN	- The cashless device sent a VEND DENIED message to the interface

63. Cashless device sent an END SESSION message

Message	Description
CSLSENDSESSION	- The cashless device sent an END SESSION message to the interface

64. Cashless device sent a CANCELED message

Message	Description
CSLSCANCELED	- The cashless device sent a CANCELED message to the interface

65. Cashless device is ready

Message	Description
CSLSREADY	- The cashless device was correctly initialized and is ready to be enabled.

66. Cashless device returned a malfunction error

Message	Description
CSLSMALFUNCTION(X)	- The cashless device returned a malfunction message - X is the internal malfunction code, it's value depends on the cashless device and you can find more information in it's manual

67. Cashless device returned COMMAND OUT OF SEQUENCE message

Message	Description
CSLSCMDOUTOFSEQ	- The cashless device returned a COMMAND OUT OF SEQUENCE message

68. Cashless device sent a REVALUE APPROVED message

Message	Description
CSLSREVALAPP	- The cashless device returned a REVALUE APPROVED message

69. Cashless device sent a REVALUE DENIED message

Message	Description
CSLSREVALDEN	- The cashless device returned a REVALUE DENIED message

70. Cashless device sent a REVALUE LIMIT message

Message	Description
CSLSREVALLIMIT(X)	- The cashless device returned a REVALUE LIMT message - X is the maximum amount it will accept for the next REVALUE REQUEST command

71. Cashless device sent a DATE/TIME request message

Message	Description
CSLSDTREQ	- The cashless device is requesting a date/time command to synchronize it internal RTC

72. Interface successfully sent date/time command to the cashless device

Message	Description
CSLSDTSENDOK	- The interface successfully sent date/time command to the cashless device.

73. Interface failed sending date/time command to the cashless device

Message	Description
CSLSDTSENDFAIL	- The interface failed sending date/time command to the cashless device.

74. Interface successfully enabled the cashless device

Message	Description
CSLSENABLED	- The interface successfully enabled the cashless device.

75. Interface successfully enabled the cashless device

Message	Description
CSLSENABLED	- The interface successfully enabled the cashless device.

76. Coin acceptor/changer just reset waiting time exceeded

Message	Description
COINJUSTRESETEXCEED	- The interface repeatedly failed to receive a valid answer on waiting for JUST RESET message. It will automatically restore all coin acceptor/changer related variables and start sending coin reset message to retry the coin acceptor/changer initialization operation.

77. Coin acceptor/changer setup time exceeded

Message	Description
COINSETUPEXCEED	- The interface repeatedly failed to receive a valid answer on COIN SETUP command. It will automatically restore all coin acceptor/changer related variables and start sending coin reset message to retry the coin acceptor/changer initialization operation.

78. Coin acceptor/changer expansion identification time exceeded

Message	Description
COINEXPIDEXCEED	- The interface repeatedly failed to receive a valid answer on COIN EXPANSION IDENTIFICATION command. It will automatically restore all coin acceptor/changer related variables and start sending coin reset message to retry the coin acceptor/changer initialization operation.

79. Coin acceptor/changer feature enable time exceeded

Message	Description
COINFTENABLEEXCEED	- The interface repeatedly failed to receive a valid answer on COIN FEATURE ENABLE command. It will automatically restore all coin acceptor/changer related variables and start sending coin reset message to retry the coin acceptor/changer initialization operation.

80. Coin acceptor/changer tube status time exceeded

Message	Description
COINTBSTATEXCEED	- The interface repeatedly failed to receive a valid answer on COIN TUBE STATUS command. It will automatically restore all coin acceptor/changer related variables and start sending coin reset message to retry the coin acceptor/changer initialization operation.

81. Coin acceptor/changer is not ready for the issued command

Message	Description
COINNOTREADY	- The coin acceptor/changer is not ready to execute the last issued command

82. Coin acceptor/changer tube status

Message	Description
COINTBSTATUS(X)	- The coin acceptor/changer returned the TUBE STATUS answer. - X is the total scaled value of the coins available for change. If the number of coins in a tube is bigger than 255, the coin changer will return 255 as a value for that tube. So, this command is not appropriate for coins stock management since it will return the same value for a tube until the number of coins in that tube falls below 255. But you can use it to set an alarm on lower coins stock, for example.

83. Coin acceptor/changer poll time exceeded

Message	Description
COINPOLLEXCEED	- The interface repeatedly failed to receive a valid answer on COIN POLL command. It will automatically restore all coin acceptor/changer related variables and start sending coin reset message to retry the coin acceptor/changer initialization operation.

84. Coin acceptor/changer is busy dispensing coins

Message	Description
COINPAYBUSY	- The coin acceptor/changer is busy dispensing coins following a COINDISPENSE or a COINAP command. This message will occur repeatedly until the coin changer finish the dispense operation. The number of those messages depends on the number of the coins it should dispense and the dispensing method (COINAP method is faster than COINDISPENSE).

85. Coin acceptor/changer temporarily unable to dispense coins

Message	Description
COINCHGNOTNOW	- The coin acceptor/changer is temporarily unable to dispense coins due to it's working stage. Your application should retry later.

86. Coin acceptor/changer has failed to dispense all or some of the required coins

Message	Description
CHANGEREMAINING(X)	- The coin acceptor/changer has failed to dispense all or some of the required coins. - X is the scaled value of the coins changer was unable to dispense for some reasons. You will use this value to display the remaining credit to the customer.

87. Coin acceptor/changer is reporting a manual coin dispense

Message	Description
COINMANDISP(A,B,C)	- The coin changer has manually dispensed one or more coins (usually by pressing one or more buttons on it's front panel). - A is the scaled coin type value - B is the total number of manually dispensed coins - C is the total number of coins remaining in tubes for the A type value

88. Coin acceptor/changer received a token

Message	Description
TOKENIN(A,B,C,D)	- One token has been received by the coin acceptor/changer - A is the token value (you need to set the token values correctly on the interface settings section) - B is the token routing (0 – to cashbox, 1 – to tubes, 3 - rejected) - C is the total number of received tokens (lifetime internal counter) - D is the total value of received tokens (lifetime internal counter)

89. Coin acceptor/changer received a coin

Message	Description
COININ(A,B,C,D,E)	- One coin has been received by the coin acceptor/changer - A is the scaled coin value - B is the token routing (0 – to cashbox, 1 – to tubes, 3 – rejected) - C is the total number of coins with the same value available in tubes - D is the total number of received coins (lifetime internal counter) - E is the total value of received coins (lifetime internal counter)

90. Coin acceptor/changer detected a slug

Message	Description
COINSLUG(A,B)	- One slug detected by the coin acceptor/changer - A is the slug counter, reported by the coin acceptor/changer - B is the total number of coins/tokens rejected by the coin acceptor/changer (lifetime internal counter)

91. Coin acceptor/changer is in normal condition

Message	Description
COINOK	- Coin was correctly initialized after reset or has been recovered after an error.

92. Coin acceptor/changer received a change request

Message	Description
COINCHGREQ	- Coin acceptor/changer has received a change request (usually by pressing the coin changer mechanical lever). Customer pressed the change lever in order to cancel the transaction or request the change after transaction. Your application should act accordingly.

93. Coin acceptor/changer received a coin that was not credited

Message	Description
COINNOTCRDT	- Coin acceptor/changer received a coin that was routed, but not credited.

94. Coin acceptor/changer has a defective tube sensor

Message	Description
COINDEFTBSENSOR	- Coin acceptor/changer detected a defective tube sensor.

95. Coin acceptor/changer detected a double arrival

Message	Description
COINDBLARRIVAL	- Coin acceptor/changer detected a double arrival (two or more coins/tokens were inserted too fast in order to allow the coin acceptor to validate them).

96. Coin changer detected an acceptor disconnection

Message	Description
COINACCUNPL	- Coin changer detected an acceptor disconnection.

97. Coin acceptor/changer detected a tube jam

Message	Description
COINTBJAM	- Coin acceptor/changer detected a tube jam

98. Coin acceptor/changer detected an internal ROM error

Message	Description
COINROMERR	- Coin acceptor/changer detected an internal ROM error

99. Coin acceptor/changer detected a routing error

Message	Description
COINROUTERR	- Coin acceptor/changer detected a routing error for the last accepted coin/token

100. Coin acceptor/changer detected reset condition

Message	Description
COINRST	- Coin acceptor/changer detected a reset condition

101. Coin acceptor/changer detected a coin jam

Message	Description
COINJAM	- Coin acceptor/changer detected a coin jam, most probably in the flight deck area. Your application can indicate the customer to press the escrow lever in order to release the blocked coins

102. Coin acceptor/changer detected the removal of a credited coin

Message	Description
COINCRREM	- Coin acceptor/changer detected the rmoval of a credited coin.

NOTES: