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DT-300™ Series

Download Tool

Operator Integration Guide

Revision 1, April 1, 2013

P/N 960-000167R_Rev. 1 {EDP #214645}

a RoHS Compliant Product

Issue #4033-IGE-01-01

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REVISION HISTORY			
Rev №.	**Date**	**Reason for Update**	**Comment**
A	10/09/12	**Initial Document**	
1	4/1/13	**Display change**	

International Compliance

- RoHS Directives or or or or
- CE Mark
- FCC Directives See below.

CE Warning
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC WARNING
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
FCC NOTICE
This equipment complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
IC NOTICE
This class A digital apparatus complies with Canadian ICES-003.
Cet appareil numerique de la classe A est conforme a la norme NMB-003 du Canada.

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1 GENERAL INFORMATION

Description

This section provides a general overview of the DT-300™ "BlueWaveDX" Download Tool Device pictured in Figure 1. This first section is designed to help the user navigate through this guide with ease and provides the following information:

- DT-300™ Device
- Component Names
- Primary Features
- Precautions
- Specifications
- Installation
- Connector Pin Assignments
- Functions
- Unit Dimensions
- Compatibility
- Technical Contact Information.

In order to make operation of this device easier and make navigation within this manual simpler, the following illustrations were used within the text:

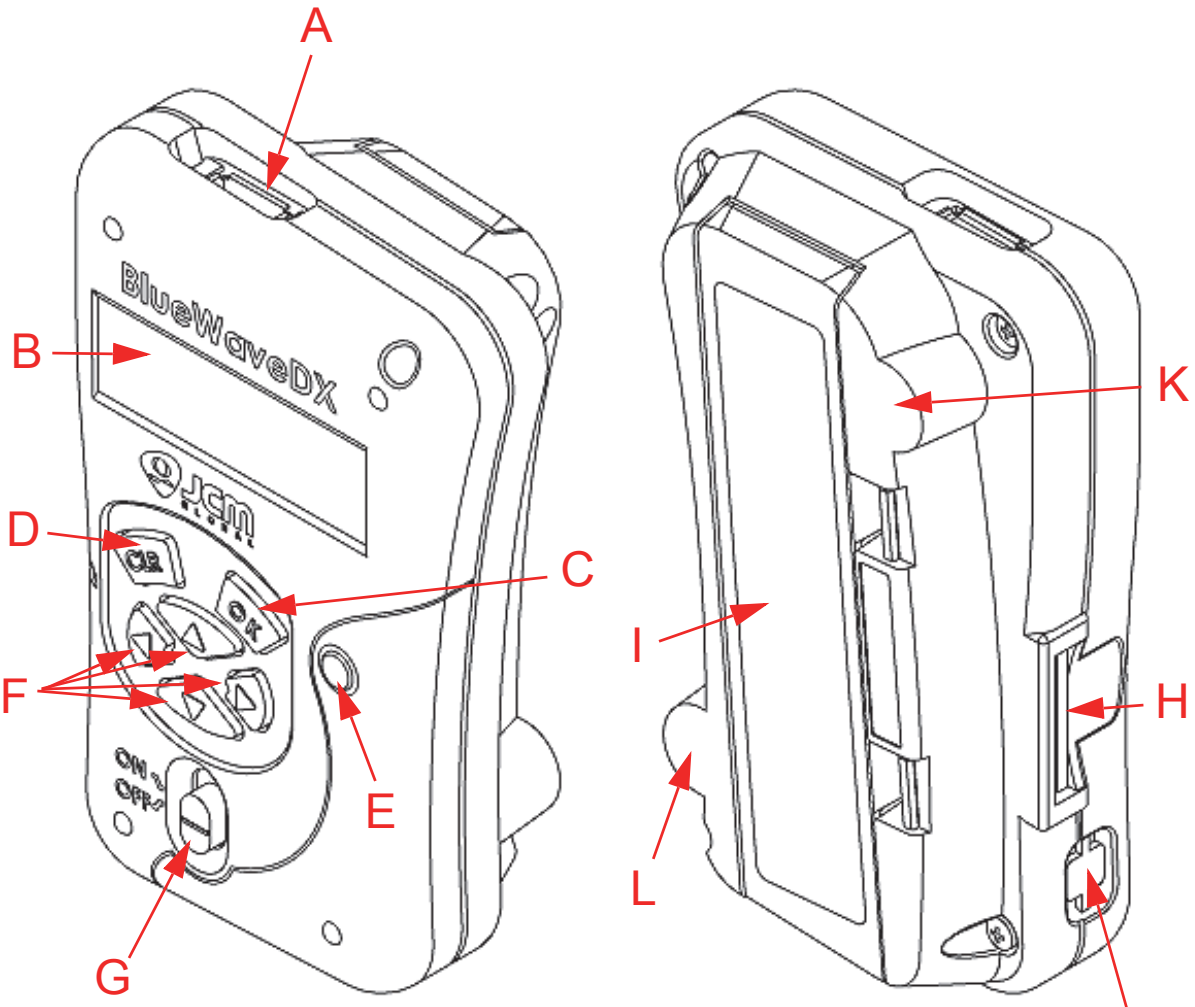
- **Safety Instructions,** which need to be observed in order to protect the operators and equipment, have been written in bold text and have been given the pictographs:
- **Special *Notes,*** which affect the use of the DT-300™ Device, have been written in *italic* text and have been given the pictograph:
- **Steps,** requiring the operator to perform specific actions are given sequential numbers (1., 2., 3., etc.).

DT-300 Device

Figure 1 DT-300 BlueWaveDX Device

2 COMPONENT NAMES

Figure 2 illustrates the DT-300™ Functional Component Part Names and Locations.



A. USB Connector Type A (Host)
B. LCD (Monochrome)
C. OK Button
D. CLR Button
E. Power LED (Red)
F. Direction Key Button
G. Power Switch
H. SD Card Slot
I. Battery Compartment Cover
J. Power Plug (Option)
K. Magnet
L. Magnet

Figure 2 DT-300 Component Names

3 PRIMARY FEATURES

The DT-300™ "BlueWave" Series Download Tool contains the following primary features:

- The DT-300™ is a battery-driven device. The DT-300 transfers the software data to the power-supplied Validator.
- The DT-300™ features an LCD Display. The Bootloader update and the MainApplication function selection are available by using the LCD Display. The Acceptance Log, Error Messages, Version/CRC/Serial Number, Maintenance Condition, Enabled Denomination and Language Selection are also confirmed by the LCD Display.
- Refer to "Operation Procedures (MainApplication)" on page 6 of this Guide for more details.

4 PRECAUTIONS

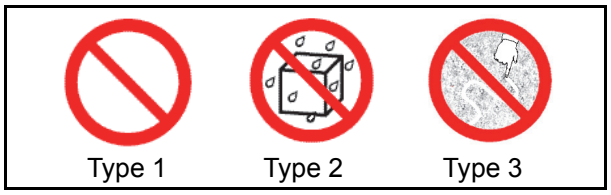


Figure 3 Precautionary Symbols

The Figure 3 symbols are defined as follows:

1. (Type 1) Do not use any other Cables except the specified USB Type A Cable.
2. (Type 2) Do not expose the Unit to water. The Unit contains several precision electronic devices that can be damaged if water or any type of liquid is sprayed or spilled into the Unit.
3. (Type 3) Do not expose the Unit in a dusty environment.

USER CAUTIONS

1. Do not use or store the DT-300™ at the following locations:
   - In direct Sunlight
   - In a dusty environment
   - Areas likely to be wet or humid
   - Vibrating areas
   - Near hazardous materials.
2. Do not insert and/or drop foreign objects such as metals or flammable substances into the DT-300™ Unit.
3. Use "AAA" Alkaline size Batteries (LR03) to Power the Unit. Be sure to turn the DT-300's Power OFF before replacing Batteries. When replacing Batteries, change all four (4) Batteries and install them in the correct direction.

Caution: DO NOT use a new Battery along with an old Battery together. Doing so will decrease the life of both Batteries, or Battery liquid content seepage may occur.

4. Be sure to turn the DT-300's Power OFF before plugging or unplugging the USB Cable. Be sure to remove the USB Cable by firmly gripping on the plug and not on the USB Cable itself.

Caution: Pulling on the USB Cable alone may damage the cable and cause a fire, electrical shock or both. Also do not damage, break, or redesign the recommended USB Cable.

Caution: Do NOT touch or pull on the connecting Cables with wet hands; this may cause an electrical shock, equipment damage or both.

5. Do not redesign or disassemble the DT-300™ Device. Disassembly and repair should only be performed by a certified JCM Service Center or a professional technician. Unauthorized repair, use by inadequately trained personnel, or use outside the manufacture's original intent voids the warranty.
6. Do not strike, drop or throw the DT-300™ Device. Contact the local JCM distributor immediately when identified damage or internal repair conditions exist.
7. When a communication error occurs, turn the Validator's Power Switch OFF and then turn it to ON again.
8. Do not touch the SD Card when downloading data. Be sure to turn the DT-300's Power Switch OFF before inserting or removing the SD Card.
9. Be sure that the Cable length connected to the Validator is less than 3m.
10. Using strong pressure or impact on the Function Buttons may damage the Buttons.
11. Do not put recording medium such as magnetic cards or magnetic tapes close to the DT-300's Magnet portion. The data recorded in the medium may be damaged or erased.

5 SPECIFICATIONS

Technical Specifications

Table 1 DT-300 Technical Specifications

Compatibility:	UBA, iVIZION, VEGA, TBV, iPRO & RC Series Units
Processing Speed*:	Software Download Time (from start to completion): a) UBA-10 (USB): Approximately 60 seconds (Software Size/1MB) b) UBA-14 (USB): Approximately 120 seconds (Software Size/2MB) c) iVIZION (USB): Approximately 70 seconds (Software Size/8MB) d) VEGA (USB): Approximately 34 seconds (Software Size/2MB) e) TBV-100 (USB): Approximately 124 seconds (Software Size/8MB) f) iPRO (USB): Approximately 70 seconds (Software Size/8MB).
Switches:	Power Switch, OK Button, CLR Button, Direction Key Button (UP/DOWN/RIGHT/LEFT)
Interface:	USB† Host Single Channel (USB 2.0, Full Speed) SD Card (SDHC acceptable)
Display:	Monochrome LCD (122x32 dots with back light) LED (Light-emitting Diodes) (Red)

*. Download Time depends on Models and/or files.

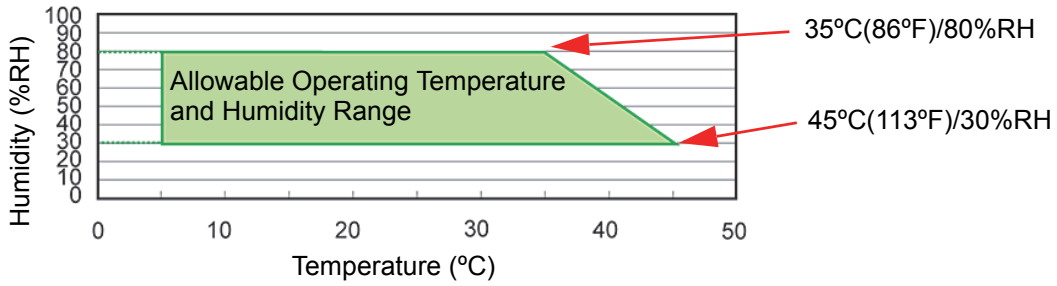
†. USB is available for only JCM products' access.

Environmental Specifications

Table 2 DT-300 Environmental Specifications

Operating Temperature:	5ºC to +45ºC (41ºF to 113ºF)
Storage Temperature:	-20ºC to +60ºC (-4ºF to 140ºF) (Batteries are exception)
Relative Operating Humidity:	30% to 80% RH (non-condensed)
Relative Storage Humidity:	15% to 95% RH (non-condensed)
Visible Light Sensitivity:	Avoid Direct Sunlight

Hydrothermal Condition Table



Electrical Specifications

Table 3 DT-300 Electrical Specifications

Supply Voltage:	Four (4) AAA/LR03 Size Alkaline Batteries (provided by User)
Current Consumption:	Standby = 20mA* Downloading = 90mA

*. 70mA for less then ten (10) minutes while entering Standby.

Structural Specifications

Table 4 DT-300 Structural Specifications

Weight Empty:	Approximately 165g (5.82oz) without Batteries and SD Card
Outside Dimensions:	Refer to "Unit Dimensions" on page 14 of this Guide

6 INSTALLATION

Battery Installation

Perform the following steps to install Batteries into the DT-300™ Device:

1. Push the two (2) Tabs of the Battery Cover in the direction of the Arrow illustrated in Figure 4a and lift the Cover off of the Device.
2. Install four (4) AAA Batteries into their correct polarized position in the direction illustrated in Figure 4.
3. Place the Battery Cover back into its original position, and listen for it to "Click" back into place.

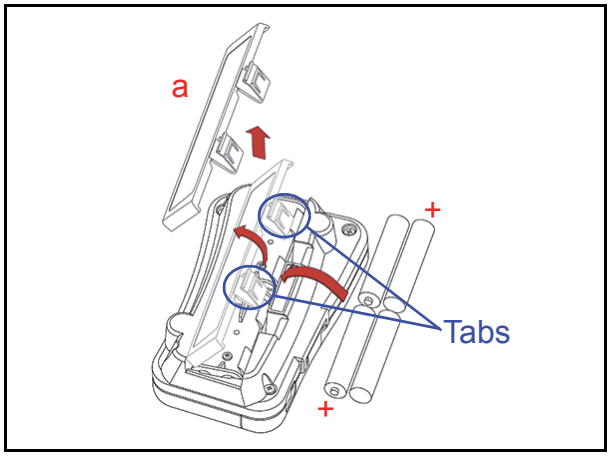


Figure 4 Type AAA Battery Installation

SD Card Installation

Installation to a PC or a Card Reader

Perform the following steps to install the SD Card into a PC or an SD Card Reader:

NOTE: When creating the storage Folder for each Model, use the SD Card Slot of a PC or an SD Card Reader.

1. Insert the SD Card into an SD Card Reader, or an SD Card Reader Slot of the PC.

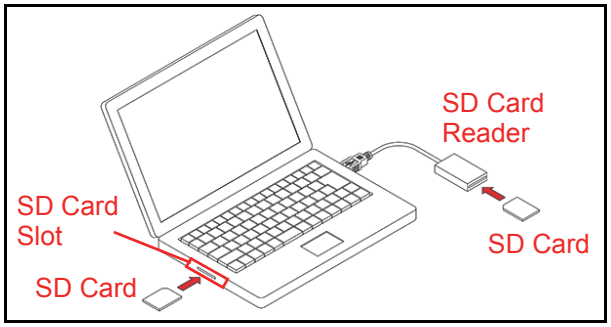


Figure 5 SD Card Insertion (PC or Card Reader)

2. Create each model Folder in the first layer of the SD Card. Each Folder Name needs to include a "space" before the word "System".

Figure 6 Model Name Creation

NOTE: Up to twenty (20) Folders can be created on an SD Card.

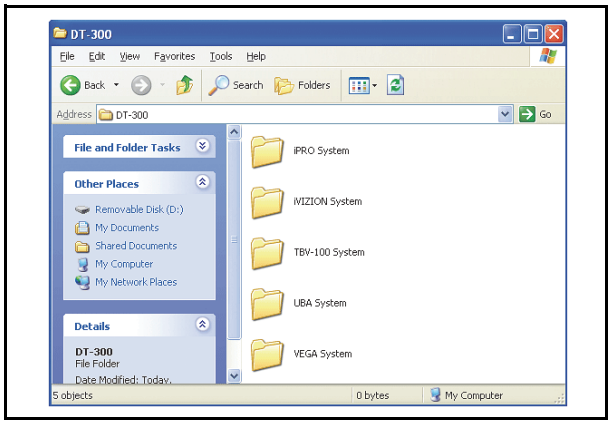


Figure 7 Model Folder Creation

NOTE: Refer to "Compatibility" on page 14 for the details regarding each Model's setting.

3. Save the Software Data Files (xxxxxxxxx.COM) for each Model's Folder. Refer to the "Software Data File" on page 13 of this Guide for more details.

NOTE: Do NOT erase the "BWDXCARD.INF" Card Information File! If the Card Information is lost, Card Reading errors may occur.

NOTE: When removing the SD Card, follow the User Guide of the PC, or the SD Card Reader.

SD Card Installation Into a DT-300

Perform the following steps to install/remove the SD Card into/from a DT-300™ Device:

1. Ensure the DT-300™ Power is OFF.
2. Slide the SD Card into the Unit in the direction indicated by the Red Arrow shown in Figure 8 until it "clicks" in place.

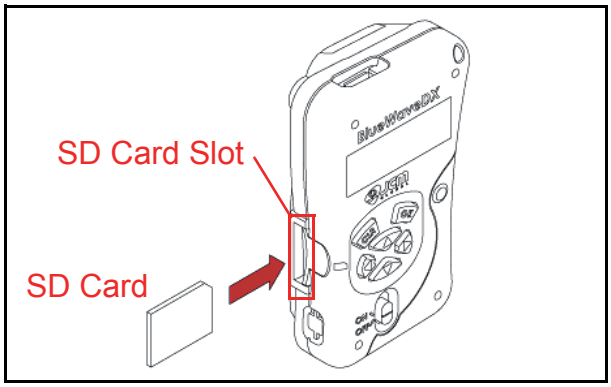


Figure 8 SD Card Insertion (DT-300)

3. When removing the SD Card from the DT-300™, push in on the SD Card in the insertion direction once and then pull the SD Card out of the DT-300™ Device.

NOTE: Do NOT push the SD Card in by using excessive force!

DIP Switch Setting

DIP Switch Settings are necessary to communicate with the DT-300™ and a Validator. Refer to "Compatibility" on page 14 of this Guide for proper DIP Switch Settings related to each Validator Model.

Functions

The following two (2) Functions exist for the DT-300™ Device:

BOOTLOADER

The Bootloader Function contains the following two (2) Modes:

- "BlueWaveDX Firmware Update Mode" to upgrade the Firmware in the DT-300™ Device
- "BlueWaveDX EEPROM Update Mode" to update the EEPROM data within the DT-300™ Device.

MAINAPPLICATION (NORMAL MODE)

MainApplication (Normal Mode) contains the following two (2) Functions:

- "Firmware Update Function" to upgrade the Firmware within the Validator
- "Acceptance Log Function" to receive and display the Acceptance Log.

Boot Mode

When the DT-300™ is initialized, three (3) Modes will be available. Select one Mode by using the Direction Key Button to move and select to the desired Operational Mode (See Table 5).

Table 5 Boot Mode Selection

Mode	Direction Key Button
DT-300 Firmware Update Mode	UP + DOWN
DT-300 EEPROM Update Mode	LEFT + RIGHT
Normal Mode (MainApplication)	N/A (except the other combinations)

Authentication

When the MainApplication is booting, the DT-300™ will authenticate itself with the information on the SD Card.

USB Cable Connection

Perform the following steps to connect a Power-Supplied Validator to the DT-300™ Device:

1. Connect the USB Cable A Terminal to the DT-300™ Unit's Connector "A" Port (See Figure 9 a).
2. Connect the USB Cable B or Mini-B terminal to the Validator's USB Port (See Figure 9 b).

NOTE: Refer to "Compatibility" on page 14 of this Guide to select the "B" or "Mini-B" Connection Terminal.

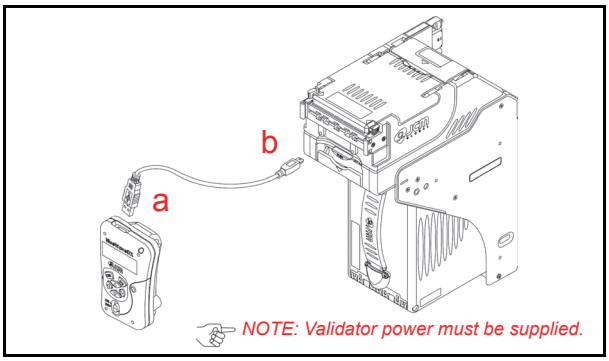


Figure 9 Cable Connection

Operation Procedures (MainApplication)

This portion provides each MainApplication procedure of the DT-300™ Device Operation.

FIRMWARE UPDATE FUNCTION

To update the Firmware of the Validator, proceed as follows:

1. Make sure that the SD Card contains the required Software Data File (Refer to "Software Data File" on page 13 of this Guide for details regarding selection of the correct Software Data File).
2. Turn the DT-300™ Power Switch ON; an SD Card check will begin as shown in Figure 10.

Figure 10 SD Card Confirmation Screen 1

NOTE: Product specifications (e.g., version) may vary from illustrations, and are subject to change without notice.

3. Select "FIRMWARE UPDATE" Function on the Function Selection Screen shown in Figure 11, and press the OK Key OK to begin the Firmware Erase process.

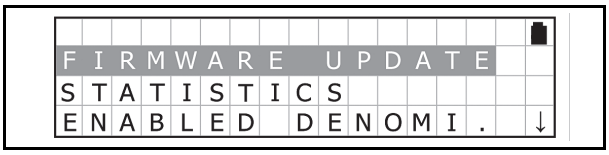


Figure 11 Function Selection Screen 1

4. Connect the USB Port of the Validator to the DT-300™ Device using a proper USB Cable.
5. Select the download File desired by pressing the UP Key ▲ or the DOWN Key ▼, and then

press the OK Key to select it (See Figure 12). ["M:" indicates the "Model Name" and "V:" indicates the "Version".]

NOTE: The DT-300 screen can display up to (20) files using the UP or DOWN key. [The SD card may have additional storage, but files exceeding twenty (20) will not display.]

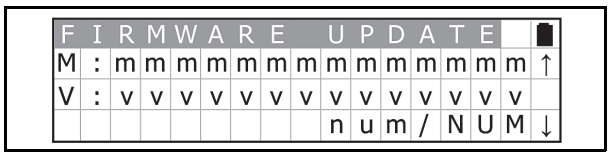


Figure 12 Select the Download File

6. Press the OK Key to begin the Software download (See Figure 13). Press the CLR Key to return to the previous File Selection Screen.

NOTE: If the connection between the Validator and the DT-300 fails, or the Software selected is inappropriate for the Validator, a Software download will not begin!

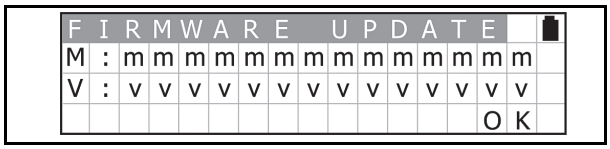


Figure 13 Download Waiting Screen

7. Ensure that the LCD Display shows the Flash ROM is in Erase Standby after pressing the OK Key.

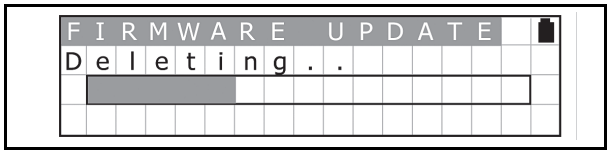


Figure 14 Flash ROM Erase Standby Screen

The LCD Screen will display a Progress Bar during the Software download (See Figure 15).

NOTE: While downloading Software, NO Keyboard operations will be accepted!

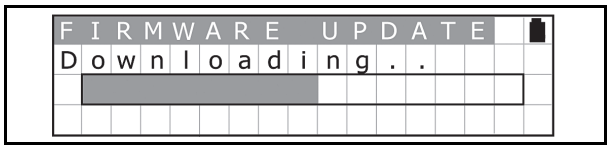


Figure 15 Software Downloading Screen

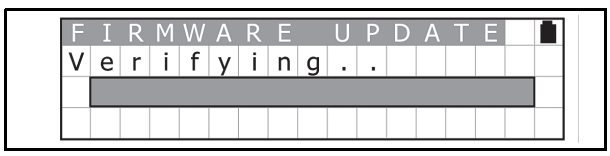


Figure 16 Software Download Verifying Screen

8. After the Software Download is complete (See Figure 17), the LCD Screen will display the Download Complete Screen once the OK Key or the CLR Key is pressed.

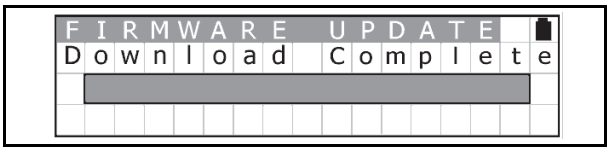


Figure 17 Software Download Complete Screen

STATISTICS FUNCTION

Reviewing an Acceptance Log (Total)

To review the total number Acceptance Log from the a Validator, proceed as follows:

NOTE: The Acceptance Log File is generated on the SD Card when it is successfully received from the Validator. Refer to "Received Log File" on page 13 of this Guide for details regarding the Acceptance Log File.

1. Turn the DT-300™ Power Switch ON, and an SD Card check will begin (See Figure 18).
2. Select "STATISTICS" on the Function Selection Screen, and then press the OK Key to accept it (See Figure 19).

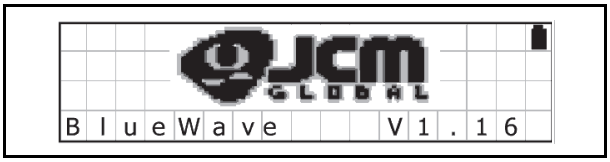


Figure 18 SD Card Confirmation Screen 2

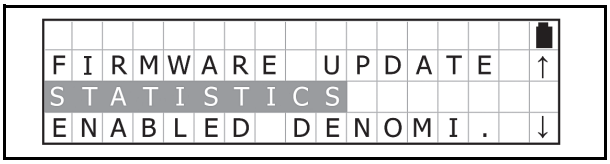


Figure 19 Function Selection Screen 2

3. Connect the USB Port of the Validator to the DT-300™ Device using a proper USB Cable (See Figure 20). Once detected, the connection between the Validator and the DT-300™ will automatically begin to receive the Validator's Acceptance Log.

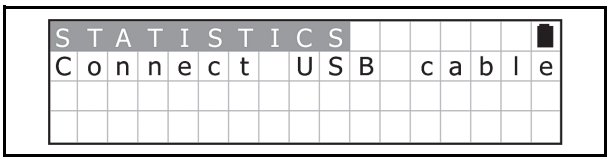


Figure 20 Acceptance Log Standby Screen 1

4. The LCD Screen will display a Progress Bar while the Acceptance Log is being read (See Figure 21).

NOTE: While reading the Acceptance Log, NO Keyboard operations will be accepted!

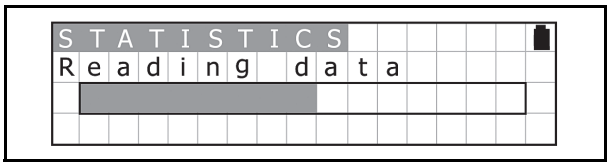


Figure 21 Acceptance Log Reading Screen

5. Once reading of the Acceptance Log is complete, the LCD will display a "Log Read Complete" Screen, as shown in Figure 22.

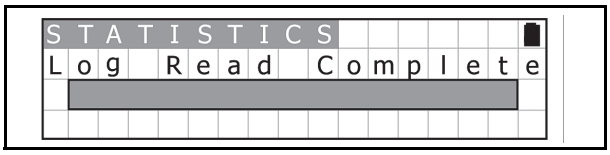


Figure 22 Log Read Complete Screen

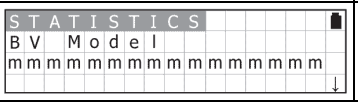
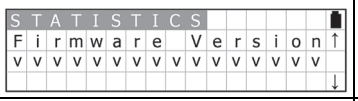
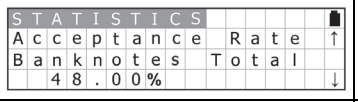
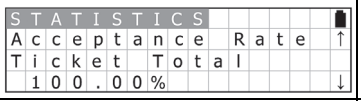
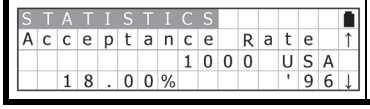
Display the Acceptance Log

To confirm the Acceptance Log, use the UP Key ▲ or the DOWN Key ▼ to display the Log. Press the CLR Key CLR to return to the previous Function Selection Screen. The Acceptance Log will be read again when re-connecting the USB Cable between the Validator and the DT-300™.

NOTE: The maximum number of Folders allowed in a DT-300 Device is 20. If more than twenty (20) Folders are saved in the SD Card Folder, their functions may not work properly.

Table 6 listed the available Acceptance Log Displays.

Table 6 Acceptance Log

Screen	Description
	Model Name
	Version
	Banknote Acceptance Rate
	Ticket Acceptance Rate
	Denomination, Country Code, Year and Acceptance Rate

Enabling a Denomination Function

To view/display the Denomination Table, proceed as follows:

1. Turn the DT-300™ Power Switch ON and an SD Card check will begin (See Figure 23).

Figure 23 SD Card Confirmation Screen 3

2. Select "ENABLE DENOMI." on the Function Selection Screen, and then press the OK Key OK to select it (See Figure 24).

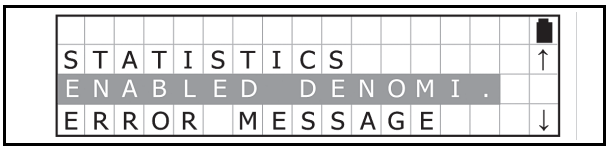


Figure 24 Function Selection Screen 3

3. Ensure that the LCD Display shows the Standby Screen shown in Figure 25.

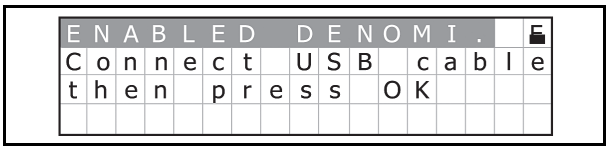


Figure 25 Standby Screen 1

4. Press the OK Key OK to display the Denomination Table Screen (See Figure 26). Press the CLR Key CLR to return to the previous Function Selection Screen.
5. Confirm that the current denomination selected from the Denomination Table is correct.

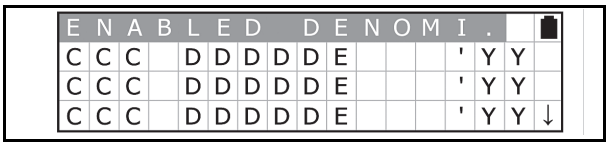


Figure 26 Denomination Table Screen

Table 7 Reading Denomination Table

	Code	Example
C	Country Code (3-digit)	EUR, USA etc.
D	Banknote (5-digit)	100, 200, 500 etc.
E	Denomination ($ or €)	$ or €
Y	Issued Year (2-digit)	02

NOTE: If the information cannot be displayed within 3-digits, the rest of the information can be shown by scrolling the Display using the UP/DOWN Key.

Error Message Function

To receive/display the error condition from the Validator, proceed as follows:

1. Turn the DT-300™ Power Switch ON, and the SD Card check will begin (See Figure 27).

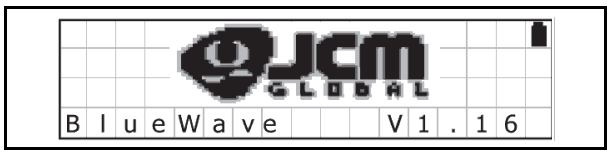


Figure 27 SD Card Confirmation Screen 4

2. Select the "ERROR MESSAGE" from the Function Selection Screen and press the OK Key OK to select it (See Figure 28).

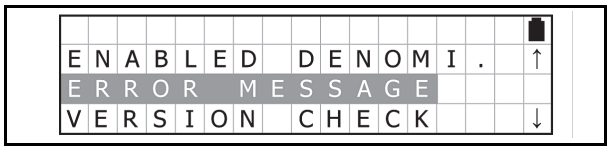


Figure 28 Function Selection Screen 4

3. Make sure that the LCD displays the Standby Screen shown in Figure 29.

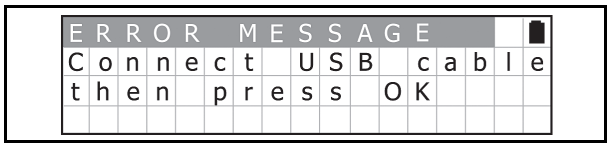


Figure 29 Standby Screen 2

4. Press the OK Key OK to display the Active Error Code Indication Screen shown in Figure 30. Press the CLR Key CLR to return to the previous Function Selection Screen.

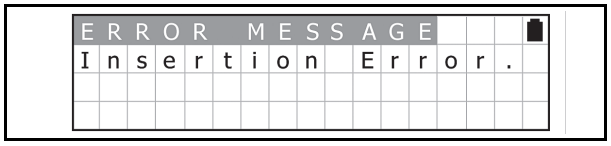


Figure 30 Active Error Code Indication Screen

5. Confirm the Active Error Code. Press the OK Key OK or the CLR Key CLR to return to the previous Standby Screen.

Version Check Function

To obtain the Version, CRC and Serial Number from the Validator, proceed as follows:

1. Turn the DT-300™ Power Switch ON, and the SD Card check will begin (See Figure 31).

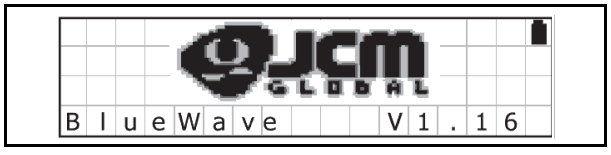


Figure 31 SD Card Confirmation Screen 5

2. Select "VERSION CHECK" from the Function Selection Screen and press the OK Key OK to select it (See Figure 32).

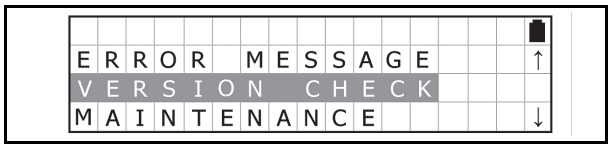


Figure 32 Function Selection Screen 5

3. Ensure that the LCD displays the Standby Screen shown in Figure 33.

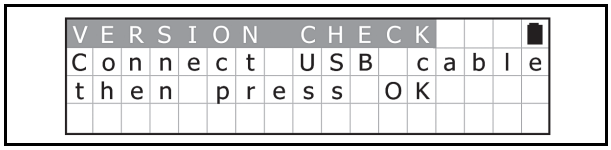


Figure 33 Standby Screen 3

4. Press the OK Key OK to display the Version, CRC and Serial Number Indication Screen (See Figure 34). Press the CLR Key CLR to return to the previous Function Selection Screen.

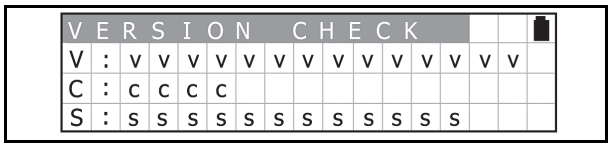


Figure 34 Version, CRC & Serial Number Screen

5. Confirm the Version, CRC and Serial Number. Press the OK Key OK or the CLR Key CLR to return to the previous Standby Screen.

Maintenance Function

To review/display the Maintenance Condition information of the Validator, proceed as follows:

1. Turn the DT-300™ Power Switch ON, and the SD Card check will begin (See Figure 35).

Figure 35 SD Card Confirmation Screen 6

2. Select "MAINTENANCE" from the Function Selection Screen and press the OK Key OK to select it (See Figure 36).

Figure 36 Function Selection Screen 6

3. Ensure that the LCD displays the Standby Screen (See Figure 37).

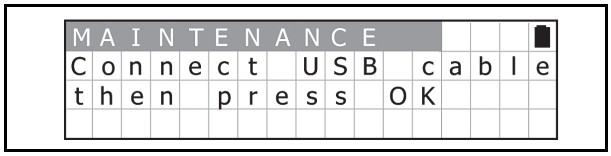


Figure 37 Standby Screen 4

4. Press the OK Key to display the Maintenance Request Indication Screen. Press the CLR Key to return to the previous Function Selection Screen.

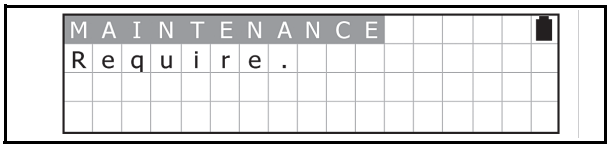


Figure 38 Maintenance Request Screen

5. Confirm the Maintenance Request (See Figure 38 & Figure 39). Press the OK Key or the CLR Key to return to the previous Standby Screen.

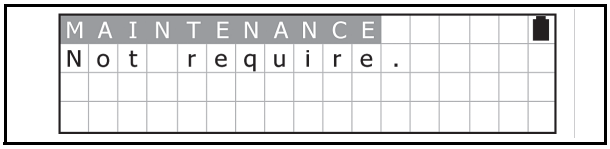


Figure 39 Maintenance Non-Request Screen

Acceptance Log Function (Limited)

The possible storage amount for Banknote Log Data is limited for each Validator Type. Table 8 lists each Validator Type's Log Storage limitation.

Table 8 Log Storage Limit

Model Series	Storage Limit
UBA Series	50 Notes
iVIZION Series	1000 Notes
VEGA Series	N/A
TBV-100 Series	N/A
iPRO Series	50 Notes

To view/display the Banknote Log Data limit of the Validator being tested, proceed as follows:

1. Turn the DT-300™ Power Switch ON, and the SD Card check will begin (See Figure 40).

Figure 40 SD Card Confirmation Screen 7

2. Select "ACCEPTANCE LOG" from the Function Selection Screen and press the OK Key to select it (See Figure 41).

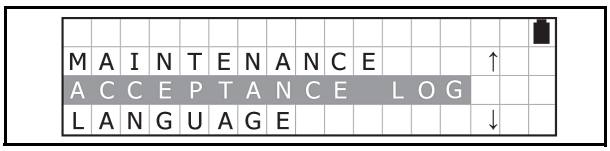


Figure 41 Function Selection Screen 7

3. Connect a proper USB Cable between the Validator and the DT-300™ Device. When the connection is detected, the reload operation will begin automatically (See Figure 42).

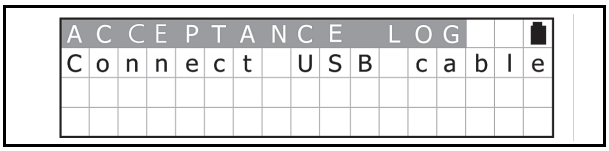


Figure 42 Standby Screen 5

4. The LCD Screen will display a Progress Bar during the Acceptance Log reading process as shown in Figure 43.

NOTE: While reading the Acceptance Log, NO Keyboard operations will be accepted!

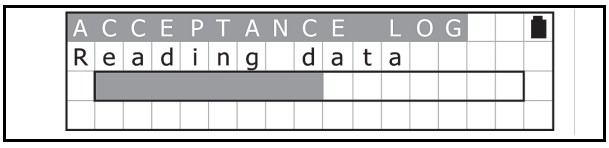


Figure 43 Acceptance Log Reading Screen

5. Once reading of the Acceptance Log is complete, the LCD will display the Log Read Complete Screen shown in Figure 44.

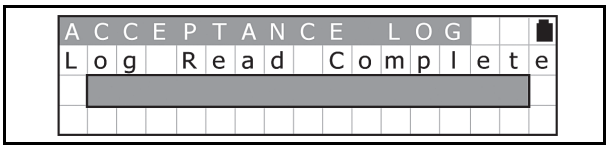


Figure 44 Log Read Complete Screen

Display the Number of the Banknote Acceptance Log

To confirm the amount in the Banknote Acceptance Log, use the UP Key or the DOWN Key to display the record desired. Press the CLR Key to return to the previous Function Selection Screen. The Banknote Acceptance Log value will be read again when re-connecting a USB Cable between the Validator and the DT-300™ Device.

Table 9 lists the various Acceptance Log Displays available.

Table 9 Acceptance Logs Available

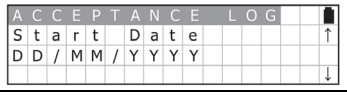
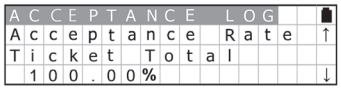
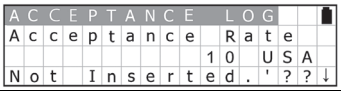
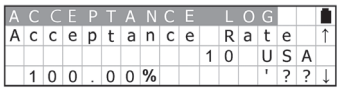
Screen	Description
	Record Start Date
	Model Name
	Version
	Total Number of the Banknote Insertions

Table 9 Acceptance Logs Available (Continued)

Screen	Description
	Total Ticket Acceptance Rate
	Limited Number of the Banknote Acceptance Rate 1
	Limited Number of the Banknote Acceptance Rate 2

Language Function

To change a Language from English to another Language, proceed as follows:

1. Turn the DT-300™ Power Switch ON, and the SD Card check will begin (See Figure 45).

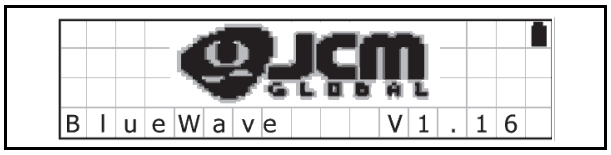


Figure 45 SD Card Confirmation Screen 8

2. Select "LANGUAGE" from the Function Selection Screen and press the OK Key to select the desired Language from the list available (See Figure 46).

Figure 46 Function Selection Screen 8

3. Select the preferred language; English or Deutsch (German) as shown in Figure 47 in this example.

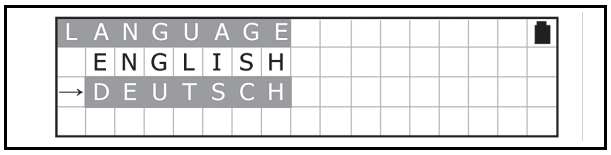


Figure 47 Language Selection Screen

Operation Procedures (Bootloader)

This portion provides each Bootloader procedure of the DT-300™ Device operation.

DT-300 Firmware Update

To update the Firmware of the DT-300™, proceed as follows:

1. Ensure that the SD Card contains the latest Version of Firmware (Refer to "Firmware File" on page 13 of this Guide for details regarding the proper Firmware File selection).

NOTE: The Firmware File should be newer than the current Firmware Version presently in the DT-300.

2. Turn the DT-300™ Power Switch ON while pressing the UP Key and the DOWN Key. The Firmware Update Confirmation Screen shown in Figure 48 will appear.

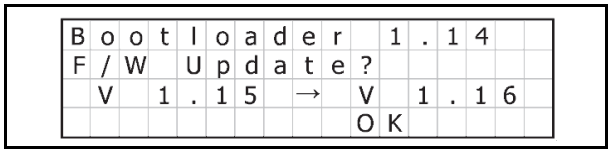


Figure 48 Firmware Update Confirmation Screen

3. Press the OK Key to begin the DT-300™ Firmware update. The LCD Screen will display a Progress Bar during the Firmware updating process as shown in Figure 49.

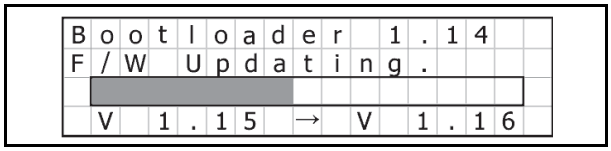


Figure 49 Firmware Update Progress Bar

4. Once the update is complete, the LCD Screen will display the new "Bootloader X.XX Succeeded." Message (See Figure 50).

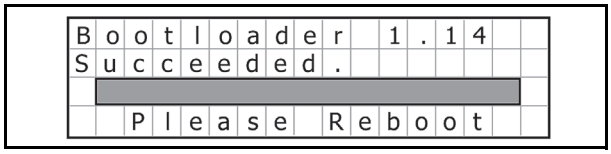


Figure 50 Firmware Update Success Screen

DT-300 EEPROM Update

To update the EEPROM Data in the DT-300™ Device, proceed as follows:

1. Ensure that the SD Card contains the EEPROM Data (Refer to "EEPROM Data File" on page 13 of this Guide for details regarding the EEPROM Data File).
2. Turn the DT-300™ Power Switch ON while pressing the LEFT Key or the RIGHT Key. The EEPROM Update Confirmation Screen shown in Figure 51 will appear.

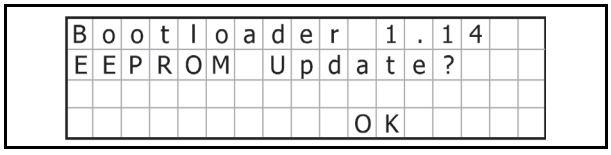


Figure 51 EEPROM Update Confirmation Screen

3. Press the OK Key to begin the EEPROM update. The LCD Screen will display a Progress Bar during the EEPROM updating process as shown in Figure 52.

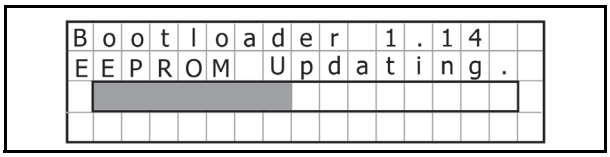


Figure 52 EEPROM Update Progress Bar

4. Once the update is complete, the LCD Screen will display the "Bootloader X.XX Succeeded." message (See Figure 53).

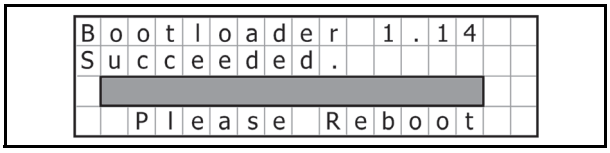


Figure 53 EEPROM Update Success Screen

Power Management

Monitoring Battery Charge Level

Three (3) Levels of a Battery Charge condition exist: FULL, LOW and EMPTY. The DT-300™ Unit's performance is limited by the Battery condition. Table 10 lists the DT-300™ available performance for each Battery condition case.

Table 10 Performance and Battery Condition

Performance Function	Battery Condition		
	FULL	LOW	EMPTY
LCD Display	O	O	O
LCD Backlight	O	O	X
Key Input	O	O	X
Function Selection	O	O	X
Firmware Update Function	O	O	X
Statistics Function	O	O	X
Enabled Denomination Function	O	O	X
Error Message Function	O	O	X
Version Check Function	O	O	X
Maintenance Function	O	O	X
Acceptance Log Function	O	O	X
Language Function	O	O	X
Bootloader*	O	X	X

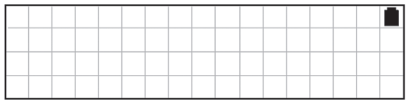
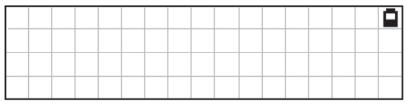
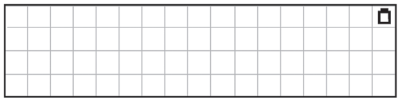
*. When booting, check the Battery Charge Level. The Bootloader will be available only when the Battery is FULL. If the Battery condition is LOW or EMPTY, an error message will appear.

Battery Condition Display

The Battery condition is monitored regularly. When the Battery condition is EMPTY, the existing performance Function will terminate, and all Functions will no longer be available; the Error Display appears.

Table 11 lists the various Battery Condition Displays.

Table 11 Battery Condition Indication

Display	Condition
	Battery FULL
	Battery LOW
	Battery EMPTY

Sleep Mode

When no operation has been performed for 10 minutes, the DT-300™ Device will enter Sleep Mode automatically in order to extend its battery life (See Figure 54). Once Power is re-supplied, or any Function Key is pressed, the DT-300™ will again be ready to begin operation.

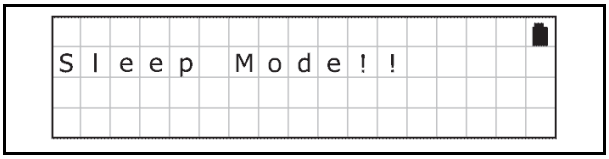
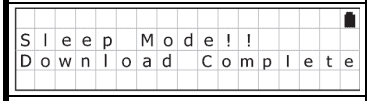
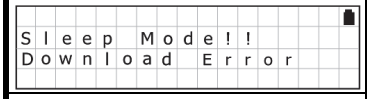
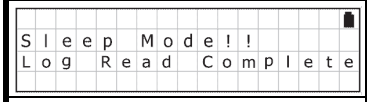
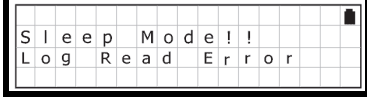


Figure 54 Sleep Mode Screen

When the DT-300™ Device enters Sleep Mode while downloading the Software or receiving the Acceptance Log, the LCD Screen will display the following messages shown in Table 12.

Table 12 Various Sleep Mode Screens

Screen	Description
	Download Complete
	Download Failed
	Acceptance Log Receipt Complete
	Acceptance Log Receipt Failed

BACKLIGHT CONTROL

The DT-300™ Device contains the following Backlight Control Functions:

Bootloader: – The Backlight is always lit.

MainApplication: – The Backlight is lit by pressing any Function Key or by booting the MainApplication (after a short delay). It is extinguished automatically, following a delay.

NOTE: The Backlight is lit each time a Key is pressed; however, there is no specific Function Key that controls it.

SOFTWARE DATA FILE

Table 13 lists the Software Data File information.

Table 13 Software Data File Information

Item	Description
File Name	xxxxxxxxx.COM*
File Contents	Download Software Data

*. An arbitrary name is present with a “COM” extension.

RECEIVED LOG FILE

Table 14 lists the received Log File. The received Log File is always created as a new File.

Table 14 Received Log Files

Item	Description
File Name	UBA: mmm_sssssssssss_nnnn.DAT TBV/iVIZION/iPRO: mmm_sssssssssss_nnnn.LOG mmm: Model Name sssssssssss: Serial Number (12-digit decimal. If the number was not read, none.) nnnn: Number (4-digit decimal) e.g., “UBA_0001.DAT”, “iPRO1234.LOG”* †

Table 14 Received Log Files (Continued)

Item	Description
File Contents	Binary Format File written Log Information. Save the Data received from the Device without processing.
Time Stamp	Fixed

*. Creating file name with valid small Serial Numbers.

†. An error will occur once a “9999” Serial Number is exceeded.

FIRMWARE FILE

Table 15 lists the MainApplication Firmware File presently written in the DT-300™ Device Memory.

Table 15 Existing Firmware File

Item	Description
File Name	BWDXFyyxx.hex*
File Contents	Motorola S Type Format Program File

*. “yyxx” indicates the Version Number (e.g., Version 1.23=0123).

EEPROM DATA FILE

Table 16 lists the saved File written into the EEPROM of the DT-300™ Device.

Table 16 EEPROM Data File Information

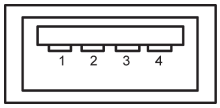
Item	Description
File Name	BWDXINFO.INF
File Contents	Text Format File written data for the EEPROM

7 CONNECTOR PIN ASSIGNMENTS

Table 17 lists the DT-300™ USB “Type A” Connector Pin Assignments, respectively.

Table 17 DT-300 USB Type “A” Pin Assignments

DT-300 USB Type “A” Connector



UBA-4R-D14T-4D (JST)

Pin No.	Signal Name	I/O*	Function
1	VBUS	OUT	+5V
2	DM	IN/OUT	USB Data-
3	DP	IN/OUT	USB Data+
4	Ground	-	Power Ground

*. I/O (Input/Output) Terminals as viewed from outside the DT-300™ Device.

8 UNIT DIMENSIONS

DT-300 ENTIRE UNIT OUTSIDE DIMENSIONS

Figure 55 illustrates the DT-300™ entire Unit outside dimensions.

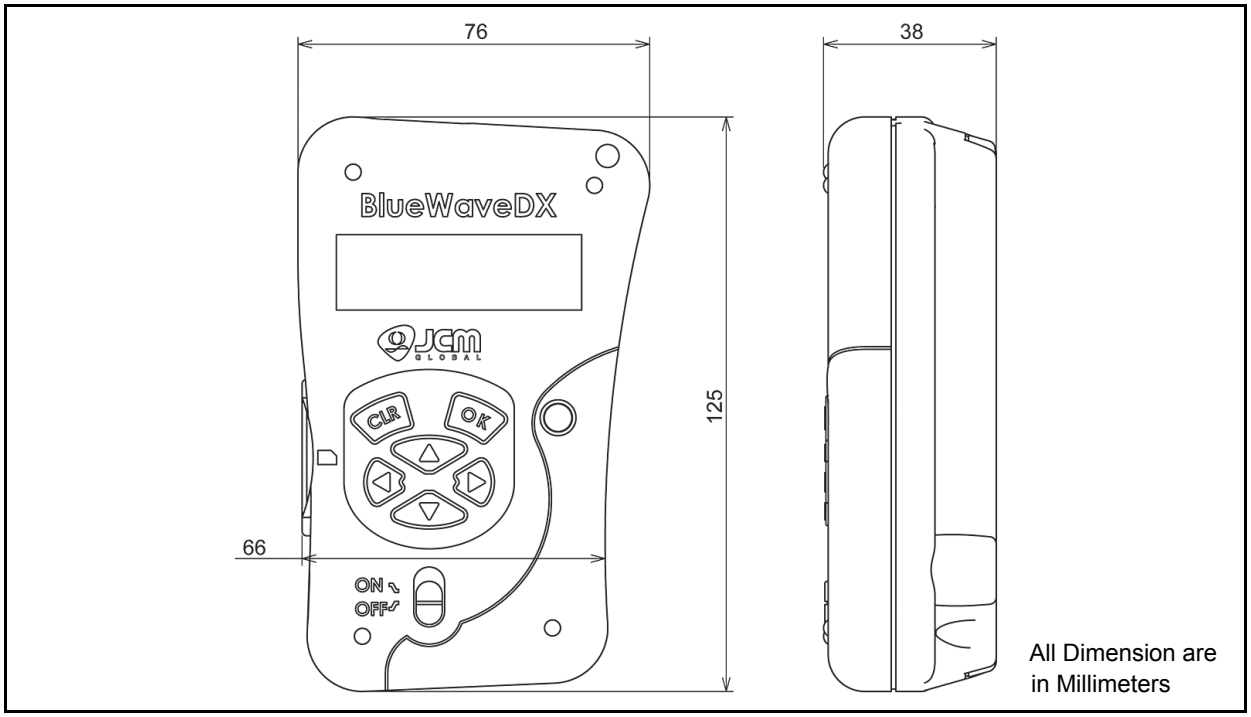


Figure 55 DT-300 Download Tool Outside Dimensions

9 COMPATIBILITY

Table 18 lists the Validator Types compatible with the "BlueWaveDX" DT-300™ Device. Refer to the "DT-300 Software Storage Destination Folder" Column to create the proper compatible Validator's Destination Folder for each DT-300™ Device being Programmed.

Table 18 DT-300 Compatible Validators

Compatible Validator	Validator Download Setting	DT-300 Software Storage Destination Folder	USB Connection
UBA Series	DIP Switch Settings are not required. UBA Series downloading is available when the DT-300 Status is either "Download Mode" or not "Download Mode". If it is necessary to set the DT-300 into "Download Mode", set DIP Switches #6, #7 & #8 to ON, and keep DIP Switches #1 through #5 in their OFF position.	UBA System	Type A - Type B
iVIZION Series	Set DIP Switches #6, #7 & #8 to ON, and keep DIP Switches #1 through #5 OFF.	iVIZION System	Type A - Mini B
VEGA Series	Set DIP Switches #1, #7 & #8 to ON, and keep DIP Switches #2 through #6 OFF.	VEGA System	Type A - Mini B
TBV-100 Series	Set DIP Switches #1, #6, #7 & #8 to ON, and keep DIP Switches #2 through #5 OFF.	TBV-100 System	Type A - Mini B
iPRO Series	DIP Switch Settings are not required. iPRO Series downloading is available when the DT-300 Status is either "Download Mode" or not "Download Mode". If it is necessary to set the DT-300 into "Download Mode", set DIP Switches #6, #7 & #8 to ON, and keep DIP Switches #1 through #5 in their OFF position.	iPRO System	Type A - Mini B

NOTE: The Destination Folder intended for download to the specific DT-300 Device must be EXACTLY as shown in the Table 18 Column, including the "Space" existing before the word "System".
Twenty (20) Software Programs can be saved in the DT-300 Destination Folder. If saving over twenty (20) Software Programs in the DT-300 Device, the functions may not work properly.

10 ERROR CODES

This portion provides the Error Codes displayed on the LCD Display Screen when an error occurs.

BOOTLOADER ERROR CODES

Table 19 lists the Bootloader Error Codes.

Table 19 Bootloader Error Codes

No.	Error Code	Error Message	Description	Remark
1	E01		Abnormal Parameter	For Debug
2	E50	System Error.	There is no valid Main Application	
3	E51	Battery Low!	Battery EMPTY	
4	E52	Update Error.	Firmware File Version Error	Same Version or old Version
5	E53	Update Error.	Firmware File Open Error	
6	E54	Update Error.	Firmware File Access Error	
7	E55	Update Error.	Firmware File Format Error	
8	E56	Update Error.	Firmware File Write Error	
9	E57	EEPROM Error.	EEPROM Data File Open Error	
10	E58	EEPROM Error.	EEPROM Data File Access Error	
11	E59	EEPROM Error.	EEPROM Data File Format Error	
12	E60	EEPROM Error.	EEPROM Write Error	
13	E61	SD Card Error.	Card Information File Authentication Error	
14	E62	SD Card Error.	SD Card (MMC Driver) Initialize Error	
15	E63	SD Card Error.	SD Card Power Control Error	
16	E64	SD Card Error.	SD Card non-detection Error	
17	E65	SD Card Error.	SD Card removal-detection Error	
18	E66	SD Card Error.	SD Card (MMC Driver) Finalize Error	
19	E67	SD Card Error.	File Relative Initialize Error	
20	E68	SD Card Error.	File Relative Finalize Error	
21	E69	System Error.	Task Control Error	
22	E70	System Error.	Mail Box Control Error	

MAINAPPLICATION ERROR CODES

The following two (2) MainApplication Error Code types exist:

- Exxx: – Error Code identifying the Error condition.
- Dxxx: – Detailed Error Code for identifying the Error Condition of the error source causing the Error Code. The Detailed Error Code "Dxxx" description is same as the Error Code "Exxx".

NOTE: The Detailed Error Code "Dxxx" description is actually the same as the Error Code "Exxx" but contains more information concerning the error.

Table 20 lists the MainApplication Error Codes.

Table 20 MainApplication Error Codes

No.	Error Code	Error Message	Description	Remark
1	E001	Battery Low!	Battery EMPTY	
2	E002	SD Card Error.	SD Card Error	
3	E003	Unit Type Error.	Product ID Error	
4	E010	USB Error.	USB Host Driver Initialize Error	
5	E011	USB Error.	Open Error	
6	E012	USB Error.	Control Transfer Error	
7	E013	USB Error.	Information Receive Error	
8	E014	USB Error.	Transfer Error	
9	E015	USB Error.	Close Error	
10	E016	USB Error.	USB Host Drive Finalize Error	
11	E017	USB Error.	USB Connection Time Out	
12	E018	USB Error.	Cancel Error	
13	E019	USB Error.	Transfer Time Out	
14	E030	SD Card Error.	File System Initialize Error	

Table 20 MainApplication Error Codes (Continued)

No.	Error Code	Error Message	Description	Remark
15	E031	SD Card Error.	Mount Error	
16	E032	SD Card Error.	Non mount Error	
17	E033	SD Card Error.	Directory Creation Error	
18	E034	SD Card Error.	File Open Error	
19	E035	SD Card Error.	File Write Error	
20	E036	SD Card Error.	File Write Size Error	
21	E037	SD Card Error.	File Read Error	
22	E038	SD Card Error.	File Secure Error	
23	E039	SD Card Error.	File Close Error	
24	E040	SD Card Error.	File Data Compare Error	
25	E041	SD Card Error.	File Flash Error	
26	E042	SD Card Error.	File Detection First Time Error	
27	E043	SD Card Error.	File Detection Continuous Error	
28	E044	SD Card Error.	File Detection End Error	
29	E045	SD Card Error.	File Erase Error	
30	E050	EEPROM Error.	EEPROM Open Error	
31	E051	EEPROM Error.	EEPROM Read Error	
32	E052	EEPROM Error.	EEPROM Write Error	
33	E053	EEPROM Error.	EEPROM Close Error	
34	E054	EEPROM Error.	The number of possible EEPROM Read Error	
35	E055	EEPROM Error.	The number of update EEPROM Read Error	
36	E056	EEPROM Error.	EEPROM Update Error	
37	E057	EEPROM Error.	EEPROM Selected Language Read Error	
38	E058	EEPROM Error.	EEPROM Selected Language Write Error	
39	E070	SD Card Error.	MMC Driver Initialize Error	
40	E071	SD Card Error.	SD Card Power ON Error	
41	E072	SD Card Error.	SD Card Power OFF Error	
42	E073	SD Card Error.	SD Card non-placed Error	
43	E100	Unit Type Error.	Log Unsupported Model Error	
44	E101	File Error.	Log File Name Creation Error	
45	E102	File Error.	Log File Open Error	
46	E103	File Error.	Log File Write Error	
47	E104	File Error.	Log File Close Error	
48	E105	File Error.	Log File Read Error	
49	E106	Mode Error.	SetMode (0x01) Command Send Error	
50	E107	Mode Error.	SetMode (0xFF) Command Send Error	
51	E108	Log Read Error.	Log Receive Request Retry Error	
52	E109	Checksum Error.	Log Checksum Error	
53	E110	File Error.	Log File Conversion Error	
54	E200	File Error.	Firmware File Open Error	
55	E201	File Error.	Firmware File Version Error	
56	E202	File Error.	Firmware File Read Error	
57	E203	File Error.	Firmware File Close Error	
58	E204	Update Count Error.	The number of possible Firmware update Error	
59	E300	Send Error.	Status Request Error	
60	E301	Receive Error.	Status Response Error	
61	E302	Send Error.	Download Start Request Error	
62	E303	Receive Error.	Download Start Response Error	
63	E304	Send Error.	Download Data Size Send Error	
64	E305	Send Error.	Download Data Send Error	

Table 20 MainApplication Error Codes (Continued)

No.	Error Code	Error Message	Description	Remark
65	E306	Receive Error.	Download Data Response Error	
66	E307	Send Error.	Download Finalize Request Error	
67	E308	Receive Error.	Download Finalize Response Error	
68	E309	Send Error.	Version Number Request Error	
69	E310	Receive Error.	Version Number Response Error	
70	E311	Reset Error.	Reset Request Error	
71	E312	Mode Error.	SetMode (0x00) Command Send Error	
72	E313	Mode Error.	SetMode (0xFF) Command Send error	
73	E350	Receive Error.	Status Request Retry Error	
74	E351	Receive Error.	Download Start Request Retry Error	
75	E370	Reset Error.	Reset Request Error (Control Transfer)	
76	E380	Unit Busy Error.	Downloaded Firmware Status Error	
77	E381	CRC Check Error,	Downloaded Firmware CRC Error	
78	E382	Version Error.	Downloaded Firmware Version Error	
79	E400	Send Error.	Enable Denomination Receive Start Request Error	
80	E401	Receive Error.	Enable Denomination Receive Start Response Error	
81	E402	DSend Error.	Enable Denomination ENG Request Error	
82	E403	Receive Error.	Enable Denomination ENQ Response Error	
83	E404	Mode Error.	SetMode (0x0A) Command Send Error	
84	E405	Mode Error.	SetMode (0xFF) Command Send error	
85	E420	Send Error.	Error Code Receive Request Error	
86	E421	Receive Error.	Error Code Receive Response Error	
87	E422	Mode Error.	SetMode (0x0A) Command Send Error	
88	E423	Mode Error.	SetMode (0xFF) Command Send Error	
89	E440	Send Error.	Maintenance Request Error	
90	E441	Receive Error.	Maintenance Response Error	
91	E442	Mode Error.	SetMode (0x0A) Command Send Error	
92	E443	Mode Error.	SetMode (0xFF) Command Send Error	
93	E460	Send Error.	Version Request Error	
94	E461	Receive Error.	Version Response Error	
95	E462	Send Error.	CRC16 Request Error	
96	E463	Receive Error.	CRC16 Response Error	
97	E464	Send Error.	Serial Request Error	
98	E465	Receive Error.	Serial Response Error	
99	E480	Unit Type Error.	Limited number of unsupported model Error	
100	E481	File Error.	Limited number of log file name creation Error	
101	E482	File Error.	Limited number of log file open Error	
102	E483	File Error.	Limited number of log file write Error	
103	E484	File Error.	Limited number of log close Error	
104	E485	File Error.	Limited number of log file read Error	
105	E486	Mode Error.	SetMode (0x01) Command Send Error	
106	E487	Mode Error.	SetMode (0xFF) Command Send Error	
107	E488	Log Read Error.	Limited number of log request Error	
108	E489	Checksum Error.	Limited number of log checksum Error	
109	E490	File Error.	Limited number of log file conversion Error	

11 INTERNATIONAL COMPLIANCE

- RoHS Directives or or or or
- CE Mark
- FCC Directives .

CE Warning
This is a class A product. In a domestic environment this product may cause radio interference in which case the User may be required to take adequate measures.

FCC WARNING
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
FCC NOTICE
This equipment complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
IC NOTICE
This class A digital apparatus complies with Canadian ICES-003.
Cet appareil numerique de la classe A est conforme a la norme NMB-003 du Canada.

12 TECHNICAL CONTACT INFORMATION

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http://www.jcmglobal.com

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