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Test Program Manual

MODEL : VCDM
REV. : 0.1
DATE : 2008. 03. 17



PULOON Technology Inc.

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Revision History

Ver.	Date	Item		Name
		Title	Title	
0.1	2008.03.17	First Released		H. H. SO

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1 Preview

The test manual describes how to test VCDM using the test program supplied by the manufacturer.

2 Basic Communication Specification

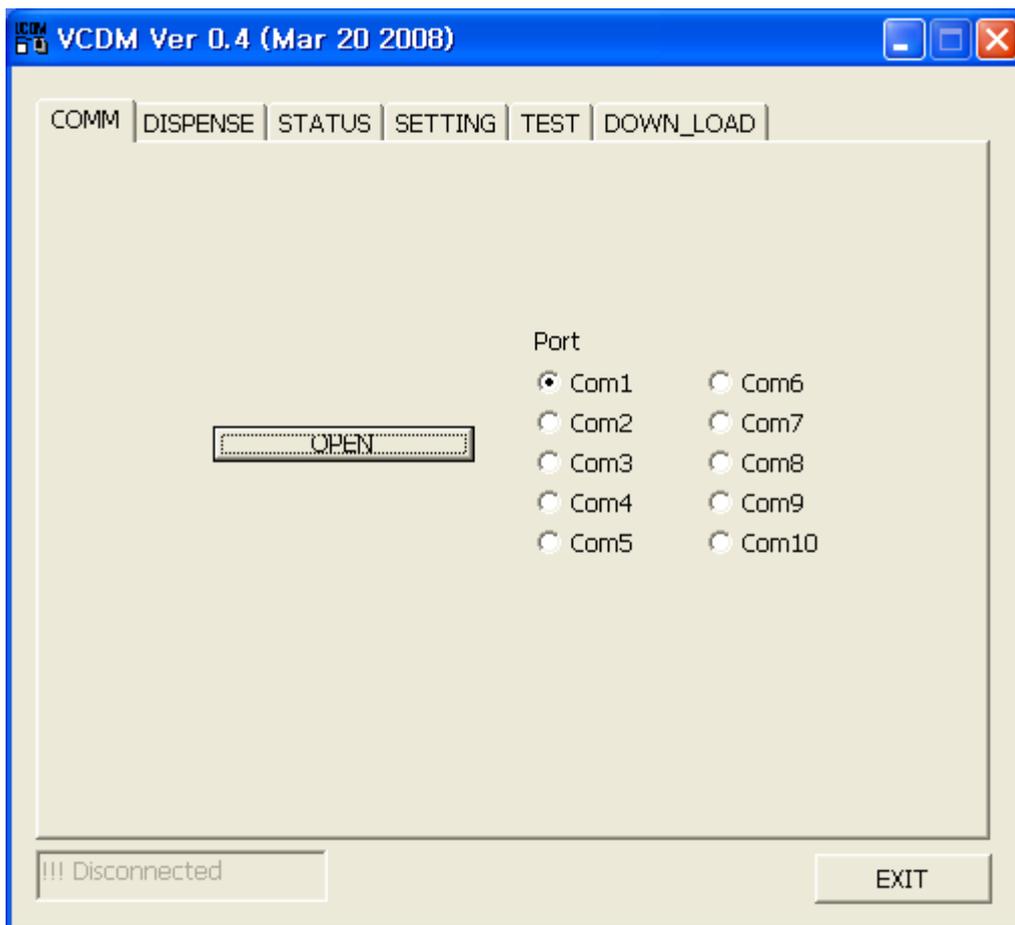
- 1) Communication Method : RS-232C
- 2) Communication Speed : 9600 BPS
- 3) Data Bits : 8 Bits
- 4) Parity : Non Parity
- 5) Stop Bit : 1 Bit
- 6) Error Inspection Method : BCC
- 7) Others : Referring to VCDM Interface Spec

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3 Function

Execute Test Program and the function on each Tab is explained.

3.1 COMM



- 1) Connect RS232 cable between PC and LCDM.
- 2) Then start the test program and choose the tab, COMM.
- 3) Check the port of PC available and press the button of OPEN.

If communication port is not opened, all the commands are not available and the connection should be performed anything else.

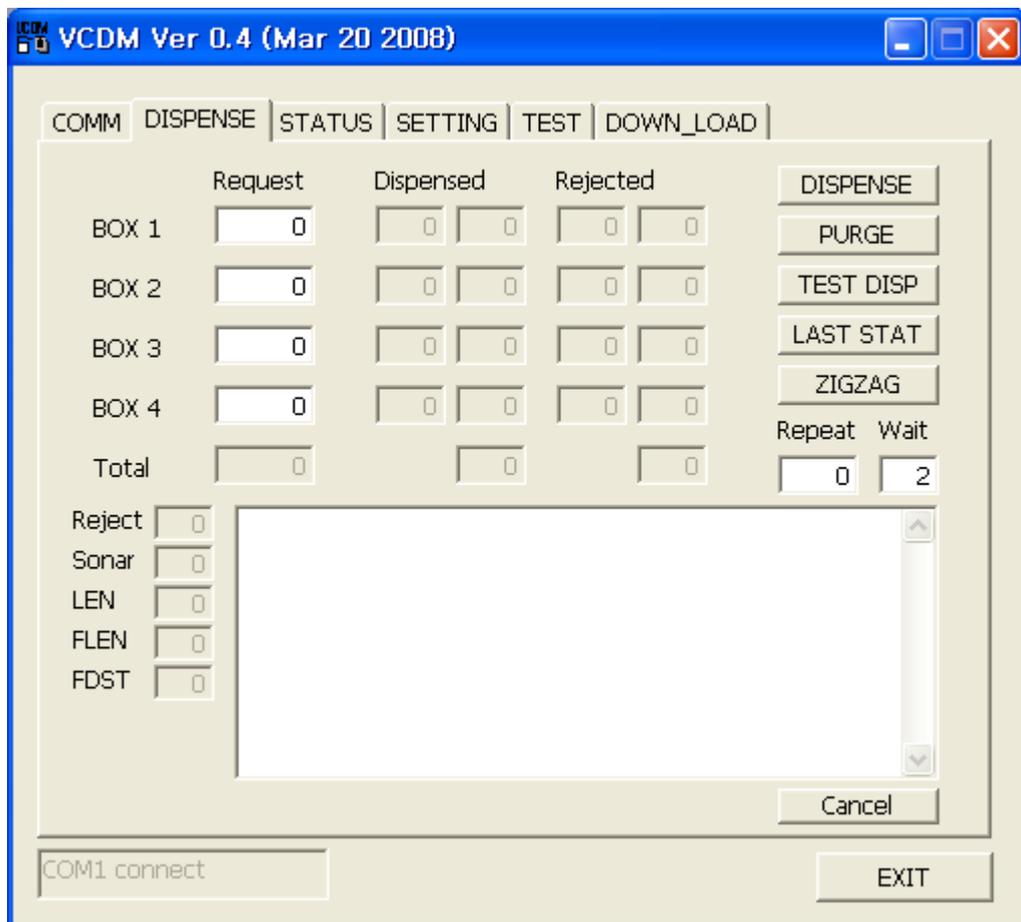
The status of communication is displayed in the small window of the bottom of the tab. (i.g, ACT Time-Out, COMX Connect, Disconnected..)

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3.2 DISPENSE

3.2.1 DISPENSE

- 1) Put the request number for dispensing onto each blank for one transaction and the number of the repetition for testing. Then, press the button of "DISPENSE" and VCDM will start to dispense as requested from the cash cassette.
- 2) Without repetition number, ECDM is operated just one time. The waiting time can be set by one second. If the error is occurred during operation, the dialog window is displayed. (Error code is referred to the interface specification.)



	Request	Dispensed		Rejected		
BOX 1	<input type="text" value="0"/>	<input type="button" value="DISPENSE"/>				
BOX 2	<input type="text" value="0"/>	<input type="button" value="PURGE"/>				
BOX 3	<input type="text" value="0"/>	<input type="button" value="TEST DISP"/>				
BOX 4	<input type="text" value="0"/>	<input type="button" value="LAST STAT"/>				
Total	<input type="text" value="0"/>	<input type="button" value="ZIGZAG"/>				
						Repeat <input type="text" value="0"/> Wait <input type="text" value="2"/>

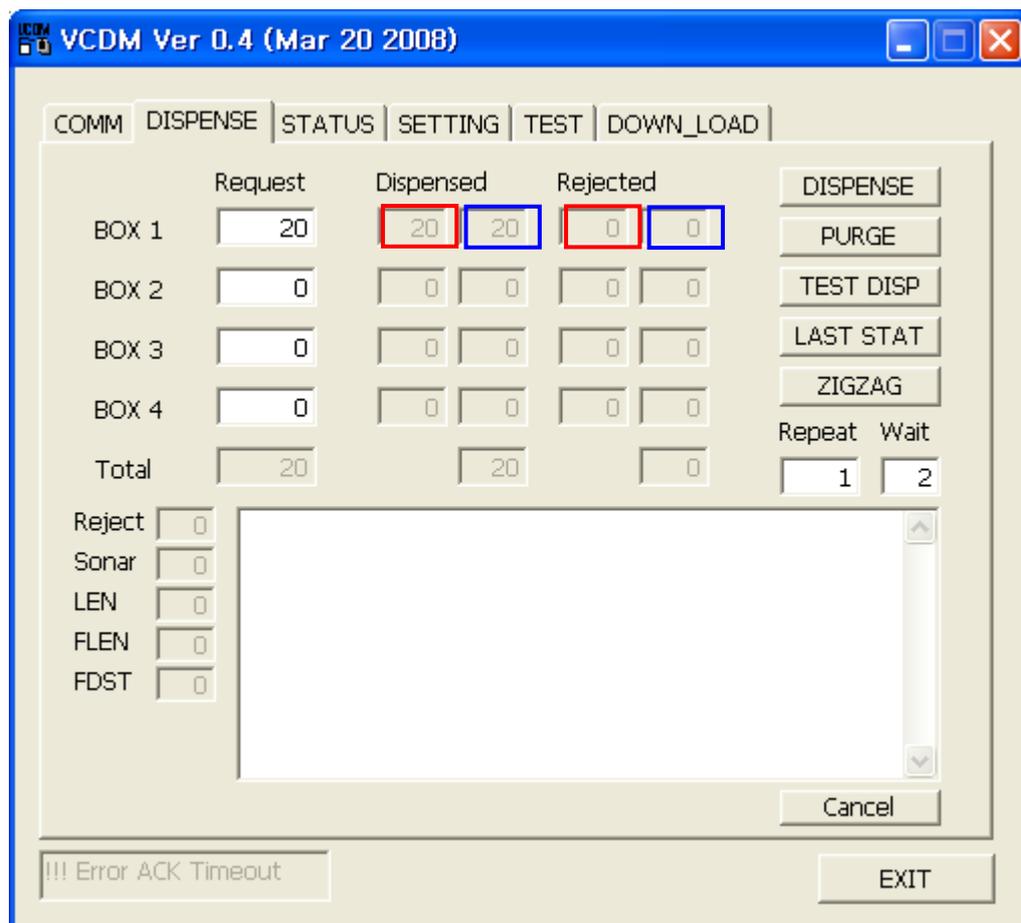
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The following picture shows the results after DISPENSE command.

In the column under “Dispensed”, the red line shows the number of the latest dispensed notes and the blue line shows the accumulated number of total dispensed notes for all repetition.

In the column under “Rejected”, the red line shows the number of the latest rejected notes and the blue line shows the accumulated number of total rejected notes for all repetition.

In the row of “Total”, the number of the dispensed and the rejected from all the cassette are shown.



The screenshot shows the VCDM Ver 0.4 (Mar 20 2008) software interface. The main window contains a table with the following data:

	Request	Dispensed		Rejected		
BOX 1	20	20	20	0	0	DISPENSE
BOX 2	0	0	0	0	0	PURGE
BOX 3	0	0	0	0	0	TEST DISP
BOX 4	0	0	0	0	0	LAST STAT
Total	20	20		0		ZIGZAG

Below the table, there are several input fields and buttons:

- Repeat: 1, Wait: 2
- Reject: 0, Sonar: 0, LEN: 0, FLEN: 0, FDST: 0
- Buttons: DISPENSE, PURGE, TEST DISP, LAST STAT, ZIGZAG, Repeat, Wait, Cancel, EXIT
- Status bar: !!! Error ACK Timeout

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3.2.2 PURGE

It causes cash dispenser to be purged. Always one time is activated.

3.2.3 TEST DISPENSE

The function of "Test Dispense" is to send the banknotes from cassettes to reject cassette in order to test the dispense function. The limit of the available number on the blank is less than 50 for the transaction.

3.2.4 LAST STAT

The latest response is displayed.

3.2.5 ZIGZAG

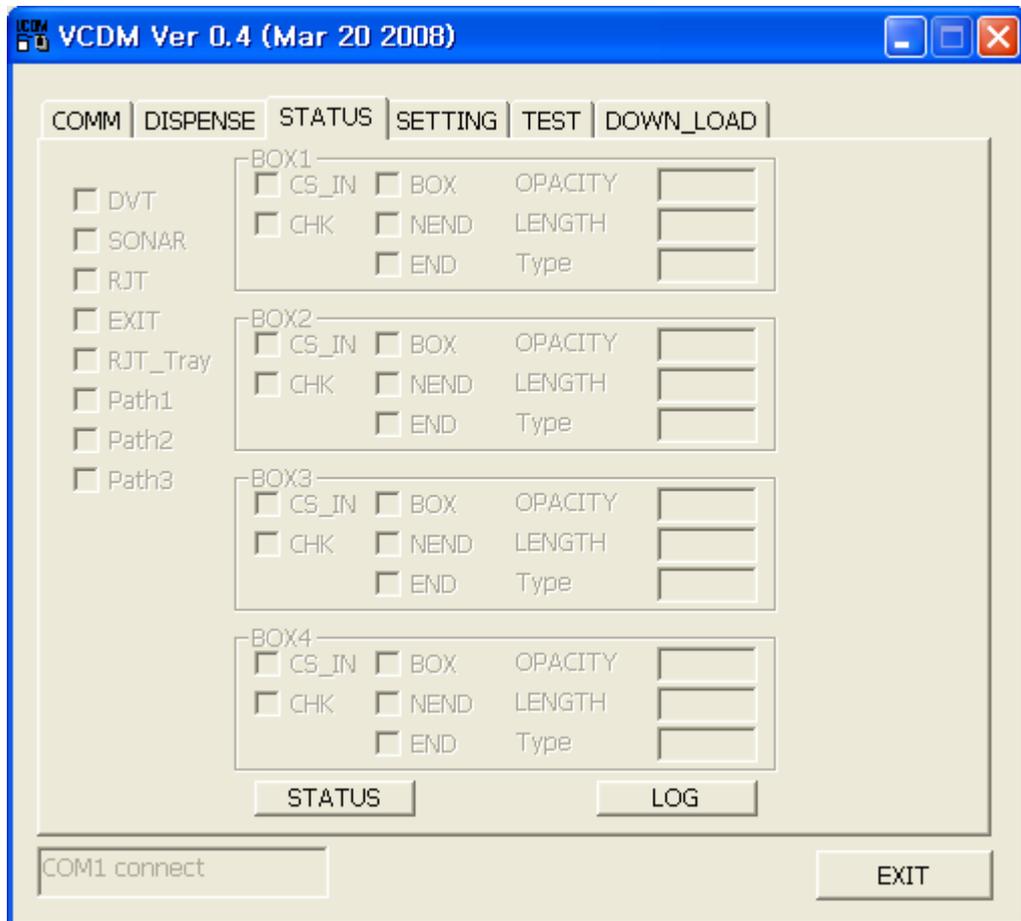
Every note is dispensed and rejected by turns as requested in the repetition. The maximum available number is 50.

3.2.6 Cancel

It is used to stop repetition of dispensing.

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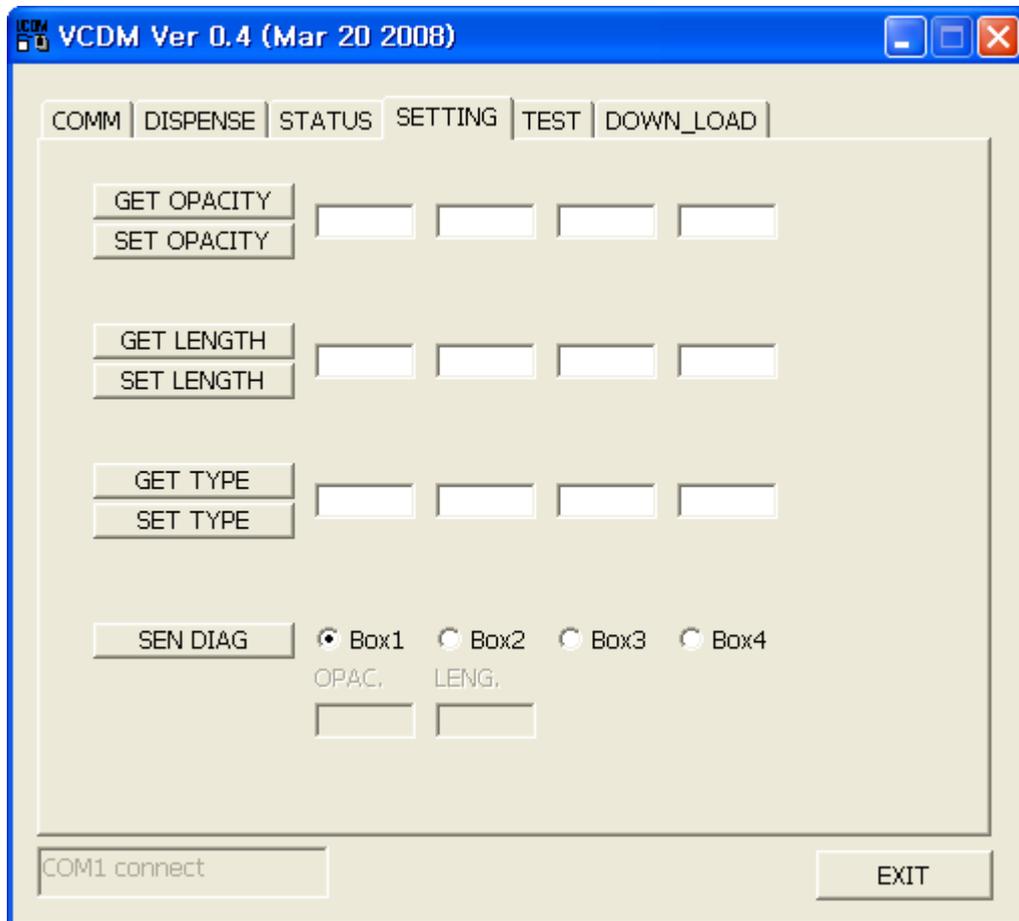
3.3 STATUS



- 1) The STATUS shows the current status of sensors. Without loading notes into cash cassettes, the normal status of sensors is like the picture.
- 2) If a sensor on the path is blocked, it will be marked with check (v).
BOX (Box Existence) sensors and NEND (Nearend) sensors should be checked and all other sensors should not be checked without trouble. (Each sensor name and position is attached in Chapter 5.)
- 3) "LOG" transmits the latest debugging data to PC. The password is "xoox".

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3.4 SETTING



VCDM-400 has function to define parameters related to the banknotes. If user wants to use different thickness and size of note from each cash box, the parameters should be set to the features of the note following the next steps.

(The data of each column are showing the values related to each cassette.)

- 1) Load the notes for each cassette.
- 2) Check the cash box to be measured among Box1, 2, 3 and 4 next to the button, SEN DIAG in the bottom.
- 3) Press the button of SEN DIAG and then 5 notes are dispensed from the chosen box for the measurement. The measured values for the OPACITY(Thickness) and LENG(Length) of notes are displayed on the bottom of the test program.
- 4) Now put the measured values to the proper blank referring to the example.
ex1) Box1 : SEN DIAG → OPAC. 50 LENG. 37
: Put 50 into the 1st blank next to GET OPACITY and 37 into the 1st blank next to GET LENG.

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ex2) Box3 : SEN DIAG → OPAC. 52 LENG. 38

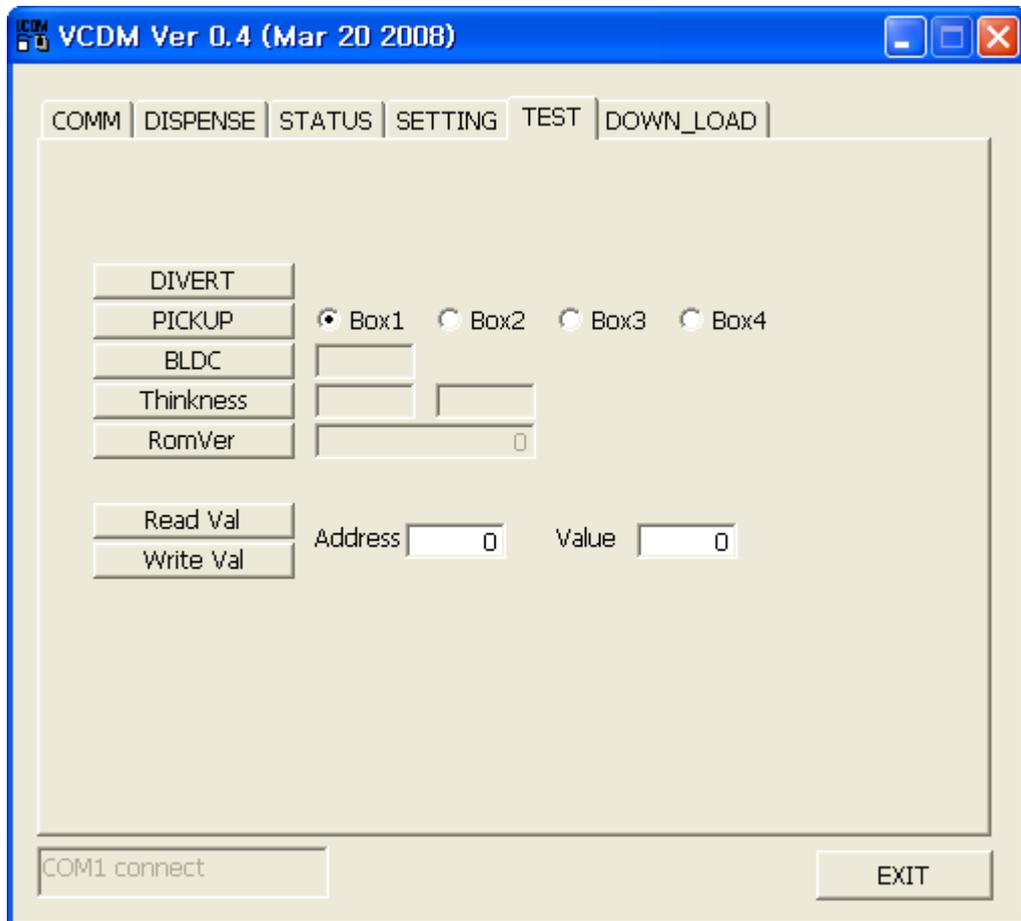
: Put 50 into the 3rd blank next to GET OPACITY and 38 into the 3rd blank next to GET LENG.

- 5) Press the button of SET OPACITY and SET LENGTH. Then, all the newly set values for each box can be displayed through GET OPACITY and SET LENGTH.
- 6) Repeat this cycle for another boxes.
- 7) SET ORDER button enables to assign the priority for dispensing of the cassette. Current priority can be shown by GET ORDER.

Caution) The parameters of the banknotes should be very carefully put after enough testing with SEN DIAG. We recommend the default value can be used unless there is special trouble.

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3.5 TEST

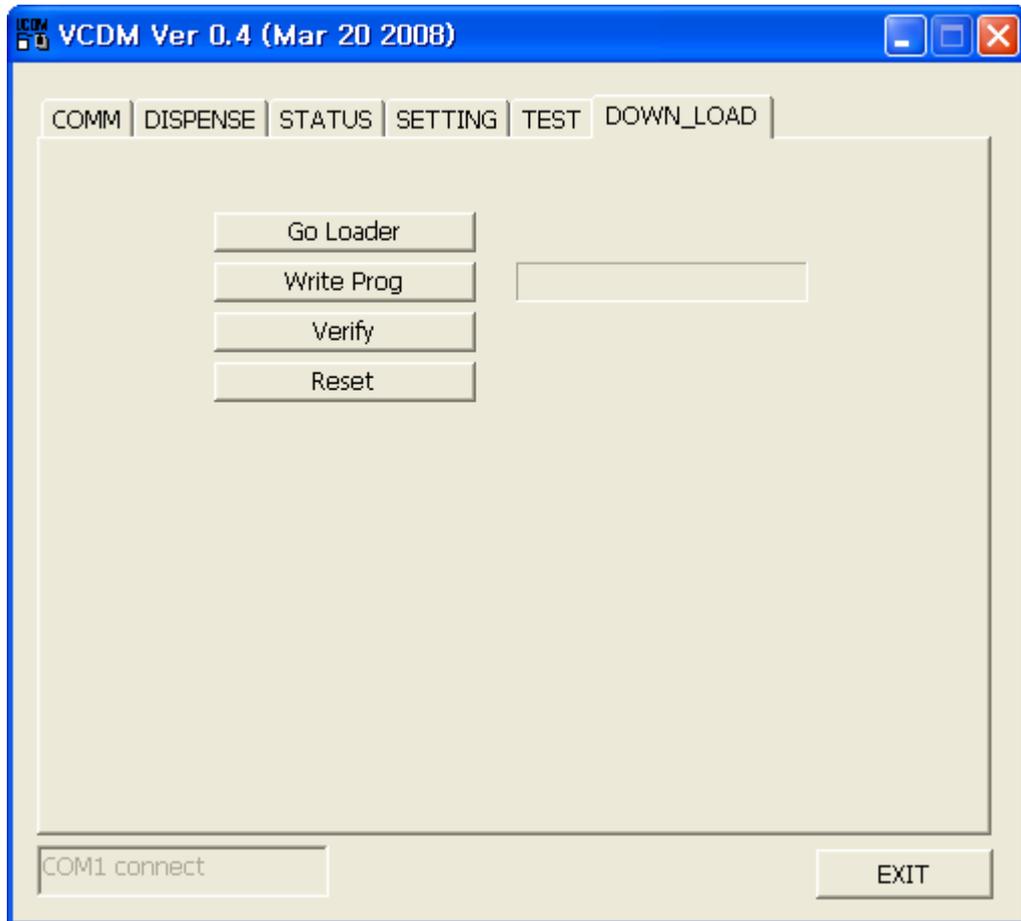


- 1) DIVERT : Checking the solenoid to operate the diverter
- 2) CLUTCH : Testing individual clutch on each box after choosing the box
- 3) BLDC : Normal Speed : $8000 \pm 5\%$ 1CB6 at ROM version B10N (5038)
- 4) RVDT : Measuring RVDT value
Normal RVDT(OPAC.) value without any load : 124 ~ 130
- 5) RomVer : Check ROM version and CHKSUM
- 6) Read Val Command to check internal variables
- 7) Write Val Command to change internal variables
 - ex) To change BLDC(Brush-Less DC) motor speed, put "19" to Address blank and the number (for requested speed) to Value blank. Then put the botton of Write Val.
(The default value for motor speed is 190.)

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3.6 DOWN_LOAD

3.6.1 Go Loader



Go Loader changes the mode from operation to program mode and should be executed at first for downloading. If it is successful, the next dialog box is displayed.

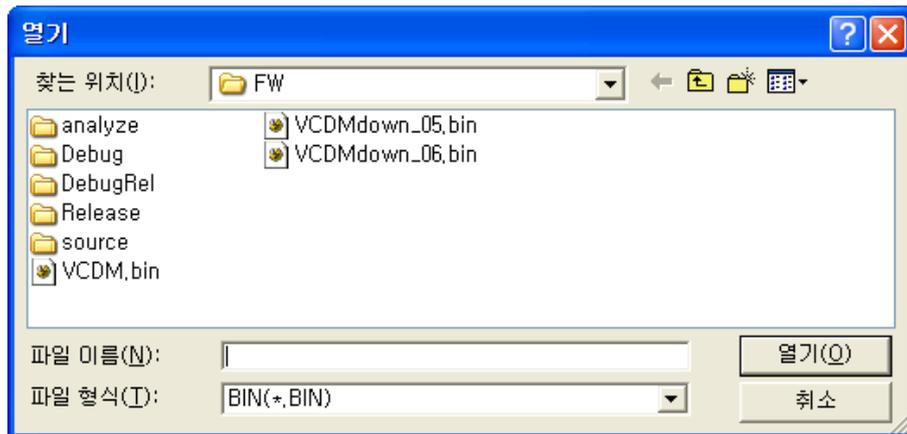


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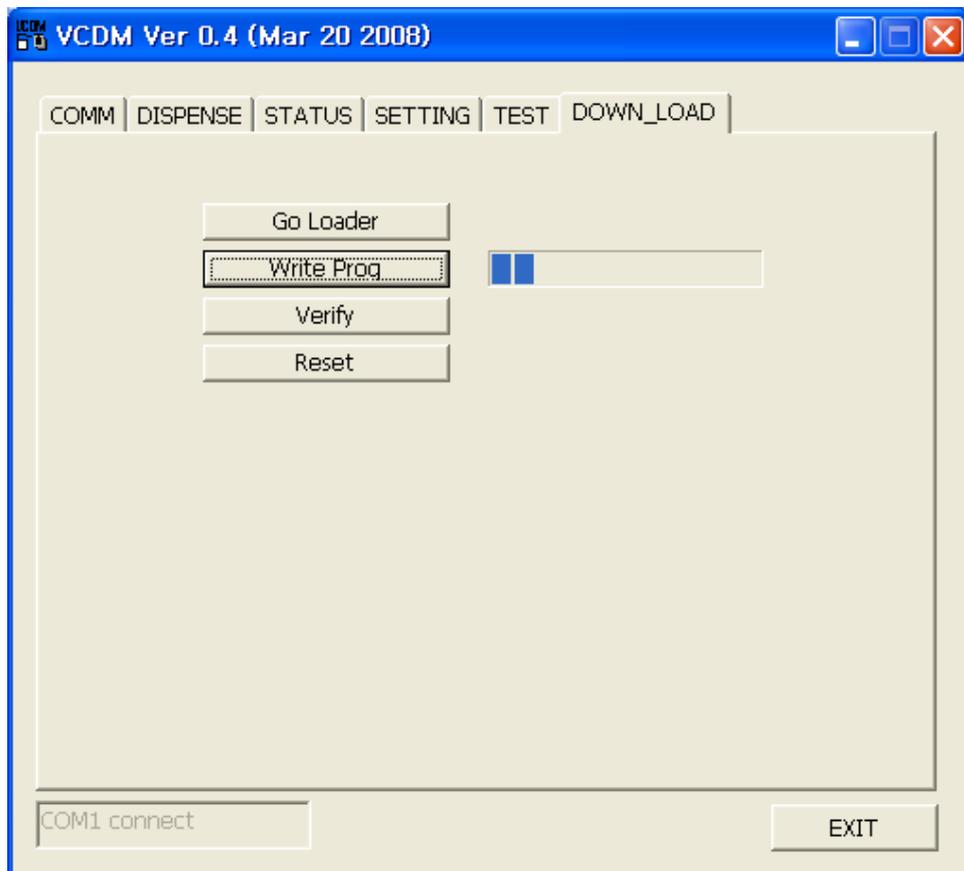
3.6.2 Write Prog

Write Prgo activates the next dialog box to choose the transferred file.

The file for downloading in ECDM400 has binary format (*.BIN).

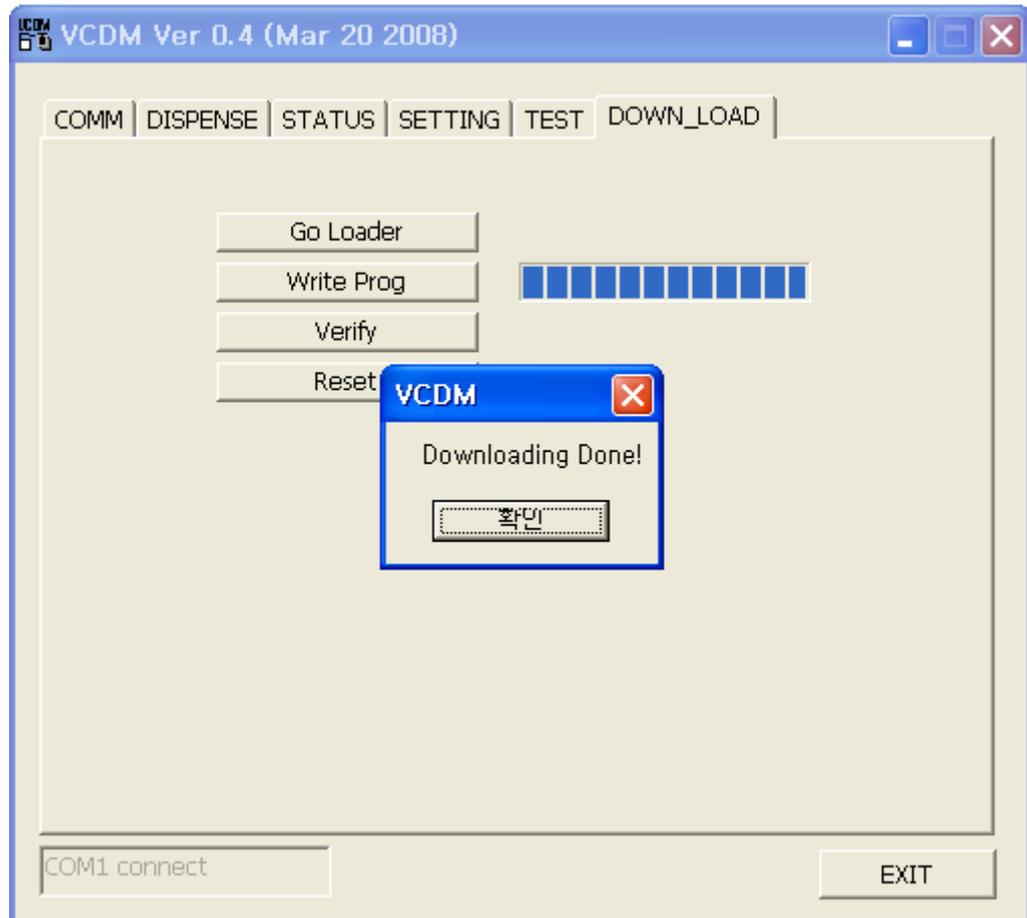


The progress is shown like the next picture.



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When the transfer is completed, the confirmation can be shown like the next picture.



3.6.3 Verify

Verify enables to check the check sum of the downloaded file.



Unless the command is executed or the check sum is right value, the error message is shown. In such a error, Write Prog should be executed again.

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3.6.4 Reset

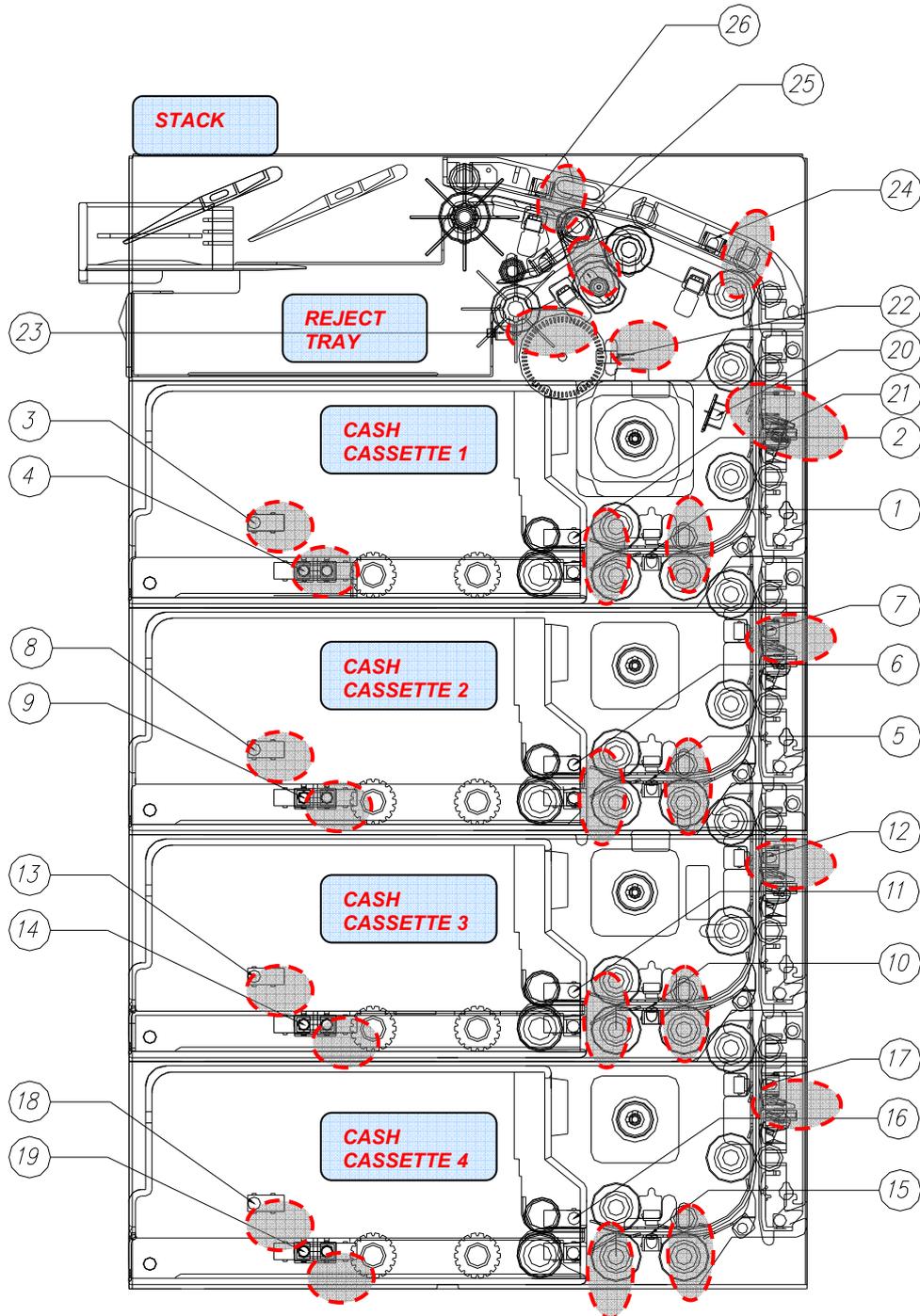
When downloading is completed, Reset terminates the operation of download.

If Verify is not executed or there is Verify Error, Reset will be executed.

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4 Position of Sensors

The drawing shows the sensor name and position.



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NO	NAME	DESCRIPTION	TYPE
1	CHK 1 SENSOR	Sensor to detect the length of the banknote picked from Top Cassette and to measure distance between banknotes	Optical
2	CST_IN 1 SENSOR	Sensor to check banknote on the path of Top Cassette	Optical
3	NEAREND 1 SENSOR	Sensor to check the remaining banknote on the path of Top Cassette	Optical
4	CST 1 SENSOR	Sensor to detect existence of Top Cassette	Optical
5	CHK 2 SENSOR	Sensor to detect the length of the banknote picked from the 2 nd Cassette from Top and to measure distance between banknotes	Optical
6	CST_IN 2 SENSOR	Sensor to check banknote on the path of the 2 nd Cassette from Top	Optical
7	PATH 2 SENSOR	Sensor to check banknote on the Path 2	Optical
8	NEAREND 2 SENSOR	Sensor to check the remaining banknote on the path of the 2 nd Cassette from Top	Optical
9	CST 2 SENSOR	Sensor to detect existence of the 2 nd Cassette from Top	Optical
10	CHK 3 SENSOR	Sensor to detect the length of the banknote picked from the 3 rd Cassette from Top and to measure distance between banknotes	Optical
11	CST_IN 3 SENSOR	Sensor to check banknote on the path of the 3 rd Cassette from Top	Optical
12	PATH 3 SENSOR	Sensor to check banknote on the Path 3	Optical
13	NEAREND 3 SENSOR	Sensor to check the remaining banknote on the path of the 3 rd Cassette from Top	Optical
14	CST 3 SENSOR	Sensor to detect existence of the 3 rd Cassette from Top	Optical
15	CHK 4 SENSOR	Sensor to detect the length of the banknote picked from the Bottom Cassette and to measure distance between banknotes	Optical
16	CST_IN 4 SENSOR	Sensor to check banknote on the path of the Bottom Cassette	Optical
17	PATH 4 SENSOR	Sensor to check banknote on the Path 4	Optical
18	NEAREND 4 SENSOR	Sensor to check the remaining banknote on the path of the Bottom Cassette	Optical
19	CST 4 SENSOR	Sensor to detect existence of the Bottom Cassette	Optical
20	SONAR_IN SENSOR	Sensor to detect start of sampling of Ultrasonic Sensor	Optical
21	SONAR SENSOR	Ultrasonic Sensor for doubled notes	Optical
22	WHEEL SENSOR	Wheel Count Sensor	Interrupt
23	RJT_TRAY SENSOR	Sensor to check existence of Reject Tray	Limit S/W
24	DVT SENSOR	DC Motor Control Sensor for Diverter Operation	Optical
25	RJT SENSOR	Sensor to detect rejected banknotes	Optical
26	EXIT SENSOR	Sensor to detect banknotes on Exit	Optical

* No 10~19 Sensors are available for VCDM-400 (4 cassettes model).