
CSM Merging Software

CSM DI REV

Dim ID software with automatic reverse option.
Operation Guide



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Version/Status	Release Date	Comments
1.0.001/Draft	25-Feb-2004	First version
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1 Introduction

The objective of this document is to specify and describe the “CSM DI software special version with automatic reverse measuring option” User interface part (called as CSMDIREV). This document should be used for operators training.



2 Main operation principles

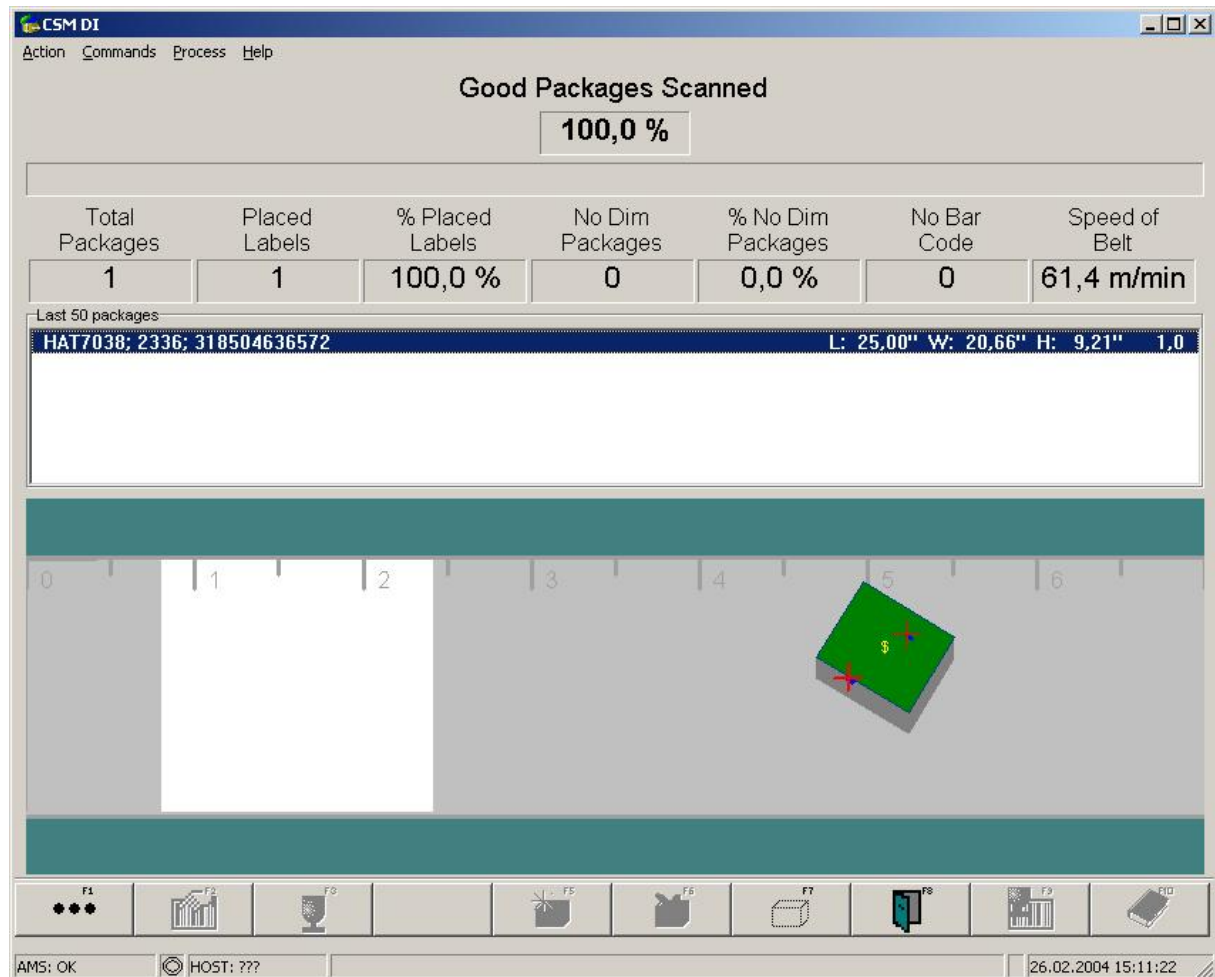
System contains two devices:

- Dimensioning device
- Barcode reader

Packages are measured by dimensioning device. Device sends also information about package position on the conveyor to control PC. Barcode reader sends read barcodes and barcodes positions to PC. PC combines data from dimensioning device and barcode reader to put proper barcodes to parcels. There is also a conveyor movement detection device below conveyor. This device informs both Dimensioning device and Barcode reader about conveyor running speed and direction. System software detects conveyor speed and direction using the information received from dimensioning device. If this information indicates that conveyor runs in different direction than system is currently supposed to run then system PC changes system devices measuring direction and uses different operating mode settings to operate properly in different direction. System is made for fully automatic operation.

3 Working with CSM DI

Main screen



During the operation you will see moving parcels on the PC screen and last 50 packages list at the middle part of screen. Different colours will indicate different statuses of parcels.

Moving parcels can be:

1. White/Gray – parcel is in the barcode detection phase but no barcodes yet
2. Pink – parcel has invalid or missing barcodes or package has some measuring errors.
3. Green – parcel has valid barcodes.

Function keys

F1 – will open second row of special application functions:

F1 – shows running system logs and internal buffers statuses

F2 – opens general configuration screen

F3 – restarts dimensioner device and synchronizes devices



- F4 – closes this special function keys row
- F5 – resets statistical counters and clears 50 parcels list
- F6 – opens main system configuration screen
- F7 – displays “About” box with system information
- F8 – test package measurement
- F9 – show legally relevant measurement data

F2 – not in use

F3 – not in use

F4 – not in use

F5 – not in use

F6 – not in use

F7 – starts bypass mode. Only Parcel ID:s will be collected

F8 – closes application software (has confirmation and password protection possibilities)

F9 – not in use

F10 – can be used for special system help (optional, currently not in use)

Statistics

Statistics section shows statistical counters and values. These values (except the belt speed) are calculated automatically after each parcel processing:

Value	Description
Total Packages	Total number of packages (usually equals to total number of generated data records, depends on host module)
Placed Labels	Number of packages having valid parcel ID
% Placed Labels	Percentage of placed labels (Placed Labels/Total Packages) * 100%
No Dim packages	Number of packages without dimensions
% No Dim Packages	Percentage of no dim. packages (No Dim Packages/Total Packages) * 100%
Good Packages Scanned	Equal to Placed Labels
No Barcode	Number of packages having no barcode
Speed of belt	The current conveyor belt speed

Last 50 packages list

Last 50 packages section on the application screen shows measuring results and barcode(s) of last 50 packages. Only the last 6 are visible on the screen, but the rest can be seen when scrolling the list up and down using keyboard or mouse.



Bypass mode

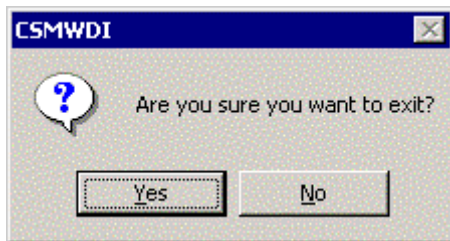
Function key **F7** can be used to activate/deactivate bypass mode. The Bypass mode allows to scan only barcodes without measuring parcels volume. The display on PC shows **BYPASS MODE** message when this mode is active. Bypass lamp will be activated if optional bypass lamp has been installed.

Reverse mode

System will switch automatically to reverse measuring mode when it detects conveyor direction change by dimensioning speed data.

Closing this application

F8 function key can be used to close this application.



Application shutdown will be confirmed pressing [Enter] key or **Yes** button in an pop up window as above.



4 Application configuration

See system technical manual for details.



5 Application workflow and Host communication

Starting up application

Application will be started automatically after system PC boot process as a Windows start-up application. Startup sequence:

1. Starts all devices
2. Does devices synchronization
3. Tries to connect to Host system if host module has such functionality.
4. Starts default operation mode specified in system setup.
5. Data will be collected and stored to local data file by system Host communication module. Additional Alibi storage option is available.
6. Host communication module will try to connect to host system using and send collected data (when available).
7. Checks belt direction using dimensioning device speed result. System will update it's internal mode in case of direction change. System has hard-coded delay 5 seconds for this operation.

Host communication

Host communication module is taking care of sending data to Host system. This module is running as a part of whole data capturing software and there is no need to worry about starting up and controlling this module separately. All data communication events and other information are stored to general system log file, having date and time information together with verbal information about each event.



6 System Error messages

System error messages can appear at the top part of the application screen, near to statistical counters. Error messages are usually appearing as: (Date/Time) (Module name) (Error Message). The most common error messages are shown below.

1. Message (appearing without date/time and module name):

'Warning Possible Scanner Problem, Contact Your Supervisor';

'Warning Possible Dimensioner Problem, Contact Your Supervisor';

ToDo: Try to resynchronize devices pressing keys F1 , F3. Call technical support if problem remains

2. Message (from different device modules):

'Socket error ...';

'The socket connection timed out';

'The socket is not connected';

'Invalid message from scanner: "...";

ToDo: If any of mesurments is missing, try to restart system

3. Message (from different device modules):

'Invalid message from ...';

'Unknown message from ...';

'... message has an invalid message counter value.';

'... message has an invalid checksum.';

'General status = ';

ToDo: Call technician ONLY if message appears often (every day).

4. Message:

'System is not initialized';

'Failed to load device module "%s". %s';

'Internal data buffer is full. Some package data is lost.';

'Dimensioning device is not initialized';

'Fatal dimensioning device error. See PMWDI.LOG for more information';

'Dimensioning device disabled due to a fatal error. See PMWDI.LOG for more information';

'Fatal overhead scanner device error. See PMWDI.LOG for more information';

'Overhead scanner device disabled due to a fatal error. See PMWDI.LOG for more nformation';

'Synchronization failed';



'Timed out without response from a device';

'Handheld scanner device disabled due to a fatal error. See PMWDI.LOG for more information';

'External display device disabled due to a fatal error. See PMWDI.LOG for more information';

ToDo: May happen when starting system and any of devices is not running yet. Switch devices off-on and restart system (windows restart).

7. For other message: Contact your supervisor or call service.

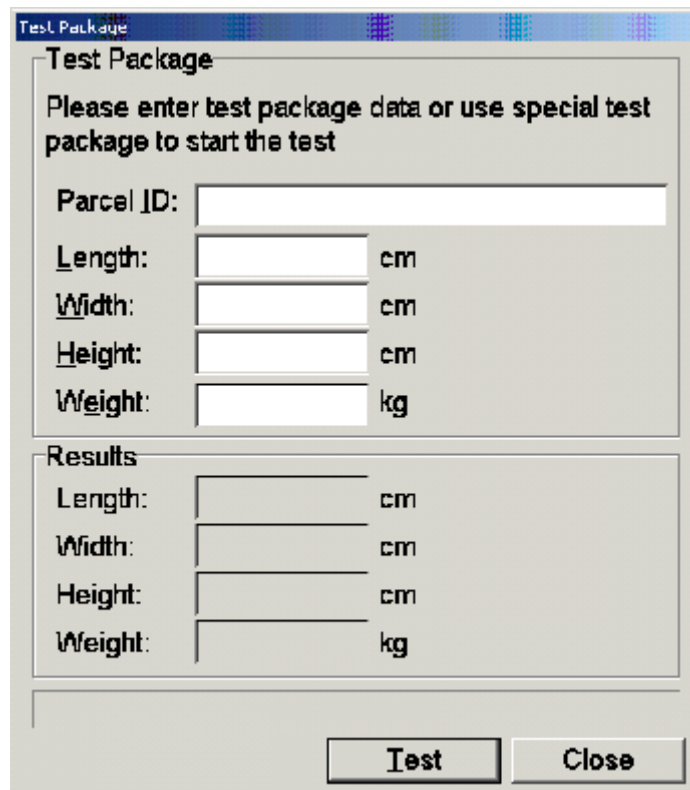
7 Test procedure

Test procedure is used to verify that the system is measuring packages properly.

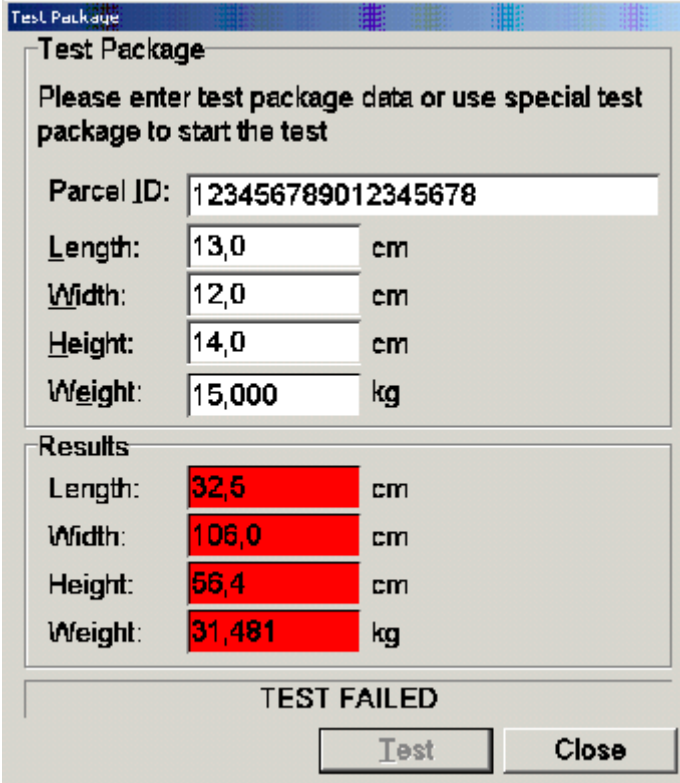
7.1. Normal test procedure

Normal test procedure can be used to check the system using any real production parcel. Data will be sent to host as usually.

1. Press <F1>-<F10> to open the test package window.

A screenshot of a software dialog box titled "Test Package". The dialog has a title bar with the text "Test Package". Inside, there is a section titled "Test Package" with the instruction "Please enter test package data or use special test package to start the test". Below this are four input fields: "Parcel ID:" (a wide text box), "Length:" (a text box followed by "cm"), "Width:" (a text box followed by "cm"), "Height:" (a text box followed by "cm"), and "Weight:" (a text box followed by "kg"). Below these is a section titled "Results" with four corresponding output fields: "Length:" (a text box followed by "cm"), "Width:" (a text box followed by "cm"), "Height:" (a text box followed by "cm"), and "Weight:" (a text box followed by "kg"). At the bottom of the dialog are two buttons: "Test" and "Close".

2. Key in the barcode label on the package that you are using for the test.
3. Measure the test package manually and enter the results. Length must be measured as the longest side on the conveyor belt.
4. Place the test package on the conveyor belt and measure it with CS5200/CS900.
5. Once the results are received, CSMWDI shows the results and a text – “TEST PASSED” or “TEST FAILED”.



Test Package

Please enter test package data or use special test package to start the test

Parcel ID: 123456789012345678

Length: 13,0 cm

Width: 12,0 cm

Height: 14,0 cm

Weight: 15,000 kg

Results

Length: 32,5 cm

Width: 106,0 cm

Height: 56,4 cm

Weight: 31,481 kg

TEST FAILED

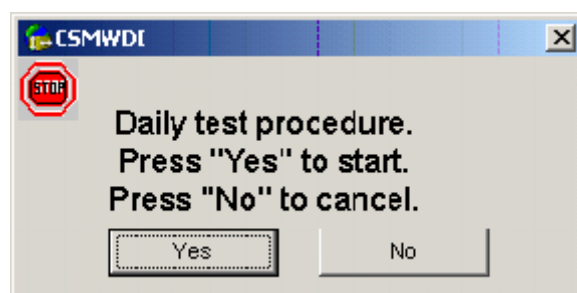
Test Close

6. A measurement result in the red color indicates that the value was not within the limits. Test packages are reported to the host like any other packages.
7. The Test Package window will be closed automatically after 5 minutes of inactivity in case of using normal parcel or after 30 seconds in case of using special test parcel.

7.2. Pre-entered test packages

Pre-entered test packages functionality can be used in addition to normal test procedure. Test can be configured to start automatically once a day. Confirmation/notification box will be displayed at pre-determined time of day.

Test can be activated by pressing "Yes" (or "ENTER" key). ESCAPE key or "No" button will cancel test.



The test itself follows the same procedure as described above when using normal test procedure.

8 Showing legally relevant measurement results

The AMS main window shows the legally relevant measurement results and is part of the protected software. Starting up the user CSM interface application, the AMS will be started up automatically. The data shown on the screen is specific to the application and is formatted in the Process Module. The same data is stored to the Alibi memory.

The following drawing shows a sample output:

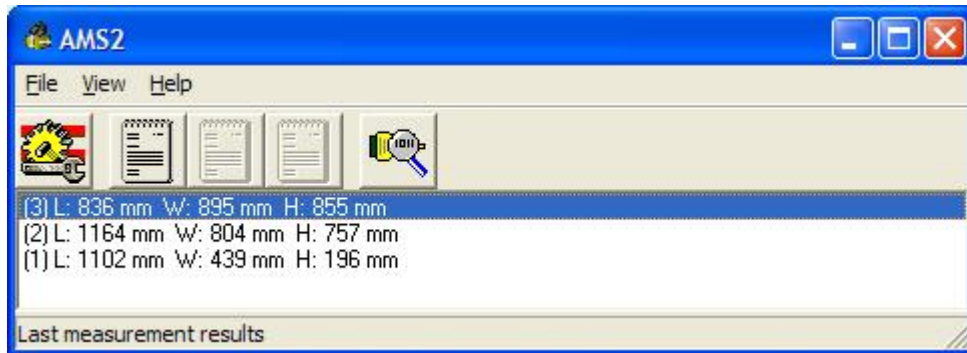


Figure 1

INSTRUCTION:

- Press F1 Opens second row of function keys (of CSM screen)
- Press F8 Shows AMS main window (for searching alibi records)

Legally relevant measurement results are always shown and stored without any conversions, i.e. using the same measurement units and precision than received from the external measuring device.

8.1 Retrieving Alibi Memory records

The AMS main window is used to retrieve Alibi Memory records. By default, the "View Alibi" window shows the records for the current day, but can be used to retrieve any set of records for a specific date and/or index. The "View Alibi" windows is part of the protected software.

The following drawing shows a sample output of the alibi memory:

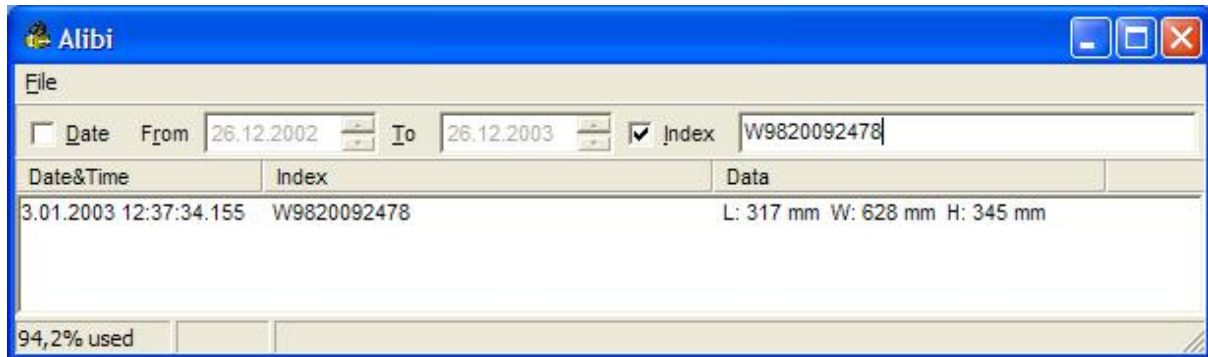


Figure 2

The checksum value is validated every time the data record is shown on the screen. If the stored checksum value does not match with the calculated checksum value, AMS shows an error message in the place of the legally relevant data field.

It is possible to search measurement results with the filter function "Date" or "Index". When the filter function is activated a new alibi memory window is shown.

INSTRUCTION:

- Press F1 Opens second row of function keys (of CSM screen)
- Press F8 Shows CargoAMS main window (for searching alibi records)
- Select "View" Show alibi records.
If filter function is not activated select "Filter" in menu "File".