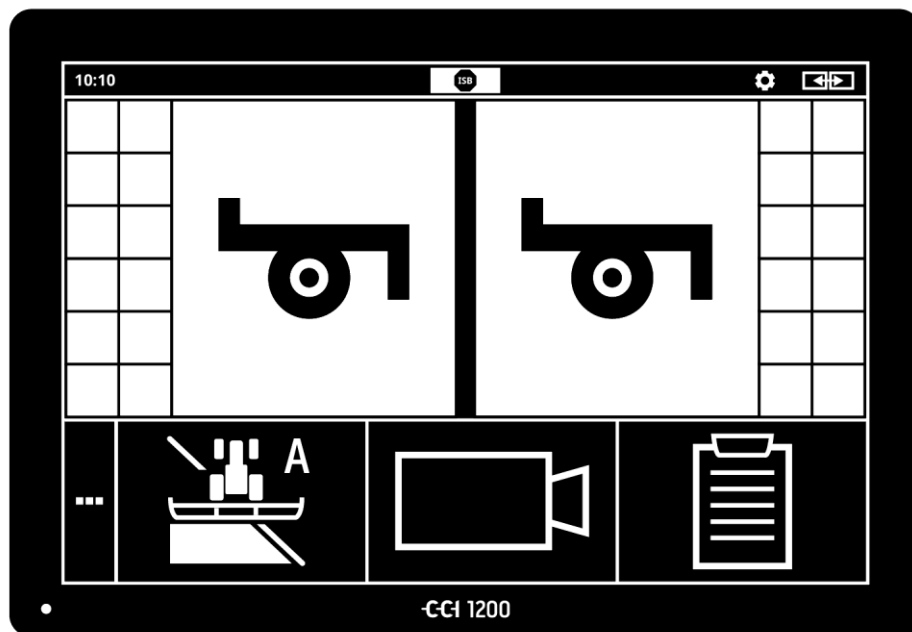


ISOBUS Terminal

CCI 1200

Operating instructions



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About these operating instructions

These operating instructions are intended for persons that are entrusted with the use and maintenance of the terminal. They include all necessary information for safe handling of the terminal.

Target group

All information provided in the operating instructions relates to the following device configuration:

Identifier	CCI 1200
Software version	CCI.OS v1.0
Hardware version	1.0

These operating instructions guide you chronologically through operation:

- About the CCI 1200
- Safety
- Setting up for operation
- Settings
- User interface
- Apps
- Troubleshooting

To ensure fault-free operation of your CCI 1200, please read through the operating instructions carefully. Keep the operating instructions for future reference.

Liability disclaimer

These operating instructions must be read and understood prior to assembly and commissioning of the terminal to prevent problems during operation. No liability is accepted for damage resulting from failure to observe these operating instructions!

If you need further information or if problems occur that are not covered in enough detail in these operating instructions, then please contact your dealer or contact us directly to obtain the required information.

If problems arise

Pictograms

Each function is explained with step-by-step instructions. On the left next to the operation instruction you can see the button to be pressed or one of the following pictograms:



Enter a value via the keyboard

- Enter the value via the terminal's screen keyboard.



Select a value from a selection list

1. Swipe through the selection list until you reach the desired value.
2. Select the value by ticking the checkbox on the right edge.



Change value

- Change an existing value.



Confirm action

- Confirm the action carried out previously.



Select list entry

- Tick the checkbox to select an element in a selection list.



Switch off

- Set the switch to "off".
→ You deactivate a function or setting.



Switch on

- Set the switch to "on".
→ You activate a function or setting.

About the CCI 1200

We commend you on your purchase of this CCI 1200. The CCI 1200 is a manufacturer-independent operating terminal for controlling ISOBUS implements.



The touchscreen of the CCI 1200

- Is 12.1" in size and has a resolution of 1280x800 pixels,
- Is highly luminous and suitable for day and night operation and
- has an anti-glare coating, which prevents reflections even in direct sunlight.

The user interface

- Offers flexible layouts and displays up to 6 apps simultaneously,
- By use of a user interface developed from practical experience, enables an intuitive approach even with complex functions.
- The plastic casing reinforced with glass beads is highly resistant.
- The ON/OFF key as well as two USB 2.0 ports are integrated in the outer surround to enable quick access.









The interfaces of the CCI 1200




- Video, GPS, LH5000, WiFi, ISOBUS, signal socket, USB: the numerous interfaces ensure maximum connectivity.
- The loud buzzer signals alarm states and provides audible feedback.
- All connectors on the back of the terminal are protected against moisture and dust by rubber caps.

1.1 CCI.Apps

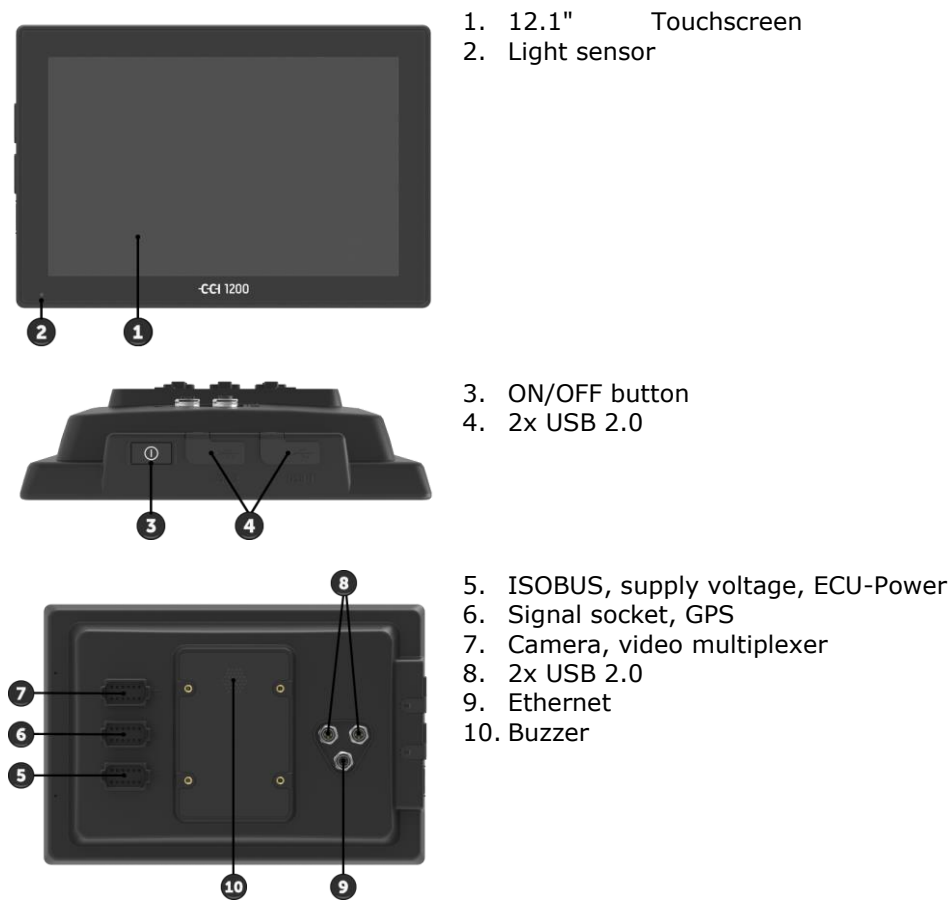
The following CCI.Apps are installed on the CCI 1200:

	CCI.UT	ISOBUS implement operation
	CCI.Cam	Display of up to 8 cameras
	CCI.Config	Tractor combination settings
	CCI.Command	Map view
	CCI.Control	Data management
	CCI.Help	Help system

The following functions must be purchased separately and can only be used once enabled:

	Parallel Tracking	Creation of tracks
	Section Control	Automatic switching of sections
	Task Control	Import and export of task data

1.2 Structure



The terminal is operated via the touchscreen. All common touch gestures are supported.

Touchscreen

The light sensor measures the ambient light and matches the screen brightness to the ambient light.

Light sensor

ON/OFF

The terminal switches off automatically,

- if you pull out the ignition key or
- turn the ignition key to the OFF position.

The terminal switches back on, when the ignition is turned on again.



Note

The terminal can only be switched on with the ignition key if it has previously been switched off via the ignition.

Preferably switch the terminal on or off using the ignition key.

Alternatively you can switch the terminal on or off using the "ON/OFF" button.

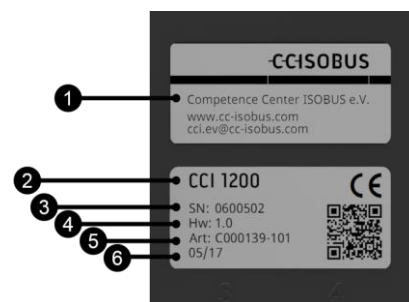
- Press the ON/OFF button for 1 second to switch it on or off.

The LED integrated in the ON/OFF button displays the current status information. The LED is off during normal terminal operation to prevent any disturbance to the driver.

The status displays are described in the chapter *Troubleshooting*.

Nameplate

Identify your device based on the information on the nameplate. The nameplate is attached on the back of the terminal.



1. Manufacturer
2. Terminal type
3. Serial number
4. Hardware version
5. Manufacturer's article number
6. Production date (week/year)



Note

Depending on the manufacturer, the nameplate may differ in layout and content from the image.

Both USB interfaces on the left casing side are of type A. Standard flash drives can be connected.

USB

The USB interfaces on the rear side are type M12. These interfaces protect the terminal against the penetration of dust and water, even when there is a connected USB device.

The buzzer is sized so that even if there is a very loud background, terminal and implement audio warnings can be clearly heard.

Buzzer

At connector A, you connect the terminal

Connector

- to the ISOBUS and
- to the power supply.

At connector B, you connect the terminal to

- the signal socket,
- an NMEA 0183 GPS receiver,
- the serial GPS output of the tractor or the automatic steering system,
- the serial interface of an N-sensor.

At connector C, you connect the terminal to

- a camera or a camera multiplexer,
- an NMEA 0183 GPS receiver,
- the serial GPS output of the tractor or the automatic steering system,
- the serial interface of an N-sensor.

2 Safety

These operating instructions contain basic instructions which must be observed during setting up, configuration and operation. As such, it is absolutely essential to read these operating instructions prior to configuration and operation.

Not only do the general safety instructions listed in the "Safety" chapter have to be observed but also the special safety instructions appearing in other chapters as well.

2.1 Identification of indications in the operating instructions

The safety instructions in these operating instructions are specially identified:



Warning - General Hazards!

This occupational safety symbol identifies general safety instructions the non-observance of which poses a danger for life and limb. Strictly observe the warning instructions and take particular care in these cases.



Caution!

This caution symbol identifies all safety instructions referring to regulations, directives or working procedures which must be observed. Non-observance can result in damage to or destruction of the terminal as well as malfunctions.



Note

The note symbol highlights operation tips and other particularly useful information.

2.2 Intended use

The terminal is intended exclusively for use with approved ISOBUS implements and devices in agriculture. Any other installation or use of the terminal is not included within the manufacturer's area of responsibility.

The manufacturer accepts no liability for any resulting personal injury or material damage. Any risks for unintended use are borne solely by the user.

Observance of the operation and maintenance conditions stipulated by the manufacturer also form part of intended use.

The accident prevention regulations in force, as well as other generally recognised safety, industrial, medical and traffic laws must be observed. Unauthorised modifications to the device exclude the manufacturer's liability.

2.3 Safety instructions



Warning - General Hazards!

Please take special care to ensure the following safety instructions are complied with. Non-compliance could result in malfunctions and consequently danger for any bystanders:

- Switch the terminal off if the touchscreen does not respond, the display hangs or the user interface is not properly displayed.
 - Ensure that the touchscreen is dry before working with the terminal.
 - Do not operate the terminal whilst wearing gloves.
 - Ensure the terminal does not exhibit any external damage.
-



Caution!

Please observe the following safety instructions to prevent damage to the terminal.

- Do not remove any safety mechanisms or safety signs.
 - Disconnect the power supply to the terminal during maintenance work or when using a charging device on the battery of the tractor/production implement.
 - Do not open the terminal casing. Opening the casing can result in reduced terminal service life and malfunctions. If the terminal casing is opened, the warranty will become void.
 - Disconnect the power supply to the terminal beforehand when welding on the tractor or an attached implement.
 - Carefully read and observe all safety information in the operating instructions and the safety labels on the terminal. Safety labels must always be in a proper legible condition. Replace missing or damaged labels. Ensure that new terminal parts are provided with the current safety labels. Spare labels can be obtained from your authorised dealer.
 - Learn how to use the terminal in accordance with regulations.
 - Keep the terminal and accessories in good condition.
 - Only use a soft cloth moistened with clean water or a small amount of glass cleaning agent to clean the terminal.
 - Do not operate the touchscreen with a sharp-edged or rough object because otherwise the anti-glare coating will be damaged.
 - Do not exceed the temperature range of the terminal.
 - Keep the light sensor clean.
 - If the terminal is not fitted in the tractor cab, it should be stored in a dry and clean location. Do not exceed the storage temperature range.
-

2.4 Installation of electrical devices

Modern farming implements use electronic components and parts the operation of which can be compromised by electro-magnetic interference from other devices. Such effects can endanger people if the following safety indications are not observed.

In the event of retrofitting electric and electronic devices, and/or components, in an implement with connection to the on-board network, the user must independently verify whether the installation interferes with vehicle electronics or other components. This is, in particular, applicable to the electronic interference of:

- EHR
- Front hoisting gear
- Power take offs
- Engine and gears

It must be ensured in particular that the retrofitted electric and electronic components comply with the EMC Directive 89/336/EC in its respectively valid version and that they bear the CE marking.

3 Setting up for operation

Setting the terminal up for operation is a quick and uncomplicated process based on the following step-by-step guide.

3.1 Check the scope of delivery

Check the scope of delivery of your terminal before you start setting up for operation:



1. Terminal
2. Device holder
3. Cable A

3.2 Install the terminal

The device holder is supplied with terminal and is pre-assembled on the terminal in the factory. Attach the terminal with the device holder to a 20mm diameter tube.

Fit the terminal in landscape or portrait format.



Note

Ensure that the screws are tightened firmly.

Mount the terminal so that it

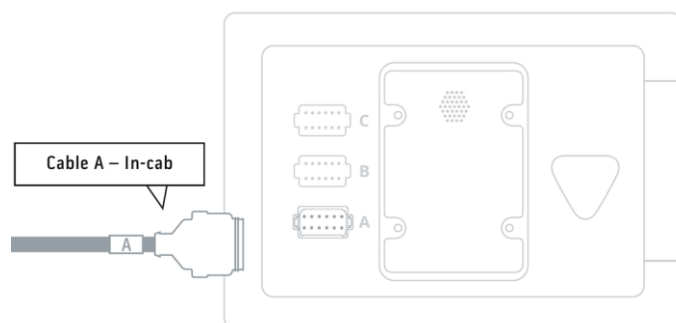
- Is easy to read and operate,
- Does not impede access to the tractor controls and
- Does not impede the view to the outside.

Setting up for operation

3.3 Connect the terminal

Connect the terminal to the ISOBUS and supply it with power via connector A:

- Connect cable A to connector A of the terminal and then to the in-cab socket of the tractor.



3.4 Switch on the terminal



1. Press the ON/OFF button for 1 second.
→ The safety instructions are displayed.
2. Drag the "Enter" button in the indicated direction.
→ The arrow changes its shape to a check mark.
→ The start screen is displayed.



3.5 Change layout

As supplied all operating screens are output in landscape format. If you have installed the device in portrait, then first change the layout:



1. Press the "Settings" button on the start screen.
→ The "Settings" operating screen is displayed.



2. Press the "Layout" button.
→ The "Layout" operating screen is displayed.



3. In the "Orientation" line, select the "Portrait" checkbox.
→ The layout is changed.



4. End the Process with "Back".

3.6 Select language

As supplied, the terminal displays all texts in English. To change the language setting:



1. Press the "Settings" button on the start screen.
→ The "Settings" operating screen is displayed.



2. Press the "User" button.
→ The "User" operating screen is displayed.



3. Press the "Language" button.
→ The "Language" operating screen is displayed.



4. Select your language.
→ The checkbox at the right edge of the button is selected.
→ The language setting is changed.



5. End the Process with "Back".

3.7 Select time zone

The time zone forms the basis for the time displayed by the terminal. Switching between summer and winter time takes place automatically and cannot be disabled.

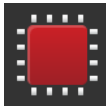


Note

Select the time zone with the correct time difference and the appropriate region.



1. Press the "Settings" button on the start screen.
→ The "Settings" operating screen is displayed.



2. Press the "System" button.
→ The "System" operating screen is displayed.



3. Press the "Date and time" button.
→ The "Date and time" operating screen is displayed.



4. Press the button "Time zone".
→ The "Time zone" selection list is displayed.



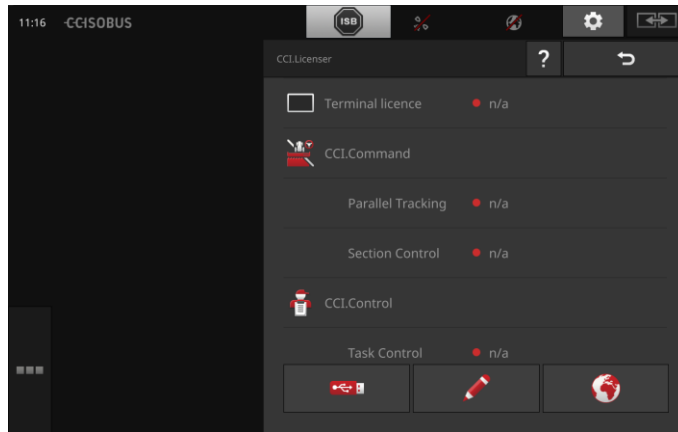
5. Select the Time zone.
→ The checkbox at the right edge of the button is selected.
→ The time zone is changed.



6. End the Process with "Back".

3.8 Enter terminal licence

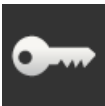
To be able to use all functions, you must enter the terminal licence for the terminal. The terminal licence can be downloaded from the web page <https://sdnord.net/PA>.



1. Press the "Settings" button on the start screen.
→ The "Settings" operating screen is displayed.



2. Press the "System" button.
→ The "System" operating screen is displayed.

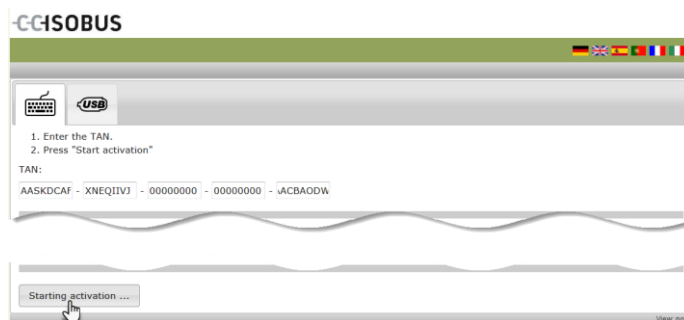


3. Press the "Licence data" button.
→ The "Licence data" operating screen is displayed.



4. Press the "Manual entry" button.
→ The licence wizard is displayed.

Setting up for operation



CCISOBUS

1. Enter the TAN,
2. Press "Start activation"

TAN:
AASKDCAF - XNEQITVJ - 00000000 - 00000000 - UACBAODW

Starting activation ...

5. Change to the PC. In the browser open the web address <https://sdnord/PA>.

6. Answer the security question.

7. Enter the TAN of the terminal and press the button "Start activation...".

→ The terminal licence is displayed.



CCISOBUS

1. Enter the TAN,
2. Press "Start activation"

TAN:
[] - [] - 00000000 - 00000000 - []

New licence key:
Serial number: 0600162
Firmware: 0601.00.00

Licence key:
Parallel Tracking: 5127698233
Section Control: 4576498281

AASKDCAF-XNEQGDV-E8C60099-00000000-AABKBEVP

Starting activation ...

Setting up for operation

8. On the terminal, press the "Next" button.
→ The "Enter terminal licence" operating screen is displayed.
9. Enter the terminal licence and confirm your entry with "Next".
→ The operating screen "Enter section control licence" is displayed.
10. Press the "Next" button.
→ The "Enter parallel tracking licence" operating screen is displayed.
11. End the process with "Next".

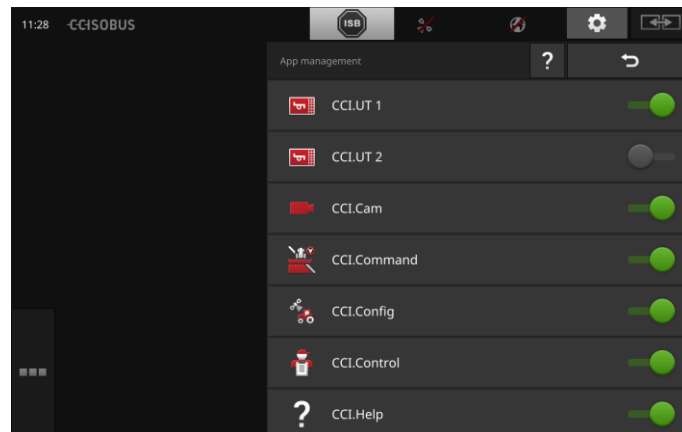


3.9 Activate apps

As supplied from the factory all apps are activated with one exception and can be used. Only the app CCI.UT2 is not activated.

Activate CCI.UT2, if you

- want to simultaneously display and operate two ISOBUS implements,
- want to operate one ISOBUS implement and set up an AUX control.



1. Press the "Settings" button on the start screen.
→ The "Settings" operating screen is displayed.



2. Press the "Apps" button.
→ The "Apps" operating screen is displayed.



3. Press the button "App management".
→ The "App management" operating screen is displayed.



4. Switch CCI.UT2 "On".
→ CCI.UT2 is activated.



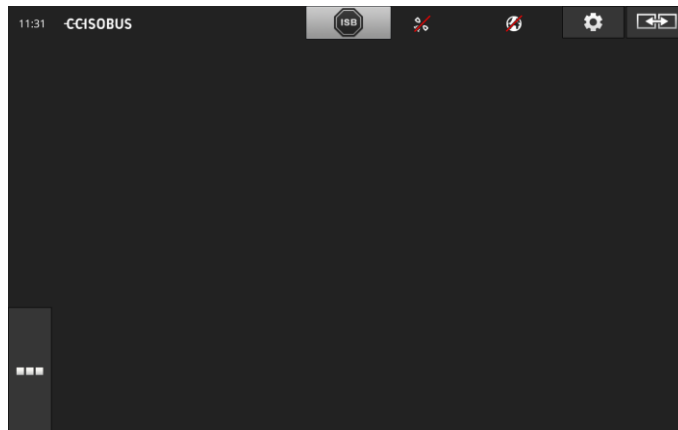
Note

We recommend leaving all apps activated.
Simply leave all unused apps in the app menu. If necessary, you can then quickly activate these apps.
Apps in the app menu use scarcely any CPU power or RAM.

3.10 Setting up the user interface

Although all apps are activated, the user interface remains empty when the terminal is first started:

Setting up for operation



You want to operate an ISOBUS implement with CCI.UT and record the implement data using CCI.Control.

Example

You have connected a camera to the terminal and want to keep the camera image visible during working:

Setting up for operation



1. Press the button "App Menu".
→ The app menu opens.



2. Press the "CCI.UT" button in the app menu.
→ CCI.UT is displayed in mini view.

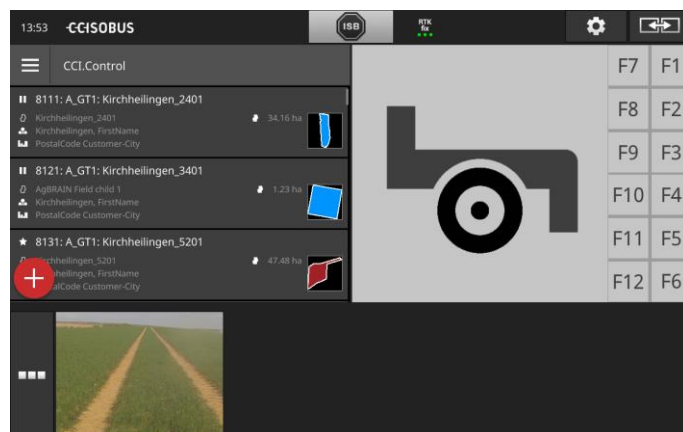


3. In mini view, press on "CCI.UT".
→ CCI.UT is displayed in the left half of the standard view.



4. Press the button "App position".
→ CCI.UT is displayed in right half of the standard view.

5. Repeat steps one to three for CCI.Control.
→ CCI.Control is displayed in the left half of the standard view.
6. Repeat steps one and two for CCI.Cam.
→ CCI.Cam is displayed in mini view.



4 Graphical user interface

Familiarise yourself with the essential components and the layout of the screen content.

4.1 Help

CCI.Help supports you in your daily work with the terminal.

CCI.Help

- Answers questions about operation based on experience,
- Gives useful application notes,
- Is available at the touch of a button and
- Is very concise.

Simply pressing the question mark opens the help page relevant for the current working step:

- Help in the Burger Menu provides information about the basic functions of the apps,
- Help in Settings supports you during configuration.



1. Press the "Help" button.
→ CCI.Help is displayed.



2. In the help text scroll to the desired position.

4.2 Touch gestures

The terminal is operated using the touchscreen alone. The terminal supports the following common gestures:



Press

- Press briefly at the indicated point on the touchscreen. You select an item in a selection list or trigger a function.
-



Long press

- Press for 2 seconds at the indicated point on the touchscreen.
-



Swipe

- Navigate quickly through a selection list.
-



Drag and drop

- Pick up an app and move it to another position on the touchscreen.
-



Spread

- Zoom in within a map view.
-



Pinch

- Zoom out in a map view.

4.3 Layout

During daily work with the terminal, you must be able to see all relevant information and operate several apps simultaneously.

The terminal helps you to do so courtesy of its large size touchscreen and the flexible design of the user interface.

Select a layout to match the terminal installation:



Landscape Standard

- The layout most frequently used in practice.
- The terminal is installed in landscape alignment.
- You work with two apps.
- The apps are arranged alongside each other.
- The softkeys for ISOBUS implement operation are located at the right and left display edge.



Landscape Maxi

- The terminal is installed in landscape alignment.
- You are working with one app.
- The app is displayed magnified.



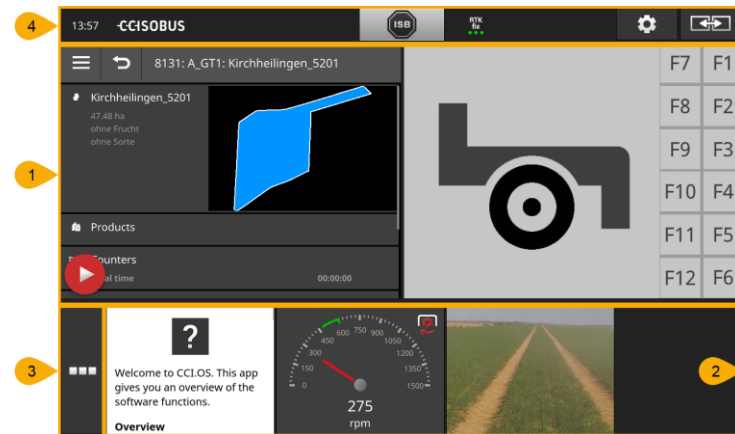
Portrait

- The terminal is installed in portrait alignment.
- The apps are arranged one below the other.
- The softkeys for ISOBUS implement operation are located at the right-hand edge.

Graphical user interface

Landscape Standard is described below. The descriptions can be applied to the other layouts.

The display is divided into four areas:



1 Standard View

Up to 2 apps are displayed in standard view.

2 Mini View

All active apps are displayed in mini view with the exception of the apps in the standard view.

3 App View

In app view you can see all apps that are activated in app management.

4 Status bar

The pictograms in the status bar give an overview of the connection status and connection quality of the following interfaces:

- GPS and
- WiFi.

Standard View

Apps can only be operated if they are included in the Standard View.

Mini View

Apps in Mini View

- Cannot be operated,
- Only display the essential information,
- Continue running executing functions.

From the fourth activated app, the Mini View extends to the right beyond the visible area:



- Swipe the Mini View to the left.
→ Apps are moved from the non-visible to the visible area.

To operate an app, move it from the Mini View to the Standard View:



- Press the app in the Mini View.
→ The app swaps position with the app in the left half of the standard view.



Note

When moved apps continue working without interruption and without a status change.

The sequence of apps in Mini View can be changed:



1. Press and hold the app.
→ The app visibly detaches from the Mini View.



2. Drag the app to the new position.

Graphical user interface

App menu

The app menu is in collapsed state.

All apps that you have activated in App management are displayed in the app menu:

Active apps

- Are displayed in Standard View, Mini View and in the app menu,
- Have a light grey frame in the app menu.

Idle apps

- Are only displayed in the app menu,
- Have a dark grey frame and
- Do not use any CPU power or RAM.

Temporarily move apps that your are not using into the app menu:



1. Press the button "App Menu".
→ The app menu opens.



2. Select an app.
→ The app is removed from the Mini View or Standard View.

Example

For example you only use CCI.Cam during fertilizer spreading. However, you will not be using this agricultural practice again for several months.

- Move CCI.Cam into the app menu.

Status bar

The symbols in the information area of the status bar give an overview of the connection status and connection quality.



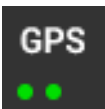
No signal

No GPS receiver is connected.



Invalid signal

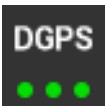
A GPS receiver is connected. However, the received position data are invalid.



GPS

A GPS receiver is connected. The received position data correspond to the GPS standard.

- The documenting of tasks is possible.
- GPS is not sufficiently accurate for Section Control.



DGPS, RTK fix, RTK float

A GPS receiver is connected. The receiving quality corresponds, depending on the display, to the requirements of DGPS, RTK fix or RTK float.

- The documenting of tasks and Section Control are possible.



No WiFi

No WiFi network found.



Connected to WiFi

The terminal is connected to a WiFi network.



No Internet

The terminal is not connected to the Internet.



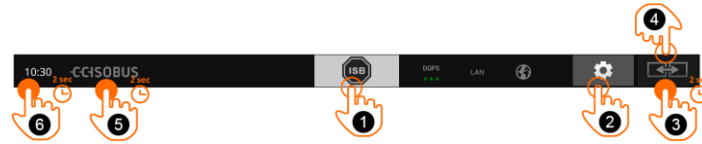
Connected to the Internet

The terminal is connected to the Internet.

LAN

The terminal is connected via an "Eth" interface to a LAN.

Graphical user interface



You have the following operating options:

1 ISB

Send an ISB command to all network members.

- Press the "ISB" button.
→ The terminal sends the ISB command over the ISOBUS.

2 Settings

Make the basic settings before working with the terminal:

- Press the "Settings" button.
→ The "Settings" operating screen is opened.

3 Standard/Maxi

In landscape switch between the two layouts Standard and Maxi:

- Press and hold the "Layout" button for 2 seconds.
→ The new layout is displayed.

4 App position

Change the position of apps in Standard View.

- Press the "Layout" button.
→ The apps in Standard View change position.

5 Display terminal information

You receive detailed information about the installed software version.

- Press and hold the company logo for 2 seconds.
→ The version information is displayed.

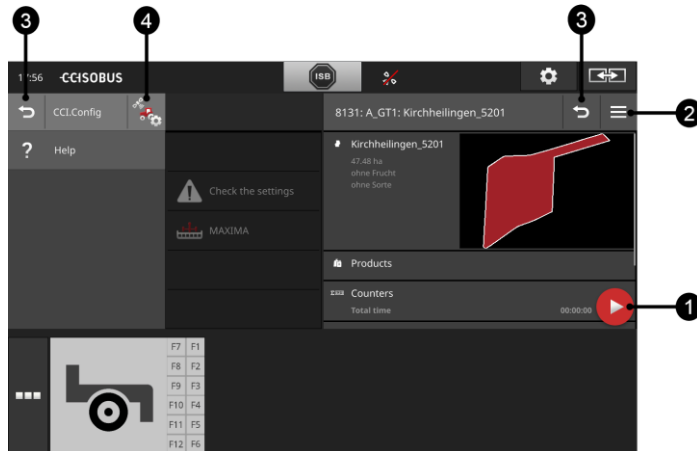
6 Create screenshot

If you are having problems operating the terminal or ISOBUS implement, you can capture a screenshot and send it to your contact:

1. Connect a flash drive to the terminal.
2. Press and hold on the clock for 2 seconds.
→ The screenshot is automatically saved in the root directory on the flash drive.

Special buttons

For efficient operation of the apps, the terminal provides special buttons.



Action Button

- 1 The Action Button provides direct access to the functions that are currently most important.

Burger Button

- 2 Open the Burger Menu using the Burger Button. The Burger Menu offers access to the settings, functions and help system of an app:

- Press the "Burger Button".
→ The Burger Menu opens.

Back/Close

Close the Burger Menu using the "Close" button:

- Press the "Close" button in the Burger Menu.
→ The Burger Menu is closed and the app operating screen is displayed.

3

Go back to the previous operating screen by pressing the "Back" button:

- Press the "Back" button.
→ The active operating screen is closed.
→ The previous operating screen is displayed.

App settings

- 4 The general settings are described in the Settings chapter. Moreover you can also match your special requirements to each app:

- Press the button "App Settings".
→ The "Settings" operating screen of the app is displayed.

Graphical user interface



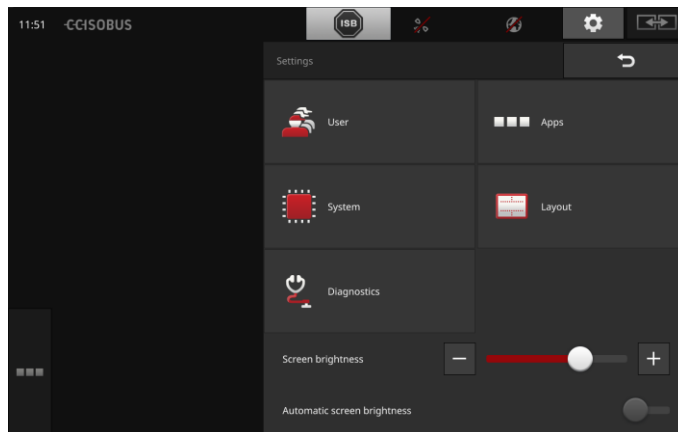
Caution!

Not all ISOBUS implements support the ISB function.
Consult the implement operating instructions to see which implement functions of an implement are deactivated by the ISB.

5 Settings



- Press the "Settings" button.
→ The "Settings" operating screen is displayed:



Change the following settings directly in the "Settings" operating screen:

Change screen brightness

- Press the "-" button to reduce the screen brightness.
- Press the "+" button to increase the screen brightness.

Automatic screen brightness

The light sensor measures the ambient light and matches the screen brightness to the ambient light.

1. Switch "Automatic screen brightness" on.
→ In high ambient light, e.g. direct sunlight, the display brightness is increased.
→ In dim ambient light, e.g. during night-time operation, the display brightness is reduced.
2. Regulate the behaviour of the light sensor using the slide control.



Note

Minimum screen brightness is achieved in manual mode:

1. Switch Automatic screen brightness "off".
2. Press the "-" button until the slide control "Change screen brightness" has reached its leftmost position.

Settings

The settings are subdivided amongst the areas "User", "Layout", "System", "Apps" and "Diagnostics".

User



Adjust the operating behaviour of the terminal:

- Sound and touch sound,
 - Language and units,
 - User administration and
 - Exhibition mode.
-

Apps



Activate and configure apps:

- Change app settings,
 - Activate apps and
 - Activate ISOBUS functions.
-

System



General options and functions are available in the "System" area:

- Call software and hardware information,
 - Set date and time,
 - Reset factory settings,
 - Install an update,
 - Create a backup,
 - Update licence data and
 - Set up an Internet connection and remote maintenance.
-

Layout



Select the display orientation. In landscape it is possible to choose between Standard and Maxi display layouts:

1. Press the "Layout" button.
→ The "Layout" operating screen is displayed.
 2. In the "Alignment" line, press the checkbox below the desired orientation.
→ The orientation is changed.
 3. In the "Layout" line press the checkbox under Standard or Maxi.
→ The layout is changed.
 4. End the Process with "Back".
-

Diagnostics

The terminal records a log. The log is only saved on the terminal and is not transmitted.

If you are having problems operating the terminal or ISOBUS implement, you can send the log to your contact:



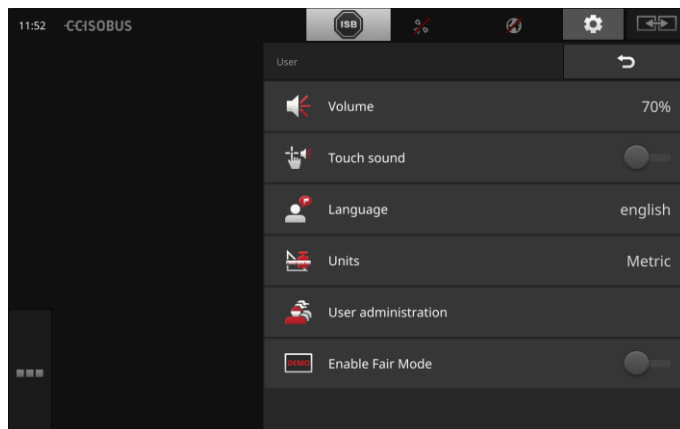
1. Connect a flash drive to the terminal.
2. Press the "Diagnostics" button.
→ The "Diagnostics" operating screen is displayed.
3. Press the "Log" button.
→ The "Log" operating screen is displayed.
4. Press on the button "Save log on flash drive".
→ The log is saved on the flash drive.
5. End the Process with "Back".

5.1 User settings

The operating characteristics of the terminal are set under User settings.



- Press the "User" button in the "Settings" operating screen.
→ The "User" operating screen is displayed:



Settings

You can change the following settings:

Volume

The terminal and many ISOBUS implements issue audio warnings. The volume of the audio warnings can be adjusted:



1. Press the "Volume" button.
→ The "Volume" operating screen is displayed.
2. Press the button with the percentage.
→ The screen keyboard is displayed.
3. Enter the volume in %.
4. Confirm your entry with "OK".
5. End the Process with "Back".

Activate touch sound



- Set the switch to "on".
→ Upon pressing a button, you receive audible feedback.

Select language

Select the language in which the text is to be output to the display:



1. Press the "Language" button.
→ The "Language" selection list is displayed.
2. Select a language.
→ The text on the display is shown in the new language.
3. End the Process with "Back".

Units

Change the system of units used by the terminal:



1. Press the "Units" button.
→ The "Units" selection list is displayed.
2. Select a system of units.
→ The terminal applies the system of units to all values.
3. End the Process with "Back".

User administration

The terminal identifies the following user groups:



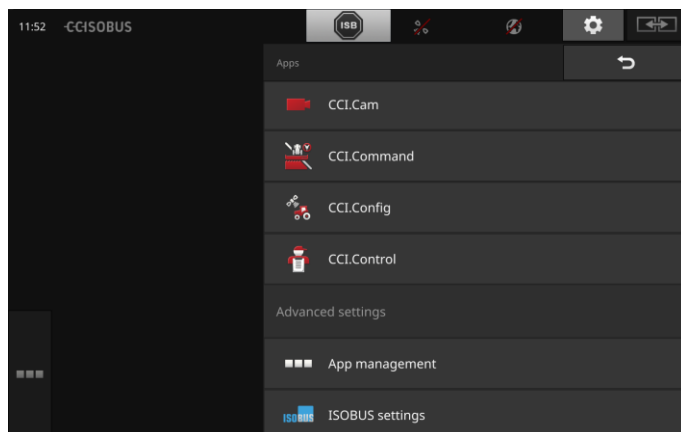
- User
- Service
- Developer.

The "User" group is preset. Do not change this setting.

5.2 App settings



- Press the "Apps" button in the "Settings" operating screen.
→ The "Apps" operating screen is displayed:



You have the following operating options:

App settings

Set up the apps.

App management

Activate and deactivate apps.

See section **App management**

ISOBUS settings

Adjust the behaviour of the terminal on the ISOBUS.

See section **ISOBUS settings**

Settings

App management

Apps that are not required can be switched off. This has no effect on the available CPU power or the available RAM.



Note

It may occur that an action cannot be performed because an app is turned off.

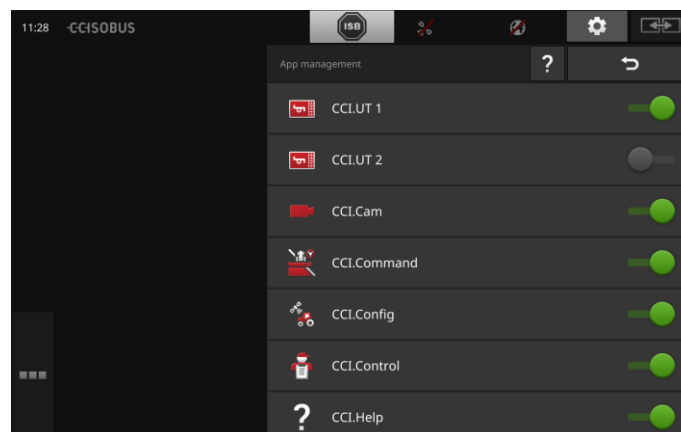
Therefore we recommend that,

- CCI.UT2 is switched on if you want to operate two ISOBUS implements,
- All other Apps are always switched on.

To switch an app off proceed as follows:



1. Press the button "App management".
→ The "App management" operating screen is displayed:



2. Switch the app off.
→ A message window is displayed.



3. Confirm your entry with "OK".
→ The app is ended.
→ The app is no longer displayed in the app menu.

To switch an app on proceed as described above. Set the switch next to the app name to "on".

ISOBUS settings

The terminal makes the following functions available via the ISOBUS:

- Universal terminal,
- AUX-N,
- Task Controller,
- TECU,
- File server.

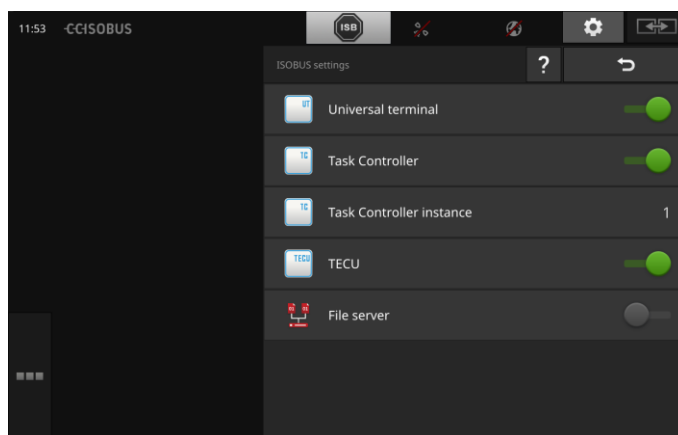
If you operate the CCI 1200 and a second ISOBUS terminal simultaneously, you can distribute the functions over both terminals.

- You operate the ISOBUS implements via the fixed ISOBUS terminal integrated in the tractor and
- You use CCI.Command on the CCI 1200 for Section Control.
 - Deactivate the "Universal terminal" on the CCI 1200 and
 - Activate the "Task Controller" on the CCI 1200.

Example



- Press the button "ISOBUS Settings".
 - The "ISOBUS settings" operating screen is displayed:



Settings

Universal Terminal



If the ISOBUS function "Universal terminal" is activated, you can operate up to two ISOBUS implements with the CCI 1200. This is also possible, if you simultaneously use a second ISOBUS terminal.

Only deactivate the ISOBUS function "Universal Terminal", if you want to operate the terminal with no ISOBUS implements:



1. Switch the "Universal terminal" off.
→ A message window is displayed.



2. Confirm your entry.
→ The ISOBUS function "Universal terminal" is off.



3. In App management, switch the apps CCI.UT1 and CCI.UT2 off.



Note

When you switch the ISOBUS function "Universal Terminal" off,

- You can no longer use the terminal for operation of an ISOBUS implement, even if the apps CCI.UT1 or CCI.UT2 are switched on.

Task Controller



You are using the task controller of another ISOBUS terminal.
Switch the ISOBUS function "Task Controller" off:



1. Switch "Task Controller" off.
→ A message window is displayed.



2. Confirm your entry.
→ The ISOBUS function "Task Controller" is off.



3. In App management, switch the app CCI.Control off.



Note

If you switch the ISOBUS function "Task Controller" off,

- CCI.Config, CCI.Control and CCI.Command will no longer receive any information from the ISOBUS implement,
- Section Control and Rate Control can no longer be carried out,
- No further task data are displayed.

You are using the Task Controller of the CCI 1200 and the Task Controller of another ISOBUS terminal.

Each of the two Task Controllers must have a unique number, as otherwise address conflicts on the ISOBUS may occur.

One ISOBUS implement can only connect to one Task Controller. The implement selects the task controller based on the task controller instance (number).

The implement automatically selects

- the lowest Task Controller instance or
- the Task Controller instance set in the implement. The number cannot be set in all ISOBUS implements.

1. Press the button "Task Controller instance".
→ The input dialogue is displayed.



2. Press the button with the number.
→ The screen keyboard is displayed.



3. Enter the Task Controller instance (number).



4. Confirm your entry.



5. End the Process with "Back".
→ A message window is displayed.



6. Confirm your entry.



Note

If you change the Task Controller instance (number) of the terminal, you must also adjust this setting in the ISOBUS implement.

Otherwise the implement does not connect to the Task Controller:

- CCI.Config, CCI.Control and CCI.Command will no longer receive any information from the ISOBUS implement,
- Section Control, Parallel Tracking and Rate Control can no longer be performed.

Settings

TECU



The ISOBUS "TECU" function sends the speed, the PTO speed, the position of the 3-point-hitch and the geolocation to the ISOBUS implement. Only switch the "TECU" off, if the TECU of the tractor displays an error message when the TECU is switched on.



1. Switch the "TECU" off.
→ A message window is displayed.



2. Confirm your entry.
→ The "TECU" ISOBUS function is off.

File server



The file server makes storage available to all network members. So for example an ISOBUS implement can save and read out configuration data on the terminal.

Only switch the file server off when you are sure that none of your ISOBUS implements are using this provision.

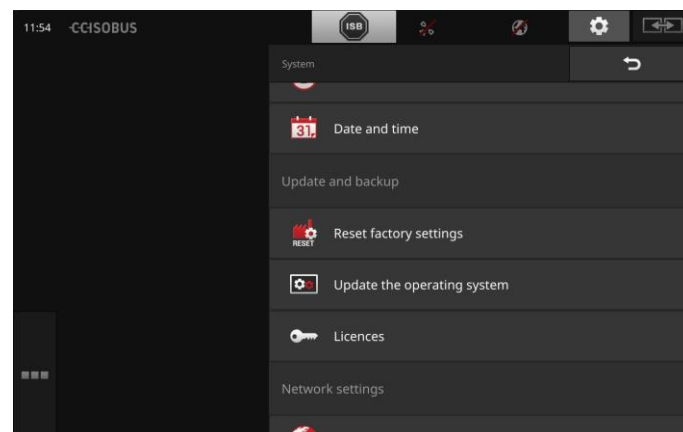


- Switch the "File server" off.
→ The ISOBUS function "File Server" is switched off.

5.3 System settings



- Press the "System" button in the "Settings" operating screen.
→ The "System" operating screen is displayed:



You have the following operating options:



Terminal data

In terminal data, the version of the installed software and the serial number of the terminal are displayed together with other data. The terminal data are required for servicing:

1. Press the "Terminal data" button.
→ The terminal data is displayed.
 2. End the Process with "Back".
-



Date and time

See section **Date and time**



Reset factory settings

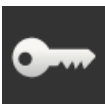
This function deletes all settings made by you and resets the terminal to its state as delivered.

1. Press the "Reset factory settings" button.
→ A message window is displayed.
 2. Confirm your entry with "OK".
→ The factory settings are restored.
-



CCI.OS-Update

See section **CCI.OS-Update**



Licence data

See section **Licence data**



Internet

See section **Internet**



Remote maintenance

See section **Remote maintenance**

Settings

Date and time



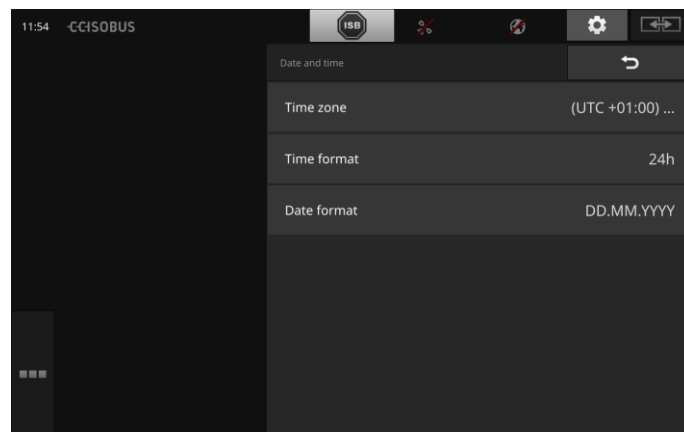
Note

The terminal clock is very accurate and is set in the factory. You cannot and must not manually change the time.

With an active Internet connection, the terminal adjusts the time based on a time server.



- Press the "Date and time" button.
→ The "Date and time" operating screen is displayed:



**Note**

The time and date are displayed in the selected format

- on the terminal and
- incorporated in the time stamp that the terminal sends over the ISO-BUS.

We recommend adherence to the factory settings.

The following settings can be made:

Select time zone

Select the time zone with the correct time difference and the appropriate region:

1. Press the button "Time zone".
 - The "Time zone" selection list is displayed.
 2. Select the Time zone.
 - The checkbox at the right edge of the button is selected.
 - The time zone is changed.
-

Select time format

1. Press the "Time format" button.
 - The "Time format" selection list is displayed.
 2. Select the format.
 - The checkbox at the right edge of the button is selected.
 - The time format is changed.
-

Select date format

The date is displayed in the selected format

- on the terminal and
 - incorporated in the time stamp that the terminal sends over the ISO-BUS.
1. Press the "Date format" button.
 - The "Date format" selection list is displayed.
 2. Select the format.
 - The checkbox at the right edge of the button is selected.
 - The date format is changed.

Settings

CCI.OS-Update

The terminal software CCI.OS is constantly subject to further development and new functions are continuously being added. New versions are made available as CCI.OS-Updates, that you can order via your service partner.

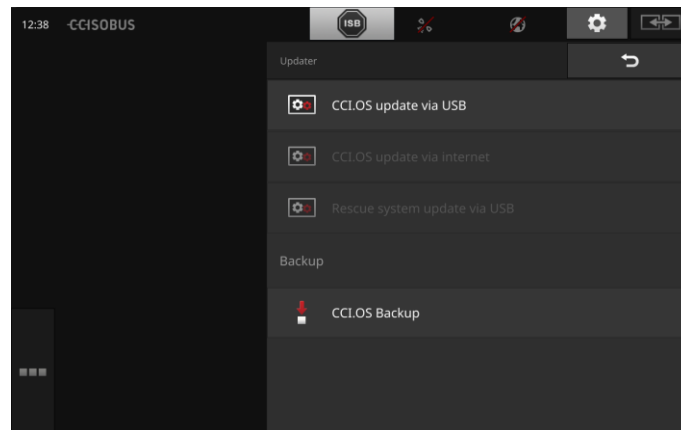


Caution!

Before updating the terminal software all connected ISOBUS implements must be disconnected from the terminal.



- Press the "CCI.OS-Update" button.
→ The "Updater" operating screen is displayed:



You have the following operating options:



Update CCI.OS from the flash drive

See section **Update from the flash drive**

Update CCI.OS via the Internet

This is the fastest and easiest way to update. Use this function, if the terminal is connected to the Internet:

1. Press the button "CCI.OS-Update via Internet".
→ The selection list with the available Updates is displayed.
2. Select an update.
3. Press the "CCI.OS-Update" button.
→ A message window is displayed.
4. Confirm the query with "OK".
→ An update is carried out.
→ Once the update is complete, you are requested to restart the terminal.
5. Press the button "Restart terminal".
→ A warning message is displayed.
6. End the process with "OK".



Rescue system

Updating of the rescue system can only be performed by the manufacturer or its sales and service partners.

Create a backup

Create a backup of the terminal, before you update the terminal software CCI.OS.

Occasionally the update of the terminal software CCI.OS may fail. Then the terminal can only be started from the rescue system.

In the rescue system you install a previously created backup:

→ The terminal is functional again.



1. Connect a flash drive with free space of at least 1 GB to the terminal.
2. Press the "Create backup" button.
→ A warning message is displayed.
3. Start the backup with "OK".
→ The backup is saved on the flash drive.
4. Press the button "Restart terminal".
→ A warning message is displayed.
5. Confirm the warning message with "OK".
→ The process is completed.
→ The terminal is restarted.

Settings

Update from the flash drive



Note

Use a flash drive with free space of at least 200MB.

→ The installation program saves data on the flash drive for the duration of the installation.



Note

The flash drive must remain connected to the terminal throughout the update.



1. Press the button "CCI.OS-Update via flash drive".
→ The selection list with the available Updates is displayed.



2. Select an update.



3. Press the "CCI.OS-Update" button.
→ A message window is displayed.



4. Start the update.
→ The new terminal software is installed.
→ Once the installation is complete, you are requested to restart the terminal.



5. Press the button "Restart terminal".
→ A warning message is displayed.

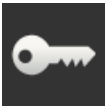


6. Confirm the warning message.
→ The update is complete.
→ The terminal is restarted.

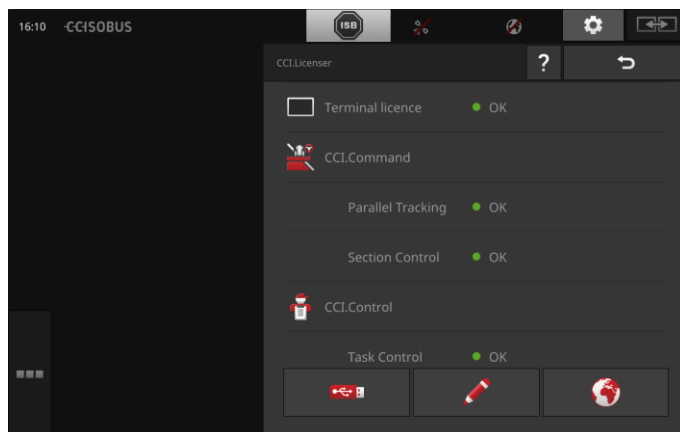
Licence data

The terminal licence data must be updated under the following circumstances:

- Following a CCI.OS update,
- After acquisition of the licence for a paid-for app.



- Press the "Licence data" button.
→ The "Licence data" operating screen is displayed:



You have the following operating options:



Update the licence data via the Internet

This is the fastest and easiest update method. Use this function, if the terminal is connected to the Internet:

1. Press the "Internet" button.
→ The licence data are updated.
 2. End the Process with "Back".
-



Update the licence data via a flash drive

A quick and reliable update method. Use this function if you have access to a PC with an Internet connection:

1. Connect a flash drive to the terminal.
 2. Press the button "USB".
→ The "Export TAN" operating screen is displayed.
 3. Press the "Export" button.
→ The "Download new licence data" operating screen is displayed.
 4. Connect the flash drive to your PC.
 5. On the PC open the web page "<https://sdnord.net/PA>" and follow the instructions.
→ The new licence data is saved on the flash drive.
 6. Connect the flash drive to the terminal.
→ The licence data are updated.
 7. End the Process with "Back".
-



Enter licence data manually

1. Press the "Manual entry" button.
→ The TAN is displayed.
2. On the PC open the web page "<https://sdnord.net/PA>"
3. Enter the TAN.
→ The new licence data are displayed on the PC.
4. On the terminal, press the "Next" button.
5. Enter the Terminal licence.
6. Press the "Next" button.
7. If available, enter the Section Control licence.
8. Press the "Next" button.
9. If available, enter the Parallel Tracking licence.
10. End the Process with "Back".

Internet

CCI.OS-Update and updating of the licence data can be performed quickly and easily via the Internet.

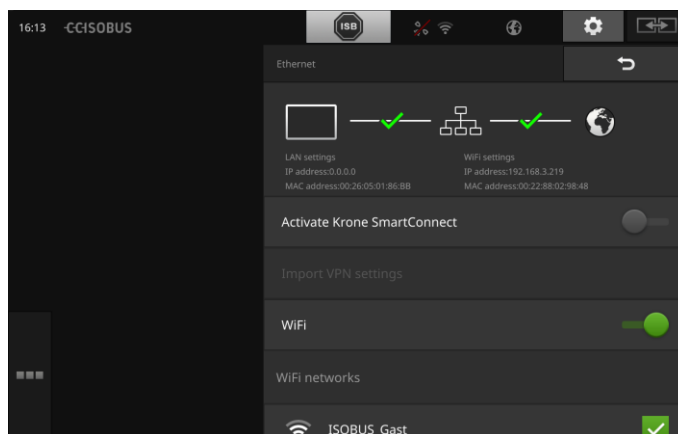
You must have an active Internet connection for remote maintenance.

You have the following options for connecting the terminal to the Internet:

1. A WiFi adapter is available for the terminal. The connection with the Internet is made via WiFi. For example the WiFi connection is created via the hotspot function of your smartphone.
2. The SmartConnect unit is installed in the tractor cab and creates an internet connection via the mobile phone network. You connect SmartConnect unit to the terminal via the "Eth" cable.



- Press the "Internet" button.
→ The "Internet" operating screen is displayed:



You have the following operating options:

Activate SmartConnect



The SmartConnect is a multi-functional external add-on to the Terminal and provides, the Internet connection amongst other things:

1. Connect the SmartConnect to the terminal.
2. Switch "Activate SmartConnect" on.
 - The terminal connects to the SmartConnect.
 - The Internet connection is established.
 - The symbols in the status bar provide information about the status and quality of the connection.

Connect via WiFi

Use the WiFi adapter to connect the terminal to the Internet:

1. Connect the WiFi adapter to connector 3 or 4.
2. Press the "WiFi" button.
 - The "WiFi networks" selection list is displayed.
3. Select a WiFi network.
 - The window for password entry is displayed.
4. Enter the WiFi password and confirm your entry with "OK".
 - The terminal connects using WiFi.
 - The symbols in the status bar provide information about the status and quality of the connection.

Correct an incorrectly entered WiFi password as follows:



1. Press the button with the name of the WiFi network "WiFi networks" in the selection list for two seconds.
 - A context menu is displayed.



2. Select "Edit".
 - The window for password entry is displayed.



3. Enter the Password and confirm your entry with "OK".

Remote maintenance

If you are having problems operating the terminal or ISOBUS implement, you can grant your service partner remote access.

You are the robot arm of the service partner, as the latter can indeed see the screen content but cannot perform any actions on the terminal.



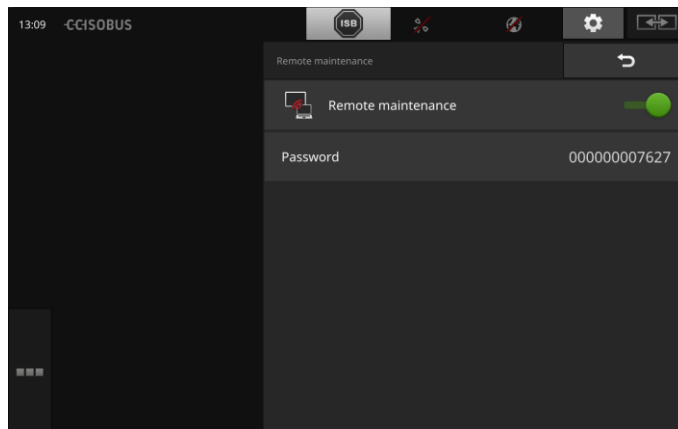
Note

Access to the terminal via the Internet is only possible if you switch on remote maintenance. Only switch on remote maintenance if expressly asked to do so by your service partner.

Prerequisite for remote maintenance is an active Internet connection.



- Press the "Remote maintenance" button.
→ The "Remote maintenance" operating screen is displayed:



1. Switch "Remote maintenance" on.
→ Remote maintenance is started.
→ The password for access to the terminal is displayed.



2. Share the password with your service partner.
3. Return to the start screen by pressing "Back" and demonstrate the problem.
→ The service partner sees the screen contents.



4. To end the session, switch "Remote maintenance" off.

6 Display of camera images

CCI.Cam is used to display camera images.

Maintain an overview of your implement and complex work processes with up to eight cameras. Cyclical camera changing makes manual switching between camera screens unnecessary.

Open CCI.Cam in Standard View or Mini View. In this way you can see the camera image at all times:

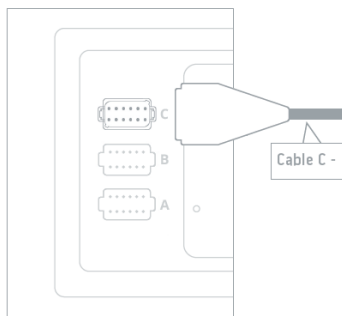


6.1 Setting up for operation

Connect a camera

You can connect one camera directly to the terminal:

1. Switch the terminal off.
2. Connect cable C to connector C of the terminal and to the camera.
3. Switch on the terminal.



Note

A pin assignment diagram for connector C is included in the appendix. Ensure proper implementation if you yourself connect the camera to the connector or cable C.

Display of camera images

Connect two cameras

To connect two cameras to the terminal, you require a video miniplexer. The video miniplexer is supplied with power from the terminal.



1. Switch the terminal off.
2. Connect the cameras to the video miniplexer.
3. Connect cable C to connector C at the terminal and to the video miniplexer.
4. Switch on the terminal.
→ The start screen is displayed.



5. Press the "Settings" button.
→ The "Settings" operating screen is displayed:



6. Press the "Apps" button.
→ The "Apps" operating screen is displayed:



7. Press the "CCI.Cam" button.
→ The operating screen with the CCI.Cam settings is displayed:



8. Press the "Video miniplexer" button.
→ The switch is in the "On" position.
→ The video miniplexer is activated.
9. Open CCI.Cam in Standard View.
→ The camera image of camera 1 is displayed.

Connect eight cameras

You can connect up to eight cameras to the terminal using the video multiplexer.



Caution!

The video can only supply limited power to the video multiplexer. Overloading the power output of the terminal may result in damage to the terminal.

→ If you connect 3 or more cameras to the video multiplexer, the video multiplexer requires an external power supply.



1. Switch the terminal off.
2. Connect the cameras to the video Multiplexer.
3. Connect cable C to connector C at the terminal and to the video multiplexer.
4. Switch on the terminal.
→ The start screen is displayed.
5. Open CCI.Cam in Standard View.
→ The camera image of camera 1 is displayed.

Display of camera images



Note

Unassigned multiplexer connections output a black camera image.

6.2 Operation

Show camera image

The camera image is displayed, if you open CCI.Cam in Standard View, Maxi View or Mini View.

Mirror camera image

The camera image is mirrored along the vertical axis.

Mirroring of the camera image is, for example, useful for reversing cameras:



CCI.Cam can only be operated in Standard View:

1. Move CCI.Cam into Standard View.



2. Press centrally on the camera screen.

→ The Burger Button is displayed.



3. Press on the Burger Button.

→ The "Burger menu" is displayed.



4. Set the "Mirror" switch to "on".

→ The camera image is mirrored.

Switch "Mirror" off so that the camera image is again displayed in normal view.



Note

The "Mirror" switch only affects the currently visible camera image.



Note

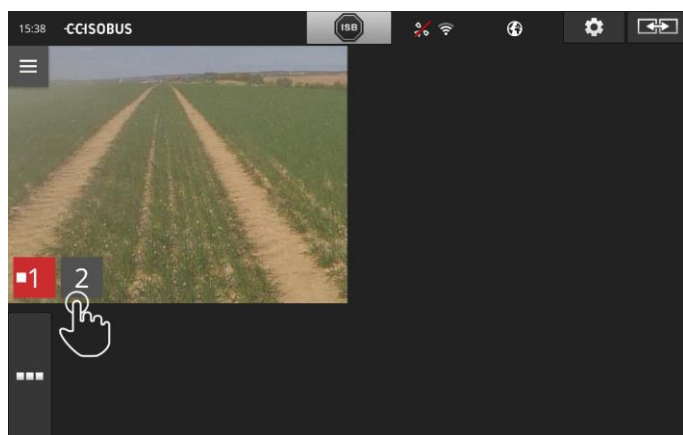
If the terminal is restarted, the position of the "Mirror" switch is retained.

Display of camera images

The functions described below must only be used if you have connected multiple cameras to the terminal.

Show camera image continuously

You want the image of a particular camera to be displayed. The camera image is to be displayed until you make another selection:



1. Press centrally on the camera screen.
→ The buttons for camera selection are displayed.

2

2. Press the button with the camera number.
→ The camera image is displayed.

Set automatic camera switching

You want

- To switch automatically between some or all camera images and
- Specify the duration of display for each camera image.

Change first to editing mode.



1. Press centrally on the camera screen.
→ The operating buttons are displayed.



2. Press the Burger Button.
→ The Burger menu is displayed.



3. Set the "Editing mode" switch to "on".
→ The buttons for camera selection are displayed.

Now define,

- how long each camera image is displayed and
- in which sequence the camera images change:



4. Press the button of the camera which is to be displayed first. Press the button for as long as the camera image is to be displayed.

5. Repeat the process for the other cameras.

End editing mode:



6. Press centrally on the camera screen.
→ The operating buttons are displayed.



7. Press the Burger Button.
→ The Burger menu is displayed.



8. Set the "Editing mode" switch to "off".

Start automatic camera switching:



9. Press centrally on the camera screen.
→ The buttons for camera selection are displayed.



10. Press the red camera number with the "Stop" symbol.
→ Automatic camera switching starts.
→ The red button displays the "Play" symbol.

Display of camera images



Note

If a camera image is not used for automatic camera switching, leave the camera off when selecting the sequence and display duration.



Note

The settings for the sequence and the display duration of the camera images are retained until you change the settings.
After terminal restart you only need to start automatic camera switching.

End automatic camera switching

Automatic camera switching is turned on.

You want to end automatic camera switching:



1. Press centrally on the camera screen.
→ The buttons for camera selection are displayed.



2. Press the red camera number with the "Play" symbol.
→ Automatic camera switching is turned off.
→ The red button displays the "Stop" symbol.

You want to start automatic camera switching:

- Press the red camera number with the "Stop" symbol.

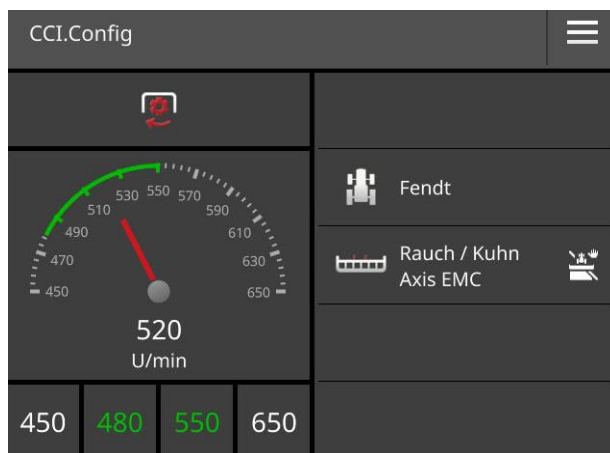
7 Tractor combination settings

You want to use Section Control and Rate Control. Both functions are location-dependent and require accurate information about the tractor combination:

- the type and source of the speed information,
- the position of the GPS receiver and
- the implement mounting type.

You make this information available with CCI.Config.

Set up your own speedometer in CCI.Config:



The following can be displayed in the speedometer:

- the wheel speed,
- the ground speed,
- the GPS Speed or
- the PTO shaft speed.

You enter the display range and the optimum working range for each of the four speed types.

Tractor combination settings

7.1 Setting up for operation

Tractor data

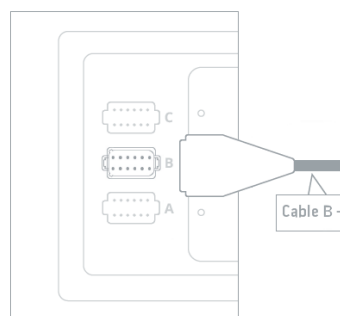
An ISOBUS tractor makes the following tractor data available via the ISOBUS to all network members:

- ground and wheel speed,
- PTO speed,
- direction of travel and
- position of the rear 3-point hitch.

Signal socket

When the tractor is not connected to the ISOBUS, the terminal reads the tractor data via the signal socket in the tractor:

1. Switch the terminal off.
2. Connect cable B to connector B of the terminal and to the signal socket.
3. Switch on the terminal.



Tractor combination settings

Add a tractor:

New tractor



1. Press the "Settings" button.
→ The "Settings" operating screen is displayed:



2. Press the "Apps" button.
→ The "Apps" operating screen is displayed:



3. Press the "CCI.Config" button.
→ The operating screen with the CCI.Config settings is displayed:



4. Press the "Tractor" button.
→ The "Tractor" operating screen is displayed.

5. Press the "+" button.



6. Enter the tractor name.



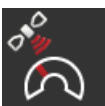
7. Confirm your entry with "OK".
→ The list of tractors is displayed.



8. Return to the "CCI.Config" settings.

Adjust the tractor:

Set up tra



GPS speed

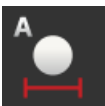
Select an ISOBUS message with which the GPS speed is sent to the implement.

You must also set this message in the implement.

Distance A

The distance between the GPS receiver and the tractor reference point:

- The distance is measured perpendicular to the direction of travel.
- The tractor reference point is the midpoint of the rear axis.

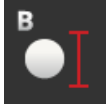


1. Fit the GPS receiver centrally on the tractor. This is the recommended procedure.
2. Press the button "Distance A".
→ An input dialogue is displayed.
3. Set the distance A to 0 and confirm your entry with "Back".

Distance B

The distance between the GPS receiver and the tractor reference point:

- The distance is measured in the direction of travel.
- The tractor reference point is the midpoint of the rear axis.



1. Mark the mid-point of the rear axle and the position of the GPS receiver on the ground using chalk next to the tractor.
 2. Measure the distance.
 3. Press the button "Distance B".
→ An input dialogue is displayed.
 4. Enter the measured value and confirm your entry with "Back".
-

Mounting type and distance C

The distance between the coupling point and the tractor reference point:

- The distance is measured in the direction of travel.
 - The tractor reference point is the midpoint of the rear axis.
 - Each mounting type has its own distance C. Enter the distance C for all mounting types.
-



Signal socket

Then switch function Signal connector on in CCI.Config. You must calibrate the signals. Follow the instructions in CCI.Config. You need only switch on the X-Sensor, if you have connected an X-Sensor to the terminal via the signal connector. You can only use power management in conjunction with certain ISOBUS upgrade cables.



Tractor combination settings

Add an implement:

New implement



1. Press the "Settings" button.
→ The "Settings" operating screen is displayed:



2. Press the "Apps" button.
→ The "Apps" operating screen is displayed:



3. Press the "CCI.Config" button.
→ The operating screen with the CCI.Config settings is displayed:



4. Press the "Implement" button.
→ The "Rear implement" operating screen is displayed.

5. Press the "+" button.



6. Enter the implement name.



7. Confirm your entry with "OK".
→ The list of implements is displayed.



8. Return to the "CCI.Config" settings.

Set up the implement:

Set up implement



Working width



Implement type

With trailed and self-propelled implements, the terminal calculates the position of the sections for curved tracks. If the implements are attached, the position of the sections remains fixed.



Mounting type

Terminal automatically uses the distance C that you entered under Tractor settings.

Many ISOBUS implements send their mounting type to the terminal. If this case you do not have to set the mounting type.



Distance D1

The distance between the coupling point and the implement reference point.

- With trailed implements, the reference point is on the midpoint of the first axle.
- With attached implements, the implement manufacturer specifies the position of the reference point.
- For manually created implements (e.g. tillage equipment), measure distance D1 between the coupling point and the last component (e.g. the roller).



Section geometry



Delay times

The delay times describe the time delay between the command and the actual activating of a section.

Set the turn on delay and the turn off delay.

8 UT and AUX

You operate your ISOBUS implements with the terminal. Use the apps CCI.UT1 and CCI.UT2.

Some functions of complex ISOBUS Implements can be better controlled using a joystick, a toggle switch strip or an other ISOBUS auxiliary control (AUX-control or AUX).

Implement functions can be freely assigned to the operating elements of the auxiliary control.

UT and AUX



9 Data management

CCI.Control saves, imports and exports task data.

CCI.Control is used to manage your tasks and field data on the terminal. Besides importing in ISO-XML format, new tasks can also be directly created in CCI.Control.

CCI.Control is used for documentation and task management:

- The ISO-XML format, defined for ISOBUS, is used for data exchange. Data are transferred using a flash drive or via online transfer.
- Process data acquisition and implement control are achieved via the ISOBUS. The job computer for the implement must therefore be equipped with task controller software.

If a GPS receiver is connected, section-specific working can be automated. Tasks planned on the PC using application maps can be processed in this way and documented with position information.

Section-specific working

In the simplest case, CCI.Control can be operated without a task file and without an ISOBUS implement.

Standalone mode

Master data (driver, farm, product, etc.) and task are created directly at the terminal and CCI.Control is used purely for task data acquisition. The time and duration of the agricultural practice, the master data allocated to the task and, if a GPS receiver is available, the track are recorded.

Most modern ISOBUS implements are able to provide CCI.Control with a series of process data.

Operation with an implement

Process data refers to

- implement-specific information
- task-specific information (application data and yield data)

The process data provided via the counters depends on the implement and is specified by the implement manufacturer.

After a task is started, CCI.Control records this process data. Master data (field, customer, driver, product, etc.) are stored together with process data (working time, application rate, time in the working position, etc.) through the importing of a task from the FMIS or through manual creation by drivers.

When operating an implement that is not ISOBUS-compatible, CCI.Control cannot record any implement data. The working time and the distance covered (if a GPS receiver is being used) are available, however.

Without ISOBUS

FMIS

This is the recommended operating mode.

CCI.Control takes over the exchange of task and process data between farm PC, terminal and implement. The ISO-XML format, defined for ISOBUS, is used for data exchange. It can be provided or processed by the FMIS of appropriate farming software providers.

You create a task data file on the PC in ISO-XML format which contains both master and task data. The data are read in using the import function of CCI.Control.

All task specific information are summarised under task data:

- Who?
- Where?
- What?
- When?
- How?

When planning a task at the PC, it is possible to specify which implement process data are to be recorded. It is, however, also possible to process a standard set of process data specified by the manufacturer. In general, any value available at the implement can be requested and displayed along with time and position information.

In addition, ISOBUS implements can react to instructions from CCI.Control. The ISOBUS implement sends a device description (DDD) to CCI.Control. CCI.Control uses this information to identify the functionality of the ISOBUS implement. Based on the application maps created on the PC, CCI.Control is thus able to control the ISOBUS implement according to position.

CCI.Control facilitates the inputting of new tasks or customers during the work in the field. The new master data are automatically imported and complemented in the FMIS.

After a task has been completed, it can be transferred to the PC. The task data now include the counter readings of the connected implements, as well as the process data requested during the planning of the task. On the basis of the data gained, subsequent tasks can be planned with greater precision. Moreover, the data make it easier to document and invoice the work performed.

10 Map view

CCI.Command contains a detailed map view for use with Section Control and Rate Control.

Using GPS, Section Control automatically switches off the sections of an ISOBUS implement upon passing over field boundaries and already treated areas and switches them back on upon leaving them. Possible overlaps (double treatments) are thus reduced to a minimum and the driver's work load reduced. Section Control can be used with pesticide sprayers, fertilizers, seed drills, grain and potato planting machinery and mowers, insofar as the implement fulfils the conditions for ISOBUS section switching. Additionally it is possible to plot obstacles. Before an obstacle is reached, a warning message is displayed.

Section Control

The safe operation of the automatic Section Control is only possible using a Section Control-enabled ISOBUS implement.

The operating mode Section Control is only available in map view once all implement data has been transferred.

Map view



11 Troubleshooting



Warning - behaviour in the event of technical failures

Continuation of working after technical failures can result in damage to the terminal or the implement!

1. Stop working.
2. Look for a solution in this chapter of the operating instructions.
3. Contact your dealer if the problem persists.

In the event of a fault, the terminal may no longer respond to user inputs.

Forced shut-down

1. Press the ON/OFF button for 8 seconds.
→ The terminal switches off.
2. Press the ON/OFF button for 1 second.
→ The terminal restarts.



Caution!

Perform a forced shut-down only if it is absolutely unavoidable. During shut-down all internal supply voltages are switched off. Unsaved data are lost.

The terminal and its software are not damaged by the switch-off.

If a hardware problem exists, the terminal switches off automatically. The LED of the ON/OFF button transmits a series of blue flashes.

Blue flashing signals



The LED flashes once per second and, dependent on the error, 1 to 27 times in succession. There is a two second pause at the end of the sequence. The sequence then starts again from the beginning. This makes counting easier for you.

Restart the terminal. If the terminal switches off again, and the LED of the ON/OFF button flashes blue again, the terminal must be sent in for testing.

When you send the terminal in, inform the service partner of the number of flashes.

Troubleshooting

With some error codes you can try to resolve the problem directly in-situ. These error codes are contained in the following table. For all other error codes, the terminal must be sent in:

Number of flashes	Cause/remedy
7	The temperature measured in the terminal exceeds 95°C. Possibly the temperature sensor is defective. / Allow the terminal to cool before restarting. If the error re-occurs, the terminal must be sent in.
25	The internal 12V power supply is unstable. / There may be a problem with the applied voltage at the terminal. Check the power supply.
26	The internal 5V power supply is unstable. / There may be a problem with the applied voltage at the terminal. Check the power supply.
27	The internal 3.3V power supply is unstable. / There may be a problem with the applied voltage at the terminal. Check the power supply.

11.1 Problems during operation

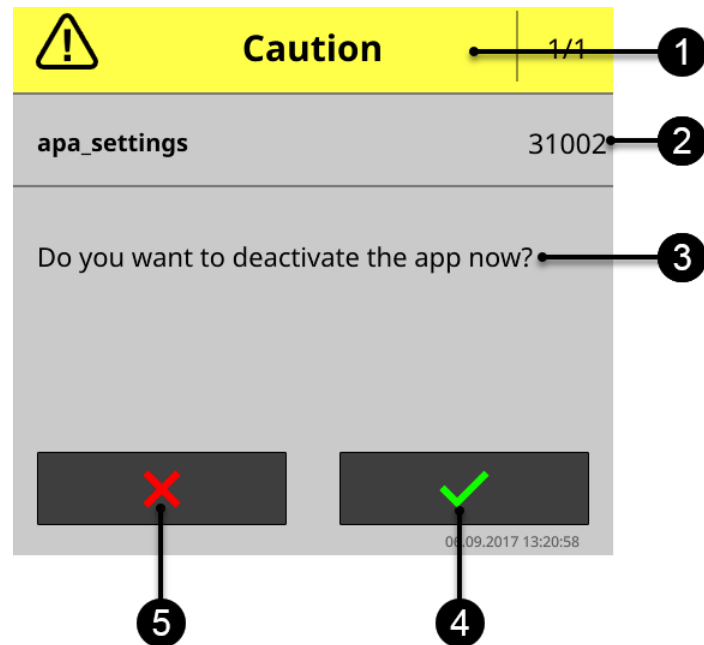
This chapter lists problems that may occur during use of the terminal.

A suggestion is made for rectification for each problem. If you cannot rectify the problem based on the suggestion, contact your dealer.

Problem	Cause/remedy
The terminal does not switch off, if you switch off the tractor ignition.	<p>The tractor does not switch off the supply to the in-cab connector.</p> <ul style="list-style-type: none"> • Switch the terminal off using the ON/OFF button or • disconnect cable A.
The terminal does not switch on.	<p>Terminal not connected to the ISOBUS.</p> <ul style="list-style-type: none"> • The setting up chapter describes how you can connect the terminal to the ISOBUS. <p>Ignition is not switched on.</p> <ul style="list-style-type: none"> • Start the tractor.
The connected implement is not displayed on the terminal.	<p>Implement is not connected or is incorrectly connected.</p> <ul style="list-style-type: none"> • Ensure that the implement's ISOBUS cable is correctly connected at the tractor. <p>Bus terminator missing.</p> <ul style="list-style-type: none"> • Check whether a bus terminator must be attached to the implement. <p>Incorrect configuration of the UT.</p> <ol style="list-style-type: none"> 1 Configure the UT of the terminal according to this manual.

11.2 Messages

The terminal indicates incorrect operation via error messages. Each error message is identified by a unique error number.



Error number	Message text/remedy
32000	<p>Disconnect all implements from the terminal before restoring the factory settings. Check all settings once the process is completed. Continue?</p> <p>/</p> <p>Not an error rather a safety note. Follow the instruction.</p>
33033	<p>Exporting of the licence data has failed. 1. Ensure that a flash drive is connected. 2. Repeat the export.</p> <p>/</p> <p>You want to update the licence data via flash drive. Saving of the TAN on the flash drive has failed.</p> <ul style="list-style-type: none"> • Use a different flash drive or a different USB port on the terminal.
34003	<p>The backup has failed.</p> <p>/</p> <p>Repeat the process.</p> <p>Ensure that,</p> <ul style="list-style-type: none"> • the flash drive has enough free space and • that the flash drive remains connected throughout the terminal backup.
34010	<p>The rescue system update has failed.</p> <p>/</p> <p>Repeat the process.</p>
37004	<p>Incorrect network password</p> <p>/</p> <p>You have entered an incorrect WiFi password.</p> <ol style="list-style-type: none"> 1. Press the button with the name of the WiFi network "WiFi networks" in the selection list for two seconds. → A context menu is displayed. 2. Select "Edit". → The window for password entry is displayed. 3. Enter the Password and confirm your entry with "OK".
50000	<p>Implement could not be loaded.</p> <p>/</p> <p>The object pool of the implement cannot be displayed clearly by the terminal. Operation of the implement is thus not possible.</p> <ol style="list-style-type: none"> 1. Disconnect the implement from the ISOBUS and wait 5 seconds. 2. Reconnect the implement to the ISOBUS.

Troubleshooting

50001	<p>The connection to the implement is lost.</p> <p>/</p> <p>The terminal no longer has a connection to the implement.</p> <ul style="list-style-type: none"> You have disconnected the implement from the ISOBUS or there a connection problem has occurred on the ISOBUS. <p>1. Check the connection of the implement to the ISOBUS.</p>
50010	<p>The selected UT number is already being used. Please select another UT number and restart the terminal.</p> <p>/</p> <p>The UT is the ISOBUS function for operating ISOBUS implements. Generally each ISOBUS terminal has a UT. Each UT on the ISOBUS must receive a unique UT number. Therefore if you operate multiple ISOBUS terminals and thus UTs on the ISOBUS, then you must assign each UT a unique number.</p> <p>Note: The CCI 1200 has two UTs.</p> <p>Note: The UT with which you want to operate the AUX control, must receive the UT number 1.</p> <p>The error message appears if two UTs have the same UT number. Change the UT number of the UT on the CCI 1200 or on the other ISOBUS terminal.</p>
51003	<p>The task data could not be imported.</p> <p>/</p> <p>Did you remove the flash drive before the action was completed?</p> <ul style="list-style-type: none"> Repeat the process and leave the flash drive plugged in until the process has completed.
51005	<p>The task data could not be exported.</p> <p>/</p> <p>Did you remove the flash drive before the action was completed?</p> <ul style="list-style-type: none"> Repeat the process and leave the flash drive plugged in until the process has completed.
51007	<p>The shape file could not be imported.</p> <p>/</p> <p>Did you remove the flash drive before the action was completed?</p> <ul style="list-style-type: none"> Repeat the process and leave the flash drive plugged in until the process has completed.
51009	<p>The shape file could not be exported.</p> <p>/</p> <p>Did you remove the flash drive before the action was completed?</p> <ul style="list-style-type: none"> Repeat the process and leave the flash drive plugged in until the process has completed.
51011	<p>The report could not be exported.</p> <p>/</p> <p>Did you remove the flash drive before the action was completed?</p> <ul style="list-style-type: none"> Repeat the process and leave the flash drive plugged in until the process has completed.

51013	<p>The task data could not be exported.</p> <p>/</p> <p>Did you remove the flash drive before the action was completed?</p> <ul style="list-style-type: none"> Repeat the process and leave the flash drive plugged in until the process has completed.
52010	<p>Section Control: Automatic mode has been deactivated. GPS signal quality is too poor.</p> <p>/</p> <p>Section Control requires a GPS signal of accuracy class DGPS or better if it is to perform location-dependent section switching.</p> <p>Atmospheric interference and shadowing can result in failures of the DGPS. Wait until the signal is available with the required accuracy. Automatic mode then switches back on independently.</p> <p>Check the symbol in the status bar. Three green dots must be displayed for Section Control. With EGNOS or WAAS correction DGPS is also present, with RTK correction RTK fix or RTK float are available.</p>
51011	<p>Automatic mode Section Control could not be activated. GPS signal quality is too poor.</p> <p>/</p> <p>See above. 52010</p> <ol style="list-style-type: none"> Wait until the GPS signal is available with the required accuracy. Repeat the process.
52012	<p>Stop the vehicle, to change the calibration or the reference point.</p> <p>/</p> <p>The reference point can only be set if the vehicle is at a complete standstill.</p>
54012	<p>There is no flash drive connected.</p> <p>/</p> <p>If you have not connected a flash drive to the terminal:</p> <ul style="list-style-type: none"> Connect a flash drive. <p>If you have already connected a flash drive to the terminal:</p> <ul style="list-style-type: none"> Use a different flash drive or a different USB port on the terminal.
56000	<p>The terminal is not connected with the ISOBUS. The camera cannot be used by the ISOBUS-implement.</p> <p>/</p> <p>Some ISOBUS implements can use/control the camera connected at the terminal. Both terminal and implement must be connected with the ISOBUS.</p> <ol style="list-style-type: none"> Restart the terminal. Disconnect the implement from the ISOBUS and wait 5 seconds. Reconnect the implement to the ISOBUS.

Troubleshooting

12 Glossary

Operating screen	The operating screen is comprised of the values and operating elements shown on the display. The touchscreen can be used to directly select the elements shown.
Boolean value	A Boolean value is a value where it is only possible to choose between true/false, on/off, yes/no etc.
Burger Menu	Navigation element of the graphical user interface. You can access all functions and settings not directly available on the screen via the Burger Menu.
CAN	C ontroller A rea N etwork
CCI	C ompetence C enter I SOBUS e.V.
ECU	E lectronic C ontrol U nit Control unit, job computer
EHR	E lectronic H oisting force R egulation
Input dialogue	Element of the graphical user interface. Enables the input or selection of values.
FMIS	F arm M anagement I nformation S ystem Also: FMIS Software for yield data processing and the creation of application maps.
GPS	G lobal P ositioning S ystem. Satellite-based system for position determination.
GPS drift	Due to the Earth's rotation and the changing position of the satellites in the sky, the calculated position of a point moves. This is referred to as GPS-drift.
In-cab	From the standard ISO 11783. Describes the nine-pole ISOBUS plug in the cab.

Glossary

ISB	ISOBUS Shortcut Button The ISB makes it possible to deactivate implement functions that have been activated via an ISOBUS terminal. This is necessary if implement operation on the terminal is not currently in Standard View. Which precise functions an ISB is able to deactivate on an implement, differs widely. You can find this information in the operating instructions for your implement.
ISO-XML	ISOBUS-specific format for task data files based on XML.
ISOBUS	ISO 11783 International standard for data transfer between farming implements and devices.
Customer	The owner or tenant of the operation on which the task is executed.
Implement	Towed or attached implement. An implement with which a task can be executed.
Agricultural practice	Crop cultivation measure The action performed on a field such as tillage or fertilising.
Miniplexer	Device for switching between video signals which facilitates operating of two cameras via one video input (similar to a multiplexer, but with limited functions).
Multiplexer	Device for switching between video signals which facilitates operating multiple cameras over one video input.
Network members	A device that is connected to the ISOBUS and communicates via this system.
Object pool	Data record that is transferred from the ISOBUS implement to the terminal and contains the individual operating screens.
Location-dependent data	Implement data and yield data. E.g. hoisting gear version, bale length, section width or application rate per hectare.
Parallel Tracking	Parallel guidance aid
PDF	Portable Document Format File format for documents
Crop type	Types or species of a crop such as corn or barley.
Crop variety	Special sort or breed of a crop type.
Product	A product is applied to or removed from a field as part of an agricultural practice, e.g. fertiliser, pesticide or harvested product.

Ground speed sensor	<p>It emits a specific number of electrical pulses in proportion to the distance already covered. As such, the real, slip-free speed, the ground speed, can be calculated.</p> <p>Note that under certain circumstances, ground speed sensors may supply inaccurate speed values depending on the surface, for example, high grass or puddles.</p>
Wheel speed sensor	<p>It emits a specific number of electrical signals in proportion to the wheel rotation. As such, the theoretical slip-including speed of the tractor, the wheel speed, can be calculated.</p> <p>Wheel based speed sensors may supply inaccurate speed values when slip occurs.</p>
Button	Operating element in the operating screen that is activated by pressing the touchscreen.
Screenshot	Capture and saving of the display content in a file.
Interface	Part of the terminal which is used to communicate with other devices.
Section Control	Automatic section control
Signal socket	Seven pole socket based on the ISO 11786 standard, at which signals for speed, PTO speed and position of the rear 3-point hitch can be read.
Master data	Customer or field data managed in the terminal or FMIS that can be assigned to a task.
TAN	<p>Transaction number:</p> <p>A single-use password that you need to obtain new licence data.</p>
Task Controller	<p>An ISOBUS function.</p> <p>The Task Controller undertakes the documenting of cumulative values and location-dependent data, which are made available by the implement.</p>
Section	<p>Using yield maps and other methods of location analysis such as ground or contour maps, aerial photographs or multi-spectral images, it is possible, based on individual experience, to define zones within the field, if these significantly differ over periods of four to five years.</p> <p>If these zones have a sufficient size and, for example with winter wheat a difference in yield potential of approximately 1.5 t/ha, it makes sense to , match the cultivation and agricultural practices in these zones to the yield potential.</p> <p>Such areas are then designated as sections.</p>
Section-specific working	Satellite support use of an application map.
Terminal	The CCI 1200 terminal
Touchscreen	Touch-sensitive display for operation of the terminal.

Glossary

USB	Universal Serial Bus: Serial bus system to connect the terminal to a storage medium.
UT	The Universal Terminal is the human-machine interface (HMI) of the ISOBUS. It is the display and control device that is equipped with a screen and optional pushbuttons and rotary knobs. Each implement connected to the ISOBUS is registered with the UT and uploads its object pool. You operate the implement via the operating screens of the object pool.
Delay time	The delay time describes the time delay between the command and the actual activation of a section (e.g. during spraying, the time from the command: "Switch on section", until when the agent is actually applied).
WLAN (WiFi)	Wireless Local Area Network Wireless or WiFi network
PTO sensor	Measures the speed of the power take off. It emits a specific number of electrical pulses in proportion to the power take off speed.
XML	Extended Markup Language Logical markup language and both successor and enhancement of HTML. XML permits the specification of its own language elements so that other markup languages such as HTML or WML can be defined by using XML.
Auxiliary control	Also: AUX-Control. Typical ISOBUS auxiliary controls are joysticks or toggle switch strips. An auxiliary control enables the comfortable and efficient operation of frequently used implement functions.

13 Disposal

Dispose of a defective or no longer used terminal with due care for the environment:

- Dispose of the device parts in an environmentally friendly manner.
- Observe the local regulations.

Dispose of plastics with normal domestic waste or according to the local regulations.

Plastics

Enter metal into a metal recycling chain.

Metal

Deliver the terminal PCBs to a specialist recycling company.

PCBs

14 Index

c

CCI 1200

Aboutiii

A. Technical Information

Dimensions (B x H x D) [mm]	312 x 213 x 66
Casing Type	Glass fibre reinforced polyamide
Fastening	VESA75
Operating Temperature [°C]	-15 - +70
Supply voltage [V]	12 VDC or 24VDC
Permitted Range [V]	7.5 VDC - 32VDC
Power consumption (at 12V) [W]	17, typical 143, maximum
Display [inch]	12.1 TFT
Display resolution [px]	WXGA, 1280 x 800
Colour depth	24 bit
Buzzer	85 dBA
Storage temperature [°C]	-30 - +80
Weight [gr]	2000
Protection class	IP65
EMC	ISO 14982
ESD protection	ISO 10605:2008

B. Interfaces



Caution!

Switch the terminal off before connecting or disconnecting connector A, B or C.



Caution!

All terminal connectors are mechanically protected to prevent incorrect connection or interchanging.

- Ensure that plugs and sockets have the same coding.
- Do not apply excessive force when connecting plug and socket.



Note

If a pin becomes bent, the interface may no longer function correctly.

- Submit the device for repair.



Note

Seal off unused connectors with blanking caps to prevent dust or moisture getting into the terminal.

A ISOBUS



B SIGNAL



+ RS232



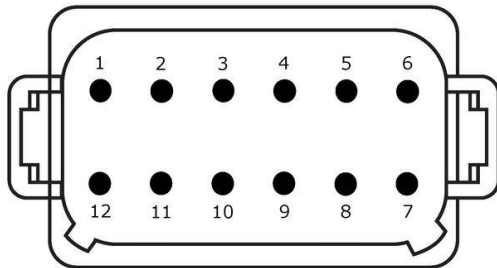
C VIDEO



+ RS232



Connector A



Connector type

German DT, 12 pole, A-coded

Type

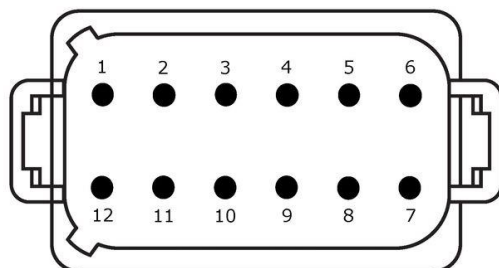
- CAN1
- CAN2
- ECU power
- Power supply

Use

ISOBUS, switched ECU supply

Pin	Signal	Comment
1	V+ in	Supply voltage, 12VDC or 24VDC
2	ECU Power enable	Switched ECU supply voltage
3	Power enable	Switched supply voltage
4	CAN_H	CAN1 High
5	CAN_L	CAN1 Low
6	CAN_GND	CAN 1 earth
7	CAN_H	CAN2 High
8	CAN_L	CAN2 Low
9	CAN_GND	CAN2 earth
10	Key Switch State	Ignition signal
11	Shield	Shielding
12	GND	Earth

Connector B



Connector type

German DT, 12 pole, B-coded

Type

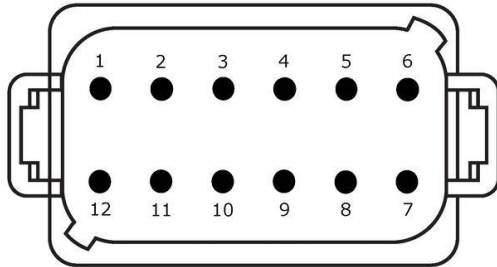
- RS232
- ISO 11786

Use

Signal socket, GPS/LH5000/ADS/TUVR

Pin	Signal	Comment
1	V+ out	12VDC or 24VDC
2	ISO 11786, Ground based speed	Ground speed sensor
3	ISO 11786, Wheel based speed	Wheel speed sensor
4	ISO 11786, PTO speed	Power take off speed
5	ISO 11786, In/out of work	Work position
6	ISO 11786, Linkage position	Hoisting gear position
7	Key Switch State	Ignition signal
8	GND	Earth
9	ISO 11786, Direction signal	Direction of travel
10	RS232 TxD	RS232-1
11	RS232 RxD	RS232-1
12	GND	Earth

Connector C



Connector type

German DT, 12 pole, C-coded

Type

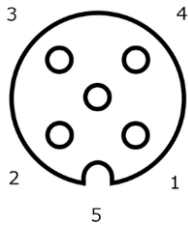
- RS232
- RS485
- Video

Use

Camera, video miniplexer, video multiplexer, GPS/LH5000/ADS/TUVR

Pin	Signal	Comment
1	V+ out	Camera power supply
2	Video IN	
3	Video GND	Earth
4	RS485B	
5	RS485A	
6	V+ out	Supply voltage Video miniplexer or video multiplexer
7	NC	
8	NC	
9	RS232, V+ out	Supply voltage RS232
10	RS232, TxD	RS232-2
11	RS232, RxD	RS232-2
12	RS232, GND	Earth

Connector 3 and 4



Connector type

M12, 5-pole, A-coded

Type

- USB 2.0

Pin	Signal	Comment
1	V+	Supply voltage
2	D-	Data -
3	D+	Data +
4	GND	Earth
5	GND	Earth

Connector Eth



Connector type

M12, 8-pole, X-coded

Type

- Ethernet

Use

LAN

Pin	Signal	Comment
1	TR0+	
2	TR0-	
3	TR1+	
4	TR1-	
5	TR3+	
6	TR3-	
7	TR2+	
8	TR2-	

C. Time zones

- (UTC -09:00) Alaska
- (UTC -08:00) Tijuana, Baja California (Mexico)
- (UTC -08:00) Los Angeles, Vancouver
- (UTC -07:00) Chihuahua, Mazatlan
- (UTC -07:00) Denver, Salt Lake City, Calgary
- (UTC -07:00) Dawson Creek, Hermosillo, Phoenix
- (UTC -06:00) Costa Rica, Guatemala, Managua
- (UTC -06:00) Chicago, Winnipeg
- (UTC -06:00) Cancun, Mexico City, Monterrey
- (UTC -05:00) Havana
- (UTC -05:00) Detroit, New York, Toronto
- (UTC -05:00) Bogota, Lima, Panama
- (UTC -04:30) Caracas
- (UTC -04:00) Bermuda, Halifax
- (UTC -04:00) Campo Grande, Cuiaba
- (UTC -04:00) Asuncion
- (UTC -04:00) Santiago
- (UTC -03:00) Montevideo
- (UTC -03:00) Sao Paulo
- (UTC -03:00) Buenos Aires, Cordoba
- (UTC -03:00) Mendoza, Recife, San Luis
- (UTC +00:00) Casablanca, Reykjavik
- (UTC +00:00) Dublin, Lisbon, London
- (UTC +01:00) Windhoek
- (UTC +01:00) Algiers, Porto Novo
- (UTC +01:00) Berlin, Oslo, Paris, Rome, Stockholm
- (UTC +01:00) Tunis
- (UTC +02:00) Cairo
- (UTC +02:00) Jerusalem, Tel Aviv
- (UTC +02:00) Kaliningrad, Minsk
- (UTC +02:00) Athens, Helsinki, Istanbul, Riga
- (UTC +02:00) Johannesburg, Tripoli
- (UTC +03:00) Moscow, Volgograd
- (UTC +04:00) Yerevan, Samara
- (UTC +05:00) Yekaterinburg
- (UTC +05:30) Calcutta, Colombo
- (UTC +05:45) Kathmandu
- (UTC +06:00) Novosibirsk, Omsk
- (UTC +07:00) Krasnoyarsk
- (UTC +08:00) Hong Kong, Perth, Singapore
- (UTC +08:00) Irkutsk
- (UTC +08:45) Eucla
- (UTC +09:00) Seoul, Tokyo
- (UTC +09:00) Yakutsk
- (UTC +09:30) Darwin
- (UTC +09:30) Adelaide
- (UTC +10:00) Vladivostok
- (UTC +10:00) Canberra, Melbourne, Sydney
- (UTC +11:00) Magadan
- (UTC +12:00) Kamchatka
- (UTC +12:00) Auckland

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Document number: 20170911