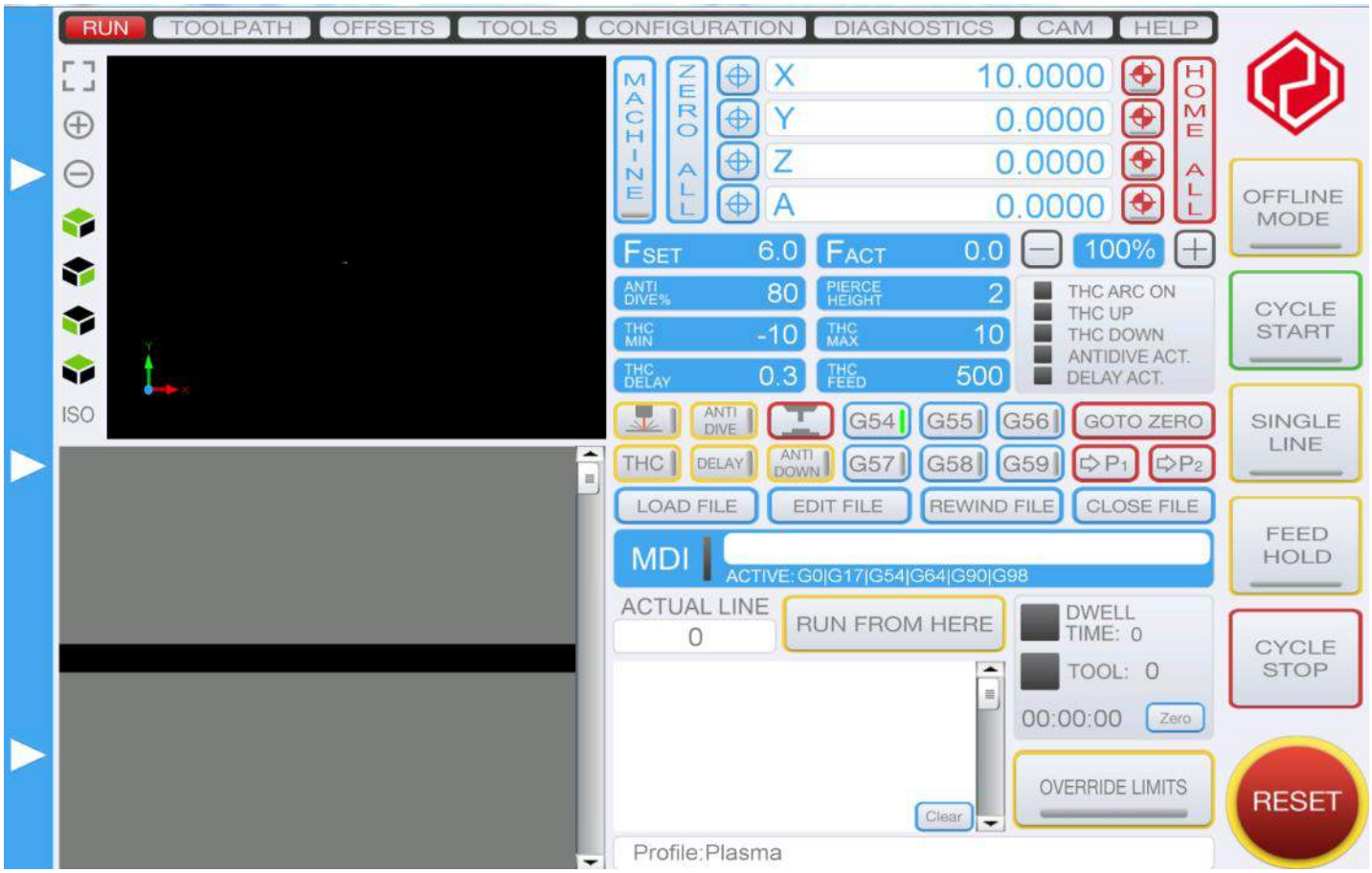

UCCNC MACROS, SCREENSET & MODBUS FUNCTIONS, BUTTON, FIELD, LED & CHECKBOX CODES

UCCNC VERSION 1.2022

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THINK BEFORE YOU PRINT

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Contents

LIST OF G-CODES

G0 : Linear interpolation with maximum feedrate (Parameters X,Y,Z,A,B,C)
G1 : Linear interpolation with set feedrate (Parameters X,Y,Z,A,B,C)
G2 : CW arc interpolation with set feedrate (Parameters X,Y,Z,I,J,K,R)
G3 : CCW arc interpolation with set feedrate (Parameters X,Y,Z,I,J,K,R)
G4 : Dwell, wait for the programmed time interval (Parameters P in milliseconds)
G10 L1 : Load tool table offset (Parameters P ,Z) Notes: P can be a value 1-20 for tools number 1-20 in the tools table.
G10 L2 : Load offset origin point (Parameters P ,X,Y,Z,A,B,C) Notes: P can be a value 1-6 for G54-G59 offset tables.
G17/G18/G19 : XY/XZ/YZ plane selection (No parameters)
G28 : Run to home position (Parameters X,Y,Z,A,B,C) Note: The parameters are the intermediate coordinates.
G28.1 : Home axis (Parameters X,Y,Z,A,B,C) Note: The parameters are the intermediate coordinates.
G31 : Straight probe (Parameters X,Y,Z,A,B,C) Note: Only one axis is supported one time.
G33 : Spindle synchronized motion (Parameters X,Z,K,Q) Note: K is the pitch per revolution. Q is the angle of penetration.
G33.1 : Rigid tapping, right-hand tap (Parameters Z,K) Note: K is the pitch per revolution.
G33.2 : Rigid tapping, left-hand tap (Parameters Z,K) Note: K is the pitch per revolution.
G43 : Set tool length offset (Parameters H) Note: The H parameter number of tool length offset is loaded from tool table to tool offset.
G44 : Set tool length offset (Parameters H) Note: Identical to G43 code, but for negative tool length offsets.
G49 : Cancel tool length offset (No parameters)
G52 : Temporary offset coordinate system (Parameters X,Y,Z,A,B,C).
G53 : Linear interpolation in the machine coordinate system (Parameters X,Y,Z,A,B,C) Note: Can be called with G0 or G1 modal active.
G54 - G59 : Work offset selection (No parameters)
G61/G61.1 : Set path control to exact stop mode (No parameters)
G64 : Set path control to constant velocity mode (Parameters D,E,H,L,P,Q)
G73 : Peck drilling cycle with set backoff (Parameters X,Y,Z,Q,R) Note's is the final depth, Q is the depth increment, R is the retract plane.
G76 : Threading cycle (Parameters P,Z,I,J,K,E,L,Q,H) Note: See the documentation for detailed information.
G80 : Cancel canned cycle (No parameters)
G81 : Drilling cycle (Parameters X,Y,Z,R) Note: Z is the depth, R is the retract plane.
G82 : Drilling cycle with dwell (Parameters X,Y,Z,R,P) Note: Z is the depth, R is the retract plane, P is the dwell time in msec.
G83 : Peck drilling cycle with full back off (Parameters X,Y,Z,Q,R) Note: Z is the final depth, Q is the depth increment, R is the retract plane.
G90 : Select absolute distance mode (No parameters)
G91 : Select relative distance mode (No parameters)
G92 : Temporary offset to programmed coordinates (Parameters X,Y,Z,A,B,C).
G92.1 : Reset temporary offset coordinates (No parameters)
G98 : Canned cycle return level to initial plane (No parameters)
G99 : Canned cycle return level to R plane (No parameters)

LIST OF M-CODES

M0, M1, M60 : Program stop
M2 : Program end
M3 : CW spindle relay on
M4 : CCW spindle relay on
M5 : CW and CCW relays off
M6 : Tool change
M7 : Mist coolant on
M8 : Flood coolant on
M9 : Mist and flood coolants off
M10 : Fast synchronous output (laser) on (Parameters Q) Note: Q parameter range is 0-255, it controls the laser power, intensity.
M11 : Fast synchronous output(laser) off
M30 : Program end and program rewind
M31 : Z-axis straight probe macro
M47 : Program rewind and continue running
M98 : Subroutine call (Parameters P, L) Notes: P is the subroutine number, L is the times of call.
M99 : Return from subroutine
M106 : Turns the spindle PWM on (Parameters P) The range of P is 0 to 255. This macro is used to control the FAN speed in 3D printing
M107 : Turns the spindle PWM off
M205 : Turns THC on in synchronous with the motion.
M206 : Turns THC off in synchronous with the motion.
M207 : Turns the THC delay on in synchronous with the motion.
M208 : Turns the THC delay off in synchronous with the motion.
M209 : Turns the THC anti dive on in synchronous with the motion.
M210 : Turns the THC anti dive off in synchronous with the motion.
M211 : Turns the THC anti down on in synchronous with the motion.
M212 : Turns the THC anti down off in synchronous with the motion.
M213 : Turns the safe probe mode on.
M214 : Turns the safe probe mode off.
M215 : Changes the spindle pulley. (Parameters P) Note: P parameter is the number of the spindle pulley in use.
M20000 to M20999 : Macros called with button codes.
M99998 : Constructor macro, called once on software startup.
M99999 : Destructor macro, called once on software shutdown.

F : Feedrate value (Parameter in Unit/min)
S : Spindle speed (Parameter in rotational speed of 1/min)
T : Load tool (Parameter is the tool number, can be 1-20, example: T2)
O : Subroutine label (Parameter is the number of the subroutine, example: O11)
 # : Reference an internal variable instead of a constant as parameter. (Example: G1 X#1 Y#2)
? : Show the value of an internal variable. (Example: ?#1, Note: This command works in MDI input only.)

ALPHABETICAL MACRO & SCREENSET FUNCTION INDEX

MACRO FUNCTION

MODBUS MACRO FUNCTIONS

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MACRO FUNCTIONS

This section describes the **UCCNC software** macro function calls capability.

The UCCNC software can have different profiles. Each profile can have different machine setup/settings and therefore different macros.

The macro files are located in the installation folder of the UCCNC software /Profile/Macro_name of profile , where the „name of profile" is the profile name the software is loaded with.

The macros are plain text files with a "***.txt***" extension and with the file names start with an "***M***" and after the number of the macro. For example M3.txt.

The user can make and edit new macros simply by creating a new macro file and adding it to the macro folder of the software. The macros as they are plain text files are editable with the built in notepad.exe in Windows.

The macros' programming language is C# (C-sharp). The language is not described in this documentation, but it is very similar to C language and for those who are yet not familiar with C# programming we recommend to study the following Wiki page: http://en.wikipedia.org/wiki/C_Sharp_syntax

The macros are compiled and executed in runtime, so they can be changed any time using a text editor like notepad. In case the macro contains a syntax error and cannot be compiled the UCCNC software will show a script error notice in the status box. Also it is possible to create a runtime error, for example with dividing by zero in the macro code, in this case the UCCNC software will also show an error notice in the status box.

We recommend that when writing macros first test them without the machine tool connected for safety reasons.

All macros are compiled into the Macro class. The Macro class has visibility to the following Namespaces and objects:

- "exec" is the executer, this is the object in the UCCNC software which makes all motion execution, I/O manipulations etc.
- "AS3" is the main screen, this is the object on the screen where all fields, buttons, LEDs are placed, the value of these can be read from the AS3 object.
- "AS3jog" is the jog panel object on the screen, all fields, buttons, LEDs values on the jogpanel can be read from the AS3jog object.
- System, System.Windows.Forms, System.Drawing, System.Threading namespaces.

The macro text typed into the macro file is inside a function of a class and therefore defining other functions and global variables directly inside the macro is not possible.

Defining global variables and functions is possible only at the end of the macro text file with writing the #Events text into the macro, this text will let the UCCNC know that the remaining text of the macro has to be compiled outside of the function, but still inside the macro class.

The following example shows a simple macro which creates a Windows Form and adding a button to it and assigning an event handler to the button's click event. The example also declares a function which is then called from inside the macro.

```
Button MyButton = new Button();
MyButton.Size = new System.Drawing.Size(80, 40);
MyButton.Location = new System.Drawing.Point(110, 130);
MyButton.Text = "Press me";
MyButton.Click += new EventHandler(MyButton_Click);

MyForm = new Form();
MyForm.Size = new System.Drawing.Size(300, 300);
MyForm.StartPosition =
System.Windows.Forms.FormStartPosition.CenterScreen;
MyForm.Controls.Add(MyButton);
MyForm.ShowDialog();

MyFunction();

#Events

Form MyForm; //This is a global variable, a Windows Form

void MyButton_Click(object sender, EventArgs e)
{
  MessageBox.Show("Mybutton was clicked!");
  MyForm.Close();
}

void MyFunction()
{
  exec.Code("G0 X10");
}
```

The following list contains the Executer object's functions which are callable from any macros.

IsMoving()
Function: bool IsMoving(void)
Description: The function returns true if the software is executing a motion or a function. It returns false if the software is in idle.
Example: ***while(exec.IsMoving()){}***

Get[XYZABC]machpos()
Function: double Get[XYZABC]machpos(void)
Description: The function returns the actual machine position of an axis, this is the absolute position excluding any offsets.
Example: ***double Xmachposvariable = exec.GetXmachpos();***
Notes: [XYZABC] means a character of X, Y, Z, A, B or C

Get[XYZABC]pos()
Function: double Get[XYZABC]pos(void)
Description: The function returns the actual position of an axis including the selected offset and the tool offset.
Example: ***double Xposvariable = exec.GetXpos();***
Notes: [XYZABC] means a character of X, Y, Z, A, B or C

StopWithDeccel()
Function: void StopWithDeccel(void)
Description: The function stops all axis using the set deceleration profile.
Example: ***exec.StopWithDeccel();***

Stop()
Function: void Stop(void)
Description: The function causing an instant stop on all axis.
Example: ***exec.Stop();***

Wait()
Function: void Wait(int milliseconds)
Description: The function causing the loop to stop for the set amount of time in milliseconds.
Example: ***exec.Wait(1000);***

Setofflinemode()

Function: void Setofflinemode(bool setoffline)
Description: The functions sets the machine to offline mode or to online mode. In offline mode the outputs of the UC100 gets disconnected from the pins, so the machine can't move, however the functions like movements seems like executing.
Example: ***exec.Setofflinemode(true);***

Getcurrenttool()

Function: int Getcurrenttool(void)
Description: The function returns the actually selected tool number. It returns zero if no tool was yet selected.
Example: ***int Currenttoolvariable = exec.Getcurrenttool();***

Setcurrenttool()

Function: void Setcurrenttool(int toolnumber)
Description: This function sets the selected tool number in the UCCNC software. Useful when using automatic tool changer. We recommend to set the new tool number at the end of the toolchange macro.
Example: ***exec.Setcurrenttool(2);***

Getnewtool()

Function: int Getnewtool(void)
Description: This function reads the tool number next to the M6 code, for example if a code M6 T2 was executed then this function returns the number 2.
Example: ***int newtoolnumber = exec.Getnewtool();***

Ismacrostopped()

Function: bool Ismacrostopped(void)
Description: This function checks if a stop was pressed by the user on the UCCNC software GUI.
Example: ***if(exec.Ismacrostopped){return;}***

Setoutpin()

Function: void Setoutpin(int portnumber, int pinnumber)
Description: This functions sets the selected output pin to high level.
Note: If a pin is called which is configured for a hardware function, for example to act as a step or direction pin will override this function.
Example: ***exec.Setoutpin(1, 2);***

Clroutpin()

Function: void Clroutpin(int portnumber, int pinnumber)
Description: This functions sets the selected output pin to low level.
Note: If a pin is called which is configured for a hardware function, for example to act as a step or direction pin will override this function.
Example: ***exec.Clroutpin(1, 2);***

Code()

Function: void Code(string code)
Description: This function is the most complex of all, it makes it possible to execute G-code from inside a macro. The G-code is sent as a string in the parameter of the function and is interpreted in execution time.
Example: ***exec.Code("G0 X10 Y20 Z0");***

Callbutton()

Function: void Callbutton(int buttonnumber)
Description: This function calls an internal function of the UCCNC software. The buttonnumber represents an internal function number of the UCCNC software. The buttonnumber list is described in a separate documentation file.
Example: ***exec.Callbutton(100);***

Readkey()

Function: string Readkey(string section, string key, string defaultvalue)
Description: This function reads a key value from the profile (.pro) file. The section and the key parameter defines which key to read from the profile file and the function returns with the default value parameter if the key does not exist in the profile file. The function returns a string type.
Example: ***string mykeyvalue = exec.Readkey("axessettingscontrolX", "Axisenabled", "False");***

Writekey()

Function: void Writekey(string section, string key, string value)
Description: This function writes a key value into the profile (.pro) file. The section, and the key parameter defines which key to write to the profile file. The value parameter is the new value to write. If the key already exists in the profile file then the function overwrites the key with the new value. If the key does not exist then the function creates the key in the file with the set value.
Example: ***exec.Writekey("axessettingscontrolX", "Axisenabled", "False");***

Pluginshowup()

Function: void Pluginshowup(string Pluginfilename)
Description: This function calls a Plugin file's Showup_event(); function. This is useful when the plugin should do something on a button press event, for example when it should show it's GUI interface.
Example: ***exec.Pluginshowup("Plugintest.dll");***

Swapaxis()

Function: void Swapaxis(int axis1, int axis2)
Description: This function swaps the step and direction pin numbers and pin negate settings of one axis with another axis. Axis swapping may be done at anytime, the software saves the swapping sequences.
The axis number parameter can be in the range of 0 to 5 for the axis X to C axis in order.
Be careful with saving the axis settings when the swapaxis function is in use. If the settings are saved without pressing the Apply settings button first then the swapped pins will be saved for the axis!
Example: ***exec.Swapaxis(0,1); //Swaps the X-axis with Y-axis.***

Resetswapaxis()

Function: void Resetswapaxis()
Description: This function resets the swap axis sequence with rolling back all the previously called axis swapping sequences.
Example: ***exec.Resetswapaxis();***

Slaveaxis()

Function: void Slaveaxis(int masteraxis, int slaveaxis)
Description: This function slaves an axis to an axis. The master axis can be axis X, Y and Z axis (numbers 0, 1, 2 respectively) and the slave axis can be A, B and C axis (3, 4, 5 respectively). To remove the slave from the master axis use value 0 on the slaveaxis parameter.
Be careful with saving the axis settings when the slaveaxis function is in use. If the settings are saved without pressing the Apply settings button first then the slave parameter will be saved for the master axis!
Example: ***exec.Slaveaxis(0,3); //Makes A-axis slave to the X-axis.***
Example: ***exec.Slaveaxis(0,0); //Clears slave to the X-axis.***

Getanaloginput()

Function: int Getanaloginput(int channel)
Description: This function returns the actual value of an analog input channel signal. The parameter defines the channel to be read. If the device has no analog input channel with the channel number called then the return value will be -1. The valid return range for the function is 0-65535.
Example: ***int analogin1 = exec.Getanaloginput(1);***

Getanalogoutput()

Function: int Getanalogoutput(int channel)
Description: This function returns the actual value of an analog output channel signal. The parameter defines the channel to be read. If the device has no analog output channel with the channel number called then the return value will be -1. The valid return range for the function is 0-65535.
Example: ***int analogout1 = exec.Getanalogoutput(1);***

TextQuestion()

Function: string TextQuestion(string Questiontext)
Description: This function shows a Question form waiting for a string as the answer. The text of the question shown on the Form is the parameter.
Example: ***string val = exec.TextQuestion("Stop code execution?");***

Question()

Function: double Question(string Questiontext)
Description: This function shows a Question form waiting for a double value as the answer. The text of the question shown on the Form is the parameter.
Example: ***double val = exec.Question("What X position to move?");***

Loadfile()

Function: void Loadfile(string filename)
Description: This function loads a g-code file. The parameter is a string which is the full path of the file to be loaded.
Example: ***exec.Loadfile("C:/UCCNC/Example_codes/holders.tap");***

IsLoading()

Function: bool IsLoading(void)
Description: The function returns true if the software is loading a g-code file and returns false if no file is being loaded.
Example: ***while(exec.IsLoading()){}***

Showplugin()

Function: int Showplugin(string pluginfilename)
Description: This function calls the Showup event of a UCCNC plugin installed in the /Plugins directory. The parameter is a string which is the name of the plugin file including the .dll extension.
The possible return values are the following:
0: The plugin started without problems.
1: The plugin is not enabled and can't run.
2: The plugin was not found, there is no plugin installed with this filename.
3.: The plugin does not have the Showup event implemented.
Example: ***int returnval = exec.Showplugin("Diagnostics.dll");***

Configplugin()

Function: int Configplugin(string pluginfilename)
Description: This function calls the Config event of a UCCNC plugin installed in the /Plugins directory. The parameter is a string which is the name of the plugin file including the .dll extension.
The possible return values are the following:
0: The plugin started without problems.
1: The plugin is not enabled and can't run.
2: The plugin was not found, there is no plugin installed with this filename.
3.: The plugin does not have the Config event implemented.
Example: ***int returnval = exec.Configplugin("Diagnostics.dll");***

The following list contains the AS3 and AS3jog object's functions which are callable from any macros.

Getfield()

Function: string Getfield(int fieldnumber)
Description: This function reads the value of a field object and returns the value in a string.
Example: ***string fieldvalue = AS3.Getfield(100);***

Setfield()

Function: void Setfield(double value, int fieldnumber)
Description: This function sets the value of a field object. If the field exists on the screen on any tab pages then it will update it's value. If it does not exist then this function will do nothing.
Note that there are fields like the position DROs and feedrate, spindle speed etc. DROs which are updated in the UCCNC from internal variables in loops, these fields cannot be updated permanently using this method,
because the internal functions will rewrite these fields with the internal variable values. Call the Validatefield after the Setfield function to change the value of the field.
Example: ***AS3.Setfield(15.23, 100);***

Validatefield()

Function: void Validatefield(int fieldnumber)
Description: This function validates the value of a field object. If the field exists on the screen on any tab pages then the function executes. If it does not exist then this function will do nothing.
When this function is called then the field value changed event is called inside the UCCNC core and the software will make the actions necessary to validate the actual value of the field.
Example: ***AS3.Setfield(12.34, 97); //Sets the value of the X current coordinate field to 12.34***
AS3.Validatefield(97); //Validates the 12.34 value for the X current coordinate field with writing the offset coordinates as necessary.

Setfieldtext()

Function: void Setfieldtext(string value, int fieldnumber)
Description: This function sets the value of a field. If the field exists on the screen on any tab pages then it will update it's value. If it does not exist then this function will do nothing.
Note that there are fields like the position DROs and feedrate, spindle speed etc. DROs which are updated in the UCCNC from internal variables in loops, these fields cannot be updated permanently using this method, because the internal functions will rewrite these fields with the internal variable values. Call the Validatefield after the Setfield function to change the value of the field.
Example: ***AS3.Setfieldtext("This is my field", 100);***
AS3.Validatefield(100); //Validates fieldtext 100.

GetLED()

Function: bool GetLED(int LEDnumber)
Description: This function returns the logic state of a LED screen object. If the LED is on then the function returns "true" or if the LED is off then this function returns "false". If the LED does not exist on the screen then the return value is "false".
Example: ***bool stateofmyLED = AS3.GetLED(18);***

SetLED()

Function: void SetLED(bool state, int LEDnumber)
Description: This function sets the logic state of a LED screen object. If the LED does not exist on the screen then this function will do nothing.
Note: There are LEDs which values are refreshed from internal loops of the UCCNC, these LEDs cannot be set with this function, because the value will update from the UCCNC's internal loop. For example the Idle and run LEDs cannot be set with this function. Basically this function is to set user LEDs which are not used by the UCCNC core.
Example: ***AS3.SetLED(true, 1000);***

Getbutton()

Function: bool Getbutton(int buttonumber)
Description: This function returns true if the button is being pressed on the screen or with an input trigger and returns false if the button is released.
Example: ***while(!AS3.Getbutton(128)); //Waits for the cycle start button press on the main screen.***

Getbuttonstate()

Function: bool Getbuttonstate(int buttonumber)
Description: This function works with toggle type buttons and returns true if the button is in it's on state and returns false when the button is in it's off state. The function always returns false for non-toggle type buttons.
Example: ***bool buttonstate = AS3.Getbuttonstate(114); //Checks if the M3 spindle on/off button is active.***

Switchbutton()

Function: void Switchbutton(bool Ison, int Buttonnumber)
Description: This function works with toggle type buttons and switches the button to on/off states. If the Ison parameter is true switches the button to the on state and false switches to the off state. The function can be used for example in buttons' macros to change the state of the button toggling it's visual state.
Example: ***AS3.Switchbutton(true, 128)***

AddStatusmessage()

Function: void AddStatusmessage(string StatusMessage)
Description: Adds a message to the Status Listbox
Example: ***exec.AddStatusmessage("Check Ohmic Probe");***

Additemtolist()

Function: void Additemtolist(string val, int labelnumber)
Description: Adds a string value to a Listbox with the corresponding labelnumber.
Example: ***AS3.Additemtolist("Check Ohmic Probe" , 18);***

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MODBUS MACRO FUNCTIONS

GetAllModbusArray()
Function: ushort[] GetAllModbusArray()
Reads the whole modbus register table.

SetModbusregister()
Function: bool SetModbusregister(int Registernumber, ushort Value)
Writes a single register in the modbus register table.

SetModbusregisters()
Function: bool SetModbusregisters(int Startregister, ushort[] Values)
Writes multiply registers in the modbus register table.

GetModbusregister()
Function: bool GetModbusregister(int Registernumber, out ushort Value)
Reads a single register from the modbus register table.

GetModbusregisters()
Function: bool GetModbusregisters(int Startregister, int Registercount,
out ushort[] Values)
Reads multiply registers from the modbus register table.

WriteModbusString()
Function: void WriteModbusString(string String, int Startregister,
bool HightoLowByteorder)
Converts a string into an ushort array and writes it into the modbus register table.

In the functions where the return value is boolean indicates if the function got executed with or without problems. The true return value means that the function executed without problems while false means that a problem has occurred and the retrieved variable(s) values may be corrupt.

Example MODBUS macro codes

The following example code reads the modbus register 0 from the UCCNC modbus table and writes the value into the Textfield (DRO) with ID=2000.
To test run the macro create a Textfield with ID=2000 using the Screen editor and place the below text into a text macro file in the /Profiles/Macros folder.
Setup a Modbus Connection and Function in the Modbus plugin which function reads value into register 0.

Execute the macro via MDI.
To execute the macro in a loop place the macro file to the macro loops in the General settings/Configure macroloops and place your macro number into one loop slots.
Running the macro in a loop will continuously read the modbus register 0 and will write the read value into the DRO.

The code is the following:

```
ushort Readvalue;
if(exec.GetModbusregister(0, out Readvalue))
{
   AS3.Setfield(Readvalue, 2000);
}
else
{
   //The read returned with error, handle it...
}
```

The following example code reads a DRO and writes the value into the modbus register 0. To test run the macro create a Textfield with ID=2000 using the Screen editor and place the below text into a text macro file in the /Profiles/Macros folder. Setup a Modbus Connection and Function in the Modbus plugin which writes register 0 value onto the Modbus.

Execute the macro via MDI.
To execute the macro in a loop place the macro file to the macro loops in the General settings/Configure macroloops and place your macro number into one loop slots. Running the macro in a loop will continuously read the DRO value and will write it to the modbus.

The code is the following:

```
ushort Writevalue = (ushort)AS3.Getfielddouble(2000);
if(!exec.SetModbusregister(0, Writevalue))
{
  //The write returned with error, handle it...
}
```

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SCREENSET FUNCTIONS

This section describes the **UCCNC software** screenset function calls capability.

All the screen elements in the UCCNC software are defined in the external screenset script file which file is located in the /Screens folder of the UCCNC installation.

The screenset files have a .ssf (Screen Set File) extension and are plain textfiles editable with notepad in Windows.

There may be more than one screenset files in the /Screens directory. Which screenset file is loaded on the software startup is defined in the profile file, the key which defines the name of the screenset file to be loaded is in the following section with the following name:

[Screensetsettings]
mainscreenfilename=Defaultscreenset

The UCCNC software first loads the profile file and reads the name of the screenset file and executes the script in this file.

The screenset file contains the definition of all screen elements, it defines the tab layers, the backgrounds, the buttons, the fields placements, dimensions, images etc.

Basically the UCCNC GUI is blank and all screen elements are unloaded to the screen from the screenset file.
This makes the screen changeable and freely editable for the user, because all the screen elements can be changed in the external screenset script file.

The screenset file's programming language is C# (C-sharp). The language is not described in this documentation, but it is very similar to C language and for those who are yet not familiar with C# programming we recommend to study the following Wiki page: http://en.wikipedia.org/wiki/C_Sharp_syntax

There are 2 different display objects or let's call them canvas on the screen the mainform.AS3 and the mainform.AS3jog. The AS3 is the main screen canvas and the AS3jog is the jog panel on the left side of the screen and the screen elements can be uploaded onto these separately.

In this documentation we describe the screenset associated function calls, the prototypes of these functions with some descriptions and examples are shown below.

Addbackground()

Function: void Addbackground(double posX, double posY, double width, double height, int picturenumber, int backgroundnumber, int layernumber)
Description: This function renders an image onto a tab layer, in other words it places a background onto a tab layer.
The posX and posY parameters define the top-left corner of the image to be placed. The width and height parameters defines how wide and how tall the image will be in pixels.
If the image has a different dimensions than the width and height parameters then the image will be scaled into the placement dimensions.
The picturenumber parameter is the identifier of the picture to use and the background number will be the identifier of this background. The layernumber is the number of the tab layer to place the image onto.
Example: ***AS3.Addbackground(0, 0, 1024, 692, 121, 11, 12);***

Addbutton()

Function: void Addbutton(double xposition, double yposition, double width, double height, bool toggletype, bool blinktype, int picturenumber, int buttonnumber, int layernumber)
Description: This function adds one button object to the screen.

- The ***xposition*** and ***yposition*** are the X and Y position in pixels of the top-left corner of the button.
- The ***width*** and ***height*** are also in pixels and they define how wide and how tall the button will be.
- If the ***toggletype*** parameter is true then the button is toggling between the on and off states with rendering the left side half image onto the button in the off state and rendering the right side half image in the on state of the button.
- If the ***blinktype*** parameter is true then in the on state of the button the rendering of the left and right side images is rendered periodically creating a blinking effect.
- The ***picturenumber*** is the identifier of the image used to render this button, this identifier was set in the Loadpicture functions and any picture which was loaded previously can be selected.
- The ***buttonnumber*** is an identifier for this button and this identifier also defines the function of this button. For example code 128. is the cycle start button code.
- The different button codes are listed and described in a separated document.
- The ***layernumber*** defines on which tab layer will the button appear on.

Example: ***AS3.Addbutton(50, 60, 100, 100, false, 18, 128, 2);***

Addcheckbox()

Function: void Addcheckbox(string labeltext, string labelfont, int fontsize, int fontcolor, int posX, int posY, int boxnumber, int layernumber)
Description: This function adds a checkbox control to the screen.

- The ***labeltext*** parameter is similar as with the field type object, it is a text string appearing before the checkbox control.
- The ***labelfont*** defines the font type used to render the text in the control, the ***textalign*** sets the text inside the control's field
- The ***fontsize*** sets the size of the font in pixels.
- The ***fontcolor*** is the RGB color code in integer format.
- The ***posX*** and ***posY*** defines the top-left corner position of the checkbox control.
- The ***boxnumber*** is the unique identifier of the checkbox control. The checkboxes numbers and their meaning are described in a separated documentation.
- The ***layernumber*** defines which layer the checkbox will appear on.

Example: ***AS3.Addcheckbox("", "Arial", 16, 0, 50, 100, 100, 2);***

Addfield()

Function: void Addfield(string labeltext, string labelfont, string textalign, int fontsize, int fontcolor, double posX, double posY, int fieldwidth, string type, double min, double max, int labelnumber, int layernumber)
Description: This function adds one field object onto the screen. Each field object represents a text label on the UCCNC screen.

- The ***labeltext*** parameter defines a text string which will be written before the field on the screen.
- The ***labelfont*** parameter defines the font used for both the text string and the field text.
- The ***textalign*** parameter defines where the text is aligned inside the field, the possible values are "left", "right" and "center".
- The ***fontsize*** defines the size of the dont used to render the field text.
- The ***fontcolor*** is the color of the font in integer format of the RGB color code.
- The ***posX*** and ***posY*** parameters define the top-left corner of the field and the ***fieldwidth*** defines the length of the field in pixels.
- The ***type*** is a special parameter, the possible values are the "textfield", "textfieldnb", "showfield", "showfieldnb", "field", "fieldnb".
    - The "textfield", "textfieldnb", "field", "fieldnb" type fields can be read and written from macro code and are editable by the user on the UCCNC GUI.
    - The "textfield", "textfieldnb" can contain any kind of text including words. The "field", "fieldnb" can contain numerical values only.
    - The "showfield", "showfieldnb" type labels can be read and written from macro code and are not editable by the user on the UCCNC GUI.
        - The "nb" at the end of the parameter means "no border", so these type of fields will have no visual border on the screen.
- The ***min*** and ***max*** parameters defines the minimal and maximal numerical value for the "field", "fieldnb" type fields, the user can't enter numbers out of this range.
- The ***labelnumber*** is the identifier number of the field, the different label numbers and their meaning are listed in a separated document.
- The layernumber is the number of the tab layer the field will appear on.

Example: ***AS3.Addfield(" ", "Arial", "right", 21, 7961465, 50, 100, 128, "showfieldnb", double.MinValue, double.MaxValue, 866, 2);***

Addled()

Function: void Addled(double posX, double posY, double width, double height, int picturenumber, int LEDnumber, int layernumber)
Description: This function adds a LED to the screen.

- The ***posX*** and ***posY*** defines the top-left corner position of the LED, the parameters are in pixels.
- The ***width*** and ***height*** parameters defines the dimensions of the LED and these parameters are also in pixels.
- The ***picturenumbe***r is the number of the image to render onto the LED.
- The LEDnumber is the unique identifier of the LED. The LED numbers and their meaning are described in a separated document.
- The ***layernumber*** is the number of the tab layer the LED will appear on.

Example: **AS3.Addled(530, 420, 6, 37, 68, 216, 2);**

Addmdi()

Function: void Addmdi(string labeltext, string labelfont, string textalign, int fontsize, int fontcolor, int posX, int posY, int width, int MDInumber, int layernumber)
Description: This function adds an MDI control to the screen.

- The ***labeltext*** parameter is similar as with the field type object, it is a text string appearing before the MDI control.
- The ***labelfont*** defines the font type used to render the text in the control, the ***textalign*** sets the text inside the control's field.
- The ***fontsize*** sets the size of the font in pixels.
- The ***fontcolor*** is the RGB color code in integer format.
- The ***posX*** and ***posY*** defines the top-left corner position of the MDI control and the width parameter defines the width of the MDI textfield in pixels.
- The ***MDInumber*** is the identifier of the MDI object.
- The ***layernumber*** defines which layer the MDI will appear on.

Example: ***AS3.Addmdi("This is an MDI:", "Arial", "left", 26, 4564978, 541, 421, 280, 2);***

Addtab()

Function: void Addtab(string labeltext, string labelfont, string textalign, int fontsize, int fontcolor, int posX, int posY, int labelwidth, int labelheight, int picturenumber, int labelnumber, int parentnumber)
Description: This function adds one tab layer on the screen. Tab layers are the base screen elements in the UCCNC software and they are like layers in CAD software.
The tab layers can contain other screen elements like buttons, fields, background images etc.
There can be any number of tab layers on the screen and by default the tab layers are all transparent.
Every tab layer object has an identifier which is the labelnumber parameter and also a parent number which is the last parameter.
Tab layers can be in parent-child relation with each other, the parentnumber defines the parent of the tab layer.
The tabs which have the same parent numbers are on the same level and just like in Windows tab controls one time only one layer can be selected from the same level tabs and the screen items on the other same level tab layers are hidden.
Every tab layer has a label which is a graphical object and is used to allow the user to press and select the tab layer. The label position and width and height can be defined with the posX, posY, labelwidth, labelheight parameters and the label can also have a picture rendered onto it, the picturenumber defines which previously loaded picture is rendered onto the label.
Example: ***AS3.Addtab("", "Arial", "center", 14, 0, 69, 30, 100, 18, 94,20, 4);***

Filterfieldtext()

Function: void Filterfieldtext(string value, int labelnumber)
Description: This function filters the characters which can be input into a field. The characters in the value string can be input to the field, all other characters are prohibited.
Note, that if a '-' character needs to be allowed in the filter then the \\ mark must be placed before the '-' character, because the '-' char means a range.
Example: ***AS3.Filterfieldtext("0123456789.\\-%", 232);***
AS3.Filterfieldtext("0-9", 232); //Allows characters 0123456789, because the - character means range.

Loadpicture()

Function: void Loadpicture(string pictureupURL, string picturedownURL, int picturenumber, bool IsLastpicturetoload)
Description: This function loads 2 images into the memory, the first 2 parameters are the filenames with the directory path for the image files. The base path is the UCCNC installation /Flashscreen/ path.
The pictureupURL will be the image which is shown when a button is not pressed (is released) and the picturedownURL is the image which is shown when the button is being pressed.
For screen elements like for backgrounds where only one image is used set both parameters the same and the software will automatically load one instance only into the memory.
The picturenumber is an identifier for the picture, this identifier can be later used to identify this image when the image has to be rendered onto a screen object like on a button or a background, tab layer etc.
Example: ***AS3.Loadpicture(bitmapfolder + "plus_up.png", bitmapfolder + "plus_down.png", 22, false);***

selectlayer()

Function: void selectlayer(int layernumber)
Description: This function selects a tab layer, so that any other tab layers on the same level will be hidden and this tab layer will be shown on the software startup.
Example: ***AS3.selectlayer(2);***

Setfield()

Function: void Setfield(double value, int labelnumber)
Description: This function sets the initial value of a field object. The value parameter is the numeric value of the field and the labelnumber is the number of the label to set the value of.
Example: ***AS3.Setfield(0, 866);***

Setfieldtext()

Function: void Setfieldtext(string value, int labelnumber)
Description: This function sets the initial text of a field object. The value parameter is a string and the labelnumber is the number of the label to set the text of.
Example: ***AS3.Setfieldtext("initialtext", 866);***

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BUTTONS (SORT BY NUMBER)

This section describes the **UCCNC software** Button screen objects.

Each button represents an internal function of the UCNC software.
Buttons can be called by their number from macro code.
This documentation lists all the accessible buttons, sorted **numerically.**

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
100	ZeroX	Zeros the X axis position.
101	ZeroY	Zeros the Y axis position.
102	ZeroZ	Zeros the Z axis position.
103	ZeroA	Zeros the A axis position.
104	ZeroB	Zeros the B axis position.
105	ZeroC	Zeros the C axis position.
106	ZeroAll	Zeros All axis position.
107	HomeX	Runs the X axis to the home sensor.
108	HomeY	Runs the Y axis to the home sensor.
109	HomeZ	Runs the Z axis to the home sensor.
110	HomeA	Runs the A axis to the home sensor.
111	HomeB	Runs the B axis to the home sensor.
112	HomeC	Runs the C axis to the home sensor.
113	HomeAll	Runs all axis to the home sensor. The homing sequence is defined in the setup.
114	M3toggle	Toggles the M3 spindle CW button.
115	M4toggle	Toggles the M4 spindle CCW button.
116	M7toggle	Toggles the M7 mist button.
117	M8toggle	Toggles the M8 flood button.
118	G54select	Selects the G54 coordinate offset.
119	G55select	Selects the G55 coordinate offset.
120	G56select	Selects the G56 coordinate offset.
121	G57select	Selects the G57 coordinate offset.
122	G58select	Selects the G58 coordinate offset.
123	G59select	Selects the G59 coordinate offset.
124	OpenGcodefile	Starts an Open G-code file dialog.
125	CloseGcodefile	Closes the G-code file which is loaded.
126	EditGcodefile	Opens the notepad to edit the loaded G-code file.
127	RewindGcodefile	Rewinds the loaded G-code file with jumping to the first row in the file.
128	Cyclestart	Makes a cyclic run on the loaded G-code file.
129	Runsingleline	Executes one line of code (the actual code line) of the loaded G-code file.
130	Cyclestop	Stops the G-code execution.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
131	Gotozero	Moves all axis to the zero position with a rapid linear interpolation movement.
132	FROincrease	Increases the Feedrate override value.
133	FRODecrease	Decreases the Feedrate override value.
134	SROincrease	Increases the spindle speed override value.
135	SRODecrease	Decreases the spindle speed override value.
136	Toolpathzoomin	Zooms in the toolpath viewer.
137	Toolpathzoomout	Zooms out the toolpath viewer.
138	Toolpathzoomcontents	Zooms the contents in the toolpath viewer.
139	Toolpathview45	Sets the toolpath to a 45° look viewing mode.
140	Toolpathviewright	Sets the toolpath to a right side look viewing mode.
141	Toolpathviewleft	Sets the toolpath to a left side look viewing mode.
142	Toolpathviewtop	Sets the toolpath to a top side look viewing mode.
143	ToolpathviewISO	Sets the toolpath to Isometric viewing mode.
144	Resettoggle	Toggles the reset button.
145	Offlinetoggle	Toggles the offline button.
146	Limitsoverridetoggle	Toggles the limits override button.
147	JogX+	Jogs the X axis to positive direction.
148	JogX-	Jogs the X axis to negative direction.
149	JogY+	Jogs the Y axis to positive direction.
150	JogY-	Jogs the Y axis to negative direction.
151	JogZ+	Jogs the Z axis to positive direction.
152	JogZ-	Jogs the Z axis to negative direction.
153	JogA+	Jogs the A axis to positive direction.
154	JogA-	Jogs the A axis to negative direction.
155	JogB+	Jogs the B axis to positive direction.
156	JogB-	Jogs the B axis to negative direction.
157	JogC+	Jogs the C axis to positive direction.
158	JogC-	Jogs the C axis to negative direction.
159	Jograteincrease	Increases the jog rate.
160	Jogratedecrease	Decreases the jog rate.
161	Jogmodecont	Sets the jog mode to continuous.
162	Jogmodestep	Sets the jog mode to stepping.
163	R*	
164	Jogsteprate001	Sets the jog distance when stepping mode to 0.01 Units.
165	Jogsteprate010	Sets the jog distance when stepping mode to 0.10 Units.
166	Jogsteprate100	Sets the jog distance when stepping mode to 1.00 Units.
167	Savesettings	Saves all settings to the profile file.
168	Applysettings	Applies the settings on the setup screens.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
169	Setnextline	Sets the G-code execution pointer to the line defined on the screen in the 128. labelfield.
170	G54offsetcurrentpos	Offsets the actual position of the G54 coordinate system.
171	G55offsetcurrentpos	Offsets the actual position of the G55 coordinate system.
172	G56offsetcurrentpos	Offsets the actual position of the G56 coordinate system.
173	G57offsetcurrentpos	Offsets the actual position of the G57 coordinate system.
174	G58offsetcurrentpos	Offsets the actual position of the G58 coordinate system.
175	G59offsetcurrentpos	Offsets the actual position of the G59 coordinate system.
176	G54offsetclear	Clears the offset in the G54 coordinate system.
177	G55offsetclear	Clears the offset in the G55 coordinate system.
178	G56offsetclear	Clears the offset in the G56 coordinate system.
179	G57offsetclear	Clears the offset in the G57 coordinate system.
180	G58offsetclear	Clears the offset in the G58 coordinate system.
181	G59offsetclear	Clears the offset in the G59 coordinate system.
182	Tooloffsetclear	Clears the tool offset.
183	Tooloffsetclear	Clears the tool offset.
184	Tooloffsetclear	Clears the tool offset.
185	Tooloffsetclear	Clears the tool offset.
186	Tooloffsetclear	Clears the tool offset.
187	Tooloffsetclear	Clears the tool offset.
188	Listprofiles	Lists the available profile file names in the 1.Listcomponent.
189	Deleteprofile	Deletes the actually selected profile file.
190	Loadprofile	Loads the actually selected profile file.
191	Createnewprofile	Create a new profile, the name of the profile is held in the 216.inputfield.
192	DoXMLimport	Imports a Mach3 .xml setup file. The function start an open file dialog.
193	Gotoparkposition1	Commands the machine to park position 1. (Code executed in Macro M200)
194	Gotoparkposition2	Commands the machine to park position 2. (Code executed in Macro M201)
195	Gotoparkposition3	Commands the machine to park position 3. (Code executed in Macro M202)
196	Toollengthmeasurement	Commands a tool length measurement. (Code executed in Macro M31)
197	Machinecoordstoggle	Toggles the position DROs between the machine coordinates and the actual offset coordinates view.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
198	CalibrateX	Calibrates the steps per units value with travel measurement for the X-axis.
199	CalibrateY	Calibrates the steps per units value with travel measurement for the Y-axis.
200	CalibrateZ	Calibrates the steps per units value with travel measurement for the Z-axis.
201	CalibrateA	Calibrates the steps per units value with travel measurement for the A-axis.
202	CalibrateB	Calibrates the steps per units value with travel measurement for the B-axis.
203	CalibrateC	Calibrates the steps per units value with travel measurement for the C-axis.
204	Softlimitstoggle	Toggles the software limits enable function.
205	THCtoggle	Toggles the THC control enable function.
218	Zeroworktimer	Zeros the work timer.
219	ClearG92offset	Clears the G92 offset coordinates.
220	MPGXaxisselect	Selects the X axis for the MPG jog.
221	MPGYaxisselect	Selects the Y axis for the MPG jog.
222	MPGZaxisselect	Selects the Z axis for the MPG jog.
223	MPGAaxisselect	Selects the A axis for the MPG jog.
224	MPGBaxisselect	Selects the B axis for the MPG jog.
225	MPGCaxisselect	Selects the C axis for the MPG jog.
226	MPGcontmodeselect	Selects the continuous jog mode for the MPG.
227	MPGsinglemodeselect	Selects the single step jog mode for the MPG.
228	MPGmultimodeselect	Selects the multi step jog mode for the MPG.
229	JogXplusoff	Switches the X axis positive direction jogging off.
230	JogXminusoff	Switches the X axis negative direction jogging off.
231	JogYplusoff	Switches the Y axis positive direction jogging off.
232	JogYminusoff	Switches the Y axis negative direction jogging off.
233	JogZplusoff	Switches the Z axis positive direction jogging off.
234	JogZminusoff	Switches the Z axis negative direction jogging off.
235	JogAplusoff	Switches the A axis positive direction jogging off.
236	JogAminusoff	Switches the A axis negative direction jogging off.
237	JogBplusoff	Switches the B axis positive direction jogging off.
238	JogBminusoff	Switches the B axis negative direction jogging off.
239	JogCplusoff	Switches the C axis positive direction jogging off.
240	JogCminusoff	Switches the C axis negative direction jogging off.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
241	Jogsteprate0001	Sets the jog distance when stepping mode to 0.001 Units.
501	CAM_ImportDXF	Imports a dxf drawing file to UCCAM.
502	CAM_Generatetoolpath	Generates the toolpath in UCCAM.
503	CAM_Generategcode	Creates the gcode in UCCAM.
504	M3on	Switches the M3 spindle CW button on.
505	M3off	Switches the M3 spindle CW button off.
506	M4on	Switches the M4 spindle CCW button on.
507	M4off	Switches the M4 spindle CCW button off.
508	M7on	Switches the M7 mist button on.
509	M7off	Switches the M7 mist button off.
510	M8on	Switches the M8 flood button on.
511	M8off	Switches the M8 flood button off.
512	Reseton	Switches the Reset button on.
513	Resetoff	Switches the Reset button off.
514	Offlineon	Switches the Offline button on.
515	Offlineoff	Switches the Offline button off.
516	Machinecoordson	Switches the machine coordinates button on.
517	Machinecoordsoff	Switches the machine coordinates button off.
518	Softlimitson	Switches the softlimits setting on.
519	Softlimitsoff	Switches the softlimits setting off.
520	THCon	Switches the THC control on.
521	THCoff	Switches the THC control off.
522	Feedholdtoggle	Toggles the feedhold button.
523	Feedholdon	Switches the feedhold button on.
524	Feedholdoff	Switches the feedhold button off.
525	Configplugins	Opens the plugin configuration window
526	Editscreen	Enters the screen editor mode
527	Savealloffsets	Saves all offset values to the profile file.
528	Clearstatusmessages	Clears the Status message box
529	THCAntiDiveon	Switches the Anti Dive function for the THC on.
530	THCAntiDiveoff	Switches the Anti Dive function for the THC off.
531	THCAntiDivetoggle	Toggles the Anti Dive function for the THC.
532	Configmacroloops	Opens the macroloop configuration window.
533	THCDelayon	Switches the THC Delay function for the THC on.
534	THCDelayoff	Switches the THC Delay function for the THC off.
535	THCDelaytoggle	Toggles the Delay function for the THC.
536	THCarconsignalon_emulation	Switches the THC arcon virtual signal on. Can be used to emulate the THC arcon signal from keyboard.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
537	THCarconsignaloff_emulation	Switches the THC arcon virtual signal off. Can be used to emulate the THC arcon signal from keyboard.
538	THCupsignalon_emulation	Switches the THC up virtual signal on. Can be used to emulate the THC up signal from keyboard.
539	THCupsignaloff_emulation	Switches the THC up virtual signal off. Can be used to emulate the THC up signal from keyboard.
540	THCdownsignalon_emulation	Switches the THC down virtual signal on. Can be used to emulate the THC down signal from keyboard.
541	THCdownsignaloff_emulation	Switches the THC down virtual signal off. Can be used to emulate the THC down signal from keyboard.
542	THCAntiDownon	Switches the Anti Down function for the THC on.
543	THCAntiDownoff	Switches the Anti Down function for the THC off.
544	THCAntiDowntoggle	Toggles the Anti Down function for the THC.
545	Safeprobemodeon	Switches the safe probe mode on.
546	Safeprobemodeoff	Switches the safe probe mode off.
547	Safeprobemodetoggle	Toggles the safe probe mode.
548	Operatorlock	Opens the operator lock/unlock window.
549	Showstatistics	Opens the machine statistics window.
550	ShowSpindlepulleys	Opens the Spindle pulleys selection window.
551	Digitize_setfilename	Sets the file name to save the Digitized points to.
242 - 292	Sethotkeycodes	Opens the Hotkeys keyboard key selection window.
293 - 343	Sethotkeyfunctions	Opens a Function selection window for the hotkeys.
344 - 394	Setinputtriggerfunctions	Opens a Function selection window for the input triggers.
400 - 449	SelectTABlayer	Selects the TAB layer on the screen. The layer number selected is the function code - 400, so TAB layer 1. selected with code 401. Note: To select a sub layer with a hotkey or with an input trigger configure the same key or pin to select all of it's parent layers and also the layer itself, so the parent layers and the sub layers will also be selected and the sub layer will always showup this way, no matter which parent layer was originally shown.
450 - 500	SetoutputtriggerLEDs	Opens a LED selection window for the output triggers.
552 - 999	R*	

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION

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USER BUTTON NUMBER	MACROCODE DESCRIPTION
Users can define M-codes M20000 to M20999 which correspond to the same Button Numbers, this allows UCCNC to call the macros directly from screen button presses. It is highly recommended that you DO NOT call Macros from Macros, given there is no way to pass back to the original macro given they run from start to finish (M98 excluded), hence will loop. This section is provided to allow users to record their M-codes / User Button Numbers along with any descriptions for future reference.	
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FIELDS (SORT BY NUMBER)

This section describes the **UCCNC software** field screen objects.

Each field object represents a text label on the UCCNC screen.
"textfield", "textfieldnb", "field", "fieldnb" type labels can be read and written from macro code and are **editable** by the user on the UCCNC GUI.
The "textfield", "textfieldnb" can contain any kind of text including words. The "field", "fieldnb" can contain numerical values only.
"showfield", "showfieldnb" type labels can be read and written from macro code and are **not editable** by the user on the UCCNC GUI.
This documentation lists all the accessible field objects, sorted **numerically.**

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
1	Xaxissteppin	
2	Xaxisdirpin	
3	Xaxislimitminuspin	
4	Xaxislimitpluspin	
5	Xaxishomepin	
6	Xaxishomingspeed	
7	Xaxishomeoffset	
8	Xaxisstepsper	
9	Xaxisvelocity	
10	Xaxisacceleration	
11	Xaxissoftlimitminus	
12	Xaxissoftlimitplus	
13	Xaxiscompaccel	
14	Xaxisbacklash	
15	R*	
16	Yaxissteppin	
17	Yaxisdirpin	
18	Yaxislimitminuspin	
19	Yaxislimitpluspin	
20	Yaxishomepin	
21	Yaxishomingspeed	
22	Yaxishomeoffset	
23	Yaxisstepsper	
24	Yaxisvelocity	
25	Yaxisacceleration	
26	Yaxissoftlimitminus	
27	Yaxissoftlimitplus	
28	Yaxiscompaccel	
29	Yaxisbacklash	
30	R*	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
31	Zaxissteppin	
32	Zaxisdirpin	
33	Zaxislimitminuspin	
34	Zaxislimitpluspin	
35	Zaxishomepin	
36	Zaxishomingspeed	
37	Zaxishomeoffset	
38	Zaxisstepsper	
39	Zaxisvelocity	
40	Zaxisacceleration	
41	Zaxissoftlimitminus	
42	Zaxissoftlimitplus	
43	Zaxiscompaccel	
44	Zaxisbacklash	
45	R*	
46	Aaxissteppin	
47	Aaxisdirpin	
48	Aaxislimitminuspin	
49	Aaxislimitpluspin	
50	Aaxishomepin	
51	Aaxishomingspeed	
52	Aaxishomeoffset	
53	Aaxisstepsper	
54	Aaxisvelocity	
55	Aaxisacceleration	
56	Aaxissoftlimitminus	
57	Aaxissoftlimitplus	
58	Aaxiscompaccel	
59	Aaxisbacklash	
60	R*	
61	Baxissteppin	
62	Baxisdirpin	
63	Baxislimitminuspin	
64	Baxislimitpluspin	
65	Baxishomepin	
66	Baxishomingspeed	
67	Baxishomeoffset	
68	Baxisstepsper	
69	Baxisvelocity	
70	Baxisacceleration	
71	Baxissoftlimitminus	
72	Baxissoftlimitplus	
73	Baxiscompaccel	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
74	Baxisbacklash	
75	R*	
76	Caxissteppin	
77	Caxisdirpin	
78	Caxislimitminuspin	
79	Caxislimitpluspin	
80	Caxishomepin	
81	Caxishomingspeed	
82	Caxishomeoffset	
83	Caxisstepsper	
84	Caxisvelocity	
85	Caxisacceleration	
86	Caxissoftlimitminus	
87	Caxissoftlimitplus	
88	Caxiscompaccel	
89	Caxisbacklash	
90	R*	
91	Estoppin	
92	Probepin1	
93	Indexpin	
94	Indexprescaler	
95	Chargepumppin	
96	Currenthilowpin	
97	G54_CurrentcoordX	
98	G54_CurrentcoordY	
99	G54_CurrentcoordZ	
100	G54_CurrentcoordA	
101	G54_CurrentcoordB	
102	G54_CurrentcoordC	
103	G55_CurrentcoordX	
104	G55_CurrentcoordY	
105	G55_CurrentcoordZ	
106	G55_CurrentcoordA	
107	G55_CurrentcoordB	
108	G55_CurrentcoordC	
109	G56_CurrentcoordX	
110	G56_CurrentcoordY	
111	G56_CurrentcoordZ	
112	G56_CurrentcoordA	
113	G56_CurrentcoordB	
114	G56_CurrentcoordC	
115	G57_CurrentcoordX	
116	G57_CurrentcoordY	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
117	G57_CurrentcoordZ	
118	G57_CurrentcoordA	
119	G57_CurrentcoordB	
120	G57_CurrentcoordC	
121	G58_CurrentcoordX	
122	G58_CurrentcoordY	
123	G58_CurrentcoordZ	
124	G58_CurrentcoordA	
125	G58_CurrentcoordB	
126	G58_CurrentcoordC	
127	G59_CurrentcoordX	
128	G59_CurrentcoordY	
129	G59_CurrentcoordZ	
130	G59_CurrentcoordA	
131	G59_CurrentcoordB	
132	G59_CurrentcoordC	
133	G54_WorkoffsetX	
134	G54_WorkoffsetY	
135	G54_WorkoffsetZ	
136	G54_WorkoffsetA	
137	G54_WorkoffsetB	
138	G54_WorkoffsetC	
139	G55_WorkoffsetX	
140	G55_WorkoffsetY	
141	G55_WorkoffsetZ	
142	G55_WorkoffsetA	
143	G55_WorkoffsetB	
144	G55_WorkoffsetC	
145	G56_WorkoffsetX	
146	G56_WorkoffsetY	
147	G56_WorkoffsetZ	
148	G56_WorkoffsetA	
149	G56_WorkoffsetB	
150	G56_WorkoffsetC	
151	G57_WorkoffsetX	
152	G57_WorkoffsetY	
153	G57_WorkoffsetZ	
154	G57_WorkoffsetA	
155	G57_WorkoffsetB	
156	G57_WorkoffsetC	
157	G58_WorkoffsetX	
158	G58_WorkoffsetY	
159	G58_WorkoffsetZ	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
160	G58_WorkoffsetA	
161	G58_WorkoffsetB	
162	G58_WorkoffsetC	
163	G59_WorkoffsetX	
164	G59_WorkoffsetY	
165	G59_WorkoffsetZ	
166	G59_WorkoffsetA	
167	G59_WorkoffsetB	
168	G59_WorkoffsetC	
169	TooloffsetZ	
170	PWMspindle_PWMpin	
171	PWMspindle_dirpin	
172	PWMspindle_PWMfrequency	
173	Stepdirspindle_Steppin	
174	Stepdirspindle_Dirpin	
175	Stepdirspindle_Stepsperrotation	
176	Stepdirspindle_Acceleration	
177	Spindle_Minvelocity	
178	Spindle_Maxvelocity	
179	Spindle_M3relaypin	
180	Spindle_M4relaypin	
181	Spindle_M3delayon	
182	Spindle_M3delayoff	
183	Spindle_M4delayon	
184	Spindle_M4delayoff	
185	Spindle_M7relaypin	
186	Spindle_M8relaypin	
187	Spindle_M7delayon	
188	Spindle_M8delayon	
189	Spindle_M9delay	
190	Comm_buffer_size	
191	CV_stopangledegrees	
192	CV_Lookaheadlines	
193	CV_Linearerrormax	
194	CV_Cornererrormax	
195	PositionDROsdigits	
196	ToolZoffset1	
197	ToolZoffset2	
198	ToolZoffset3	
199	ToolZoffset4	
200	ToolZoffset5	
201	ToolZoffset6	
202	ToolZoffset7	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
203	ToolZoffset8	
204	ToolZoffset9	
205	ToolZoffset10	
206	ToolZoffset11	
207	ToolZoffset12	
208	ToolZoffset13	
209	ToolZoffset14	
210	ToolZoffset15	
211	ToolZoffset16	
212	ToolZoffset17	
213	ToolZoffset18	
214	ToolZoffset19	
215	ToolZoffset20	
216	Newprofilename	
217	CV_Linearadditionlenght	
218	CV_Linearunifylength	
219	THC_onpin	
220	THC_uppin	
221	THC_downpin	
222	THC_min_height	
223	THC_max_height	
224	THC_feedrate	
225	SafeZheight	
226	XposDRO	
227	YposDRO	
228	ZposDRO	
229	AposDRO	
230	BposDRO	
231	CposDRO	
232	FRODRO	
233	SRODRO	
234	THC_ondelay	
235	G73backoff	
236	R*	
237	R*	
238	R*	
239	R*	
240	R*	
241	Xaxisstepport	
242	Xaxisdirport	
243	Xaxislimitminusport	
244	Xaxislimitplusport	
245	Xaxishomeport	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
246	Yaxisstepport	
247	Yaxisdirport	
248	Yaxislimitminusport	
249	Yaxislimitplusport	
250	Yaxishomeport	
251	Zaxisstepport	
252	Zaxisdirport	
253	Zaxislimitminusport	
254	Zaxislimitplusport	
255	Zaxishomeport	
256	Aaxisstepport	
257	Aaxisdirport	
258	Aaxislimitminusport	
259	Aaxislimitplusport	
260	Aaxishomeport	
261	Baxisstepport	
262	Baxisdirport	
263	Baxislimitminusport	
264	Baxislimitplusport	
265	Baxishomeport	
266	Caxisstepport	
267	Caxisdirport	
268	Caxislimitminusport	
269	Caxislimitplusport	
270	Caxishomeport	
271	Estopport	
272	Probeport1	
273	Indexport	
274	Chargepumpport	
275	Currenthilowport	
276	THC_onport	
277	THC_upport	
278	THC_downport	
279	PWMspindle_PWMport	
280	PWMspindle_dirport	
281	Stepdirspindle_Stepport	
282	Stepdirspindle_Dirport	
283	Spindle_M3relayport	
284	Spindle_M4relayport	
285	Spindle_M7relayport	
286	Spindle_M8relayport	
287	MPGpinA	
288	MPGportA	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
289	MPGpinB	
290	MPGportB	
291	Inputtrigger1pin	
292	Inputtrigger1port	
293	Inputtrigger1function	
294	Inputtrigger2pin	
295	Inputtrigger2port	
296	Inputtrigger2function	
297	Inputtrigger3pin	
298	Inputtrigger3port	
299	Inputtrigger3function	
300	Inputtrigger4pin	
301	Inputtrigger4port	
302	Inputtrigger4function	
303	Inputtrigger5pin	
304	Inputtrigger5port	
305	Inputtrigger5function	
306	Inputtrigger6pin	
307	Inputtrigger6port	
308	Inputtrigger6function	
309	Inputtrigger7pin	
310	Inputtrigger7port	
311	Inputtrigger7function	
312	Inputtrigger8pin	
313	Inputtrigger8port	
314	Inputtrigger8function	
315	Inputtrigger9pin	
316	Inputtrigger9port	
317	Inputtrigger9function	
318	Inputtrigger10pin	
319	Inputtrigger10port	
320	Inputtrigger10function	
321	Inputtrigger11pin	
322	Inputtrigger11port	
323	Inputtrigger11function	
324	Inputtrigger12pin	
325	Inputtrigger12port	
326	Inputtrigger12function	
327	Inputtrigger13pin	
328	Inputtrigger13port	
329	Inputtrigger13function	
330	Inputtrigger14pin	
331	Inputtrigger14port	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
332	Inputtrigger14function	
333	Inputtrigger15pin	
334	Inputtrigger15port	
335	Inputtrigger15function	
336	Inputtrigger16pin	
337	Inputtrigger16port	
338	Inputtrigger16function	
339	Inputtrigger17pin	
340	Inputtrigger17port	
341	Inputtrigger17function	
342	Inputtrigger18pin	
343	Inputtrigger18port	
344	Inputtrigger18function	
345	Inputtrigger19pin	
346	Inputtrigger19port	
347	Inputtrigger19function	
348	Inputtrigger20pin	
349	Inputtrigger20port	
350	Inputtrigger20function	
351	Inputtrigger21pin	
352	Inputtrigger21port	
353	Inputtrigger21function	
354	Inputtrigger22pin	
355	Inputtrigger22port	
356	Inputtrigger22function	
357	Inputtrigger23pin	
358	Inputtrigger23port	
359	Inputtrigger23function	
360	Inputtrigger24pin	
361	Inputtrigger24port	
362	Inputtrigger24function	
363	Inputtrigger25pin	
364	Inputtrigger25port	
365	Inputtrigger25function	
366	Inputtrigger26pin	
367	Inputtrigger26port	
368	Inputtrigger26function	
369	Inputtrigger27pin	
370	Inputtrigger27port	
371	Inputtrigger27function	
372	Inputtrigger28pin	
373	Inputtrigger28port	
374	Inputtrigger28function	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
375	Inputtrigger29pin	
376	Inputtrigger29port	
377	Inputtrigger29function	
378	Inputtrigger30pin	
379	Inputtrigger30port	
380	Inputtrigger30function	
381	Inputtrigger31pin	
382	Inputtrigger31port	
383	Inputtrigger31function	
384	Inputtrigger32pin	
385	Inputtrigger32port	
386	Inputtrigger32function	
387	Inputtrigger33pin	
388	Inputtrigger33port	
389	Inputtrigger33function	
390	Inputtrigger34pin	
391	Inputtrigger34port	
392	Inputtrigger34function	
393	Inputtrigger35pin	
394	Inputtrigger35port	
395	Inputtrigger35function	
396	Inputtrigger36pin	
397	Inputtrigger36port	
398	Inputtrigger36function	
399	Inputtrigger37pin	
400	Inputtrigger37port	
401	Inputtrigger37function	
402	Inputtrigger38pin	
403	Inputtrigger38port	
404	Inputtrigger38function	
405	Inputtrigger39pin	
406	Inputtrigger39port	
407	Inputtrigger39function	
408	Inputtrigger40pin	
409	Inputtrigger40port	
410	Inputtrigger40function	
411	Inputtrigger41pin	
412	Inputtrigger41port	
413	Inputtrigger41function	
414	Inputtrigger42pin	
415	Inputtrigger42port	
416	Inputtrigger42function	
417	Inputtrigger43pin	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
418	Inputtrigger43port	
419	Inputtrigger43function	
420	Inputtrigger44pin	
421	Inputtrigger44port	
422	Inputtrigger44function	
423	Inputtrigger45pin	
424	Inputtrigger45port	
425	Inputtrigger45function	
426	Inputtrigger46pin	
427	Inputtrigger46port	
428	Inputtrigger46function	
429	Inputtrigger47pin	
430	Inputtrigger47port	
431	Inputtrigger47function	
432	Inputtrigger48pin	
433	Inputtrigger48port	
434	Inputtrigger48function	
435	R*	
436	R*	
437	R*	
438	R*	
439	R*	
440	R*	
443	MPGprescaler	
444	Analoginput1var	
445	Analoginput2var	
446	R*	
447	FROanalogchannelnumber	
448	FROanalogminpercent	
449	FROanalogmaxpercent	
450	SROanalogchannelnumber	
451	SROanalogminpercent	
452	SROanalogmaxpercent	
453	JROanalogchannelnumber	
454	JROanalogminpercent	
455	JROanalogmaxpercent	
456	MPGfilterconstant	
457	MPGspeedmultiplier	
458	PWMspindle_PWMmindutycycle	
459	PWMspindle_PWMmaxdutycycle	
460	Analogoutput1var	
461	Analogoutput2var	
462	SpindlePWM_analogoutputchanne	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
	I	
463	Xaxisenablepin	
464	Xaxisenableport	
465	Yaxisenablepin	
466	Yaxisenableport	
467	Zaxisenablepin	
468	Zaxisenableport	
469	Aaxisenablepin	
470	Aaxisenableport	
471	Baxisenablepin	
472	Baxisenableport	
473	Caxisenablepin	
474	Caxisenableport	
475 - 499	R*	
500	G92_offsetX	
501	G92_offsetY	
502	G92_offsetZ	
503	G92_offsetA	
504	G92_offsetB	
505	G92_offsetC	
506	Hotkey_keycode1	
507	Hotkey_function1	
508	Hotkey_keycode2	
509	Hotkey_function2	
510	Hotkey_keycode3	
511	Hotkey_function3	
512	Hotkey_keycode4	
513	Hotkey_function4	
514	Hotkey_keycode5	
515	Hotkey_function5	
516	Hotkey_keycode6	
517	Hotkey_function6	
518	Hotkey_keycode7	
519	Hotkey_function7	
520	Hotkey_keycode8	
521	Hotkey_function8	
522	Hotkey_keycode9	
523	Hotkey_function9	
524	Hotkey_keycode10	
525	Hotkey_function10	
526	Hotkey_keycode11	
527	Hotkey_function11	
528	Hotkey_keycode12	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
529	Hotkey_function12	
530	Hotkey_keycode13	
531	Hotkey_function13	
532	Hotkey_keycode14	
533	Hotkey_function14	
534	Hotkey_keycode15	
535	Hotkey_function15	
536	Hotkey_keycode16	
537	Hotkey_function16	
538	Hotkey_keycode17	
539	Hotkey_function17	
540	Hotkey_keycode18	
541	Hotkey_function18	
542	Hotkey_keycode19	
543	Hotkey_function19	
544	Hotkey_keycode20	
545	Hotkey_function20	
546	Hotkey_keycode21	
547	Hotkey_function21	
548	Hotkey_keycode22	
549	Hotkey_function22	
550	Hotkey_keycode23	
551	Hotkey_function23	
552	Hotkey_keycode24	
553	Hotkey_function24	
554	Hotkey_keycode25	
555	Hotkey_function25	
556	Hotkey_keycode26	
557	Hotkey_function26	
558	Hotkey_keycode27	
559	Hotkey_function27	
560	Hotkey_keycode28	
561	Hotkey_function28	
562	Hotkey_keycode29	
563	Hotkey_function29	
564	Hotkey_keycode30	
565	Hotkey_function30	
566	Hotkey_keycode31	
567	Hotkey_function31	
568	Hotkey_keycode32	
569	Hotkey_function32	
570	Hotkey_keycode33	
571	Hotkey_function33	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
572	Hotkey_keycode34	
573	Hotkey_function34	
574	Hotkey_keycode35	
575	Hotkey_function35	
576	Hotkey_keycode36	
577	Hotkey_function36	
578	Hotkey_keycode37	
579	Hotkey_function37	
580	Hotkey_keycode38	
581	Hotkey_function38	
582	Hotkey_keycode39	
583	Hotkey_function39	
584	Hotkey_keycode40	
585	Hotkey_function40	
586	Hotkey_keycode41	
587	Hotkey_function41	
588	Hotkey_keycode42	
589	Hotkey_function42	
590	Hotkey_keycode43	
591	Hotkey_function43	
592	Hotkey_keycode44	
593	Hotkey_function44	
594	Hotkey_keycode45	
595	Hotkey_function45	
596	Hotkey_keycode46	
597	Hotkey_function46	
598	Hotkey_keycode47	
599	Hotkey_function47	
600	Hotkey_keycode48	
601	Hotkey_function48	
602 - 699	R*	
700	Outputtrigger1pin	
701	Outputtrigger1port	
702	Outputtrigger1LED	
703	Outputtrigger2pin	
704	Outputtrigger2port	
705	Outputtrigger2LED	
706	Outputtrigger3pin	
707	Outputtrigger3port	
708	Outputtrigger3LED	
709	Outputtrigger4pin	
710	Outputtrigger4port	
711	Outputtrigger4LED	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
712	Outputtrigger5pin	
713	Outputtrigger5port	
714	Outputtrigger5LED	
715	Outputtrigger6pin	
716	Outputtrigger6port	
717	Outputtrigger6LED	
718	Outputtrigger7pin	
719	Outputtrigger7port	
720	Outputtrigger7LED	
721	Outputtrigger8pin	
722	Outputtrigger8port	
723	Outputtrigger8LED	
724	Outputtrigger9pin	
725	Outputtrigger9port	
726	Outputtrigger9LED	
727	Outputtrigger10pin	
728	Outputtrigger10port	
729	Outputtrigger10LED	
730	Outputtrigger11pin	
731	Outputtrigger11port	
732	Outputtrigger11LED	
733	Outputtrigger12pin	
734	Outputtrigger12port	
735	Outputtrigger12LED	
736	Outputtrigger13pin	
737	Outputtrigger13port	
738	Outputtrigger13LED	
739	Outputtrigger14pin	
740	Outputtrigger14port	
741	Outputtrigger14LED	
742	Outputtrigger15pin	
743	Outputtrigger15port	
744	Outputtrigger15LED	
745	Outputtrigger16pin	
746	Outputtrigger16port	
747	Outputtrigger16LED	
748	Outputtrigger17pin	
749	Outputtrigger17port	
750	Outputtrigger17LED	
751	Outputtrigger18pin	
752	Outputtrigger18port	
753	Outputtrigger18LED	
754	Outputtrigger19pin	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
755	Outputtrigger19port	
756	Outputtrigger19LED	
757	Outputtrigger20pin	
758	Outputtrigger20port	
759	Outputtrigger20LED	
760	Outputtrigger21pin	
761	Outputtrigger21port	
762	Outputtrigger21LED	
763	Outputtrigger22pin	
764	Outputtrigger22port	
765	Outputtrigger22LED	
766	Outputtrigger23pin	
767	Outputtrigger23port	
768	Outputtrigger23LED	
769	Outputtrigger24pin	
770	Outputtrigger24port	
771	Outputtrigger24LED	
772	Outputtrigger25pin	
773	Outputtrigger25port	
774	Outputtrigger25LED	
775	Outputtrigger26pin	
776	Outputtrigger26port	
777	Outputtrigger26LED	
778	Outputtrigger27pin	
779	Outputtrigger27port	
780	Outputtrigger27LED	
781	Outputtrigger28pin	
782	Outputtrigger28port	
783	Outputtrigger28LED	
784	Outputtrigger29pin	
785	Outputtrigger29port	
786	Outputtrigger29LED	
787	Outputtrigger30pin	
788	Outputtrigger30port	
789	Outputtrigger30LED	
790	Outputtrigger31pin	
791	Outputtrigger31port	
792	Outputtrigger31LED	
793	Outputtrigger32pin	
794	Outputtrigger32port	
795	Outputtrigger32LED	
796	Outputtrigger33pin	
797	Outputtrigger33port	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
798	Outputtrigger33LED	
799	Outputtrigger34pin	
800	Outputtrigger34port	
801	Outputtrigger34LED	
802	Outputtrigger35pin	
803	Outputtrigger35port	
804	Outputtrigger35LED	
805	Outputtrigger36pin	
806	Outputtrigger36port	
807	Outputtrigger36LED	
808	Outputtrigger37pin	
809	Outputtrigger37port	
810	Outputtrigger37LED	
811	Outputtrigger38pin	
812	Outputtrigger38port	
813	Outputtrigger38LED	
814	Outputtrigger39pin	
815	Outputtrigger39port	
816	Outputtrigger39LED	
817	Outputtrigger40pin	
818	Outputtrigger40port	
819	Outputtrigger40LED	
820	Outputtrigger41pin	
821	Outputtrigger41port	
822	Outputtrigger41LED	
823	Outputtrigger42pin	
824	Outputtrigger42port	
825	Outputtrigger42LED	
826	Outputtrigger43pin	
827	Outputtrigger43port	
828	Outputtrigger43LED	
829	Outputtrigger44pin	
830	Outputtrigger44port	
831	Outputtrigger44LED	
832	Outputtrigger45pin	
833	Outputtrigger45port	
834	Outputtrigger45LED	
835	Outputtrigger46pin	
836	Outputtrigger46port	
837	Outputtrigger46LED	
838	Outputtrigger47pin	
839	Outputtrigger47port	
840	Outputtrigger47LED	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
841	Outputtrigger48pin	
842	Outputtrigger48port	
843	Outputtrigger48LED	
844 - 851	R*	
852	EncoderApin	
853	EncoderAport	
854	EncoderBpin	
855	EncoderBport	
856	CAM_Tooldia	
857	CAM_Startdepth	
858	CAM_Cutdepth	
859	CAM_Cutperpass	
860	CAM_SafeZ	
861	CAM_Feedrate	
862	CAM_Tooloverlap	
863	CAM_Plungerate	
864	EncoderPPR	
865	CAM_Spindlespeed	
866	Setnextlinefield	
867	Setfeedrate	
868	Actfeedrate	
869	Setspindlespeed	
870	Actspindlespeed	
871	MachinecoordX	
872	MachinecoordY	
873	MachinecoordZ	
874	MachinecoordA	
875	MachinecoordB	
876	MachinecoordC	
877	Activemodal	
878	IOmonitor_XPOS	
879	IOmonitor_YPOS	
880	IOmonitor_ZPOS	
881	IOmonitor_APOS	
882	IOmonitor_BPOS	
883	IOmonitor_CPOS	
884	Motionbuffer	
885	Diagnostics_minX	
886	Diagnostics_minY	
887	Diagnostics_minZ	
888	Diagnostics_maxX	
889	Diagnostics_maxY	
890	Diagnostics_maxZ	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
891	Diagnostics_sizeX	
892	Diagnostics_sizeY	
893	Diagnostics_sizeZ	
894	Diagnostics_totalnumberofobjects	
895	Diagnostics_Filename	
896	Dwell_time	
897	Active_toolnumber	
898	Worktimer	
899	Active_fixture	
900	Profile_name	
901	Licensed_to	
902	Softwareversion	
903	Firmwareversion	
904	Hardwareversion	
905	APIversion	
906	Serialnumber	
907	Devicetype	
908	CAM_Statuslabel	
909	Analog_inputvalue1	
910	Analog_inputvalue2	
911	Analog_outputvalue1	
912	Analog_outputvalue2	
913	Jogfeedrate	
914	Laseroutputpin	
915	Laseroutputport	
916 - 920	R*	
921	ToolZoffset21	
922	ToolZoffset22	
923	ToolZoffset23	
924	ToolZoffset24	
925	ToolZoffset25	
926	ToolZoffset26	
927	ToolZoffset27	
928	ToolZoffset28	
929	ToolZoffset29	
930	ToolZoffset30	
931	ToolZoffset31	
932	ToolZoffset32	
933	ToolZoffset33	
934	ToolZoffset34	
935	ToolZoffset35	
936	ToolZoffset36	
937	ToolZoffset37	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
938	ToolZoffset38	
939	ToolZoffset39	
940	ToolZoffset40	
941	ToolZoffset41	
942	ToolZoffset42	
943	ToolZoffset43	
944	ToolZoffset44	
945	ToolZoffset45	
946	ToolZoffset46	
947	ToolZoffset47	
948	ToolZoffset48	
949	ToolZoffset49	
950	ToolZoffset50	
951	ToolZoffset51	
952	ToolZoffset52	
953	ToolZoffset53	
954	ToolZoffset54	
955	ToolZoffset55	
956	ToolZoffset56	
957	ToolZoffset57	
958	ToolZoffset58	
959	ToolZoffset59	
960	ToolZoffset60	
961	ToolZoffset61	
962	ToolZoffset62	
963	ToolZoffset63	
964	ToolZoffset64	
965	ToolZoffset65	
966	ToolZoffset66	
967	ToolZoffset67	
968	ToolZoffset68	
969	ToolZoffset69	
970	ToolZoffset70	
971	ToolZoffset71	
972	ToolZoffset72	
973	ToolZoffset73	
974	ToolZoffset74	
975	ToolZoffset75	
976	ToolZoffset76	
977	ToolZoffset77	
978	ToolZoffset78	
979	ToolZoffset79	
980	ToolZoffset80	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
981	ToolZoffset81	
982	ToolZoffset82	
983	ToolZoffset83	
984	ToolZoffset84	
985	ToolZoffset85	
986	ToolZoffset86	
987	ToolZoffset87	
988	ToolZoffset88	
989	ToolZoffset89	
990	ToolZoffset90	
991	ToolZoffset91	
992	ToolZoffset92	
993	ToolZoffset93	
994	ToolZoffset94	
995	ToolZoffset95	
996	ToolZoffset96	
949 - 2000	R*	
2001	THCAntidivevelocitypercentage	
2002	Analog_inputvalue3	
2003	Analog_inputvalue4	
2004	Analoginput3var	
2005	Analoginput4var	
2006	Analogoutput3var	
2007	Analogoutput4var	
2008	Analog_outputvalue3	
2009	Analog_outputvalue4	
2010	Plasmapieceheight	
2011	Probepin2	
2012	Probeport2	
2013	Pulleynumber	
2014	Pulleyratio	
2015	Digitize_numberofdigits	
2016	Digitize_proberadius	
2017	Digitize_filename	
2018	Digitize_numberofstoredpoints	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION

FIELD NUMBER	FUNCTION NAME	DESCRIPTION

R* = Reserved address, do not use this address.

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LED's (SORT BY NUMBER)

This section describes the **UCCNC software** LED screen objects.

Each LED represents an internal boolean variable of the UCNC software.
The LEDs' logic state can be read in macro code.
This documentation lists all the accessible LED variables, sorted **numerically.**

LED NUMBER	LED NAME	DESCRIPTION
1	OutputPT1PN1	Indicates the actual logic state of port#1 pin#1.
2	OutputPT1PN2	Indicates the actual logic state of port#1 pin#2.
3	OutputPT1PN3	Indicates the actual logic state of port#1 pin#3.
4	OutputPT1PN4	Indicates the actual logic state of port#1 pin#4.
5	OutputPT1PN5	Indicates the actual logic state of port#1 pin#5.
6	OutputPT1PN6	Indicates the actual logic state of port#1 pin#6.
7	OutputPT1PN7	Indicates the actual logic state of port#1 pin#7.
8	OutputPT1PN8	Indicates the actual logic state of port#1 pin#8.
9	OutputPT1PN9	Indicates the actual logic state of port#1 pin#9.
10	OutputPT1PN10	Indicates the actual logic state of port#1 pin#10.
11	OutputPT1PN11	Indicates the actual logic state of port#1 pin#11.
12	OutputPT1PN12	Indicates the actual logic state of port#1 pin#12.
13	OutputPT1PN13	Indicates the actual logic state of port#1 pin#13.
14	OutputPT1PN14	Indicates the actual logic state of port#1 pin#14.
15	OutputPT1PN15	Indicates the actual logic state of port#1 pin#15.
16	OutputPT1PN16	Indicates the actual logic state of port#1 pin#16.
17	OutputPT1PN17	Indicates the actual logic state of port#1 pin#17.
18	Idle	Indicates the Idle state of the device.
19	Run	Indicates a run state of the device. This is the opposite of the Idle state.
20	Jog	Active when a jog command is being executed.
21	Dwell	Indicates a dwell in progress.
22	Backlash	Active when the backlash compensation is being executed.
23	Home	Active when the homing command is being executed.
24	Probing	Active when the probing command is being executed.
25	Reset	Indicates an active reset signal.
26	Hardlimit	Active when any of the configured limit inputs are triggered.
27	Limitsoverride	Active if the limits are overriden by the user.
28	Toolchangeinprogress	Active when a tool change macro is being executed.
29	Xlimitpositive	Active when the X-axis positive side limit switch is triggered.
30	Ylimitpositive	Active when the Y-axis positive side limit switch is triggered.

LED NUMBER	LED NAME	DESCRIPTION
31	Zlimitpositive	Active when the Z-axis positive side limit switch is triggered.
32	Alimitpositive	Active when the A-axis positive side limit switch is triggered.
33	Blimitpositive	Active when the B-axis positive side limit switch is triggered.
34	Climitpositive	Active when the C-axis positive side limit switch is triggered.
35	Index	Active when the index input is triggered.
36	Estop	Active when the estop input is triggered.
37	Probe	Active when the probe input is triggered.
38	Xlimitnegative	Active when the X-axis negative side limit switch is triggered.
39	Ylimitnegative	Active when the Y-axis negative side limit switch is triggered.
40	Zlimitnegative	Active when the Z-axis negative side limit switch is triggered.
41	Alimitnegative	Active when the A-axis negative side limit switch is triggered.
42	Blimitnegative	Active when the B-axis negative side limit switch is triggered.
43	Climitnegative	Active when the C-axis negative side limit switch is triggered.
44	Xhome	Active when then X-axis home input is triggered.
45	Yhome	Active when then Y-axis home input is triggered.
46	Zhome	Active when then Z-axis home input is triggered.
47	Ahome	Active when then A-axis home input is triggered.
48	Bhome	Active when then B-axis home input is triggered.
49	Chome	Active when then C-axis home input is triggered.
50	SpindleCW	Active when the spindle is rotating Clockwise.
51	SpindleCCW	Active when the spindle is rotating Counter-clockwise
52	Miston	Active when the mist coolant is on.
53	Floodon	Active when the flood coolant is on.
54	Cyclestart	Active when a G-code execution cycle is in progress.
55	Runsingleline	Active when a Single line G-code execution cycle is in progress.
56	Xhomed	Active when the X-axis was already homed.
57	Yhomed	Active when the Y-axis was already homed.
58	Zhomed	Active when the Z-axis was already homed.
59	Ahomed	Active when the A-axis was already homed.
60	Bhomed	Active when the B-axis was already homed.
61	Chomed	Active when the C-axis was already homed.
62	Machinecoords	Active when the machine coordinate system is selected to view in the position DROs.
63	THCon	Active when the THC on physical input is active.
64	THCup	Active when the THC up physical input is active.

LED NUMBER	LED NAME	DESCRIPTION
65	THCdown	Active when the THC down physical input is active.
66	THCenabled	Active when the THC control is enabled.
67	Softlimitsenabled	Active when the Software limit function is enabled.
68	THCdelay	Active when the THC delay is ongoing.
69	OutputPT2PN1	Indicates the actual logic state of port#2 pin#1.
70	OutputPT2PN2	Indicates the actual logic state of port#2 pin#2.
71	OutputPT2PN3	Indicates the actual logic state of port#2 pin#3.
72	OutputPT2PN4	Indicates the actual logic state of port#2 pin#4.
73	OutputPT2PN5	Indicates the actual logic state of port#2 pin#5.
74	OutputPT2PN6	Indicates the actual logic state of port#2 pin#6.
75	OutputPT2PN7	Indicates the actual logic state of port#2 pin#7.
76	OutputPT2PN8	Indicates the actual logic state of port#2 pin#8.
77	OutputPT2PN9	Indicates the actual logic state of port#2 pin#9.
78	OutputPT2PN10	Indicates the actual logic state of port#2 pin#10.
79	OutputPT2PN11	Indicates the actual logic state of port#2 pin#11.
80	OutputPT2PN12	Indicates the actual logic state of port#2 pin#12.
81	OutputPT2PN13	Indicates the actual logic state of port#2 pin#13.
82	OutputPT2PN14	Indicates the actual logic state of port#2 pin#14.
83	OutputPT2PN15	Indicates the actual logic state of port#2 pin#15.
84	OutputPT2PN16	Indicates the actual logic state of port#2 pin#16.
85	OutputPT2PN17	Indicates the actual logic state of port#2 pin#17.
86	OutputPT3PN1	Indicates the actual logic state of port#3 pin#1.
87	OutputPT3PN2	Indicates the actual logic state of port#3 pin#2.
88	OutputPT3PN3	Indicates the actual logic state of port#3 pin#3.
89	OutputPT3PN4	Indicates the actual logic state of port#3 pin#4.
90	OutputPT3PN5	Indicates the actual logic state of port#3 pin#5.
91	OutputPT3PN6	Indicates the actual logic state of port#3 pin#6.
92	OutputPT3PN7	Indicates the actual logic state of port#3 pin#7.
93	OutputPT3PN8	Indicates the actual logic state of port#3 pin#8.
94	OutputPT3PN9	Indicates the actual logic state of port#3 pin#9.
95	OutputPT3PN10	Indicates the actual logic state of port#3 pin#10.
96	OutputPT3PN11	Indicates the actual logic state of port#3 pin#11.
97	OutputPT3PN12	Indicates the actual logic state of port#3 pin#12.
98	OutputPT3PN13	Indicates the actual logic state of port#3 pin#13.
99	OutputPT3PN14	Indicates the actual logic state of port#3 pin#14.
100	OutputPT3PN15	Indicates the actual logic state of port#3 pin#15.
101	OutputPT3PN16	Indicates the actual logic state of port#3 pin#16.
102	OutputPT3PN17	Indicates the actual logic state of port#3 pin#17.
103	OutputPT4PN1	Indicates the actual logic state of port#4 pin#1.
104	OutputPT4PN2	Indicates the actual logic state of port#4 pin#2.
105	OutputPT4PN3	Indicates the actual logic state of port#4 pin#3.

LED NUMBER	LED NAME	DESCRIPTION
106	OutputPT4PN4	Indicates the actual logic state of port#4 pin#4.
107	OutputPT4PN5	Indicates the actual logic state of port#4 pin#5.
108	OutputPT4PN6	Indicates the actual logic state of port#4 pin#6.
109	OutputPT4PN7	Indicates the actual logic state of port#4 pin#7.
110	OutputPT4PN8	Indicates the actual logic state of port#4 pin#8.
111	OutputPT4PN9	Indicates the actual logic state of port#4 pin#9.
112	OutputPT4PN10	Indicates the actual logic state of port#4 pin#10.
113	OutputPT4PN11	Indicates the actual logic state of port#4 pin#11.
114	OutputPT4PN12	Indicates the actual logic state of port#4 pin#12.
115	OutputPT4PN13	Indicates the actual logic state of port#4 pin#13.
116	OutputPT4PN14	Indicates the actual logic state of port#4 pin#14.
117	OutputPT4PN15	Indicates the actual logic state of port#4 pin#15.
118	OutputPT4PN16	Indicates the actual logic state of port#4 pin#16.
119	OutputPT4PN17	Indicates the actual logic state of port#4 pin#17.
120	OutputPT5PN1	Indicates the actual logic state of port#5 pin#1.
121	OutputPT5PN2	Indicates the actual logic state of port#5 pin#2.
122	OutputPT5PN3	Indicates the actual logic state of port#5 pin#3.
123	OutputPT5PN4	Indicates the actual logic state of port#5 pin#4.
124	OutputPT5PN5	Indicates the actual logic state of port#5 pin#5.
125	OutputPT5PN6	Indicates the actual logic state of port#5 pin#6.
126	OutputPT5PN7	Indicates the actual logic state of port#5 pin#7.
127	OutputPT5PN8	Indicates the actual logic state of port#5 pin#8.
128	OutputPT5PN9	Indicates the actual logic state of port#5 pin#9.
129	OutputPT5PN10	Indicates the actual logic state of port#5 pin#10.
130	OutputPT5PN11	Indicates the actual logic state of port#5 pin#11.
131	OutputPT5PN12	Indicates the actual logic state of port#5 pin#12.
132	OutputPT5PN13	Indicates the actual logic state of port#5 pin#13.
133	OutputPT5PN14	Indicates the actual logic state of port#5 pin#14.
134	OutputPT5PN15	Indicates the actual logic state of port#5 pin#15.
135	OutputPT5PN16	Indicates the actual logic state of port#5 pin#16.
136	OutputPT5PN17	Indicates the actual logic state of port#5 pin#17.
137	MPGAPIN	Indicates the logic state of the MPG A pin.
138	MPGBPIN	Indicates the logic state of the MPG B pin.
139	EnableXaxis	On when the enable output of the X axis is active
140	EnableYaxis	On when the enable output of the Y axis is active
141	EnableZaxis	On when the enable output of the Z axis is active
142	EnableAaxis	On when the enable output of the A axis is active
143	EnableBaxis	On when the enable output of the B axis is active
144	EnableCaxis	On when the enable output of the C axis is active
145	Jogmodecontinous	On when the continuous jog mode is selected.
146	Jogmodestep	On when the step jog mode is selected.
147	R*	
148	Jograte0001	On when the step jog rate is set to 0.001 units.

LED NUMBER	LED NAME	DESCRIPTION
149	Jograte0010	On when the step jog rate is set to 0.01 units.
150	Jograte0100	On when the step jog rate is set to 0.1 units.
151	Jograte1000	On when the step jog rate is set to 1 units.
152	MPGmodecont	On when the MPG continuous mode is selected.
153	MPGmodesingle	On when the MPG single mode is selected.
154	MPGmodemulti	On when the MPG multi mode is selected.
155	MPGXaxisselect	On when the X axis is selected for the MPG jog.
156	MPGYaxisselect	On when the Y axis is selected for the MPG jog.
157	MPGZaxisselect	On when the Z axis is selected for the MPG jog.
158	MPGAaxisselect	On when the A axis is selected for the MPG jog.
159	MPGBaxisselect	On when the B axis is selected for the MPG jog.
160	MPGCaxisselect	On when the C axis is selected for the MPG jog.
161 to 211	TABlayervisible	On when the tab layer is visible. The layer number selected is the LED code - 161, so the 161. LED code is for the tab layer 0. and the 211. LED code is for the 50. tab layer. Note: When more than one tab layer is visible, for example if a tab layer has a sub-tab layer which is also visible then both LED codes are active.
212	Offlinemode	On when the offline mode is active.
213	Sync_thread	Active when a syncronous thread cutting is in execution.
214	EncoderApin	Indicates the logic state of the Encoder A pin.
215	EncoderBpin	Indicates the logic state of the Encoder B pin.
216	MDIrunning	On when an MDI command is in progress.
217	Feedhold	On when the feedhold button is avtice.
218	Isdemomode	On if the software is running in demo mode.
219	Laserdataloaded	On if a laser data object is loaded to the memory for laser engraving.
220	Laserrunning	On when a laser engraving is in progress using the laser data object.
221	OutputPT5PN26	Indicates the actual logic state of port#5 pin#26. (M44 motherboard only.)
222	OutputPT5PN27	Indicates the actual logic state of port#5 pin#27. (M44 motherboard only.)
223	OutputPT5PN28	Indicates the actual logic state of port#5 pin#28. (M44 motherboard only.)
224	OutputPT5PN29	Indicates the actual logic state of port#5 pin#29. (M44 motherboard only.)
225	OutputPT5PN30	Indicates the actual logic state of port#5 pin#30. (M44 motherboard only.)
226	OutputPT5PN31	Indicates the actual logic state of port#5 pin#31. (M44 motherboard only.)
227	OutputPT5PN32	Indicates the actual logic state of port#5 pin#32. (M44 motherboard only.)
228	OutputPT5PN33	Indicates the actual logic state of port#5 pin#33. (M44 motherboard only.)
229	M0stopactive	Indicates that the M0 stop is active.

LED NUMBER	LED NAME	DESCRIPTION
230	M1stopactive	Indicates that the M1 stop is active.
231	M60stopactive	Indicates that the M60 stop is active.
232	Pause	On when any of the M0 or M1 or M60 stop mode is active.
233	THCAntidiveactive	On when in THC control and the Anti diving happens.
234	OutputPT1PN94	Indicates the actual logic state of port#1 pin#94. (5441 motherboard only.)
235	OutputPT1PN95	Indicates the actual logic state of port#1 pin#95. (5441 motherboard only.)
236	MPGJogOn	Indicates that the MPG jogging is active.
237	THCarcon_emulation	Indicates that the THCarcon emulation signal is active.
238	THCup_emulation	Indicates that the THCup emulation signal is active.
239	THCdown_emulation	Indicates that the THCdown emulation signal is active.
240	THCantidiveenabled	On when the THC anti dive function is enabled.
241	THCdelayenabled	On when the THC delay function is enabled.
242	THCantidownenabled	On when the THC anti down function is enabled.
243	SafeProbeModeactive	On when the SafeProbeMode is active. The safe probe mode actives the Reset if the probe goes on when not probing.
244	ProbedOK	On if the last probing (G31) was finished with a probe touch, off if the last probing did not end with a touch.
245	Digitizing	On when the M40 digitizing command is active.

LED NUMBER	LED NAME	DESCRIPTION

LED NUMBER	LED NAME	DESCRIPTION

R* = Reserved address, do not use this address.

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CHECKBOX OBJECTS (SORT BY NUMBER)

This section describes the **UCCNC software** Checkbox screen objects.

Each checkbox permits the user to make a selection on the UCCNC software GUI.
Checkboxes are read only and their logic state can be read in macro code.
This documentation lists all the accessible Checkbox variables, sorted **numerically.**

CHECKBOX NUMBER	CHECKBOX NAME	DESCRIPTION
1	Xaxisenable	
2	Xaxissteppin_activelow	
3	Xaxisdirpin_activelow	
4	Xaxislimitminuspin_activelow	
5	Xaxislimitpluspin_activelow	
6	Xaxishomepin_activelow	
7	Xaxishomedirectionpositive	
8	Xaxishomepositionautoset	
9	Xaxisenablebacklash	
10	Yaxisenable	
11	Yaxissteppin_activelow	
12	Yaxisdirpin_activelow	
13	Yaxislimitminuspin_activelow	
14	Yaxislimitpluspin_activelow	
15	Yaxishomepin_activelow	
16	Yaxishomedirectionpositive	
17	Yaxishomepositionautoset	
18	Yaxisenablebacklash	
19	Zaxisenable	
20	Zaxissteppin_activelow	
21	Zaxisdirpin_activelow	
22	Zaxislimitminuspin_activelow	
23	Zaxislimitpluspin_activelow	
24	Zaxishomepin_activelow	
25	Zaxishomedirectionpositive	
26	Zaxishomepositionautoset	
27	Zaxisenablebacklash	
28	Aaxisenable	
29	Aaxissteppin_activelow	
30	Aaxisdirpin_activelow	
31	Aaxislimitminuspin_activelow	
32	Aaxislimitpluspin_activelow	
33	Aaxishomepin_activelow	

CHECKBOX NUMBER	CHECKBOX NAME	DESCRIPTION
34	Aaxishomedirectionpositive	
35	Aaxishomepositionautoset	
36	Aaxisenablebacklash	
37	Baxisenable	
38	Baxissteppin_activelow	
39	Baxisdirpin_activelow	
40	Baxislimitminuspin_activelow	
41	Baxislimitpluspin_activelow	
42	Baxishomepin_activelow	
43	Baxishomedirectionpositive	
44	Baxishomepositionautoset	
45	Baxisenablebacklash	
46	Caxisenable	
47	Caxissteppin_activelow	
48	Caxisdirpin_activelow	
49	Caxislimitminuspin_activelow	
50	Caxislimitpluspin_activelow	
51	Caxishomepin_activelow	
52	Caxishomedirectionpositive	
53	Caxishomepositionautoset	
54	Caxisenablebacklash	
55	Estoppin_activelow	
56	Probepin1_activelow	
57	Chargepumppin_activelow	
58	R*	
59	Chargepump_alwayson	
60	Currenthilow_activelow	
61 - 72	R*	
73	Generalsettings_exactstoppathmode	
74	Generalsettings_constantvelocitypathmode	
75	Generalsettings_enablesoftlimits	
76	Toolchange_igonoretoolchangemacro	
77	Toolchange_stopspindleandwaitforcyclestart	
78	Toolchange_runM6macro	
79	Profiles_createshortcutondesktop	
80	Appearance_3DTCPmarker	
81	IOsetup_EnableTHCcontrol	
82	IOsetup_THConpinactivelow	
83	IOsetup_THCuppinactivelow	
84	IOsetup_THCdownpinactivelow	
85	IOsetup_ControlTHCevenifTHConisnotactive	
86	Generalsettings_Kernelfrequency25kHz	
87	Generalsettings_Kernelfrequency50kHz	

CHECKBOX NUMBER	CHECKBOX NAME	DESCRIPTION
88	Generalsettings_Kernelfrequency100kHz	
89	Appearance_ShowconeicononTCP	
90	Appearance_ShowcrosshaironTCP	
91 - 138	Inputtrigger1_activelow to Inputtrigger48_activelow	
139	R*	
140	R*	
141	Xaxis_enable	
142	Yaxis_enable	
143	Zaxis_enable	
144	Aaxis_enable	
145	Baxis_enable	
146	Caxis_enable	
147	Appearance_Maximizescreenonstartup	
148	IOsetup_attachJROtoMPG	
149	R*	
150 - 197	Outputtrigger1_activelow to Outputtrigger48_activelow	
198	R*	
199	R*	
201	Reverseencodercountdirection	
202 - 210	CAM_select_origin	
211	Laseroutput_activelow	
212	Dwelltimeinseconds	
213	Enableusertabpage	
214	Generalsettings_Kernelfrequency200kHz	
215	Generalsettings_Kernelfrequency400kHz	
216	Unknowgcode_ignore	
217	Unknowngcode_warning	
218	Unknowngcode_donotrun	
219	RotateTCPwithplaneselection	
220	Showzeromark	
221	THCAntidiveenable	
222	Showmessageonsoftlimits	
223	THCDelayenable	
224	THCAntidownenable	
225	Probepin2_activelow	
226	UseSpindlepulleys	
227	ValidateTextfieldswithEnterkeyonly	
228	Digitize_addaxisnames	
229	Digitize_commaseparatedCSV	
230	Digitize_includeaxisX	
231	Digitize_includeaxisY	

CHECKBOX NUMBER	CHECKBOX NAME	DESCRIPTION
232	Digitize_includeaxisZ	
233	Digitize_includeaxisA	
234	Digitize_includeaxisB	
235	Digitize_includeaxisC	
236	Digitize_Clearfilenamewhenfinished	

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BUTTONS (SORT BY ALPHABETICAL NAME)

This section describes the **UCCNC software** Button screen objects.

Each button represents an internal function of the UCNC software.
Buttons can be called by their number from macro code.
This documentation lists all the accessible buttons sorted **alphabetically** by function.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
168	Applysettings	Applies the settings on the setup screens.
201	CalibrateA	Calibrates the steps per units value with travel measurement for the A-axis.
202	CalibrateB	Calibrates the steps per units value with travel measurement for the B-axis.
203	CalibrateC	Calibrates the steps per units value with travel measurement for the C-axis.
198	CalibrateX	Calibrates the steps per units value with travel measurement for the X-axis.
199	CalibrateY	Calibrates the steps per units value with travel measurement for the Y-axis.
200	CalibrateZ	Calibrates the steps per units value with travel measurement for the Z-axis.
503	CAM_Generategcode	Creates the gcode in UCCAM.
502	CAM_Generatetoolpath	Generates the toolpath in UCCAM.
501	CAM_ImportDXF	Imports a dxf drawing file to UCCAM.
219	ClearG92offset	Clears the G92 offset coordinates.
528	Clearstatusmessages	Clears the Status message box
125	CloseGcodefile	Closes the G-code fájl which is loaded.
532	Configmacroloops	Opens the macroloop configuration window.
525	Configplugins	Opens the plugin configuration window
191	Createnewprofile	Create a new profile, the name of the profile is held in the 216.inputfield.
128	Cyclestart	Makes a cyclic run on the loaded G-code file.
130	Cyclestop	Stops the G-code execution.
189	Deleteprofile	Deletes the actually selected profile file.
551	Digitize_setfilename	Sets the file name to save the Digitized points to.
192	DoXMLimport	Imports a Mach3 .xml setup file. The function start an open file dialog.
126	EditGcodefile	Opens the notepad to edit the loaded G-code file.
526	Editscreen	Enters the screen editor mode
524	Feedholdoff	Switches the feedhold button off.
523	Feedholdon	Switches the feedhold button on.
522	Feedholdtoggle	Toggles the feedhold button.
133	FROdecrease	Decreases the Feedrate override value.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
132	FROincrease	Increases the Feedrate override value.
176	G54offsetclear	Clears the offset in the G54 coordinate system.
170	G54offsetcurrentpos	Offsets the actual position of the G54 coordinate system.
118	G54select	Selects the G54 coordinate offset.
177	G55offsetclear	Clears the offset in the G55 coordinate system.
171	G55offsetcurrentpos	Offsets the actual position of the G55 coordinate system.
119	G55select	Selects the G55 coordinate offset.
178	G56offsetclear	Clears the offset in the G56 coordinate system.
172	G56offsetcurrentpos	Offsets the actual position of the G56 coordinate system.
120	G56select	Selects the G56 coordinate offset.
179	G57offsetclear	Clears the offset in the G57 coordinate system.
173	G57offsetcurrentpos	Offsets the actual position of the G57 coordinate system.
121	G57select	Selects the G57 coordinate offset.
180	G58offsetclear	Clears the offset in the G58 coordinate system.
174	G58offsetcurrentpos	Offsets the actual position of the G58 coordinate system.
122	G58select	Selects the G58 coordinate offset.
181	G59offsetclear	Clears the offset in the G59 coordinate system.
175	G59offsetcurrentpos	Offsets the actual position of the G59 coordinate system.
123	G59select	Selects the G59 coordinate offset.
193	Gotoparkposition1	Commands the machine to park position 1. (Code executed in Macro M200)
194	Gotoparkposition2	Commands the machine to park position 2. (Code executed in Macro M201)
195	Gotoparkposition3	Commands the machine to park position 3. (Code executed in Macro M202)
131	Gotozero	Moves all axis to the zero position with a rapid linear interpolation movement.
110	HomeA	Runs the A axis to the home sensor.
113	HomeAll	Runs all axis to the home sensor. The homing sequence is defined in the setup.
111	HomeB	Runs the B axis to the home sensor.
112	HomeC	Runs the C axis to the home sensor.
107	HomeX	Runs the X axis to the home sensor.
108	HomeY	Runs the Y axis to the home sensor.
109	HomeZ	Runs the Z axis to the home sensor.
154	JogA-	Jogs the A axis to negative direction.
153	JogA+	Jogs the A axis to positive direction.
236	JogAminusoff	Switches the A axis negative direction jogging off.
235	JogAplusoff	Switches the A axis positive direction jogging off.
156	JogB-	Jogs the B axis to negative direction.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
155	JogB+	Jogs the B axis to positive direction.
238	JogBminusoff	Switches the B axis negative direction jogging off.
237	JogBplusoff	Switches the B axis positive direction jogging off.
158	JogC-	Jogs the C axis to negative direction.
157	JogC+	Jogs the C axis to positive direction.
240	JogCminusoff	Switches the C axis negative direction jogging off.
239	JogCplusoff	Switches the C axis positive direction jogging off.
161	Jogmodecont	Sets the jog mode to continous.
162	Jogmodestep	Sets the jog mode to stepping.
160	Jogratedecrease	Decreases the jog rate.
159	Jograteincrease	Increases the jog rate.
241	Jogsteprate0001	Sets the jog distance when stepping mode to 0.001 Units.
164	Jogsteprate001	Sets the jog distance when stepping mode to 0.01 Units.
165	Jogsteprate010	Sets the jog distance when stepping mode to 0.10 Units.
166	Jogsteprate100	Sets the jog distance when stepping mode to 1.00 Units.
148	JogX-	Jogs the X axis to negative direction.
147	JogX+	Jogs the X axis to positive direction.
230	JogXminusoff	Switches the X axis negative direction jogging off.
229	JogXplusoff	Switches the X axis positive direction jogging off.
150	JogY-	Jogs the Y axis to negative direction.
149	JogY+	Jogs the Y axis to positive direction.
232	JogYminusoff	Switches the Y axis negative direction jogging off.
231	JogYplusoff	Switches the Y axis positive direction jogging off.
152	JogZ-	Jogs the Z axis to negative direction.
151	JogZ+	Jogs the Z axis to positive direction.
234	JogZminusoff	Switches the Z axis negative direction jogging off.
233	JogZplusoff	Switches the Z axis positive direction jogging off.
146	Limitsoverridetoggle	Toggles the limits override button.
188	Listprofiles	Lists the available profile file names in the 1.Listcomponent.
190	Loadprofile	Loads the actually selected profile file.
505	M3off	Switches the M3 spindle CW button off.
504	M3on	Switches the M3 spindle CW button on.
114	M3toggle	Toggles the M3 spindle CW button.
507	M4off	Switches the M4 spindle CCW button off.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
506	M4on	Switches the M4 spindle CCW button on.
115	M4toggle	Toggles the M4 spindle CCW button.
509	M7off	Switches the M7 mist button off.
508	M7on	Switches the M7 mist button on.
116	M7toggle	Toggles the M7 mist button.
511	M8off	Switches the M8 flood button off.
510	M8on	Switches the M8 flood button on.
117	M8toggle	Toggles the M8 flood button.
517	Machinecoordsoff	Switches the machine coordinates button off.
516	Machinecoordson	Switches the machine coordinates button on.
197	Machinecoordstoggle	Toggles the position DROs between the machine coordinates and the actual offset coordinates view.
223	MPGAaxisselect	Selects the A axis for the MPG jog.
224	MPGBaxisselect	Selects the B axis for the MPG jog.
225	MPGCaxisselect	Selects the C axis for the MPG jog.
226	MPGcontmodeselect	Selects the continuous jog mode for the MPG.
228	MPGmultimodeselect	Selects the multi step jog mode for the MPG.
227	MPGsinglemodeselect	Selects the single step jog mode for the MPG.
220	MPGXaxisselect	Selects the X axis for the MPG jog.
221	MPGYaxisselect	Selects the Y axis for the MPG jog.
222	MPGZaxisselect	Selects the Z axis for the MPG jog.
515	Offlineoff	Switches the Offline button off.
514	Offlineon	Switches the Offline button on.
145	Offlinetoggle	Toggles the offline button.
124	OpenGcodefile	Starts an Open G-code file dialog.
548	Operatorlock	Opens the operator lock/unlock window.
163	R*	
552 - 999	R*	
513	Resetoff	Switches the Reset button off.
512	Reseton	Switches the Reset button on.
144	Resettoggle	Toggles the reset button.
127	RewindGcodefile	Rewinds the loaded G-code file with jumping to the first row in the file.
129	Runsingleline	Executes one line of code (the actual code line) of the loaded G-code file.
546	Safeprobemodeoff	Switches the safe probe mode off.
545	Safeprobemodeon	Switches the safe probe mode on.
547	Safeprobemodetoggle	Toggles the safe probe mode.
527	Savealloffsets	Saves all offset values to the profile file.
167	Savesettings	Saves all settings to the profile file.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
400 - 449	SelectTABlayer	Selects the TAB layer on the screen. The layer number selected is the function code - 400, so TAB layer 1. selected with code 401. Note: To select a sub layer with a hotkey or with an input trigger configure the same key or pin to select all of it's parent layers and also the layer itself, so the parent layers and the sub layers will also be selected and the sub layer will always showup this way, no matter which parent layer was originally shown.
242 - 292	Sethotkeycodes	Opens the Hotkeys keyboard key selection window.
293 - 343	Sethotkeyfunctions	Opens a Function selection window for the hotkeys.
344 - 394	Setinputtriggerfunctions	Opens a Function selection window for the input triggers.
169	Setnextline	Sets the G-code execution pointer to the line defined on the screen in the 128. labelfield.
450 - 500	SetoutputtriggerLEDs	Opens a LED selection window for the output triggers.
550	ShowSpindlepulleys	Opens the Spindle pulleys selection window.
549	Showstatistics	Opens the machine statistics window.
519	Softlimitsoff	Switches the softlimits setting off.
518	Softlimitson	Switches the softlimits setting on.
204	Softlimitstoggle	Toggles the software limits enable function.
135	SROdecrease	Decreases the spindle speed override value.
134	SROincrease	Increases the spindle speed override value.
530	THCAntiDiveoff	Switches the Anti Dive function for the THC off.
529	THCAntiDiveon	Switches the Anti Dive function for the THC on.
531	THCAntiDivetoggle	Toggles the Anti Dive function for the THC.
543	THCAntiDownoff	Switches the Anti Down function for the THC off.
542	THCAntiDownon	Switches the Anti Down function for the THC on.
544	THCAntiDowntoggle	Toggles the Anti Down function for the THC.
537	THCarconsignaloff_emulation	Switches the THC arcon virtual signal off. Can be used to emulate the THC arcon signal from keyboard.
536	THCarconsignalon_emulation	Switches the THC arcon virtual signal on. Can be used to emulate the THC arcon signal from keyboard.
534	THCDelayoff	Switches the THC Delay function for the THC off.
533	THCDelayon	Switches the THC Delay function for the THC on.
535	THCDelaytoggle	Toggles the Delay function for the THC.
541	THCdownsignaloff_emulation	Switches the THC down virtual signal off. Can be used to emulate the THC down signal from keyboard.

BUTTON NUMBER	FUNCTION NAME	DESCRIPTION
540	THCdownsignalon_emulation	Switches the THC down virtual signal on. Can be used to emulate the THC down signal from keyboard.
521	THCoff	Switches the THC control off.
520	THCon	Switches the THC control on.
205	THCtoggle	Toggles the THC control enable function.
539	THCupsignaloff_emulation	Switches the THC up virtual signal off. Can be used to emulate the THC up signal from keyboard.
538	THCupsignalon_emulation	Switches the THC up virtual signal on. Can be used to emulate the THC up signal from keyboard.
196	Toollengthmeasurement	Commands a tool length measurement. (Code executed in Macro M31)
182	Tooloffsetclear	Clears the tool offset.
183	Tooloffsetclear	Clears the tool offset.
184	Tooloffsetclear	Clears the tool offset.
185	Tooloffsetclear	Clears the tool offset.
186	Tooloffsetclear	Clears the tool offset.
187	Tooloffsetclear	Clears the tool offset.
139	Toolpathview45	Sets the toolpath to a 45° look viewing mode.
143	ToolpathviewISO	Sets the toolpath to Isometric viewing mode.
141	Toolpathviewleft	Sets the toolpath to a left side look viewing mode.
140	Toolpathviewright	Sets the toolpath to a right side look viewing mode.
142	Toolpathviewtop	Sets the toolpath to a top side look viewing mode.
138	Toolpathzoomcontents	Zooms the contents in the toolpath viewer.
136	Toolpathzoomin	Zooms in the toolpath viewer.
137	Toolpathzoomout	Zooms out the toolpath viewer.
103	ZeroA	Zeros the A axis position.
106	ZeroAll	Zeros All axis position.
104	ZeroB	Zeros the B axis position.
105	ZeroC	Zeros the C axis position.
218	Zeroworktimer	Zeros the work timer.
100	ZeroX	Zeros the X axis position.
101	ZeroY	Zeros the Y axis position.
102	ZeroZ	Zeros the Z axis position.

R* = Reserved address, do not use this address.

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FIELDS (SORT BY ALPHABETICAL NAME)

This section describes the **UCCNC software** field screen objects.

Each field object represents a text label on the UCCNC screen.
"textfield", "textfieldnb", "field", "fieldnb" type labels can be read and written from macro code and are **editable** by the user on the UCCNC GUI.
The "textfield", "textfieldnb" can contain any kind of text including words. The "field", "fieldnb" can contain numerical values only.
"showfield", "showfieldnb" type labels can be read and written from macro code and are **not editable** by the user on the UCCNC GUI.
This documentation lists all the accessible field objects sorted **alphabetically** by function.

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
55	Aaxisacceleration	
59	Aaxisbacklash	
58	Aaxiscompaccel	
47	Aaxisdirpin	
257	Aaxisdirport	
469	Aaxisenablepin	
470	Aaxisenableport	
52	Aaxishomeoffset	
50	Aaxishomepin	
260	Aaxishomeport	
51	Aaxishomingspeed	
48	Aaxislimitminuspin	
258	Aaxislimitminusport	
49	Aaxislimitpluspin	
259	Aaxislimitplusport	
56	Aaxissoftlimitminus	
57	Aaxissoftlimitplus	
46	Aaxissteppin	
256	Aaxisstepport	
53	Aaxisstepsper	
54	Aaxisvelocity	
868	Actfeedrate	
899	Active_fixture	
897	Active_toolnumber	
877	Activemodal	
870	Actspindlespeed	
909	Analog_inputvalue1	
910	Analog_inputvalue2	
2002	Analog_inputvalue3	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
2003	Analog_inputvalue4	
911	Analog_outputvalue1	
912	Analog_outputvalue2	
2008	Analog_outputvalue3	
2009	Analog_outputvalue4	
444	Analoginput1var	
445	Analoginput2var	
2004	Analoginput3var	
2005	Analoginput4var	
460	Analogoutput1var	
461	Analogoutput2var	
2006	Analogoutput3var	
2007	Analogoutput4var	
905	APIversion	
229	AposDRO	
70	Baxisacceleration	
74	Baxisbacklash	
73	Baxiscompaccel	
62	Baxisdirpin	
262	Baxisdirport	
471	Baxisenablepin	
472	Baxisenableport	
67	Baxishomeoffset	
65	Baxishomepin	
265	Baxishomeport	
66	Baxishomingspeed	
63	Baxislimitminuspin	
263	Baxislimitminusport	
64	Baxislimitpluspin	
264	Baxislimitplusport	
71	Baxissoftlimitminus	
72	Baxissoftlimitplus	
61	Baxissteppin	
261	Baxisstepport	
68	Baxisstepsper	
69	Baxisvelocity	
230	BposDRO	
858	CAM_Cutdepth	
859	CAM_Cutperpass	
861	CAM_Feedrate	
863	CAM_Plungerate	
860	CAM_SafeZ	
865	CAM_Spindlespeed	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
857	CAM_Startdepth	
908	CAM_Statuslabel	
856	CAM_Tooldia	
862	CAM_Tooloverlap	
85	Caxisacceleration	
89	Caxisbacklash	
88	Caxiscompaccel	
77	Caxisdirpin	
267	Caxisdirport	
473	Caxisenablepin	
474	Caxisenableport	
82	Caxishomeoffset	
80	Caxishomepin	
270	Caxishomeport	
81	Caxishomingspeed	
78	Caxislimitminuspin	
268	Caxislimitminusport	
79	Caxislimitpluspin	
269	Caxislimitplusport	
86	Caxissoftlimitminus	
87	Caxissoftlimitplus	
76	Caxissteppin	
266	Caxisstepport	
83	Caxisstepsper	
84	Caxisvelocity	
95	Chargepumppin	
274	Chargepumpport	
190	Comm_buffer_size	
231	CposDRO	
96	Currenthilowpin	
275	Currenthilowport	
194	CV_Cornererrormax	
217	CV_Linearadditionlenght	
193	CV_Linearerrormax	
218	CV_Linearunifylength	
192	CV_Lookaheadlines	
191	CV_stopangledegrees	
907	Devicetype	
895	Diagnostics_Filename	
888	Diagnostics_maxX	
889	Diagnostics_maxY	
890	Diagnostics_maxZ	
885	Diagnostics_minX	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
886	Diagnostics_minY	
887	Diagnostics_minZ	
891	Diagnostics_sizeX	
892	Diagnostics_sizeY	
893	Diagnostics_sizeZ	
894	Diagnostics_totalnumberofobjects	
2017	Digitize_filename	
2015	Digitize_numberofdigits	
2018	Digitize_numberofstoredpoints	
2016	Digitize_proberadius	
896	Dwell_time	
852	EncoderApin	
853	EncoderAport	
854	EncoderBpin	
855	EncoderBport	
864	EncoderPPR	
91	Estoppin	
271	Estopport	
903	Firmwareversion	
447	FROanalogchannelnumber	
449	FROanalogmaxpercent	
448	FROanalogminpercent	
232	FRODRO	
100	G54_CurrentcoordA	
101	G54_CurrentcoordB	
102	G54_CurrentcoordC	
97	G54_CurrentcoordX	
98	G54_CurrentcoordY	
99	G54_CurrentcoordZ	
136	G54_WorkoffsetA	
137	G54_WorkoffsetB	
138	G54_WorkoffsetC	
133	G54_WorkoffsetX	
134	G54_WorkoffsetY	
135	G54_WorkoffsetZ	
106	G55_CurrentcoordA	
107	G55_CurrentcoordB	
108	G55_CurrentcoordC	
103	G55_CurrentcoordX	
104	G55_CurrentcoordY	
105	G55_CurrentcoordZ	
142	G55_WorkoffsetA	
143	G55_WorkoffsetB	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
144	G55_WorkoffsetC	
139	G55_WorkoffsetX	
140	G55_WorkoffsetY	
141	G55_WorkoffsetZ	
112	G56_CurrentcoordA	
113	G56_CurrentcoordB	
114	G56_CurrentcoordC	
109	G56_CurrentcoordX	
110	G56_CurrentcoordY	
111	G56_CurrentcoordZ	
148	G56_WorkoffsetA	
149	G56_WorkoffsetB	
150	G56_WorkoffsetC	
145	G56_WorkoffsetX	
146	G56_WorkoffsetY	
147	G56_WorkoffsetZ	
118	G57_CurrentcoordA	
119	G57_CurrentcoordB	
120	G57_CurrentcoordC	
115	G57_CurrentcoordX	
116	G57_CurrentcoordY	
117	G57_CurrentcoordZ	
154	G57_WorkoffsetA	
155	G57_WorkoffsetB	
156	G57_WorkoffsetC	
151	G57_WorkoffsetX	
152	G57_WorkoffsetY	
153	G57_WorkoffsetZ	
124	G58_CurrentcoordA	
125	G58_CurrentcoordB	
126	G58_CurrentcoordC	
121	G58_CurrentcoordX	
122	G58_CurrentcoordY	
123	G58_CurrentcoordZ	
160	G58_WorkoffsetA	
161	G58_WorkoffsetB	
162	G58_WorkoffsetC	
157	G58_WorkoffsetX	
158	G58_WorkoffsetY	
159	G58_WorkoffsetZ	
130	G59_CurrentcoordA	
131	G59_CurrentcoordB	
132	G59_CurrentcoordC	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
127	G59_CurrentcoordX	
128	G59_CurrentcoordY	
129	G59_CurrentcoordZ	
166	G59_WorkoffsetA	
167	G59_WorkoffsetB	
168	G59_WorkoffsetC	
163	G59_WorkoffsetX	
164	G59_WorkoffsetY	
165	G59_WorkoffsetZ	
235	G73backoff	
503	G92_offsetA	
504	G92_offsetB	
505	G92_offsetC	
500	G92_offsetX	
501	G92_offsetY	
502	G92_offsetZ	
904	Hardwareversion	
507	Hotkey_function1	
525	Hotkey_function10	
527	Hotkey_function11	
529	Hotkey_function12	
531	Hotkey_function13	
533	Hotkey_function14	
535	Hotkey_function15	
537	Hotkey_function16	
539	Hotkey_function17	
541	Hotkey_function18	
543	Hotkey_function19	
509	Hotkey_function2	
545	Hotkey_function20	
547	Hotkey_function21	
549	Hotkey_function22	
551	Hotkey_function23	
553	Hotkey_function24	
555	Hotkey_function25	
557	Hotkey_function26	
559	Hotkey_function27	
561	Hotkey_function28	
563	Hotkey_function29	
511	Hotkey_function3	
565	Hotkey_function30	
567	Hotkey_function31	
569	Hotkey_function32	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
571	Hotkey_function33	
573	Hotkey_function34	
575	Hotkey_function35	
577	Hotkey_function36	
579	Hotkey_function37	
581	Hotkey_function38	
583	Hotkey_function39	
513	Hotkey_function4	
585	Hotkey_function40	
587	Hotkey_function41	
589	Hotkey_function42	
591	Hotkey_function43	
593	Hotkey_function44	
595	Hotkey_function45	
597	Hotkey_function46	
599	Hotkey_function47	
601	Hotkey_function48	
515	Hotkey_function5	
517	Hotkey_function6	
519	Hotkey_function7	
521	Hotkey_function8	
523	Hotkey_function9	
506	Hotkey_keycode1	
524	Hotkey_keycode10	
526	Hotkey_keycode11	
528	Hotkey_keycode12	
530	Hotkey_keycode13	
532	Hotkey_keycode14	
534	Hotkey_keycode15	
536	Hotkey_keycode16	
538	Hotkey_keycode17	
540	Hotkey_keycode18	
542	Hotkey_keycode19	
508	Hotkey_keycode2	
544	Hotkey_keycode20	
546	Hotkey_keycode21	
548	Hotkey_keycode22	
550	Hotkey_keycode23	
552	Hotkey_keycode24	
554	Hotkey_keycode25	
556	Hotkey_keycode26	
558	Hotkey_keycode27	
560	Hotkey_keycode28	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
562	Hotkey_keycode29	
510	Hotkey_keycode3	
564	Hotkey_keycode30	
566	Hotkey_keycode31	
568	Hotkey_keycode32	
570	Hotkey_keycode33	
572	Hotkey_keycode34	
574	Hotkey_keycode35	
576	Hotkey_keycode36	
578	Hotkey_keycode37	
580	Hotkey_keycode38	
582	Hotkey_keycode39	
512	Hotkey_keycode4	
584	Hotkey_keycode40	
586	Hotkey_keycode41	
588	Hotkey_keycode42	
590	Hotkey_keycode43	
592	Hotkey_keycode44	
594	Hotkey_keycode45	
596	Hotkey_keycode46	
598	Hotkey_keycode47	
600	Hotkey_keycode48	
514	Hotkey_keycode5	
516	Hotkey_keycode6	
518	Hotkey_keycode7	
520	Hotkey_keycode8	
522	Hotkey_keycode9	
93	Indexpin	
273	Indexport	
94	Indexprescaler	
320	Inputtrigger10function	
318	Inputtrigger10pin	
319	Inputtrigger10port	
323	Inputtrigger11function	
321	Inputtrigger11pin	
322	Inputtrigger11port	
326	Inputtrigger12function	
324	Inputtrigger12pin	
325	Inputtrigger12port	
329	Inputtrigger13function	
327	Inputtrigger13pin	
328	Inputtrigger13port	
332	Inputtrigger14function	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
330	Inputtrigger14pin	
331	Inputtrigger14port	
335	Inputtrigger15function	
333	Inputtrigger15pin	
334	Inputtrigger15port	
338	Inputtrigger16function	
336	Inputtrigger16pin	
337	Inputtrigger16port	
341	Inputtrigger17function	
339	Inputtrigger17pin	
340	Inputtrigger17port	
344	Inputtrigger18function	
342	Inputtrigger18pin	
343	Inputtrigger18port	
347	Inputtrigger19function	
345	Inputtrigger19pin	
346	Inputtrigger19port	
293	Inputtrigger1function	
291	Inputtrigger1pin	
292	Inputtrigger1port	
350	Inputtrigger20function	
348	Inputtrigger20pin	
349	Inputtrigger20port	
353	Inputtrigger21function	
351	Inputtrigger21pin	
352	Inputtrigger21port	
356	Inputtrigger22function	
354	Inputtrigger22pin	
355	Inputtrigger22port	
359	Inputtrigger23function	
357	Inputtrigger23pin	
358	Inputtrigger23port	
362	Inputtrigger24function	
360	Inputtrigger24pin	
361	Inputtrigger24port	
365	Inputtrigger25function	
363	Inputtrigger25pin	
364	Inputtrigger25port	
368	Inputtrigger26function	
366	Inputtrigger26pin	
367	Inputtrigger26port	
371	Inputtrigger27function	
369	Inputtrigger27pin	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
370	Inputtrigger27port	
374	Inputtrigger28function	
372	Inputtrigger28pin	
373	Inputtrigger28port	
377	Inputtrigger29function	
375	Inputtrigger29pin	
376	Inputtrigger29port	
296	Inputtrigger2function	
294	Inputtrigger2pin	
295	Inputtrigger2port	
380	Inputtrigger30function	
378	Inputtrigger30pin	
379	Inputtrigger30port	
383	Inputtrigger31function	
381	Inputtrigger31pin	
382	Inputtrigger31port	
386	Inputtrigger32function	
384	Inputtrigger32pin	
385	Inputtrigger32port	
389	Inputtrigger33function	
387	Inputtrigger33pin	
388	Inputtrigger33port	
392	Inputtrigger34function	
390	Inputtrigger34pin	
391	Inputtrigger34port	
395	Inputtrigger35function	
393	Inputtrigger35pin	
394	Inputtrigger35port	
398	Inputtrigger36function	
396	Inputtrigger36pin	
397	Inputtrigger36port	
401	Inputtrigger37function	
399	Inputtrigger37pin	
400	Inputtrigger37port	
404	Inputtrigger38function	
402	Inputtrigger38pin	
403	Inputtrigger38port	
407	Inputtrigger39function	
405	Inputtrigger39pin	
406	Inputtrigger39port	
299	Inputtrigger3function	
297	Inputtrigger3pin	
298	Inputtrigger3port	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
410	Inputtrigger40function	
408	Inputtrigger40pin	
409	Inputtrigger40port	
413	Inputtrigger41function	
411	Inputtrigger41pin	
412	Inputtrigger41port	
416	Inputtrigger42function	
414	Inputtrigger42pin	
415	Inputtrigger42port	
419	Inputtrigger43function	
417	Inputtrigger43pin	
418	Inputtrigger43port	
422	Inputtrigger44function	
420	Inputtrigger44pin	
421	Inputtrigger44port	
425	Inputtrigger45function	
423	Inputtrigger45pin	
424	Inputtrigger45port	
428	Inputtrigger46function	
426	Inputtrigger46pin	
427	Inputtrigger46port	
431	Inputtrigger47function	
429	Inputtrigger47pin	
430	Inputtrigger47port	
434	Inputtrigger48function	
432	Inputtrigger48pin	
433	Inputtrigger48port	
302	Inputtrigger4function	
300	Inputtrigger4pin	
301	Inputtrigger4port	
305	Inputtrigger5function	
303	Inputtrigger5pin	
304	Inputtrigger5port	
308	Inputtrigger6function	
306	Inputtrigger6pin	
307	Inputtrigger6port	
311	Inputtrigger7function	
309	Inputtrigger7pin	
310	Inputtrigger7port	
314	Inputtrigger8function	
312	Inputtrigger8pin	
313	Inputtrigger8port	
317	Inputtrigger9function	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
315	Inputtrigger9pin	
316	Inputtrigger9port	
881	IOmonitor_APOS	
882	IOmonitor_BPOS	
883	IOmonitor_CPOS	
878	IOmonitor_XPOS	
879	IOmonitor_YPOS	
880	IOmonitor_ZPOS	
913	Jogfeedrate	
453	JROanalogchannelnumber	
455	JROanalogmaxpercent	
454	JROanalogminpercent	
914	Laseroutputpin	
915	Laseroutputport	
901	Licensed_to	
874	MachinecoordA	
875	MachinecoordB	
876	MachinecoordC	
871	MachinecoordX	
872	MachinecoordY	
873	MachinecoordZ	
884	Motionbuffer	
456	MPGfilterconstant	
287	MPGpinA	
289	MPGpinB	
288	MPGportA	
290	MPGportB	
443	MPGprescaler	
457	MPGspeedmultiplier	
216	Newprofilename	
729	Outputtrigger10LED	
727	Outputtrigger10pin	
728	Outputtrigger10port	
732	Outputtrigger11LED	
730	Outputtrigger11pin	
731	Outputtrigger11port	
735	Outputtrigger12LED	
733	Outputtrigger12pin	
734	Outputtrigger12port	
738	Outputtrigger13LED	
736	Outputtrigger13pin	
737	Outputtrigger13port	
741	Outputtrigger14LED	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
739	Outputtrigger14pin	
740	Outputtrigger14port	
744	Outputtrigger15LED	
742	Outputtrigger15pin	
743	Outputtrigger15port	
747	Outputtrigger16LED	
745	Outputtrigger16pin	
746	Outputtrigger16port	
750	Outputtrigger17LED	
748	Outputtrigger17pin	
749	Outputtrigger17port	
753	Outputtrigger18LED	
751	Outputtrigger18pin	
752	Outputtrigger18port	
756	Outputtrigger19LED	
754	Outputtrigger19pin	
755	Outputtrigger19port	
702	Outputtrigger1LED	
700	Outputtrigger1pin	
701	Outputtrigger1port	
759	Outputtrigger20LED	
757	Outputtrigger20pin	
758	Outputtrigger20port	
762	Outputtrigger21LED	
760	Outputtrigger21pin	
761	Outputtrigger21port	
765	Outputtrigger22LED	
763	Outputtrigger22pin	
764	Outputtrigger22port	
768	Outputtrigger23LED	
766	Outputtrigger23pin	
767	Outputtrigger23port	
771	Outputtrigger24LED	
769	Outputtrigger24pin	
770	Outputtrigger24port	
774	Outputtrigger25LED	
772	Outputtrigger25pin	
773	Outputtrigger25port	
777	Outputtrigger26LED	
775	Outputtrigger26pin	
776	Outputtrigger26port	
780	Outputtrigger27LED	
778	Outputtrigger27pin	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
779	Outputtrigger27port	
783	Outputtrigger28LED	
781	Outputtrigger28pin	
782	Outputtrigger28port	
786	Outputtrigger29LED	
784	Outputtrigger29pin	
785	Outputtrigger29port	
705	Outputtrigger2LED	
703	Outputtrigger2pin	
704	Outputtrigger2port	
789	Outputtrigger30LED	
787	Outputtrigger30pin	
788	Outputtrigger30port	
792	Outputtrigger31LED	
790	Outputtrigger31pin	
791	Outputtrigger31port	
795	Outputtrigger32LED	
793	Outputtrigger32pin	
794	Outputtrigger32port	
798	Outputtrigger33LED	
796	Outputtrigger33pin	
797	Outputtrigger33port	
801	Outputtrigger34LED	
799	Outputtrigger34pin	
800	Outputtrigger34port	
804	Outputtrigger35LED	
802	Outputtrigger35pin	
803	Outputtrigger35port	
807	Outputtrigger36LED	
805	Outputtrigger36pin	
806	Outputtrigger36port	
810	Outputtrigger37LED	
808	Outputtrigger37pin	
809	Outputtrigger37port	
813	Outputtrigger38LED	
811	Outputtrigger38pin	
812	Outputtrigger38port	
816	Outputtrigger39LED	
814	Outputtrigger39pin	
815	Outputtrigger39port	
708	Outputtrigger3LED	
706	Outputtrigger3pin	
707	Outputtrigger3port	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
819	Outputtrigger40LED	
817	Outputtrigger40pin	
818	Outputtrigger40port	
822	Outputtrigger41LED	
820	Outputtrigger41pin	
821	Outputtrigger41port	
825	Outputtrigger42LED	
823	Outputtrigger42pin	
824	Outputtrigger42port	
828	Outputtrigger43LED	
826	Outputtrigger43pin	
827	Outputtrigger43port	
831	Outputtrigger44LED	
829	Outputtrigger44pin	
830	Outputtrigger44port	
834	Outputtrigger45LED	
832	Outputtrigger45pin	
833	Outputtrigger45port	
837	Outputtrigger46LED	
835	Outputtrigger46pin	
836	Outputtrigger46port	
840	Outputtrigger47LED	
838	Outputtrigger47pin	
839	Outputtrigger47port	
843	Outputtrigger48LED	
841	Outputtrigger48pin	
842	Outputtrigger48port	
711	Outputtrigger4LED	
709	Outputtrigger4pin	
710	Outputtrigger4port	
714	Outputtrigger5LED	
712	Outputtrigger5pin	
713	Outputtrigger5port	
717	Outputtrigger6LED	
715	Outputtrigger6pin	
716	Outputtrigger6port	
720	Outputtrigger7LED	
718	Outputtrigger7pin	
719	Outputtrigger7port	
723	Outputtrigger8LED	
721	Outputtrigger8pin	
722	Outputtrigger8port	
726	Outputtrigger9LED	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
724	Outputtrigger9pin	
725	Outputtrigger9port	
2010	Plasmapieceheight	
195	PositionDROsdigits	
92	Probepin1	
2011	Probepin2	
272	Probeport1	
2012	Probeport2	
900	Profile_name	
2013	Pulleynumber	
2014	Pulleyratio	
171	PWMspindle_dirpin	
280	PWMspindle_dirport	
172	PWMspindle_PWMfrequency	
459	PWMspindle_PWMmaxdutycycle	
458	PWMspindle_PWMmindutycycle	
170	PWMspindle_PWMpin	
279	PWMspindle_PWMport	
15	R*	
30	R*	
45	R*	
60	R*	
75	R*	
90	R*	
236	R*	
237	R*	
238	R*	
239	R*	
240	R*	
435	R*	
436	R*	
437	R*	
438	R*	
439	R*	
440	R*	
446	R*	
475 - 499	R*	
602 - 699	R*	
844 - 851	R*	
916 - 920	R*	
949-2000	R*	
225	SafeZheight	
906	Serialnumber	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
867	Setfeedrate	
866	Setnextlinefield	
869	Setspindlespeed	
902	Softwareversion	
182	Spindle_M3delayoff	
181	Spindle_M3delayon	
179	Spindle_M3relaypin	
283	Spindle_M3relayport	
184	Spindle_M4delayoff	
183	Spindle_M4delayon	
180	Spindle_M4relaypin	
284	Spindle_M4relayport	
187	Spindle_M7delayon	
185	Spindle_M7relaypin	
285	Spindle_M7relayport	
188	Spindle_M8delayon	
186	Spindle_M8relaypin	
286	Spindle_M8relayport	
189	Spindle_M9delay	
178	Spindle_Maxvelocity	
177	Spindle_Minvelocity	
462	SpindlePWM_analogoutputchannel	
450	SROanalogchannelnumber	
452	SROanalogmaxpercent	
451	SROanalogminpercent	
233	SRODRO	
176	Stepdirspindle_Acceleration	
174	Stepdirspindle_Dirpin	
282	Stepdirspindle_Dirport	
173	Stepdirspindle_Steppin	
281	Stepdirspindle_Stepport	
175	Stepdirspindle_Stepsperrotation	
221	THC_downpin	
278	THC_downport	
224	THC_feedrate	
223	THC_max_height	
222	THC_min_height	
234	THC_ondelay	
219	THC_onpin	
276	THC_onport	
220	THC_uppin	
277	THC_upport	
2001	THCAntidivevelocitypercentage	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
169	TooloffsetZ	
196	ToolZoffset1	
205	ToolZoffset10	
206	ToolZoffset11	
207	ToolZoffset12	
208	ToolZoffset13	
209	ToolZoffset14	
210	ToolZoffset15	
211	ToolZoffset16	
212	ToolZoffset17	
213	ToolZoffset18	
214	ToolZoffset19	
197	ToolZoffset2	
215	ToolZoffset20	
921	ToolZoffset21	
922	ToolZoffset22	
923	ToolZoffset23	
924	ToolZoffset24	
925	ToolZoffset25	
926	ToolZoffset26	
927	ToolZoffset27	
928	ToolZoffset28	
929	ToolZoffset29	
198	ToolZoffset3	
930	ToolZoffset30	
931	ToolZoffset31	
932	ToolZoffset32	
933	ToolZoffset33	
934	ToolZoffset34	
935	ToolZoffset35	
936	ToolZoffset36	
937	ToolZoffset37	
938	ToolZoffset38	
939	ToolZoffset39	
199	ToolZoffset4	
940	ToolZoffset40	
941	ToolZoffset41	
942	ToolZoffset42	
943	ToolZoffset43	
944	ToolZoffset44	
945	ToolZoffset45	
946	ToolZoffset46	
947	ToolZoffset47	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
948	ToolZoffset48	
949	ToolZoffset49	
200	ToolZoffset5	
950	ToolZoffset50	
951	ToolZoffset51	
952	ToolZoffset52	
953	ToolZoffset53	
954	ToolZoffset54	
955	ToolZoffset55	
956	ToolZoffset56	
957	ToolZoffset57	
958	ToolZoffset58	
959	ToolZoffset59	
201	ToolZoffset6	
960	ToolZoffset60	
961	ToolZoffset61	
962	ToolZoffset62	
963	ToolZoffset63	
964	ToolZoffset64	
965	ToolZoffset65	
966	ToolZoffset66	
967	ToolZoffset67	
968	ToolZoffset68	
969	ToolZoffset69	
202	ToolZoffset7	
970	ToolZoffset70	
971	ToolZoffset71	
972	ToolZoffset72	
973	ToolZoffset73	
974	ToolZoffset74	
975	ToolZoffset75	
976	ToolZoffset76	
977	ToolZoffset77	
978	ToolZoffset78	
979	ToolZoffset79	
203	ToolZoffset8	
980	ToolZoffset80	
981	ToolZoffset81	
982	ToolZoffset82	
983	ToolZoffset83	
984	ToolZoffset84	
985	ToolZoffset85	
986	ToolZoffset86	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
987	ToolZoffset87	
988	ToolZoffset88	
989	ToolZoffset89	
204	ToolZoffset9	
990	ToolZoffset90	
991	ToolZoffset91	
992	ToolZoffset92	
993	ToolZoffset93	
994	ToolZoffset94	
995	ToolZoffset95	
996	ToolZoffset96	
898	Worktimer	
10	Xaxisacceleration	
14	Xaxisbacklash	
13	Xaxiscompaccel	
2	Xaxisdirpin	
242	Xaxisdirport	
463	Xaxisenablepin	
464	Xaxisenableport	
7	Xaxishomeoffset	
5	Xaxishomepin	
245	Xaxishomeport	
6	Xaxishomingspeed	
3	Xaxislimitminuspin	
243	Xaxislimitminusport	
4	Xaxislimitpluspin	
244	Xaxislimitplusport	
11	Xaxissoftlimitminus	
12	Xaxissoftlimitplus	
1	Xaxissteppin	
241	Xaxisstepport	
8	Xaxisstepsper	
9	Xaxisvelocity	
226	XposDRO	
25	Yaxisacceleration	
29	Yaxisbacklash	
28	Yaxiscompaccel	
17	Yaxisdirpin	
247	Yaxisdirport	
465	Yaxisenablepin	
466	Yaxisenableport	
22	Yaxishomeoffset	
20	Yaxishomepin	

FIELD NUMBER	FUNCTION NAME	DESCRIPTION
250	Yaxishomeport	
21	Yaxishomingspeed	
18	Yaxislimitminuspin	
248	Yaxislimitminusport	
19	Yaxislimitpluspin	
249	Yaxislimitplusport	
26	Yaxissoftlimitminus	
27	Yaxissoftlimitplus	
16	Yaxissteppin	
246	Yaxisstepport	
23	Yaxisstepsper	
24	Yaxisvelocity	
227	YposDRO	
40	Zaxisacceleration	
44	Zaxisbacklash	
43	Zaxiscompaccel	
32	Zaxisdirpin	
252	Zaxisdirport	
467	Zaxisenablepin	
468	Zaxisenableport	
37	Zaxishomeoffset	
35	Zaxishomepin	
255	Zaxishomeport	
36	Zaxishomingspeed	
33	Zaxislimitminuspin	
253	Zaxislimitminusport	
34	Zaxislimitpluspin	
254	Zaxislimitplusport	
41	Zaxissoftlimitminus	
42	Zaxissoftlimitplus	
31	Zaxissteppin	
251	Zaxisstepport	
38	Zaxisstepsper	
39	Zaxisvelocity	
228	ZposDRO	

R* = Reserved address, do not use this address.

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LED's (SORT BY ALPHABETICAL NAME)

This section describes the **UCCNC software** LED screen objects.

Each LED represents an internal boolean variable of the UCNC software.
The LEDs' logic state can be read in macro code.
This documentation lists all the accessible LED variables, sorted **alphabetically** by function**.**

LED NUMBER	LED NAME	DESCRIPTION
47	Ahome	Active when then A-axis home input is triggered.
59	Ahomed	Active when the A-axis was already homed.
41	Alimitnegative	Active when the A-axis negative side limit switch is triggered.
32	Alimitpositive	Active when the A-axis positive side limit switch is triggered.
22	Backlash	Active when the backlash compensation is being executed.
48	Bhome	Active when then B-axis home input is triggered.
60	Bhomed	Active when the B-axis was already homed.
42	Blimitnegative	Active when the B-axis negative side limit switch is triggered.
33	Blimitpositive	Active when the B-axis positive side limit switch is triggered.
49	Chome	Active when then C-axis home input is triggered.
61	Chomed	Active when the C-axis was already homed.
43	Climitnegative	Active when the C-axis negative side limit switch is triggered.
34	Climitpositive	Active when the C-axis positive side limit switch is triggered.
54	Cyclestart	Active when a G-code execution cycle is in progress.
245	Digitizing	On when the M40 digitizing command is active.
21	Dwell	Indicates a dwell in progress.
142	EnableAaxis	On when the enable output of the A axis is active
143	EnableBaxis	On when the enable output of the B axis is active
144	EnableCaxis	On when the enable output of the C axis is active
139	EnableXaxis	On when the enable output of the X axis is active
140	EnableYaxis	On when the enable output of the Y axis is active
141	EnableZaxis	On when the enable output of the Z axis is active
214	EncoderApin	Indicates the logic state of the Encoder A pin.
215	EncoderBpin	Indicates the logic state of the Encoder B pin.
36	Estop	Active when the estop input is triggered.
217	Feedhold	On when the feedhold button is active.
53	Floodon	Active when the flood coolant is on.
26	Hardlimit	Active when any of the configured limit inputs are triggered.

LED NUMBER	LED NAME	DESCRIPTION
23	Home	Active when the homing command is being executed.
18	Idle	Indicates the Idle state of the device.
35	Index	Active when the index input is triggered.
218	Isdemomode	On if the software is running in demo mode.
20	Jog	Active when a jog command is being executed.
145	Jogmodecontinous	On when the continuous jog mode is selected.
146	Jogmodestep	On when the step jog mode is selected.
148	Jograte0001	On when the step jog rate is set to 0.001 units.
149	Jograte0010	On when the step jog rate is set to 0.01 units.
150	Jograte0100	On when the step jog rate is set to 0.1 units.
151	Jograte1000	On when the step jog rate is set to 1 units.
219	Laserdataloaded	On if a laser data object is loaded to the memory for laser engraving.
220	Laserrunning	On when a laser engraving is in progress using the laser data object.
27	Limitsoverride	Active if the limits are overridden by the user.
229	M0stopactive	Indicates that the M0 stop is active.
230	M1stopactive	Indicates that the M1 stop is active.
231	M60stopactive	Indicates that the M60 stop is active.
62	Machinecoords	Active when the machine coordinate system is selected to view in the position DROs.
216	MDIrunning	On when an MDI command is in progress.
52	Miston	Active when the mist coolant is on.
158	MPGAaxisselect	On when the A axis is selected for the MPG jog.
137	MPGAPIN	Indicates the logic state of the MPG A pin.
159	MPGBaxisselect	On when the B axis is selected for the MPG jog.
138	MPGBPIN	Indicates the logic state of the MPG B pin.
160	MPGCaxisselect	On when the C axis is selected for the MPG jog.
236	MPGJogOn	Indicates that the MPG jogging is active.
152	MPGmodecont	On when the MPG continuous mode is selected.
154	MPGmodemulti	On when the MPG multi mode is selected.
153	MPGmodesingle	On when the MPG single mode is selected.
155	MPGXaxisselect	On when the X axis is selected for the MPG jog.
156	MPGYaxisselect	On when the Y axis is selected for the MPG jog.
157	MPGZaxisselect	On when the Z axis is selected for the MPG jog.
212	Offlinemode	On when the offline mode is active.
1	OutputPT1PN1	Indicates the actual logic state of port#1 pin#1.
10	OutputPT1PN10	Indicates the actual logic state of port#1 pin#10.
11	OutputPT1PN11	Indicates the actual logic state of port#1 pin#11.
12	OutputPT1PN12	Indicates the actual logic state of port#1 pin#12.
13	OutputPT1PN13	Indicates the actual logic state of port#1 pin#13.
14	OutputPT1PN14	Indicates the actual logic state of port#1 pin#14.
15	OutputPT1PN15	Indicates the actual logic state of port#1 pin#15.

LED NUMBER	LED NAME	DESCRIPTION
16	OutputPT1PN16	Indicates the actual logic state of port#1 pin#16.
17	OutputPT1PN17	Indicates the actual logic state of port#1 pin#17.
2	OutputPT1PN2	Indicates the actual logic state of port#1 pin#2.
3	OutputPT1PN3	Indicates the actual logic state of port#1 pin#3.
4	OutputPT1PN4	Indicates the actual logic state of port#1 pin#4.
5	OutputPT1PN5	Indicates the actual logic state of port#1 pin#5.
6	OutputPT1PN6	Indicates the actual logic state of port#1 pin#6.
7	OutputPT1PN7	Indicates the actual logic state of port#1 pin#7.
8	OutputPT1PN8	Indicates the actual logic state of port#1 pin#8.
9	OutputPT1PN9	Indicates the actual logic state of port#1 pin#9.
234	OutputPT1PN94	Indicates the actual logic state of port#1 pin#94. (5441 motherboard only.)
235	OutputPT1PN95	Indicates the actual logic state of port#1 pin#95. (5441 motherboard only.)
69	OutputPT2PN1	Indicates the actual logic state of port#2 pin#1.
78	OutputPT2PN10	Indicates the actual logic state of port#2 pin#10.
79	OutputPT2PN11	Indicates the actual logic state of port#2 pin#11.
80	OutputPT2PN12	Indicates the actual logic state of port#2 pin#12.
81	OutputPT2PN13	Indicates the actual logic state of port#2 pin#13.
82	OutputPT2PN14	Indicates the actual logic state of port#2 pin#14.
83	OutputPT2PN15	Indicates the actual logic state of port#2 pin#15.
84	OutputPT2PN16	Indicates the actual logic state of port#2 pin#16.
85	OutputPT2PN17	Indicates the actual logic state of port#2 pin#17.
70	OutputPT2PN2	Indicates the actual logic state of port#2 pin#2.
71	OutputPT2PN3	Indicates the actual logic state of port#2 pin#3.
72	OutputPT2PN4	Indicates the actual logic state of port#2 pin#4.
73	OutputPT2PN5	Indicates the actual logic state of port#2 pin#5.
74	OutputPT2PN6	Indicates the actual logic state of port#2 pin#6.
75	OutputPT2PN7	Indicates the actual logic state of port#2 pin#7.
76	OutputPT2PN8	Indicates the actual logic state of port#2 pin#8.
77	OutputPT2PN9	Indicates the actual logic state of port#2 pin#9.
86	OutputPT3PN1	Indicates the actual logic state of port#3 pin#1.
95	OutputPT3PN10	Indicates the actual logic state of port#3 pin#10.
96	OutputPT3PN11	Indicates the actual logic state of port#3 pin#11.
97	OutputPT3PN12	Indicates the actual logic state of port#3 pin#12.
98	OutputPT3PN13	Indicates the actual logic state of port#3 pin#13.
99	OutputPT3PN14	Indicates the actual logic state of port#3 pin#14.
100	OutputPT3PN15	Indicates the actual logic state of port#3 pin#15.
101	OutputPT3PN16	Indicates the actual logic state of port#3 pin#16.
102	OutputPT3PN17	Indicates the actual logic state of port#3 pin#17.
87	OutputPT3PN2	Indicates the actual logic state of port#3 pin#2.
88	OutputPT3PN3	Indicates the actual logic state of port#3 pin#3.
89	OutputPT3PN4	Indicates the actual logic state of port#3 pin#4.

LED NUMBER	LED NAME	DESCRIPTION
90	OutputPT3PN5	Indicates the actual logic state of port#3 pin#5.
91	OutputPT3PN6	Indicates the actual logic state of port#3 pin#6.
92	OutputPT3PN7	Indicates the actual logic state of port#3 pin#7.
93	OutputPT3PN8	Indicates the actual logic state of port#3 pin#8.
94	OutputPT3PN9	Indicates the actual logic state of port#3 pin#9.
103	OutputPT4PN1	Indicates the actual logic state of port#4 pin#1.
112	OutputPT4PN10	Indicates the actual logic state of port#4 pin#10.
113	OutputPT4PN11	Indicates the actual logic state of port#4 pin#11.
114	OutputPT4PN12	Indicates the actual logic state of port#4 pin#12.
115	OutputPT4PN13	Indicates the actual logic state of port#4 pin#13.
116	OutputPT4PN14	Indicates the actual logic state of port#4 pin#14.
117	OutputPT4PN15	Indicates the actual logic state of port#4 pin#15.
118	OutputPT4PN16	Indicates the actual logic state of port#4 pin#16.
119	OutputPT4PN17	Indicates the actual logic state of port#4 pin#17.
104	OutputPT4PN2	Indicates the actual logic state of port#4 pin#2.
105	OutputPT4PN3	Indicates the actual logic state of port#4 pin#3.
106	OutputPT4PN4	Indicates the actual logic state of port#4 pin#4.
107	OutputPT4PN5	Indicates the actual logic state of port#4 pin#5.
108	OutputPT4PN6	Indicates the actual logic state of port#4 pin#6.
109	OutputPT4PN7	Indicates the actual logic state of port#4 pin#7.
110	OutputPT4PN8	Indicates the actual logic state of port#4 pin#8.
111	OutputPT4PN9	Indicates the actual logic state of port#4 pin#9.
120	OutputPT5PN1	Indicates the actual logic state of port#5 pin#1.
129	OutputPT5PN10	Indicates the actual logic state of port#5 pin#10.
130	OutputPT5PN11	Indicates the actual logic state of port#5 pin#11.
131	OutputPT5PN12	Indicates the actual logic state of port#5 pin#12.
132	OutputPT5PN13	Indicates the actual logic state of port#5 pin#13.
133	OutputPT5PN14	Indicates the actual logic state of port#5 pin#14.
134	OutputPT5PN15	Indicates the actual logic state of port#5 pin#15.
135	OutputPT5PN16	Indicates the actual logic state of port#5 pin#16.
136	OutputPT5PN17	Indicates the actual logic state of port#5 pin#17.
121	OutputPT5PN2	Indicates the actual logic state of port#5 pin#2.
221	OutputPT5PN26	Indicates the actual logic state of port#5 pin#26. (M44 motherboard only.)
222	OutputPT5PN27	Indicates the actual logic state of port#5 pin#27. (M44 motherboard only.)
223	OutputPT5PN28	Indicates the actual logic state of port#5 pin#28. (M44 motherboard only.)
224	OutputPT5PN29	Indicates the actual logic state of port#5 pin#29. (M44 motherboard only.)
122	OutputPT5PN3	Indicates the actual logic state of port#5 pin#3.
225	OutputPT5PN30	Indicates the actual logic state of port#5 pin#30. (M44 motherboard only.)
226	OutputPT5PN31	Indicates the actual logic state of port#5 pin#31. (M44 motherboard only.)

LED NUMBER	LED NAME	DESCRIPTION
227	OutputPT5PN32	Indicates the actual logic state of port#5 pin#32. (M44 motherboard only.)
228	OutputPT5PN33	Indicates the actual logic state of port#5 pin#33. (M44 motherboard only.)
123	OutputPT5PN4	Indicates the actual logic state of port#5 pin#4.
124	OutputPT5PN5	Indicates the actual logic state of port#5 pin#5.
125	OutputPT5PN6	Indicates the actual logic state of port#5 pin#6.
126	OutputPT5PN7	Indicates the actual logic state of port#5 pin#7.
127	OutputPT5PN8	Indicates the actual logic state of port#5 pin#8.
128	OutputPT5PN9	Indicates the actual logic state of port#5 pin#9.
232	Pause	On when any of the M0 or M1 or M60 stop mode is active.
37	Probe	Active when the probe input is triggered.
244	ProbedOK	On if the last probing (G31) was finished with a probe touch, off if the last probing did not end with a touch.
24	Probing	Active when the probing command is being executed.
147	R*	
25	Reset	Indicates an active reset signal.
19	Run	Indicates a run state of the device. This is the opposite of the Idle state.
55	Runsingleline	Active when a Single line G-code execution cycle is in progress.
243	SafeProbeModeactive	On when the SafeProbeMode is active. The safe probe mode actives the Reset if the probe goes on when not probing.
67	Softlimitsenabled	Active when the Software limit function is enabled.
51	SpindleCCW	Active when the spindle is rotating Counter-clockwise
50	SpindleCW	Active when the spindle is rotating Clockwise.
213	Sync_thread	Active when a synchronous thread cutting is in execution.
161 to 211	TABlayervisible	On when the tab layer is visible. The layer number selected is the LED code - 161, so the 161. LED code is for the tab layer 0. and the 211. LED code is for the 50. tab layer. Note: When more than one tab layer is visible, for example if a tab layer has a sub-tab layer which is also visible then both LED codes are active.
233	THCAntidiveactive	On when in THC control and the Anti diving happens.
240	THCantidiveenabled	On when the THC anti dive function is enabled.
242	THCantidownenabled	On when the THC anti down function is enabled.
237	THCarcon_emulation	Indicates that the THCarcon emulation signal is active.
68	THCdelay	Active when the THC delay is ongoing.
241	THCdelayenabled	On when the THC delay function is enabled.

LED NUMBER	LED NAME	DESCRIPTION
65	THCdown	Active when the THC down physical input is active.
239	THCdown_emulation	Indicates that the THCdown emulation signal is active.
66	THCenabled	Active when the THC control is enabled.
63	THCon	Active when the THC on physical input is active.
64	THCup	Active when the THC up physical input is active.
238	THCup_emulation	Indicates that the THCup emulation signal is active.
28	Toolchangeinprogress	Active when a tool change macro is being executed.
44	Xhome	Active when then X-axis home input is triggered.
56	Xhomed	Active when the X-axis was already homed.
38	Xlimitnegative	Active when the X-axis negative side limit switch is triggered.
29	Xlimitpositive	Active when the X-axis positive side limit switch is triggered.
45	Yhome	Active when then Y-axis home input is triggered.
57	Yhomed	Active when the Y-axis was already homed.
39	Ylimitnegative	Active when the Y-axis negative side limit switch is triggered.
30	Ylimitpositive	Active when the Y-axis positive side limit switch is triggered.
46	Zhome	Active when then Z-axis home input is triggered.
58	Zhomed	Active when the Z-axis was already homed.
40	Zlimitnegative	Active when the Z-axis negative side limit switch is triggered.
31	Zlimitpositive	Active when the Z-axis positive side limit switch is triggered.

R* = Reserved address, do not use this address.

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CHECKBOX OBJECTS (SORT BY ALPHABETICAL NAME)

This section describes the **UCCNC software** Checkbox screen objects.

Each checkbox permits the user to make a selection on the UCCNC software GUI.
Checkboxes are read only and their logic state can be read in macro code.
This documentation lists all the accessible Checkbox variables, sorted **alphabetically** by function**.**

CHECKBOX NUMBER	CHECKBOX NAME	DESCRIPTION
144	Aaxis_enable	
30	Aaxisdirpin_activelow	
28	Aaxisenable	
36	Aaxisenablebacklash	
34	Aaxishomedirectionpositive	
33	Aaxishomepin_activelow	
35	Aaxishomepositionautoset	
31	Aaxislimitminuspin_activelow	
32	Aaxislimitpluspin_activelow	
29	Aaxissteppin_activelow	
80	Appearance_3DTCPmarker	
147	Appearance_Maximizescreenonstartup	
89	Appearance_ShowconeicononTCP	
90	Appearance_ShowcrosshaironTCP	
145	Baxis_enable	
39	Baxisdirpin_activelow	
37	Baxisenable	
45	Baxisenablebacklash	
43	Baxishomedirectionpositive	
42	Baxishomepin_activelow	
44	Baxishomepositionautoset	
40	Baxislimitminuspin_activelow	
41	Baxislimitpluspin_activelow	
38	Baxissteppin_activelow	
202 - 210	CAM_select_origin	
146	Caxis_enable	
48	Caxisdirpin_activelow	
46	Caxisenable	
54	Caxisenablebacklash	
52	Caxishomedirectionpositive	
51	Caxishomepin_activelow	
53	Caxishomepositionautoset	
49	Caxislimitminuspin_activelow	

CHECKBOX NUMBER	CHECKBOX NAME	DESCRIPTION
50	Caxislimitpluspin_activelow	
47	Caxissteppin_activelow	
59	Chargepump_alwayson	
57	Chargepumppin_activelow	
60	Currenthilow_activelow	
228	Digitize_addaxisnames	
236	Digitize_Clearfilenamewhenfinished	
229	Digitize_commaseparatedCSV	
233	Digitize_includeaxisA	
234	Digitize_includeaxisB	
235	Digitize_includeaxisC	
230	Digitize_includeaxisX	
231	Digitize_includeaxisY	
232	Digitize_includeaxisZ	
212	Dwelltimeinseconds	
213	Enableusertabpage	
55	Estoppin_activelow	
74	Generalsettings_constantvelocitypathmode	
75	Generalsettings_enablesoftlimits	
73	Generalsettings_exactstoppathmode	
88	Generalsettings_Kernelfrequency100kHz	
214	Generalsettings_Kernelfrequency200kHz	
86	Generalsettings_Kernelfrequency25kHz	
215	Generalsettings_Kernelfrequency400kHz	
87	Generalsettings_Kernelfrequency50kHz	
91 - 138	Inputtrigger1_activelow to Inputtrigger48_activelow	
148	IOsetup_attachJROtoMPG	
85	IOsetup_ControlTHCevenifTHConisnotactive	
81	IOsetup_EnableTHCcontrol	
84	IOsetup_THCdownpinactivelow	
82	IOsetup_THConpinactivelow	
83	IOsetup_THCuppinactivelow	
211	Laseroutput_activelow	
150 - 197	Outputtrigger1_activelow to Outputtrigger48_activelow	
56	Probepin1_activelow	
225	Probepin2_activelow	
79	Profiles_createshortcutondesktop	
58	R*	
139	R*	
140	R*	
149	R*	

CHECKBOX NUMBER	CHECKBOX NAME	DESCRIPTION
198	R*	
199	R*	
61 - 72	R*	
201	Reverseencodercountdirection	
219	RotateTCPwithplaneselection	
222	Showmessageonsoftlimits	
220	Showzeromark	
221	THCAntidiveenable	
224	THCAntidownenable	
223	THCDelayenable	
76	Toolchange_igonoretoolchangemacro	
78	Toolchange_runM6macro	
77	Toolchange_stopspindleandwaitforcyclestart	
216	Unknowgcode_ignore	
218	Unknowngcode_donotrun	
217	Unknowngcode_warning	
226	UseSpindlepulleys	
227	ValidateTextfieldswithEnterkeyonly	
141	Xaxis_enable	
3	Xaxisdirpin_activelow	
1	Xaxisenable	
9	Xaxisenablebacklash	
7	Xaxishomedirectionpositive	
6	Xaxishomepin_activelow	
8	Xaxishomepositionautoset	
4	Xaxislimitminuspin_activelow	
5	Xaxislimitpluspin_activelow	
2	Xaxissteppin_activelow	
142	Yaxis_enable	
12	Yaxisdirpin_activelow	
10	Yaxisenable	
18	Yaxisenablebacklash	
16	Yaxishomedirectionpositive	
15	Yaxishomepin_activelow	
17	Yaxishomepositionautoset	
13	Yaxislimitminuspin_activelow	
14	Yaxislimitpluspin_activelow	
11	Yaxissteppin_activelow	
143	Zaxis_enable	
21	Zaxisdirpin_activelow	
19	Zaxisenable	
27	Zaxisenablebacklash	
25	Zaxishomedirectionpositive	

CHECKBOX NUMBER	CHECKBOX NAME	DESCRIPTION
24	Zaxishomepin_activelow	
26	Zaxishomepositionautoset	
22	Zaxislimitminuspin_activelow	
23	Zaxislimitpluspin_activelow	
20	Zaxissteppin_activelow	

R* = Reserved address, do not use this address.

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VARIABLES

UCCNC allows for the use of parametric programming (as shown within the main UCCNC user manual), the following is an extract from the UCCNC manual for ease of reference. The purpose of this section is to provide a list of the internal variables as tabled below and also a location for the user to note their own variables should they be using them and to avoid (or allow for) sharing them between macros.

Parametric programming

Instead of constants, variables could be also used to define coordinates or feedrate, spindle speed etc. There are 1000 spaces for internal variables currently, named as #0 to #999.
When a number is programmed with the '**#**' suffix means that this parameter is not a constant, but a pointer to an internal variable.
The variables can get new value any time programming an equation in code execution or via MDI.
Mathematic equations can be also programmed to give values to variables.
For example to give a value of **1.23** to variable **#2**, *code:* **'#2 = 1.23'**.
Equations should always be on a new line, it is not allowed to place an equation as a parameter of an axis word or feedrate or spindle speed set code. Only one variable can be programmed as a parameter on a single line.

The following code example shows how to use the variables:

#1 = 5 (Sets the value of variable #1 to 5)
#2 = 10 (Sets the value of variable #2 to 10)
G0 X#1 Y#2 Z1 (Moves the axis with rapid to coordinates X=5, Y=10, Z=1)
#2 = 1.5 (Sets the value of variable #2 to 1.5)
G1 X#1 Y#2 Z#2 (Moves the axis with set feedrate to coordinates X=5, Y=1.5, Z=1.5)
#3 = #1 + #2 (Sets the value of variable #3 to 6.5)
#4 = 100 (Sets the value of variable #4 to 100)
G1 X#3 F#4 (Moves the axis with set feedrate of 100 unit/min to coordinates X=6.5)

To program complex equations it is often required to use brackets. Because in RS274NGC programming, the round brackets '**(**' and '**)**' are used to defined comments for the equations, rectangular brackets '**[**' and '**]**' should be used instead. Also, to define a comma for functions which have more than one parameter use the semicolon '**;**' character instead of the '**,**' comma.

For example: **#1= [1 + #2]*3**
#4=max[#1;# 2]*7

And there are two available built in constant variables, these are: '**pi**' and the '**e**'.

Available math operators and operations

In the equations the constants and internal variables can be mixed with mathematical operators and functions to calculate complex equations inline. The mathematic operators and supported functions are listed below:

OPERATOR	NAME OF FUNCTION	SHORT DESCRIPTION
+	Summation (addition)	Summarise (add) numbers.
-	Deduction (subtraction)	Deduct (subtract) numbers.
*****	multiplication	Multiply numbers.
/	division	Divide numbers.
%	division for remainder	Returns the remainder of a division.
^	power	Returns a specified number raised to the specified power.
?	get variable value	Shows variables value in a window. For example: ?#1 prints the value of #1 variable. ***Note: This operator works in MDI input only.***
abs	absolute value	Returns the absolute value of a number.
acos	arc cosine	Returns the angle whose cosine is the specified number.
asin	arc sine	Returns the angle whose sine is the specified number.
atan	arc tangent	Returns the angle whose tangent is the specified number.
cosh	hyperbolic cosine	Returns the hyperbolic cosine of the specified angle.
e	exponentiation	Returns e (the base of natural logarithms) raised to the specified power.
exp	exponentiation	Returns e (the base of natural logarithms) raised to the specified power.
floor	floor	Returns the largest integer that's less than or equal to the specified number.
log	logarithm	Returns the natural (base e) logarithm of a specified number or the logarithm of a specified number in a specified base.
log10	10 base logarithm	Returns the base 10 logarithm of a specified number.
Min[;]	minimum	Returns the smaller of two numbers. Example: min[1; 2] gives an output of 1.
max[;]	maximum	Returns the larger of two numbers. Example: max[1;2] gives an output of 2.
pi	Pi (π)	~ 22/7 or 3.142…
pow[;]	power	Returns a specified number raised to the specified power. Example: pow[2; 3] gives an output of 8.
rnd[;]	round to 0 to 9 decimals	Rounds the input number to 0 to 9 decimal places. Example: rnd[1.234; 2] gives an output of 1.23.
sin	sine	Returns the sine of the specified angle.
sinh	hyperbolic sine	Returns the hyperbolic sine of the specified angle.
sqrt	square root	Returns the square root of a specified number.
tan	tangent	Returns the tangent of the specified angle.
tanh	hyperbolic tangent	Returns the hyperbolic tangent of the specified angle

The following is the list of variables that are known and referenced within the UCCNC manual, as others are made available the list will be updated, space is provided to add the users own variables to avoid (or allow for) sharing them between macros:

KNOWN VARIABLE	FUNCTION / DESCRIPTION
#5061	G31 Probe, X Axis Touch / Stop Coordinate
#5062	G31 Probe, Y Axis Touch / Stop Coordinate
#5063	G31 Probe, Z Axis Touch / Stop Coordinate
#5064	G31 Probe, A Axis Touch / Stop Coordinate
#5065	G31 Probe, B Axis Touch / Stop Coordinate
#5066	G31 Probe, C Axis Touch / Stop Coordinate
USER VARIABLES	**FUNCTION / DESCRIPTION**
Permitted range: #0 to #999	

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DOCUMENT REVISIONS

Version 1.2022 considered the "base" version, amendments will be noted below by UCCNC version revision number and a brief description (not every button, led etc code added!)

1.2022	Initial issue – draft versions
1.202	