

Original Display // Original display

# Original Machine

7195 Configuration Tool Version 1.0.2

File Tools Help

Open an INI File Open 7195 Check Configuration Build Configuration Exit

Machine Display Axis Spindle I/O Tool Changer SS Cards Options PLC Pins Info PC

**Machine**

Configuration Name

File Path

Linear Units

Max Linear Velocity

Coordinates

**Configuration Setup**

IP Address

**Firmware**

Pins Read Flash Reload Verify Copy

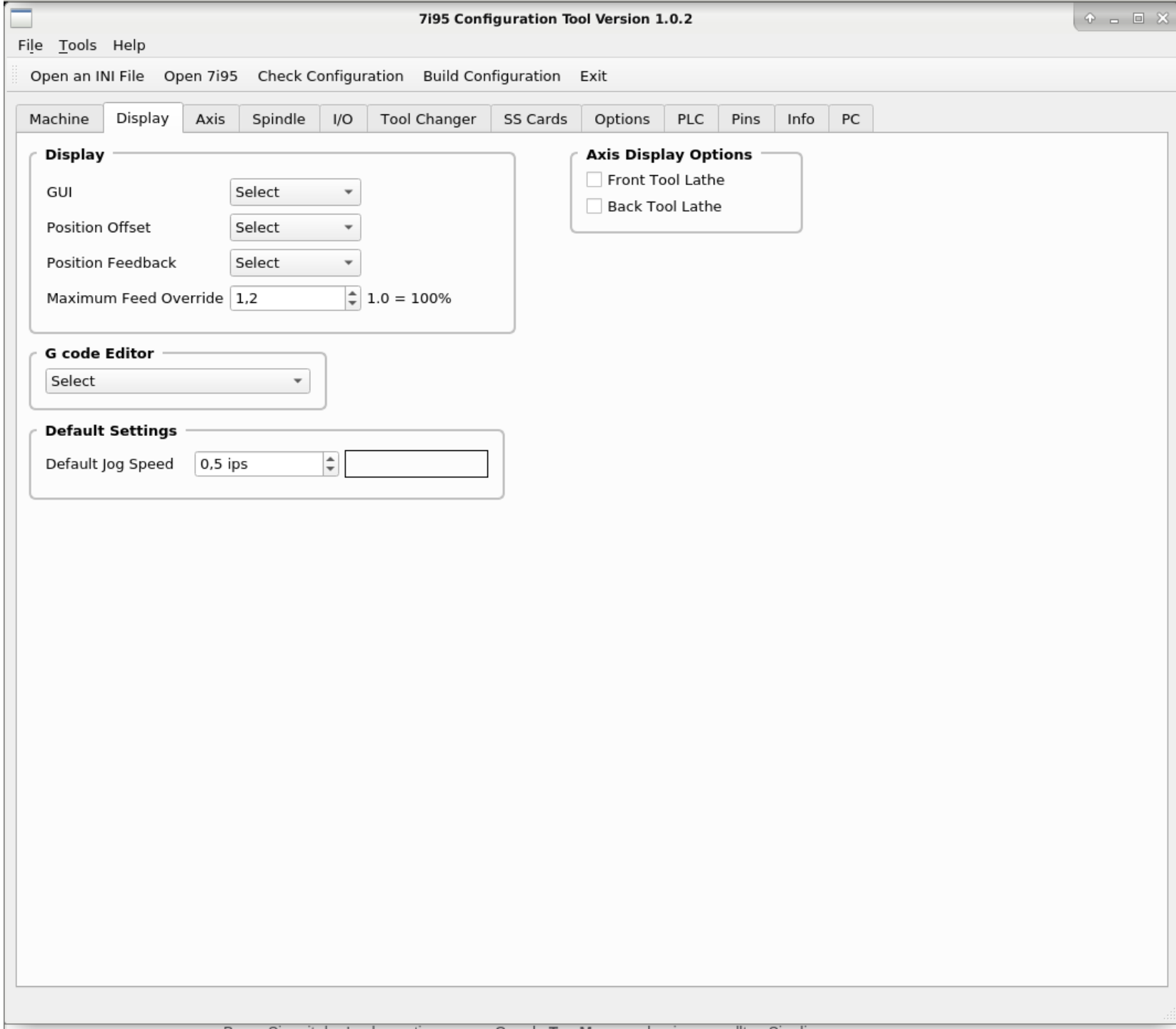
**Backups**

Enable Backups

*F1 for help on current tab*

# Original

## Display



# Original

## Axis

7i95 Configuration Tool Version 1.0.2

File Tools Help

Open an INI File Open 7i95 Check Configuration Build Configuration Exit

Machine Display **Axis** Spindle I/O Tool Changer SS Cards Options PLC Pins Info PC

Joint 0 **Joint 1** Joint 2 Joint 3 Joint 4 Joint 5

### Axis

Axis	Axis Type	Scale	Minimum Limit	Maximum Limit	Maximum Velocity	Maximum Acceleration	<input type="checkbox"/> Reverse Dir
Select ▾	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>

### PID Settings

P	<input type="text"/>	Deadband	<input type="text"/>
I	<input type="text"/>	Bias	<input type="text"/>
D	<input type="text"/>	Max Output	<input type="text"/>
FF0	<input type="text"/>	Max Error	<input type="text"/>
FF1	<input type="text"/>		
FF2	<input type="text"/>		

### Homing

Home	<input type="text"/>
Home Offset	<input type="text"/>
Home Search Velocity	<input type="text"/>
Home Latch Velocity	<input type="text"/>
Home Final Velocity	<input type="text"/>
Home Sequence	<input type="text"/>

Home Ignore Limits  
 Home Use Index  
 Home Switch is Shared

### StepGen Settings

Step Time	<input type="text"/>	ns	Custom ▾
Step Space	<input type="text"/>	ns	
Direction Setup	<input type="text"/>	ns	
Direction Hold	<input type="text"/>	ns	

For a Gantry type machine the Home Sequence must be a negative number. Home Sequence starts with either 0 or 1 and you can't skip a number. The first Joint for the gantry sets the Minimum Limit, Maximum Limit, Maximum Velocity and Maximum Acceleration.

### Joint Information

Time to accelerate to max speed	<input type="text"/>
Distance to accelerate to max speed	<input type="text"/>
Step rate at max speed	<input type="text"/>

# Original

## Spindle

7i95 Configuration Tool Version 1.0.2

File Tools Help

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Machine Display Axis **Spindle** I/O Tool Changer SS Cards Options PLC Pins Info PC

**Spindle PWM requires the 5 axis plus PWM firmware**

For Spindle On/Off,  
Spindle CW/CCW  
use Outputs

**Encoder Settings**

Encoder Scale

**Spindle Settings**

Min RPM

Max RPM

PWM Frequency  Hz

Spindle Type

**PID Settings**

P  Deadband

I  Bias

D  Max Output

FF0  Max Error

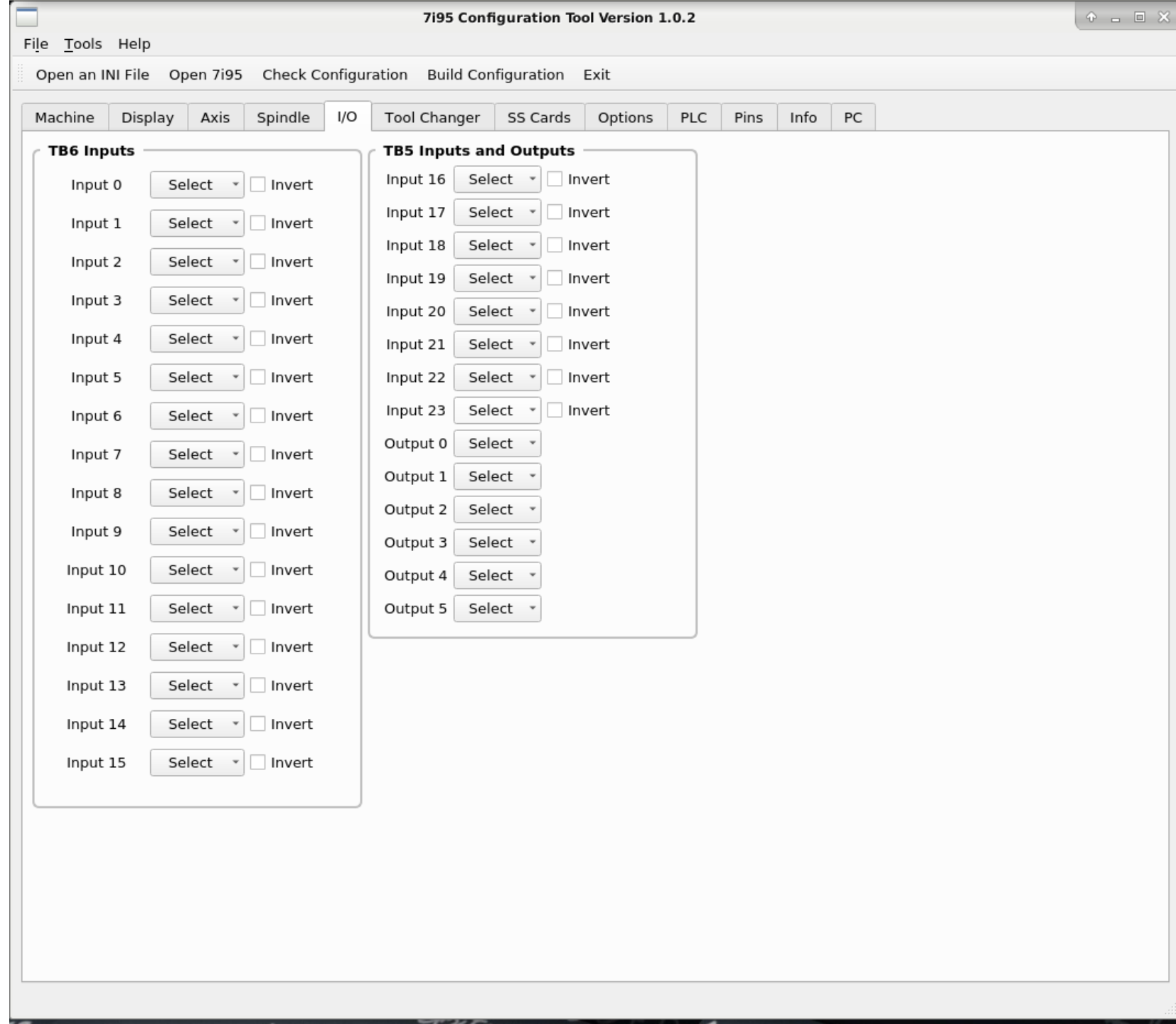
FF1

FF2

**Spindle Information**

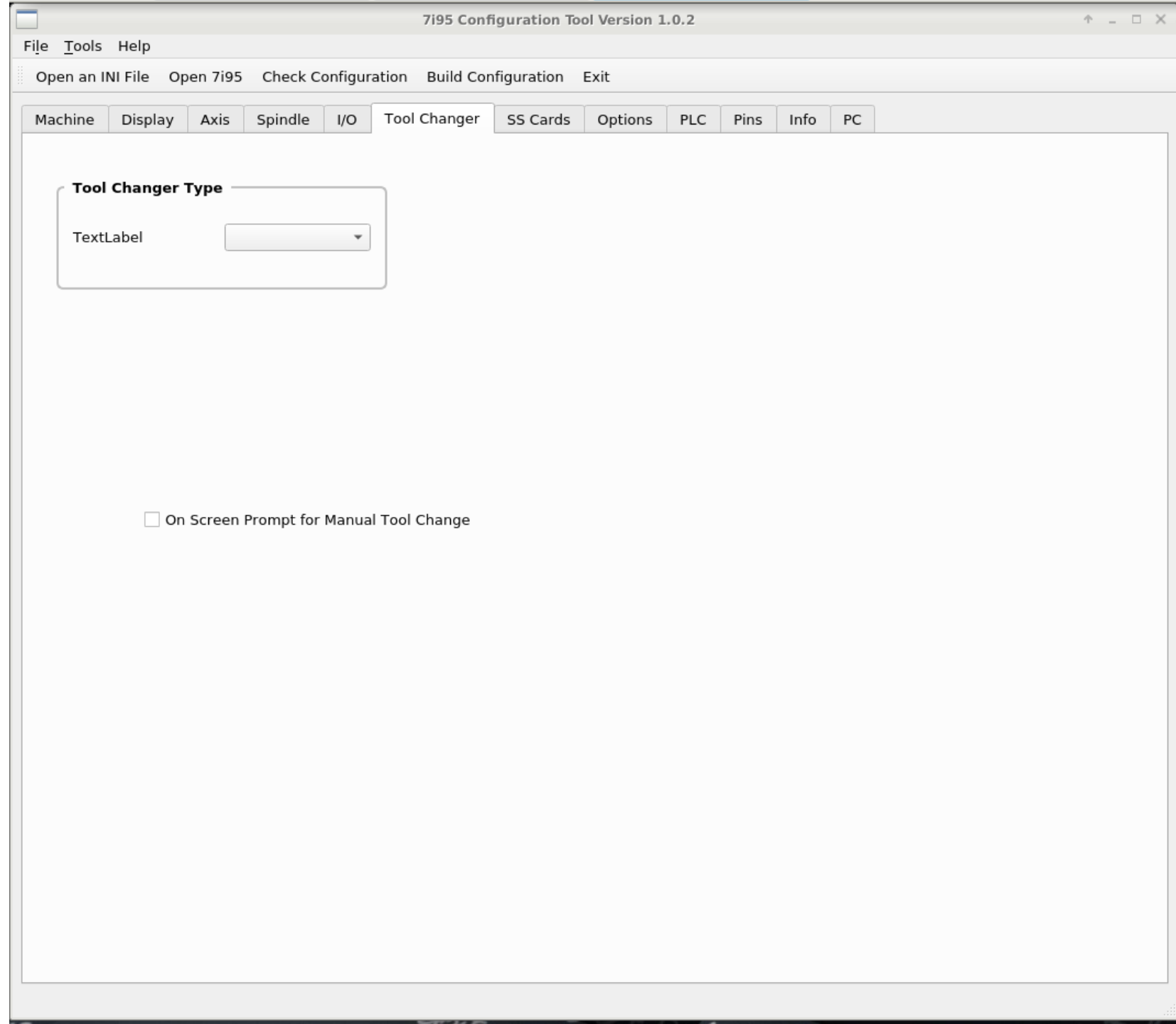
# Original

I/O



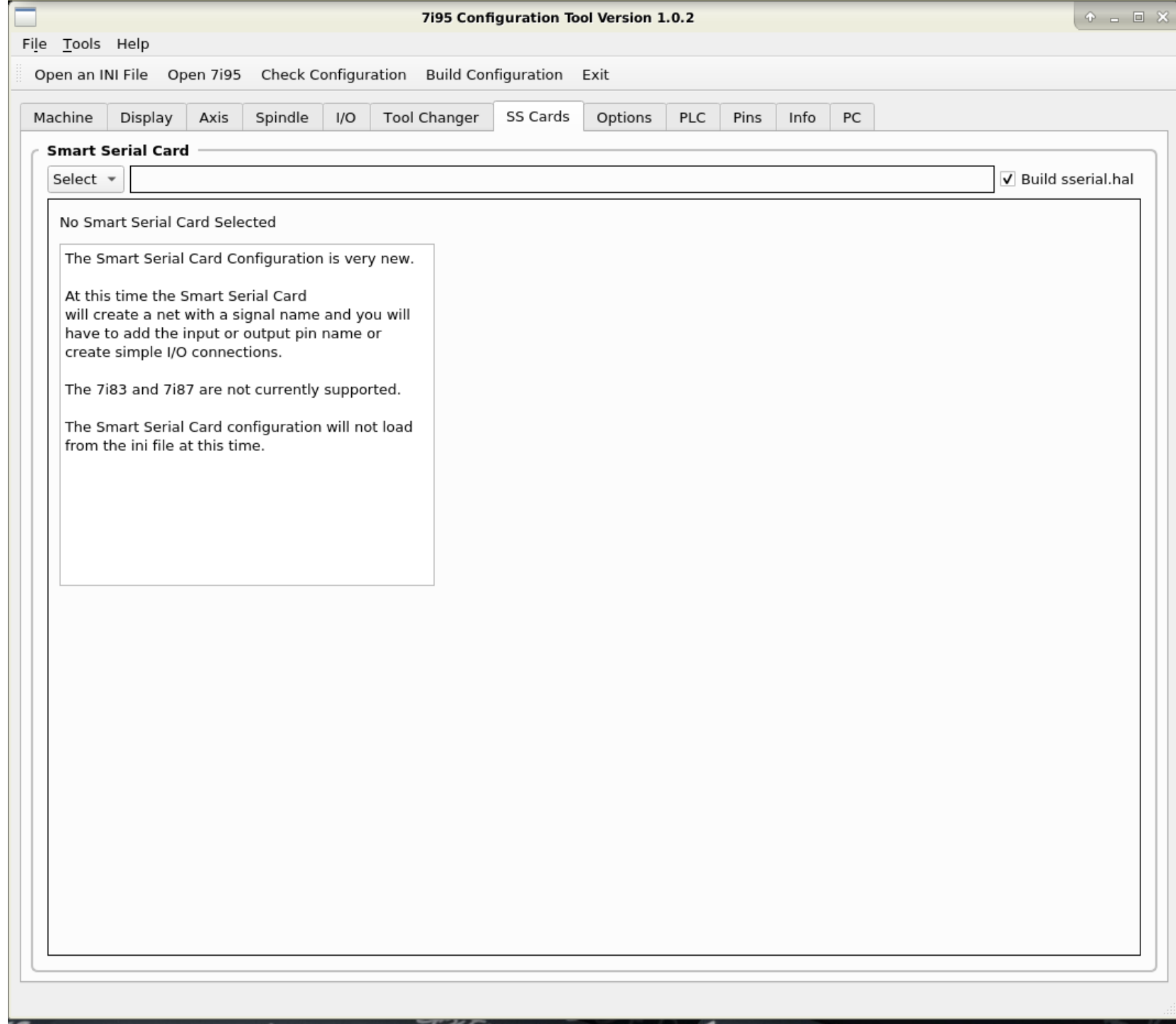
# Original

## Tool Changer



# Original

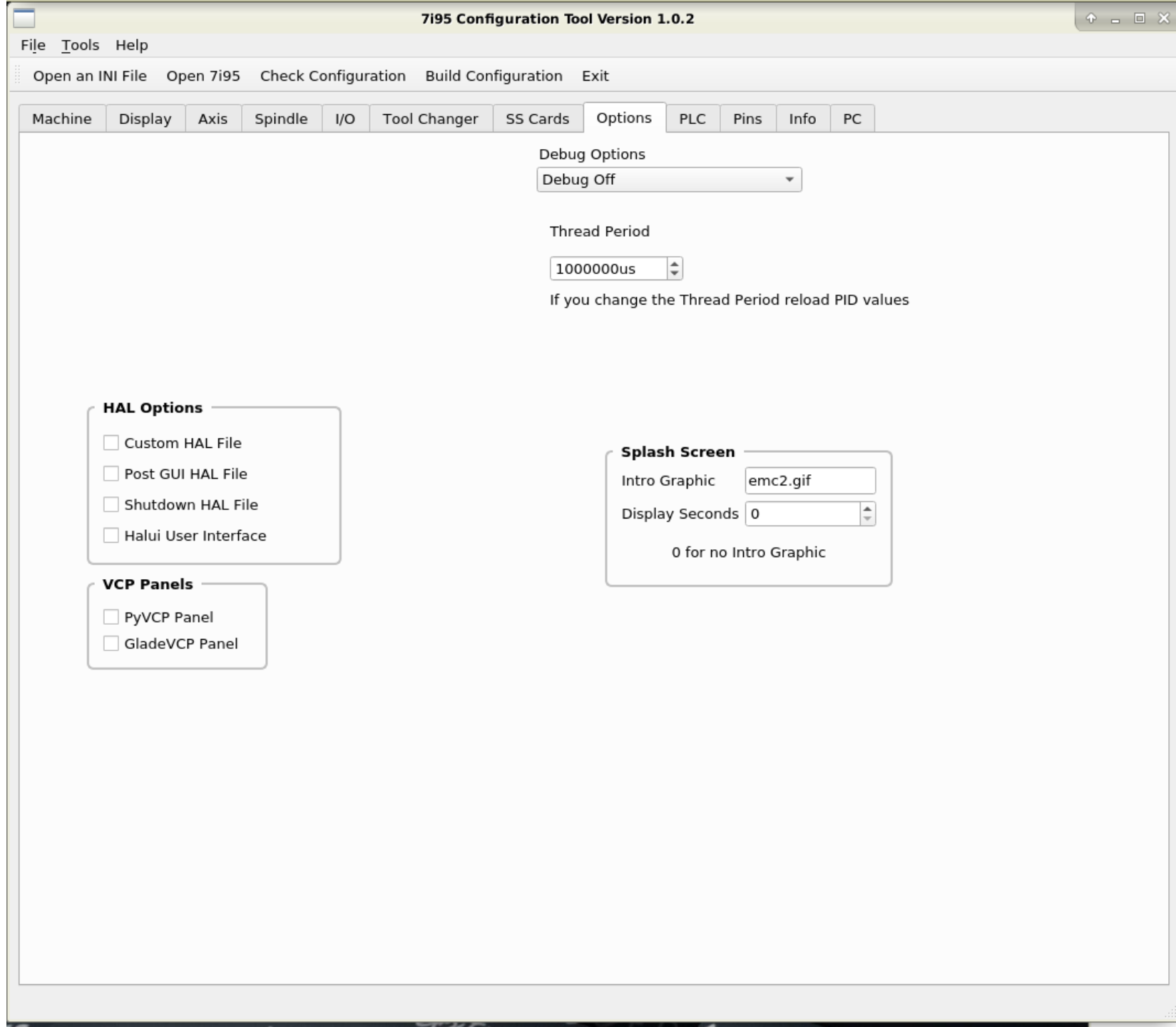
## SS Cards





# Original

## Options



# Original PLC

The screenshot shows the '7195 Configuration Tool Version 1.0.2' window. The 'PLC' tab is selected, and the 'ClassicLadder PLC' configuration panel is open. The panel contains a table of optional settings with spinners for each value.

Optional Settings	Default
Rungs	100
Bits	20
Words	20
Timers	10
IEC Timers	10
Monostables	10
Counters	10
HAL Inputs	15
HAL Outputs	15
Arithmetic Expressions	50
Sections	10
Symbols	Auto
S32 Inputs	10
S32 Outputs	10
Float Inputs	10
Float Outputs	10

Leave at 0 for default settings to be used

# Original Pins

7i95 Configuration Tool Version 1.0.2

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Terminals Raw output

TB1		TB2		TB3		TB4		TB5		TB6	
Pin 1	QA0	Pin 1	QA3	Pin 1	GND	Pin 1	GND	Pin 1	INPUT16	Pin 1	INPUT0
Pin 2	/QA0	Pin 2	/QA3	Pin 2	STEP0-	Pin 2	STEP4-	Pin 2	INPUT17	Pin 2	INPUT1
Pin 3	GND	Pin 3	GND	Pin 3	STEP0+	Pin 3	STEP4+	Pin 3	INCOM16,17	Pin 3	INCOM0,1
Pin 4	QB0	Pin 4	QB3	Pin 4	DIR0-	Pin 4	DIR4-	Pin 4	INPUT18	Pin 4	INPUT2
Pin 5	/QB0	Pin 5	/QB3	Pin 5	DIR0+	Pin 5	DIR4+	Pin 5	INPUT19	Pin 5	INPUT3
Pin 6	+5V	Pin 6	+5V	Pin 6	+5VP	Pin 6	+5VP	Pin 6	NCOM18,19	Pin 6	INCOM2,3
Pin 7	IDX0	Pin 7	IDX3	Pin 7	GND	Pin 7	GND	Pin 7	INPUT20	Pin 7	INPUT4
Pin 8	/IDX0	Pin 8	/IDX3	Pin 8	STEP1-	Pin 8	STEP5-	Pin 8	INPUT21	Pin 8	INPUT5
Pin 9	QA1	Pin 9	QA4	Pin 9	STEP1+	Pin 9	STEP5+	Pin 9	INCOM20,21	Pin 9	INCOM4,5
Pin 10	/QA1	Pin 10	/QA4	Pin 10	DIR1-	Pin 10	DIR5-	Pin 10	INPUT22	Pin 10	INPUT6
Pin 11	GND	Pin 11	GND	Pin 11	DIR1+	Pin 11	DIR5+	Pin 11	INPUT23	Pin 11	INPUT7
Pin 12	QB1	Pin 12	QB4	Pin 12	+5VP	Pin 12	+5VP	Pin 12	INCOM22,23	Pin 12	INCOM6,7
Pin 13	/QB1	Pin 13	/QB4	Pin 13	GND	Pin 13	GND	Pin 13	OUT0-	Pin 13	INPUT8
Pin 14	+5V	Pin 14	+5V	Pin 14	STEP2-	Pin 14	RS-422/485 RX0+	Pin 14	OUT0+	Pin 14	INPUT9
Pin 15	IDX1	Pin 15	IDX4	Pin 15	STEP2+	Pin 15	RS-422/485 RX0-	Pin 15	OUT1-	Pin 15	INCOM8,9
Pin 16	/IDX1	Pin 16	/IDX4	Pin 16	DIR2-	Pin 16	RS-422/485 TX0+	Pin 16	OUT1+	Pin 16	INPUT10
Pin 17	QA2	Pin 17	QA5	Pin 17	DIR2+	Pin 17	RS-422/485 TX0-	Pin 17	OUT2-	Pin 17	INPUT11
Pin 18	/QA2	Pin 18	/QA5	Pin 18	+5VP	Pin 18	+5VP	Pin 18	OUT2+	Pin 18	INCOM10,11
Pin 19	GND	Pin 19	GND	Pin 19	GND	Pin 19	GND	Pin 19	OUT3-	Pin 19	INPUT12
Pin 20	QB2	Pin 20	QB5	Pin 20	STEP3-	Pin 20	RS-422/485 RX1+	Pin 20	OUT3+	Pin 20	INPUT13
Pin 21	/QB2	Pin 21	/QB5	Pin 21	STEP3+	Pin 21	RS-422/485 RX1-	Pin 21	OUT4-	Pin 21	INCOM12,13
Pin 22	+5V	Pin 22	+5V	Pin 22	DIR3-	Pin 22	RS-422/485 TX1+	Pin 22	OUT4+	Pin 22	INPUT14
Pin 23	IDX2	Pin 23	IDX5	Pin 23	DIR3+	Pin 23	RS-422/485 TX1-	Pin 23	OUT5-	Pin 23	INPUT15
Pin 24	/IDX2	Pin 24	/IDX5	Pin 24	+5VP	Pin 24	+5VP	Pin 24	OUT5+	Pin 24	INCOM14,15

# Original

Info

7195 Configuration Tool Version 1.0.2

File Tools Help

Open an INI File Open 7i95 Check Configuration Build Configuration Exit

Machine Display Axis Spindle I/O Tool Changer SS Cards Options PLC Pins Info PC

7i95 PC

## CONNECTORS

### 7195 CONNECTOR LOCATIONS AND DEFAULT JUMPER POSITIONS

NOTE: BLACK SQUARES INDICATE PIN 1

The diagram shows the following components and connectors:

- USER LEADS
- ETHERNET HOST INTERFACE
- FPGA STATUS LEADS
- FPGA
- W16,W17 IP ADDRESS SELECTION
- POWER
- P1 EXPANSION CONNECTOR
- ENCODER 0 ENCODER 1 ENCODER 2
- ENCODER 3 ENCODER 4 ENCODER 5
- TB1 ENC 0..2
- TB2 ENC 3..5
- TB3 STEP/DIR 0..3
- TB4 STEP/DIR 4,5 SERIAL 0,1
- TB5 INPUTS 16..23 OUTPUTS 0..5
- TB6 INPUTS 0..15
- INCOM2,3
- IN 3
- INCOM0,1
- IN 1
- IN 0
- P3 POWER
- P4 JTAG
- W22,W23 EXPANSION CONNECTOR OPTIONS

TextLabel

# Original PC

7i95 Configuration Tool Version 1.0.2

File Tools Help

Open an INI File Open 7i95 Check Configuration Build Configuration Exit

Machine Display Axis Spindle I/O Tool Changer SS Cards Options PLC Pins Info PC

**NIC Test**

CPU Speed tMax Packet Time Threshold

GHz    Calculate

In a terminal run this to get CPU speed Packet Time must be less than Threshold

```
sudo dmidecode | grep MHz
```

Packet Time and Threshold are in units of servo thread period. If the Packet Time is greater than 50% try increasing the thread period.

Read tMax

**The 7i95 must be connected and LinuxCNC run 7i95 configuration before trying to read tMax.**



Anmerkungen // *Notes*

# Anmerkungen // Notes

## Machine

-- DE --

- **Max. Linearer Speed**  
Diese Angabe bezieht sich auf die Schnellste Achse im gesamten System.  
Bitte geben Sie ihren wert in mm pro Sekunde an.
- **IP Adress**  
Ihr Rechner muss wie folgt eingestellt sein.  
Adresse: 192.168.1.10  
Gateway: 1.1.1.1  
IPv4-Adressierung: Aktiv  
  
Bitte wählen Sie die IP Ihrer Mesanet Karte aus.

-- EN --

- **Max Linear Velocity**  
This value refers to the fastest axis in the entire system. Please enter your value in mm per second.
- **IP Adress**  
Your computer must be set as follows.  
Address: 192.168.1.10  
Gateway: 1.1.1.1  
IPv4 Addressing: Active  
  
Please select the IP of your Mesanet card.

7195 Configuration Tool Version 1.0.2

File Tools Help

Open an INI File Open 7195 Check Configuration Build Configuration Exit

Machine Display Axis Spindle I/O Tool Changer SS Cards Options PLC Pins Info PC

**Machine**

Configuration Name

File Path

Linear Units

**i** Max Linear Velocity

Coordinates

**Configuration Setup**

**i** IP Address

**Firmware**

Pins Read Flash Reload Verify Copy

**Backups**

Enable Backups

**F1 for help on current tab**

Übersetzung // *Translation*



# Übersetzung // *Translation* Machine

-- DE --

- **Maßeinheit**  
imperial  
Metrisch

-- EN --

- **Linear Unit**  
imperial  
Metric

7195 Configuration Tool Version 1.0.2

File Tools Help

INI-Datei Öffnen 7195 Öffnen Konfiguration prüfen Konfiguration erstellen Exit

Maschine Display Axis Spindle I/O Tool Changer SS Cards Options PLC Pins Info PC

Maschine

Konfigurationsname

Speicherort

Maßeinheit Auswahl

Max. Linearer Speed

Koordinaten

Verbindungseinstellungen

IP Address Auswahl

Firmware

Auswahl Pins Read Flash Reload Verify Copy

Backups

Backups einschalten

F1 for help on current tab

# Übersetzung // Translation

## Display

-- DE --

- **Position Offset**  
Relativ  
Maschine
- **Position Feedback**  
Befohlen  
Tatsächliche

-- EN --

- **Position Offset**  
Relativ  
Machine
- **Position Feedback**  
Commanded  
Actual

7i95 Configuration Tool Version 1.0.2

File Tools Help

Open an INI File Open 7i95 Check Configuration Build Configuration Exit

Machine Display Axis Spindle I/O Tool Changer SS Cards Options PLC Pins Info PC

**Display**

GUI Auswahl

Position Offset Auswahl

Position Feedback Auswahl

Max. Vorschubübersteuerung 1,2 1.0 = 100%

**G code Editor**

Select

Standardeinstellungen

Default Jog Speed 0,5 ips

Standard-Jog-Geschwindigkeit

**Axis Display Options**

Front Tool Lathe

Back Tool Lathe

Was ist Jog?? // What's Jog?

# Übersetzung // Translation

## Axis

-- DE --

-- EN --

7i95 Configuration Tool Version 1.0.2

File Tools Help

Open an INI File Open 7i95 Check Configuration Build Configuration Exit

Machine Display **Axis** Spindle I/O Tool Changer SS Cards Options PLC Pins Info PC

Joint 0 **Joint 1** Joint 2 Joint 3 Joint 4 Joint 5

**Axis**

Achse	Type	Scale	Minimum Limit	Maximum Limit	Maximum Velocity	Maximum Acceleration	<input type="checkbox"/> Reverse Dir
Auswahl							

**PID Settings**

P		Deadband	
I		Bias	
D		Max Output	
FF0		Max Error	
FF1			
FF2			

Default Values

**Homing**

Home	
Home Offset	
Home Search Velocity	
Home Latch Velocity	
Home Final Velocity	
Home Sequence	

Home Ignore Limits  
 Home Use Index  
 Home Switch is Shared

**StepGen Settings**

Step Time		ns	Custom
Step Space		ns	
Direction Setup		ns	
Direction Hold		ns	

For a Gantry type machine the Home Sequence must be a negative number.Home Sequence starts with either 0 or 1 and you can't skip a number.The first Joint for the gantry sets the Minimum Limit, Maximum Limit,Maximum Velocity andMaximum Acceleration.

**Joint Information**

Time to accelerate to max speed	
Distance to accelerate to max speed	
Step rate at max speed	