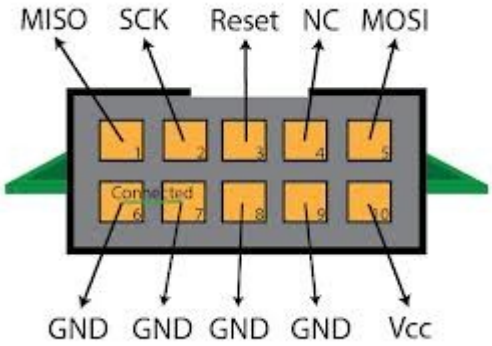
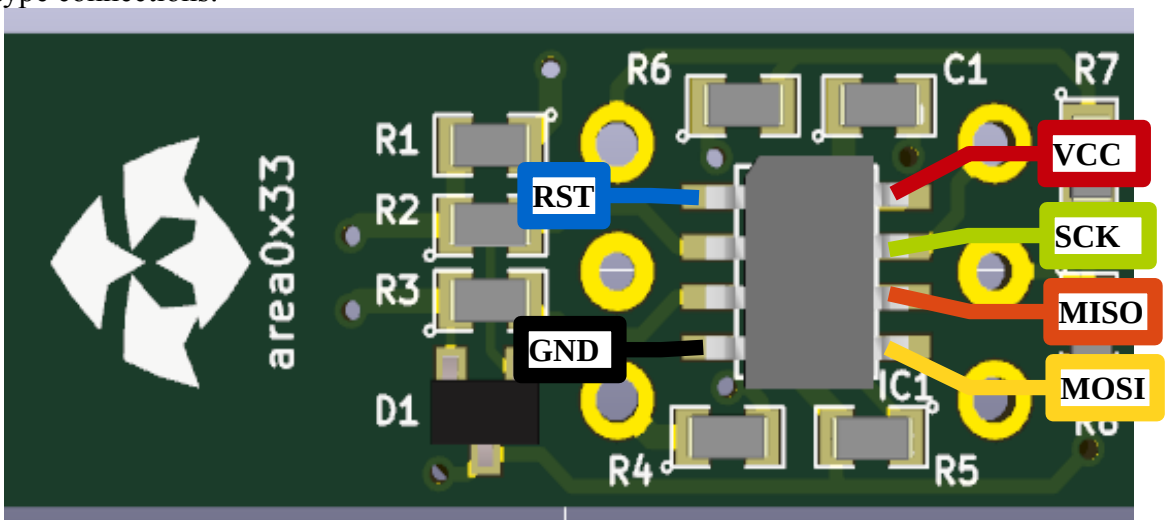
MEMTYPE FLASHING GUIDE

Programmer: USBasp

Pinout description:



Memtype connections:



FLASHING COMMANDS

1- GEN HEX: make clean && make hex

2- FUSES & FIRMWARE: avrdude -c avrispmkII -p attiny85 -U flash:w:main.hex -U eeprom:w:main.eep -U lfuse:w:0xe1:m -U hfuse:w:0xdd:m -U efuse:w:0xfe:m -U lock:w:0xfc:m

All should be working fine !

FUSE BYTES (explanation)

Fuse low byte

Fuse Low Byte	Bit	Description	Default Value (62h)	MemType Value (E1h)
CKDIV8	7	Clock divided by 8	0 (programmed)	1 (unprogrammed)
CKOUT	6	Clock output enabled	1 (unprogrammed)	1 (unprogrammed)
SUT1	5	Start-up time setting	1 (unprogrammed)	1 (unprogrammed)
SUT0	4	Start-up time setting	0 (programmed)	0 (unprogrammed)
CKSEL3	3	Clock source setting	0 (programmed)	0 (programmed)
CKSEL2	2	Clock source setting	0 (programmed)	0 (programmed)
CKSEL1	1	Clock source setting	1 (unprogrammed)	0 (programmed)
CKSEL0	0	Clock source setting	0 (programmed)	1 (unprogrammed)

MemType Value = E1h

CKDIV8: disabled
CKOUT: disabled
Start-up time setting: 14ck+1024ck+64ms
Clock source setting: High Frequency PLL Clock (16Mhz)

Fuse high byte

Fuse High Byte	Bit	Description	Default Value (DFh)	MemType Value (DDh)
RSTDISBL	7	External reset disabled	1 (unprogrammed)	1 (unprogrammed)
DWEN	6	DebugWIRE enabled	1 (unprogrammed)	1 (unprogrammed)
SPIEN	5	Serial program and data download enabled	0 (programmed)	0 (programmed)
WDTON	4	Watchdog timer always on	1 (unprogrammed)	1 (unprogrammed)
EESAVE	3	EEPROM preserves chip erase	1 (unprogrammed)	1 (unprogrammed)
BODLEVEL2	2	Brown-out Detector trigger level	1 (unprogrammed)	1 (unprogrammed)
BODLEVEL1	1	Brown-out Detector trigger level	1 (unprogrammed)	0 (unprogrammed)
BODLEVEL0	0	Brown-out Detector trigger level	1 (unprogrammed)	1 (unprogrammed)

MemType Value = DDh

External Reset: enabled
Debug Wire: disabled
Serial Programming: enabled
Watchdog timer always on: disabled
Erase eeprom on chip erase: enabled
Brown-out Detector trigger level: 2.5V(min) 2.7V(typ) 2.9V(max)

Fuse extended byte

Fuse Extended Byte	Bit	Description	Default Value (FFh)	MemType Value (FEh)
	7		1 (unprogrammed)	1 (unprogrammed)
	6		1 (unprogrammed)	1 (unprogrammed)
	5		1 (unprogrammed)	1 (unprogrammed)
	4		1 (unprogrammed)	1 (unprogrammed)
	3		1 (unprogrammed)	1 (unprogrammed)
	2		1 (unprogrammed)	1 (unprogrammed)
	1		1 (unprogrammed)	1 (unprogrammed)
SELFPRGEN	0	Self-programming enabled	1 (unprogrammed)	0 (programmed)

MemType Value = FEh

Self-programming: enabled

Lock Bit Byte

Lock Bit	Bit	Description	Default Value (FFh)	MemType Value (FCh)
	7		1 (unprogrammed)	1 (unprogrammed)
	6		1 (unprogrammed)	1 (unprogrammed)
	5		1 (unprogrammed)	1 (unprogrammed)
	4		1 (unprogrammed)	1 (unprogrammed)
	3		1 (unprogrammed)	1 (unprogrammed)
	2		1 (unprogrammed)	1 (unprogrammed)
LB2	1	Lock bit	1 (unprogrammed)	0 (programmed)
LB1	0	Lock bit	1 (unprogrammed)	0 (programmed)

MemType Value = FCh

LB Mode → 3

Table 20-2. Lock Bit Protection Modes[1][2]

Memory Lock Bits			Protection Type
LB Mode	LB2	LB1	
1	1	1	No memory lock features enabled.
2	1	0	Further programming of the Flash and EEPROM is disabled in High-voltage and Serial Programming mode. The Fuse bits are locked in both Serial and High-voltage Programming mode.[1] debugWire is disabled.
3	0	0	Further programming and verification of the Flash and EEPROM is disabled in High-voltage and Serial Programming mode. The Fuse bits are locked in both Serial and High-voltage Programming mode.[1] debugWire is disabled.

Notes: 1. Program the Fuse bits before programming the LB1 and LB2.
2. "1" means unprogrammed, "0" means programmed