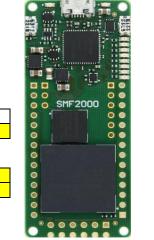TRENZ SMF2000; M2S010-400VF (VFG400) core; STD Speed; COM Range; 1.2V core; 3.3V IO; 25/50MHz (50MHz) oscilator as clock source; 71MHz bus/peripherals; 142MHz M3 clock

GB5		USB_XCLK_C	MSIO21PB1	G17	USER_LED (left)
MMUART_0_CLK	GPIO_29_B	USB_NXT_C	MSIO27NB1	B19	USER_BTN (right)

MMUART_0_RXD	GPIO_28_B	USB_STP_C	MSIO27PB1	C19	FTDI BDBUS0
MMUART_0_TXD	GPIO_27_B	USB_DIR_C	MSI26NB1	D18	FTDI BDBUS1
MMUART_0_CTS	GPIO_19_B	USB_DATA7_C	MSIO24PB1	E17	FTDI BDBUS2
MMUART_0_RTS	GPIO_17_B	USB_DATA5_C	MSIO23PB1	F15	FTDI BDBUS3
MMUART_0_DSR	GPIO_20_B		MSIO24NB1	E16	FTDI BDBUS4
MMUART_0_DTR	GPIO_18_B	USB_DATA6_C	MSIO23NB1	F16	FTDI BDBUS5

LED1	E18	MSIO22PB1	USB_DATA4_C	GPIO_25_B	MMUART_1_CLK	GB6
LED2	R17	MSIO5PB2	USB_DATA4_B			
LED3	R18	MSIO5NB2	USB_DATA5_B			
LED4	T18	MSIO2PB2	USB_STP_B			
LED5	U18	MSIO1PB2	USB_XCLK_B			
LED6	R16	MSIO7PB2				
LED7	E1	MSIO70PB7				
LED8	D2	MSIO68PB7				

Clocks

25 MHz	Y18/W18	XTAL **MAIN**
32.768 kHz	W17/Y17	XTAL AUX (RTC)
12 MHz from FTDI	N16	CCC_NE0_CLK1
User clock	M17	CCC_NE0_CLK2

QSPI FLASH 8MB W74M64FV

CSn	K15	MSIO17NB2	SPI_1_SS7	GPIO_24_A
CLK	P18	MSIO6PB2	USB_DATA6_B	
DI SI/IO0	P19	MSIO6NB2		
DO SI/IO1	K16	MSIO17PB2	SPI_1_SS6	GPIO_23_A
D2 WPn/IO2	J18	MSIO16NB2	SPI_1_SS5	GPIO_18_A
D3 HOLDn/IO3	N19	MSIO4NB2	USB_DATA3_B	

SDRAM W9864G6JT 8MB (upto 166MHz)

Timming example @100MHz

SMC & AHBLite (AHB Master -> CoreAHBLite -> CORE_AHBL_TO_AXI -> CoreAXI -> MSS_SMC)

Parameters **#ChipSelects**=1 **#ColumnBits**=8 **#RowBits**=12 **#EncodedChipSelectBits**=1 **#BankStatusModules**=4 **MemoryWidth**=16

Timmings **Act->Pre**=2 **Act->Rw/Wr**=2 **A->B-bank**=2 **Pre-command**=3 Act->**AutoRefresh**=8 **AutoRefresh->Act**=9 **WriteRecovery**=2 **LoadCMD->Act**=2 **CAS**=2 **Init**=6800ns **Refresh**=4096 **Buffer&AutoPre**=No

DQ IO(F1, G1, E2, G2, E3, G3, F3, F4, J7, G6, F6, H5, H6, H4, F5, G4)

SDRCLK O(T14); **OE** NC; **SA** O(U11, U12, V11, Y10, W15, U14, Y15, W14, T15, W13, T13, V14, V15, Y16); **BA** O(W10, V12); **CS_N** O(R13); **DQM** O(E5, F7); **CKE** O(Y13); **RAS_N** O(U13); **CAS_N** O(Y12); **WE_N** O(R12)

PMOD types:

IO1 / IO2 / SCL / SDA	IO1 IO5 / IO2 IO6 / IO3 IO7 / IO4 IO8	SS INT / MOSI RST / MISO IO7 / SCK IO8	CTS INT / RTS RST / RX IO7 / TX IO8	CTS INT / RX RST / TX IO7 / RTS IO8
GND / 3.3V	GND / 3.3V	GND / 3.3V	GND / 3.3V	GND / 3.3V

GPIO_22_B	MMUART_0_DCD	MSIO25NB1	C20	
		MSIO**0PB2**	V20	
	USB_DATA7_B	MSIO0NB2	V19	
	USB_NXT_B	MSIO2NB2	T19	
	USB_DIR_B	MSIO1NB2	U19	
	USB_DATA0_B	MSIO**3PB2**	T20	
	USB_DATA2_B	MSIO4PB2	P20	
	USB_DATA1_B	MSIO3NB2	R20	

CAN_TX	GPIO_2_A	USB_DATA0_A	MSIO7NB2	R15
CAN_RX	GPIO_3_A	USB_DATA1_A	MSIO**8PB2**	N20
CAN_TX_EN_N	GPIO_4_A	USB_DATA2_A	MSIO8NB2	M19
CCC_NE0_CLK2 I2C_1_SCL	GPIO_1_A	USB_DATA4_A	MSIO11NB2	M17
SPI_0_SS3	GPIO_10_A	USB_DATA7_A	MSIO**19PB2**	H17
SPI_0_SS2	GPIO_9_A	USB_DATA6_A	MSIO18NB2	G18

PROBE_A	GND	5V	<= after protection circuit	
GND	JTAGSEL	VIN	<= before protection circuit (directly USB power 4.75V - 5.25V)	
PROBE_B	TCK	3.3V	<= IO voltage	
	TDO	GND		
	TDI	RESETn	<= 10k pullup to 3.3V (RESET button is on the left side)	
	TMS			

Legend

MMUART_0	MMUART_1
USB A USB B	USB C
GPIO	
I2C_0	I2C_1
SPI_0	SPI_1
CAN	
Dedicated Input Pad Clock	

G16	MSIO21NB1	USB_DATA2_C	GPIO_24_B	MMUART_1_TXD
F18	MSIO22NB1	USB_DATA3_C	GPIO_26_B	MMUART_1_RXD
A19	MSIO**28NB1**	USB_DATA1_C	GPIO_31_B	I2C_0_SCL
A20	MSIO**28PB1**	USB_DATA0_C	GPIO_30_B	I2C_0_SDA
N15	MSIO12NB2	USB_DIR_A	GPIO_5_A	SPI_0_SDI
P15	MSIO**12PB2**	USB_XCLK_A		SPI_0_CLK
L20	MSIO**13PB2**	USB_STP_A	GPIO_6_A	SPI_0_SDO
L19	MSIO13NB2	USB_NXT_A	GPIO_7_A	SPI_0_SS0
H19	MSIO**18PB2**	USB_DATA5_A	GPIO_8_A	SPI_0_SS1

Differential LVDS / MSIO**P**-port / MSIO**N**-port

Icon when the pair is next to each other

PMOD — Pin 1 is close to H19 on PCB — this is rotated by 90°

GPIO_13_A	SPI_1_SS0	MSIO15NB2	J20	1	12	H16	MSIO19NB2	SPI_1_SS1	GPIO_14_A
GPIO_12_A	SPI_1_SDO	MSIO15PB2	K20	2	11	G19	MSIO**20PB2**	SPI_1_SS2	GPIO_15_A
GPIO_11_A	SPI_1_SDI	MSIO14NB2	L16	3	10	F20	MSIO20NB2	SPI_1_SS3	GPIO_16_A
	SPI_1_CLK	MSIO14PB2	L15	4	9	J17	MSIO16PB2	SPI_1_SS4	GPIO_17_A
			GND	5	8	GND			
			3.3V	6	7	3.3V			