IMX MULTIPROTOCOL

IMXRT1020 MCU Embedded contest 2021

Command	Description	NOTE
<imx –h>	Help me!	
<imx –s>	Enables UART interface. Every data will be forwarded to uart interface, enter <imx –a> for closing interface. RESPONSE: SUCCESS: "Serial interface selected" INVALID: "unknown command"	**1**
<imx –i>	Enables I2C interface. RESPONSE: SUCCESS: "I2C interface selected" INVALID: "unknown command"	**2**
<imx –p>	Enables SPI interface. Every data will be forwarded to spi interface, enter <imx –a> for closing interface. RESPONSE: SUCCESS: "SPI interface selected" INVALID: "unknown command"	**3**
<imx –a>	Close the communication interface previosly selected with <imx –s> <imx –i> <imx –p>. SUCCESS: "XXX interface closed" INVALID1: "unknown command" INVALID2: "No interface selected"	
<ser –bX>	Baudrate selections for UART interface: X=0 , baudrate 1200 X=1 , baudrate 4800 X=2 , baudrate 9600 X=3 , baudrate 19200 X=4 , baudrate 19200 X=5 , baudrate 19200 X=6 , baudrate 19200 Default or wrong parameter: 9600 RESPONSE: SUCCESS: "Serial baudrate set" INVALID1: "unknown command" INVALID2: "Error – interface must be closed"	
<spi –ah>	Set SPI NSS pin active high. Default: NSS active low. RESPONSE: SUCCESS: "SPI NSS active high" INVALID1: "unknown command"	

<spi –al>	Set SPI NSS pin active low. Default: NSS active low. RESPONSE: SUCCESS: "SPI NSS active low" INVALID1: "unknown command"	
<i2c –a 0xXX>	Set Slave address. RESPONSE: SUCCESS: "Slave Address set" INVALID1: "unknown command"	**4**
<i2c –mt>	Generation of Start/repeat start condition + address will be send in write mode. RESPONSE: SUCCESS: "Sending address in write mode" INVALID: "unknown command"	
<i2c –mr>	Generation of Start/repeat start condition + address will send in read mode. RESPONSE: SUCCESS: "Sending address in read mode" INVALID: "unknown command"	
<i2c –w 0xXX>	Byte Write request. XX value in hexadecimal format [00 – FF] RESPONSE: SUCCESS: "Byte write enqueued" INVALID: "unknown command"	
<i2c –r>	Byte read request. RESPONSE: SUCCESS: "Byte read enqueued" INVALID: "unknown command"	
<i2c –q>	Get i2c commands in the queue. RESPONSE: SUCCESS: Output the i2c commands queue INVALID: "unknown command"	
<i2c –d>	Delete all i2C commands in the queue. RESPONSE: SUCCESS: "Queue free" INVALID: "unknown command"	
<i2c –x>	Starts i2c transfer. RESPONSE: SUCCESS: "Transfer Success" + byte read in HEX format if present. INVALID: "Transfer Failure" + ERROR	

	ERROR1: “Bus Busy” ERROR2: “Timeout” ERROR3: “Address Nack” ERROR4: “General Error”	

NOTE1	
INTERFACE	**LPUART2**
IMXRT_1020 PINS	**GPIO_AD_B1_09 (UART RX)** **GPIO_AD_B1_08 (UART TX)**
ARDUINO INTERFACE PINS	**J17 pin 1 (UART RX)** **J17 pin 2 (UART TX)**
	
RACCOMANDATIONS	**Put at the output of each pin a series resistor of at least 100 Ohm.**

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NOTE2	
INTERFACE	**LPI2C1**
IMXRT_1020 PINS	**GPIO_AD_B1_15 (SDA)** **GPIO_AD_B1_14 (SCL)**
ARDUINO INTERFACE PINS	**J18 pin 5 (SDA)** **J18 pin 6 (SCL)**
	
RACCOMANDATIONS	**Pull UP resistor must be external.**
The speed of I2C bus for the current firmware release cannot be change and is fixed to 100 kHz.	

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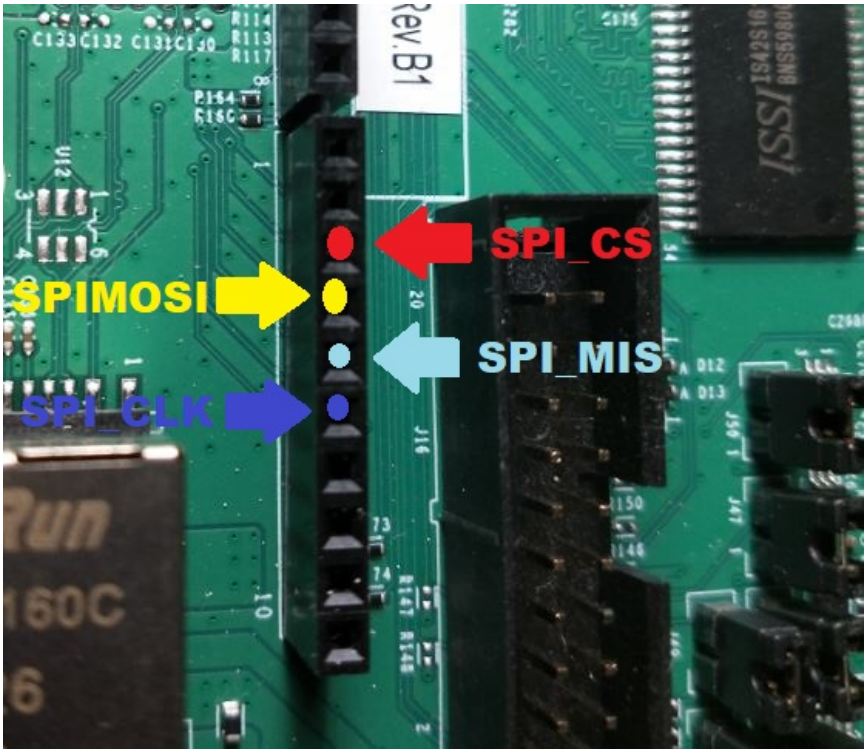
NOTE3	
INTERFACE	**LPSPI1**
IMXRT_1020 PINS	**GPIO_AD_B0_15 (SDA)** **GPIO_AD_B0_11 (SCL)** **GPIO_AD_B0_12 (SDA)** **GPIO_AD_B0_13 (SCL)**
ARDUINO INTERFACE PINS	**J18 pin 5 (SDA)** **J18 pin 6 (SCL)**
	
RACCOMANDATIONS	**Put at the output of each pin a series resistor of at least 100 Ohm.**

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NOTE4

Slave address must be set following the table.

X	MSB					LSB
0	A6	A5	A4	A3	A2	A1

REVISION HISTORY		
VERSION	**REVISION DATE**	**COMMENTS**
1	04/06/2021	First Release