INTRODUCTION

This user's manual is for the XR20M1172 evaluation board set. This evaluation board is used by the XR20M1172IG28, XR20M1172IL32, XR20M1172IL24 and XR20V2172IL64.

1.0 HARDWARE SETUP

1.1 Package Description

Since the XR20M1172 evaluation board can be used for both XR20M1172 and XR20V2172, the Table 1 shows the different packages supported by the board.

TABLE 1: PACKAGE LIST

PART NUMBER	PACKAGE	LOCATION
XR20M1172IL32	32-pin QFN	U5
XR20M1172IL24	24-pin QFN	U2
XR20M1172IG28	28-pin TSSOP	U4
XR20V2172IL64	64-pin QFN	U6

1.2 Jumper Settings

1.2.1 XR20M1172IL32

The jumper settings that apply to the XR20M1172IL32 are:

TABLE 2: JUMPER SETTINGS FOR XR20M1172IL32

JUMPERS	FUNCTIONS	COMMENTS
J15	Selects between I^2C and SPI mode	Jumper in selects SPI mode Jumper out selects I^2C mode
J10	For internal use only	
J2	For internal use only	
J37	I^2C Address Select (A0) ■ 1&2 = VCC ■ 3&4 = SCL ■ 5&6 = SDA ■ 7&8 = GND	Only one jumper should be selected. See XR20M1172 datasheet for I^2C addressing. For SPI mode, jumper should be out.
J38	I^2C Address Select (A1) ■ 1&2 = VCC ■ 3&4 = SCL ■ 5&6 = SDA ■ 7&8 = GND	Only one jumper should be selected. See XR20M1172 datasheet for I^2C addressing. For SPI mode, jumper should be out.

TABLE 2: JUMPER SETTINGS FOR XR20M1172IL32

JUMPERS	FUNCTIONS	COMMENTS
J14	Header for connection to external microcontroller board ■ Pin 2 = SDA signal for I²C interface ■ Pin 3 = SO signal for SPI interface ■ Pin 4 = IRQ# output signal from XR20M1172 ■ Pin 13 = A0 signal for I²C interface or CS# for SPI interface ■ Pin 14 = A1 signal for I²C interface or SI for SPI interface ■ Pin 15 = RESET# input signal ■ Pin 16 = SCL signal for I²C interface or SCK for SPI interface ■ Pin 17 = GND signal ■ Pin 18 = External power for XR20M1172 and RS-232 Transceiver	Ground and Power connections ■ Pin 17 should be connected to GND ■ Pin 18 should be connected +3.3V If I²C interface is used: ■ Pin 2 should be connected to SDA ■ Pin 4 should be connected to MCU interrupt input (if using interrupts) ■ Pin 13 should be unconnected when using J37 ■ Pin 14 should be unconnected when using J38 ■ Pin 15 should be connected to reset output from MCU ■ Pin 16 should be connected to SCL If SPI interface is used: ■ Pin 2 should be unconnected ■ Pin 3 should be connected to SO ■ Pin 4 should be connected to MCU interrupt (if using interrupts) ■ Pin 13 should be connected to CS# ■ Pin 14 should be connected to SI ■ Pin 15 should be connected to reset output from MCU ■ Pin 16 should be connected to SCK
J9	Enable/Disable RS-485 feature	Jumper in enables RS-485 mode Jumper out disables RS-485 mode
J11	Enable/Disable IR feature	Jumper in enables IR mode Jumper out disables IR mode

1.2.2   Jumper Settings for XR20M1172IL24

The jumper settings that apply to the XR20M1172IL24 are::

TABLE 3: JUMPER SETTINGS FOR XR20M1172IL24

JUMPERS	FUNCTIONS	COMMENTS
J15	Selects between I^2C and SPI mode	Jumper in selects SPI mode Jumper out selects I^2C mode
J10	For internal use only	
J2	For internal use only	
J37	I^2C Address Select (A0) ■ 1&2 = VCC ■ 3&4 = SCL ■ 5&6 = SDA ■ 7&8 = GND	Only one jumper should be selected. See XR20M1172 datasheet for I^2C addressing. For SPI mode, jumper should be out.
J38	I^2C Address Select (A1) ■ 1&2 = VCC ■ 3&4 = SCL ■ 5&6 = SDA ■ 7&8 = GND	Only one jumper should be selected. See XR20M1172 datasheet for I^2C addressing. For SPI mode, jumper should be out.
J14	Header for connection to external microcontroller board ■ Pin 2 = SDA signal for I^2C interface ■ Pin 3 = SO signal for SPI interface ■ Pin 4 = IRQ# output signal from XR20M1172 ■ Pin 13 = A0 signal for I^2C interface or CS# for SPI interface ■ Pin 14 = A1 signal for I^2C interface or SI for SPI interface ■ Pin 15 = RESET# input signal ■ Pin 16 = SCL signal for I^2C interface or SCK for SPI interface ■ Pin 17 = GND signal ■ Pin 18 = External power for XR20M1172 and RS-232 Transceiver	Ground and Power connections ■ Pin 17 should be connected to GND ■ Pin 18 should be connected +3.3V If I^2C interface is used: ■ Pin 2 should be connected to SDA ■ Pin 4 should be connected to MCU interrupt input (if using interrupts) ■ Pin 13 should be unconnected when using J37 ■ Pin 14 should be unconnected when using J38 ■ Pin 15 should be connected to reset output from MCU ■ Pin 16 should be connected to SCL If SPI interface is used: ■ Pin 2 should be unconnected ■ Pin 3 should be connected to SO ■ Pin 4 should be connected to MCU interrupt (if using interrupts) ■ Pin 13 should be connected to CS# ■ Pin 14 should be connected to SI ■ Pin 15 should be connected to reset output from MCU ■ Pin 16 should be connected to SCK

1.2.3 Jumper Settings for XR20M1172IG28

The jumper settings that apply to the XR20M1172IG28 are::

TABLE 4: JUMPER SETTINGS FOR XR20M1172IL24

JUMPERS	FUNCTIONS	COMMENTS
J15	Selects between I^{2}C and SPI mode	Jumper in selects SPI mode Jumper out selects I^{2}C mode
J10	For internal use only	
J2	For internal use only	
J37	I^{2}C Address Select (A0) ■ 1&2 = VCC ■ 3&4 = SCL ■ 5&6 = SDA ■ 7&8 = GND	Only one jumper should be selected. See XR20M1172 datasheet for I^{2}C addressing. For SPI mode, jumper should be out.
J38	I^{2}C Address Select (A1) ■ 1&2 = VCC ■ 3&4 = SCL ■ 5&6 = SDA ■ 7&8 = GND	Only one jumper should be selected. See XR20M1172 datasheet for I^{2}C addressing. For SPI mode, jumper should be out.
J14	Header for connection to external microcontroller board ■ Pin 2 = SDA signal for I^{2}C interface ■ Pin 3 = SO signal for SPI interface ■ Pin 4 = IRQ# output signal from XR20M1172 ■ Pin 13 = A0 signal for I^{2}C interface or CS# for SPI interface ■ Pin 14 = A1 signal for I^{2}C interface or SI for SPI interface ■ Pin 15 = RESET# input signal ■ Pin 16 = SCL signal for I^{2}C interface or SCK for SPI interface ■ Pin 17 = GND signal ■ Pin 18 = External power for XR20M1172 and RS-232 Transceiver	Ground and Power connections ■ Pin 17 should be connected to GND ■ Pin 18 should be connected +3.3V If I^{2}C interface is used: ■ Pin 2 should be connected to SDA ■ Pin 4 should be connected to MCU interrupt input (if using interrupts) ■ Pin 13 should be unconnected when using J37 ■ Pin 14 should be unconnected when using J38 ■ Pin 15 should be connected to reset output from MCU ■ Pin 16 should be connected to SCL If SPI interface is used: ■ Pin 2 should be unconnected ■ Pin 3 should be connected to SO ■ Pin 4 should be connected to MCU interrupt (if using interrupts) ■ Pin 13 should be connected to CS# ■ Pin 14 should be connected to SI ■ Pin 15 should be connected to reset output from MCU ■ Pin 16 should be connected to SCK

TABLE 4: JUMPER SETTINGS FOR XR20M1172IL24

JUMPERS	FUNCTIONS	COMMENTS
J12	Enable/Disable UART side channel A external loopback	Jumper in enables UART side channel A external loopback Jumper out disables UART side channel A external loopback
J13	Enable/Disable UART side channel B external loopback	Jumper in enables UART side channel B external loopback Jumper out disables UART side channel B external loopback

1.2.4 Jumper Settings for XR20V2172IL64

The jumper settings that apply to the XR20V2172IL64 are::

TABLE 5: JUMPER SETTINGS FOR XR20V2172IL64

JUMPERS	FUNCTIONS	COMMENTS
J15	Selects between I^{2}C and SPI mode	Jumper in selects SPI mode Jumper out selects I^{2}C mode
J10	For internal use only	
J2	For internal use only	
J37	I^{2}C Address Select (A0) ■ 1&2 = VCC ■ 3&4 = SCL ■ 5&6 = SDA ■ 7&8 = GND	Only one jumper should be selected. See XR20M1172 datasheet for I^{2}C addressing. For SPI mode, jumper should be out.
J38	I^{2}C Address Select (A1) ■ 1&2 = VCC ■ 3&4 = SCL ■ 5&6 = SDA ■ 7&8 = GND	Only one jumper should be selected. See XR20M1172 datasheet for I^{2}C addressing. For SPI mode, jumper should be out.
J14	Header for connection to external microcontroller board ■ Pin 2 = SDA signal for I^{2}C interface ■ Pin 3 = SO signal for SPI interface ■ Pin 4 = IRQ# output signal from XR20M1172 ■ Pin 13 = A0 signal for I^{2}C interface or CS# for SPI interface ■ Pin 14 = A1 signal for I^{2}C interface or SI for SPI interface ■ Pin 15 = RESET# input signal ■ Pin 16 = SCL signal for I^{2}C interface or SCK for SPI interface ■ Pin 17 = GND signal ■ Pin 18 = External power for XR20M1172 and RS-232 Transceiver	Ground and Power connections ■ Pin 17 should be connected to GND ■ Pin 18 should be connected +3.3V If I^{2}C interface is used: ■ Pin 2 should be connected to SDA ■ Pin 4 should be connected to MCU interrupt input (if using interrupts) ■ Pin 13 should be unconnected when using J37 ■ Pin 14 should be unconnected when using J38 ■ Pin 15 should be connected to reset output from MCU ■ Pin 16 should be connected to SCL If SPI interface is used: ■ Pin 2 should be unconnected ■ Pin 3 should be connected to SO ■ Pin 4 should be connected to MCU interrupt (if using interrupts) ■ Pin 13 should be connected to CS# ■ Pin 14 should be connected to SI ■ Pin 15 should be connected to reset output from MCU ■ Pin 16 should be connected to SCK
J16	Power supply select for the XR20V2172IL64 ■ 1&2 selects supply voltage from +P ■ 2&3 selects supply voltage of +5V	

TABLE 5: JUMPER SETTINGS FOR XR20V2172IL64

JUMPERS	FUNCTIONS	COMMENTS
J17	Enable/Disable UART side channel A external loopback	Jumper in enables UART side channel A external loopback Jumper out disables UART side channel A external loopback
J18	Enable/Disable UART side channel B external loopback	Jumper in enables UART side channel B external loopback Jumper out disables UART side channel B external loopback
J19	Enable/Disable FAST transmission	Jumper in enables FAST transmission Jumper out disables FAST transmission
J20	Enable/Disable auto sleep for charge pump	Jumper in enables auto sleep feature for charge pump Jumper out disables auto sleep feature for charge pump
J31	Capacitor C3 select ■ 1&3 selects when power supply voltage equals +3.3V ■ 1&2 selects when power supply voltage equals +5V	
J32	Enable/Disable R_EN	Jumper in when power supply voltage is less than 3.6V Jumper out when power supply voltage is greater than 3.6V
J33	Receive data input select	Jumper in selects RXB Jumper out selects RXDB

2.0 DRIVERS

For the I^{2}C/SPI UART driver, it is recommended that you contact your microcontroller vendor first for sample code to access devices on the I^{2}C or SPI bus. Once you can access devices on the I^{2}C or SPI bus, you can use the sample code from EXAR for initializing the I^{2}C/SPI UART as a reference for devoloping your driver.

3.0 SAMPLE INITIALIZATION ROUTINE AND SUPPORT

For a sample initialization routine or if there are any questions, send an e-mail to uarttechsupport@exar.com.

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