10Pin XPRO Adapter

Atmel MCU Wireless

Features

- Enables Atmel Legacy platforms to use newer ZigBit® Extensions.
- Supports RF-only ZigBits, SoC ZigBits and RF Extensions.
- On board current measurement header.
- Minimal jumper configuration.

Table of Contents

1. Introduction

1.1 Summary

ATXPRO-10PIN is a 10- to 20-pin adaptor that facilitates to connect new 20-pin Zigbits extensions and RF extensions to legacy 10-pin headers on SAM-EKs, STK®600, Xplained kits. The 10-pin header on legacy kits refers to the RF header where RZ600 fits. The supported 20-pin extensions includes RF only ZigBit extension, SoC ZigBit extension and REB233-XPRO.

1.2 Supported Kits Containing 10 Pin Headers

1. SAM4E-EK
2. SAM3X-EK
3. SAM3S-EK

4. SAM4L-EK
5. SAM4S-EK2
6. SAM3N-EK

7. XMEGA® A3BU Xplained
8. XMEGA B1 Xplained
9. XMEGA A1 Xplained

10. SAM4S-XPLD
11. Mega1284P Xplained
12. STK600

2. Specifications

2.1 Pin Configuration

Pin No.	20-pin Connector (J3)
1	ID_DATA
2	GND
3	ADC(+)
4	ADC(-)
5	GPIO
6	GPIO
7	PWM(+)
8	PWM(-)
9	IRQ/GPIO
10	SPI_SS_B/GPIO
11	TWI_SDA
12	TWI_SCL
13	UART_RX
14	UART_TX
15	SPI_SS_A
16	SPI_MOSI
17	SPI_MISO
18	SPI_SCK
19	GND
20	VCC_TARGET

Pin No.	10-pin Connector (J1)
1	RST
2	MISC IO
3	IRQ
4	SLP_TR
5	SEL/SPI_CS
6	MOSI
7	MISO
8	SCLK/SPCK
9	GND
10	VCC

Note: Refer datasheets of the selected evaluation board or XPRO extension for details on the signal names mentioned in above tables.
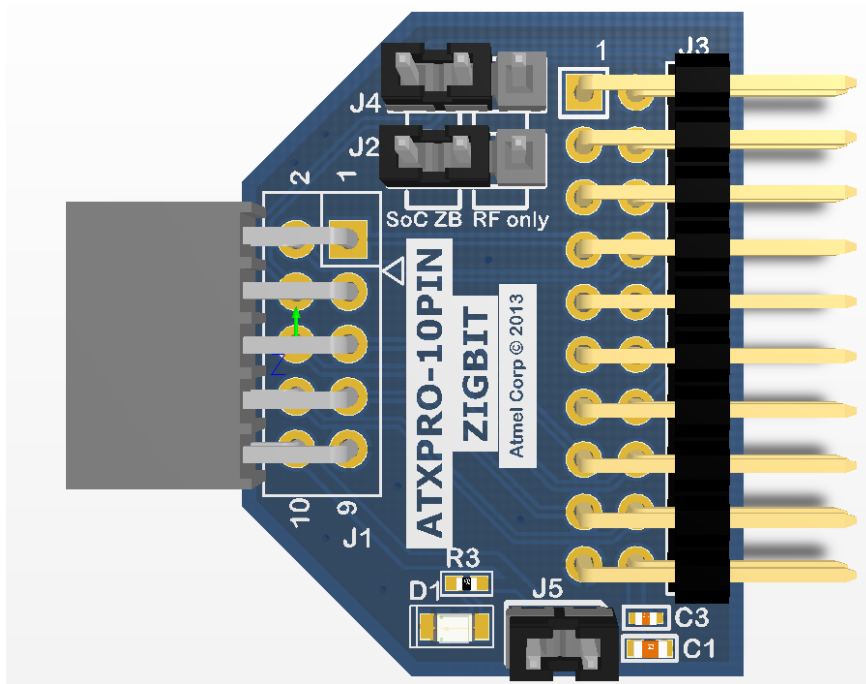
2.2 Jumper Settings

For REB233-XPRO and RF only Zigbits, jumper settings for J4 and J2 are as shown in Figure 2-1.

Figure 2-1. ATXPRO-10PIN for REB233-XPRO and RF only ZigBits
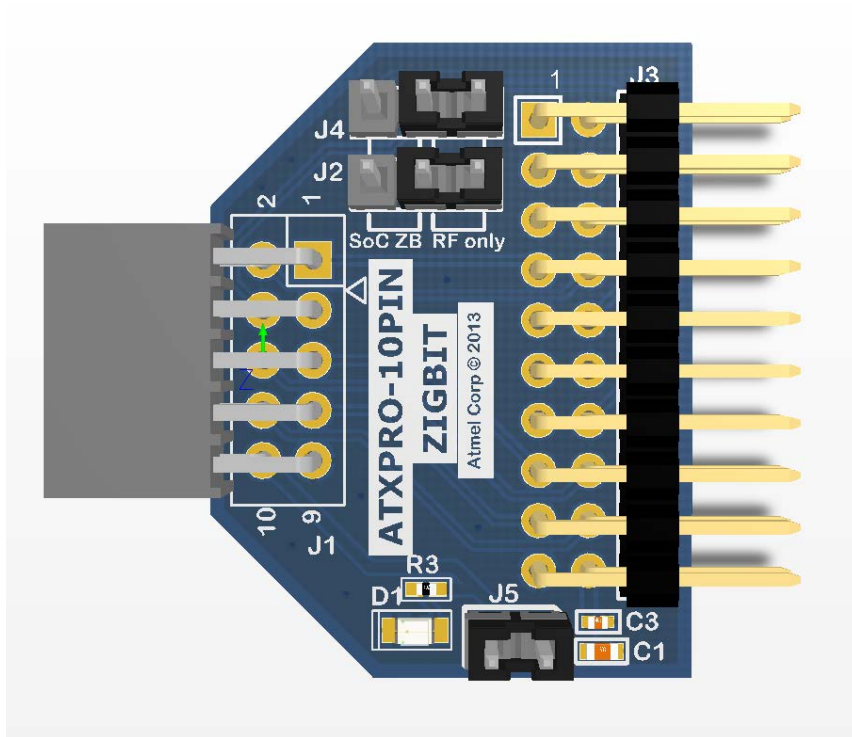
For SoC Zigbits, jumper settings for J4 and J2 are as shown in Figure 2-2.

Figure 2-2. ATXPRO-10PIN for SoC ZigBits
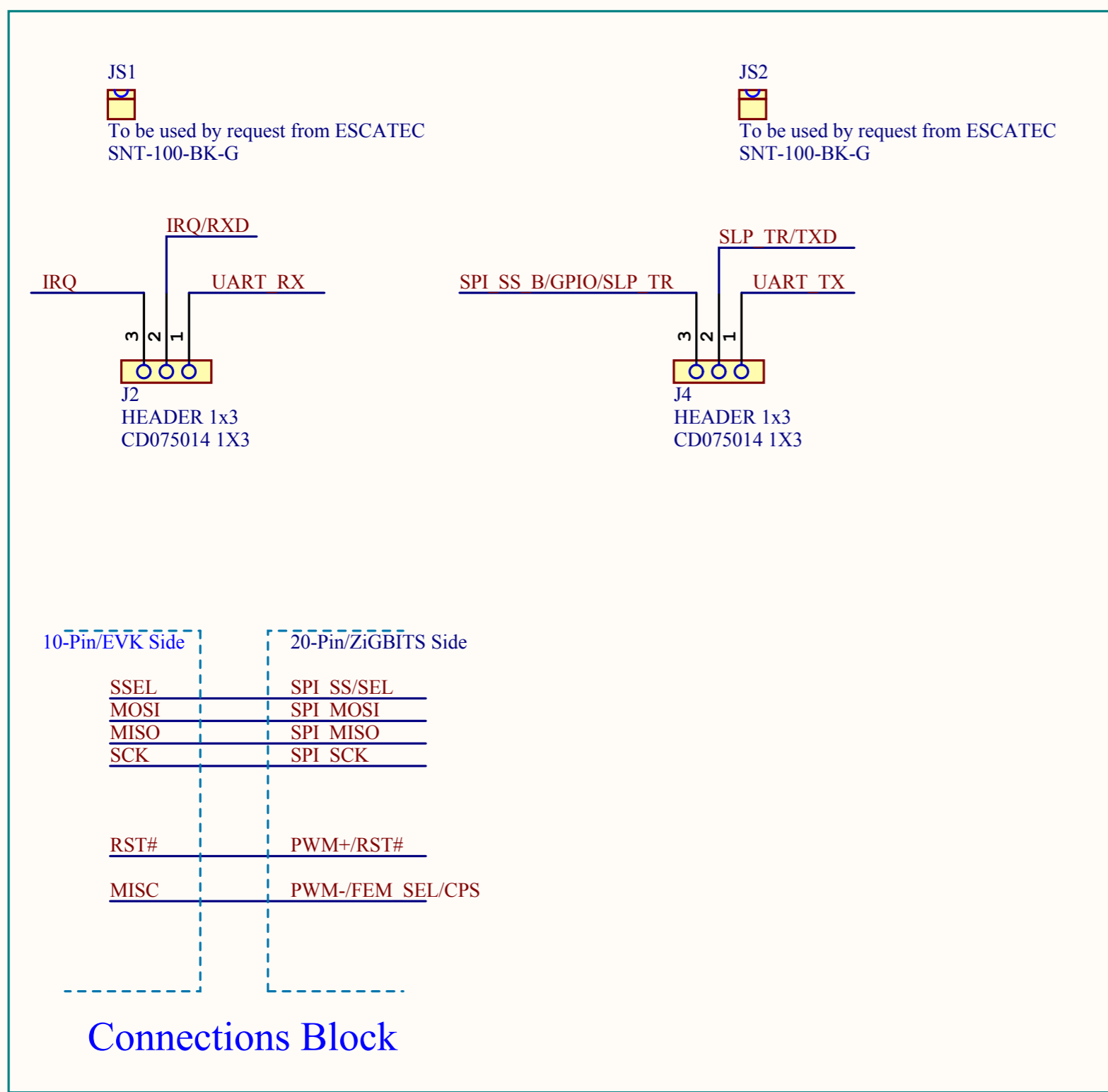

2.3   Current Measurement

Header J5 is the current measurement header which enables user to measure current consumed by the extension modules. When 'J5' is not used for current measurement, the jumper should be placed on it.
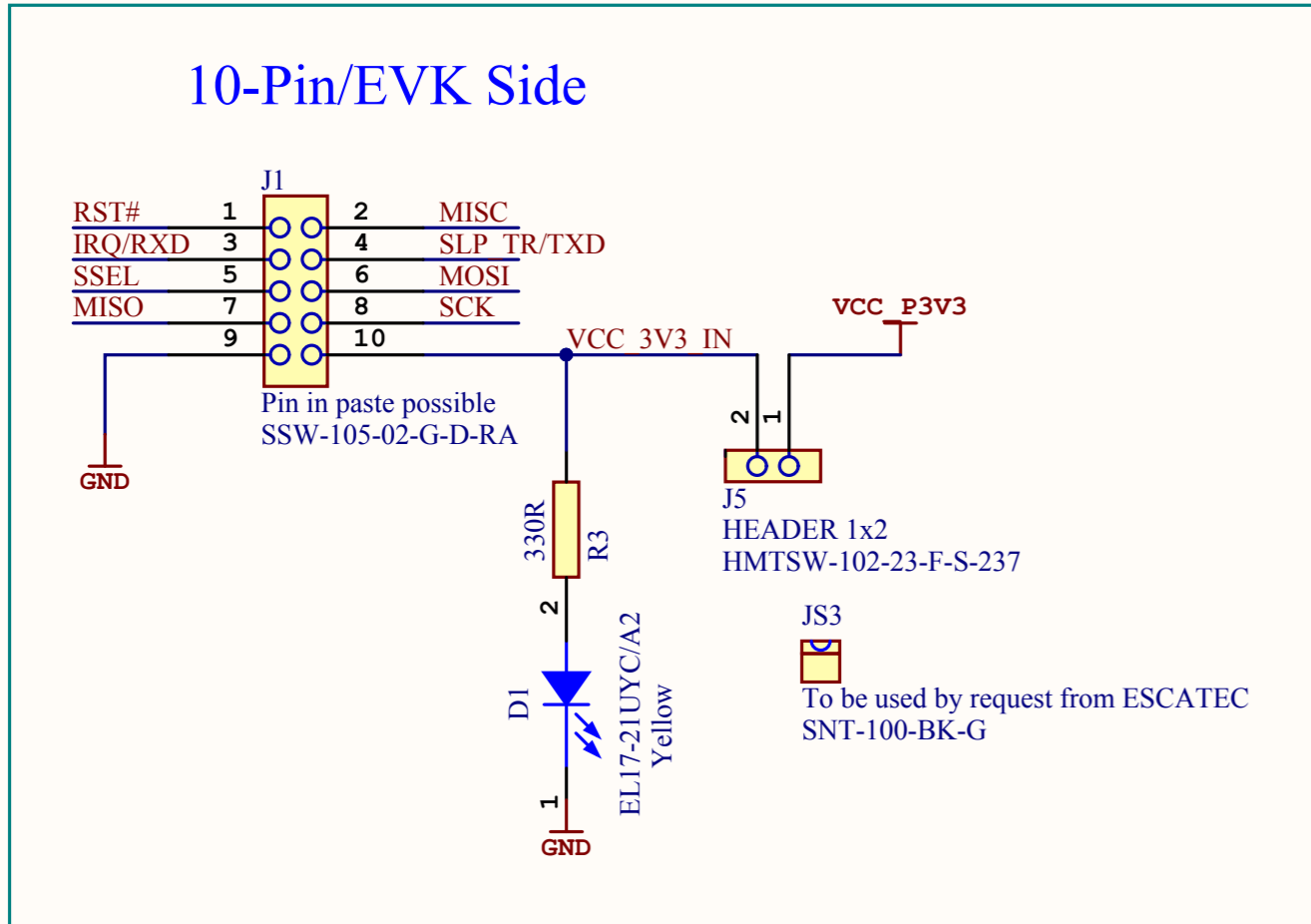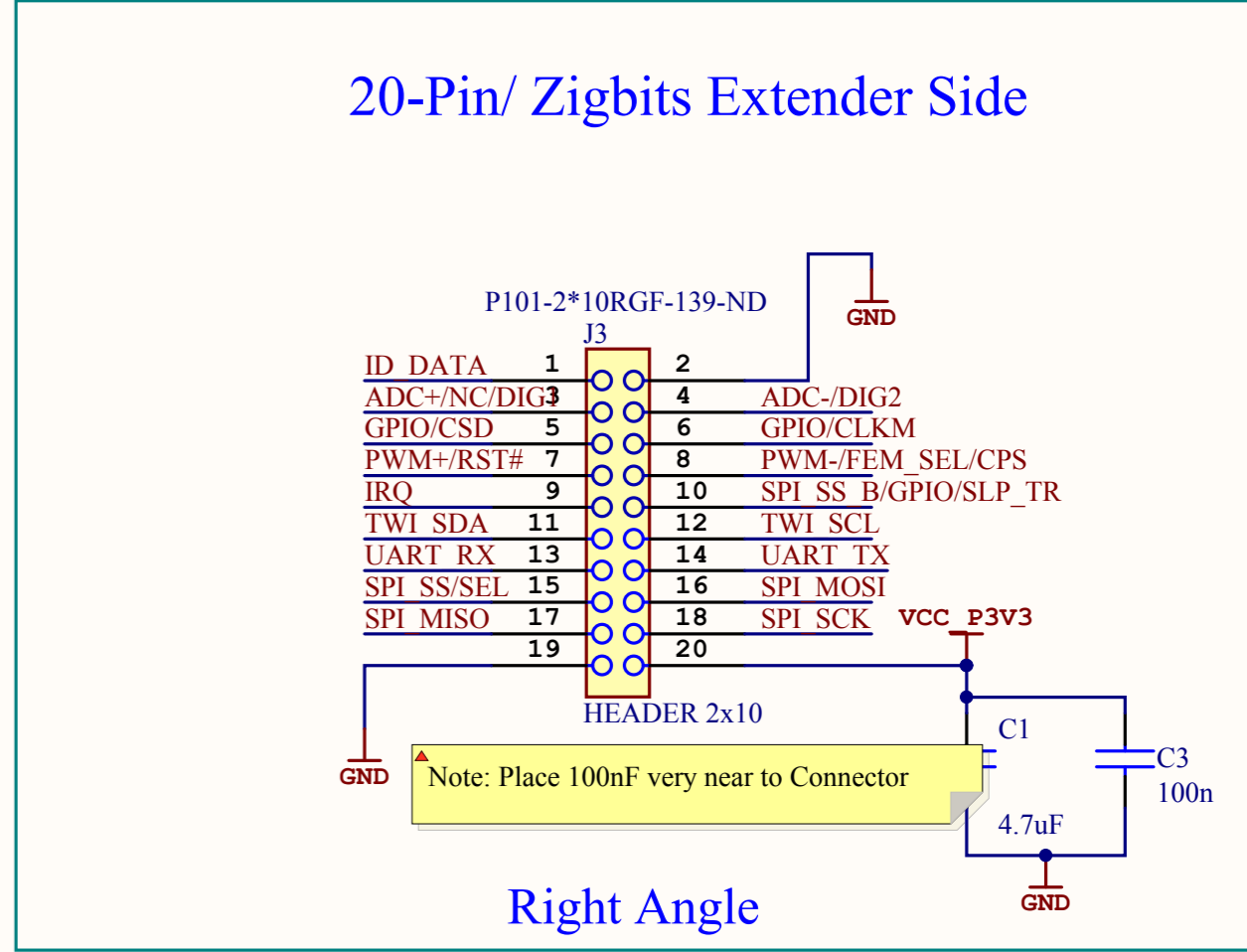
2.4   Schematics

The schematic of the 10-pin to 20-pin Adaptor is shown below.

JS1
To be used by request from ESCATEC
SNT-100-BK-G

JS2
To be used by request from ESCATEC
SNT-100-BK-G

Note:
For some of these kits pin3 and pin4 of 10pin Connector
has UART interface connected.
for those kits SoCZigbits Can be directly interfaced.
1.Xmega A3BU Xplained
2.Xmega B1 Xplained
3.Xmega A1 Xplained
4.SAM4S-XPLD
5.Mega1284P Xplained
6.STK600(mapping)

IRQ/RXD
IRQ   UART_RX

3 2 1
J2
HEADER 1x3
CD075014 1X3

SLP_TR/TXD
SPI_SS_B/GPIO/SLP_TR   UART_TX

3 2 1
J4
HEADER 1x3
CD075014 1X3

Note:
1. ID_DATA has no connection to 10-pin Connector
2. ADC+/NC/DIG1, ADC-/DIG2, TWI_SDA, TWI_SCL, UART_RX and UART_TX have no
connection to 10-pin connector,
except(UART_RX and UART_TX were used for some kits)
3. CSD has Pull down on RF-only Zigbits.

10-Pin/EVK Side   20-Pin/ZiGBITS Side

SSEL   SPI_SS/SEL
MOSI   SPI_MOSI
MISO   SPI_MISO
SCK   SPI_SCK

RST#   PWM+/RST#

MISC   PWM-/FEM_SEL/CPS

Connections Block

20-Pin/ Zigbits Extender Side

P101-2*10RGF-139-ND
J3
ID_DATA   1   2
ADC+/NC/DIG1 3   4   ADC-/DIG2
GPIO/CSD   5   6   GPIO/CLKM
PWM+/RST#   7   8   PWM-/FEM_SEL/CPS
IRQ   9   10   SPI_SS_B/GPIO/SLP_TR
TWI_SDA   11 12   TWI_SCL
UART_RX   13 14   UART_TX
SPI_SS/SEL   15 16   SPI_MOSI
SPI_MISO   17 18   SPI_SCK
              19 20
HEADER 2x10

GND

VCC_P3V3

C1
4.7uF

C3
100n

GND

Note: Place 100nF very near to Connector

Right Angle

10-Pin/EVK Side

RST#   1   2   MISC
IRQ/RXD   3   4   SLP_TR/TXD
SSEL   5   6   MOSI
MISO   7   8   SCK
          9   10
J1
Pin in paste possible
SSW-105-02-G-D-RA

GND

VCC_3V3_IN

VCC_P3V3

2 1
J5
HEADER 1x2
HMTSW-102-23-F-S-237

JS3
To be used by request from ESCATEC
SNT-100-BK-G

330R
R3
2

D1
EL17-21UYC/A2
Yellow
1
GND

Supported Zigbits

1. RF212B RF-only Zigbits
2. RF233 RF-only Zigbits
3. mega256RFR2 SoC
Zigbits(Optional - only listed kits
will be supported)

Note:
As this is an adapto doesn't require Rubber
Feet

ATMEL R&D INDIA	Mallikarjun	
RMZ Millenia	Narayana Karthik	
Chennai	*	
INDIA		
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TITLE: 10-pin to 20-pin XPRO adaptor

ATXPRO-10PIN.SchDoc

3. Revision History

Doc. Rev.	Date	Comments
42207A	10/2013	Initial document release

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