

The logo for Elprotronic, featuring the word "Elprotronic" in a stylized, serif font with a blue glow effect, set against a solid blue rectangular background.

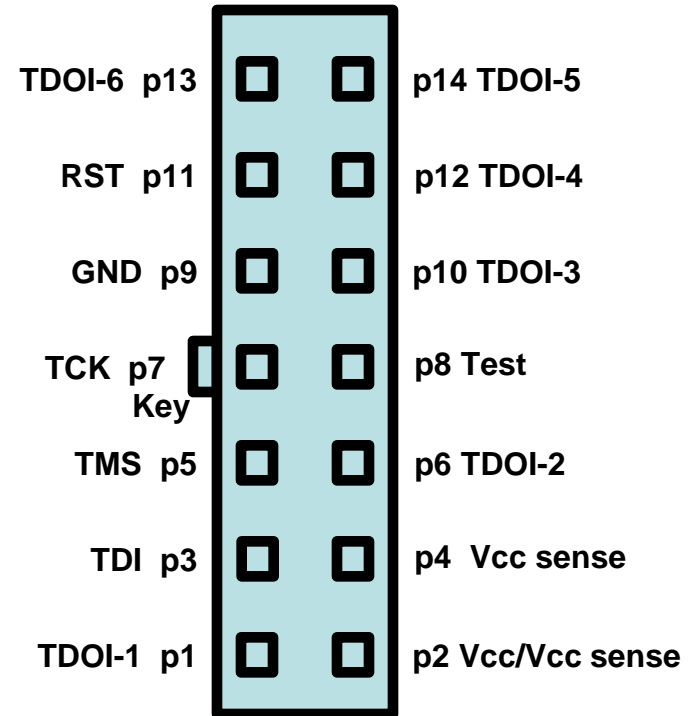
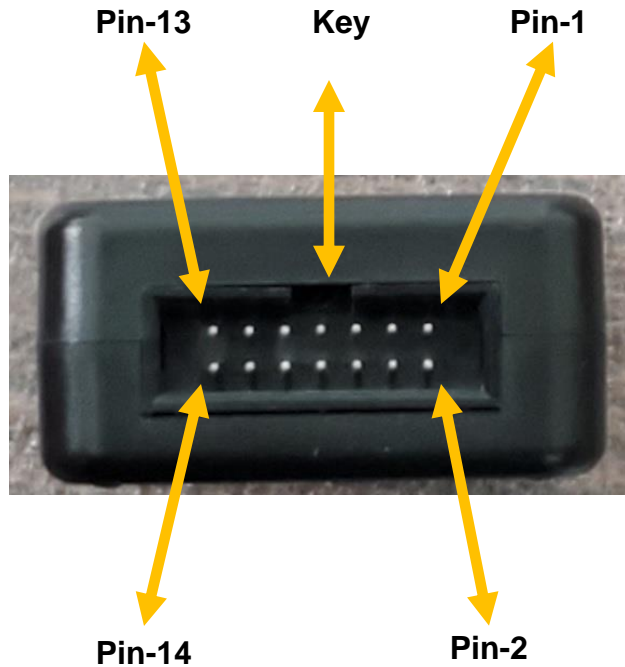
Elprotronic

[www.elprotronic.com](http://www.elprotronic.com)

# *Connection between targets and Flash and Gang Programmers*

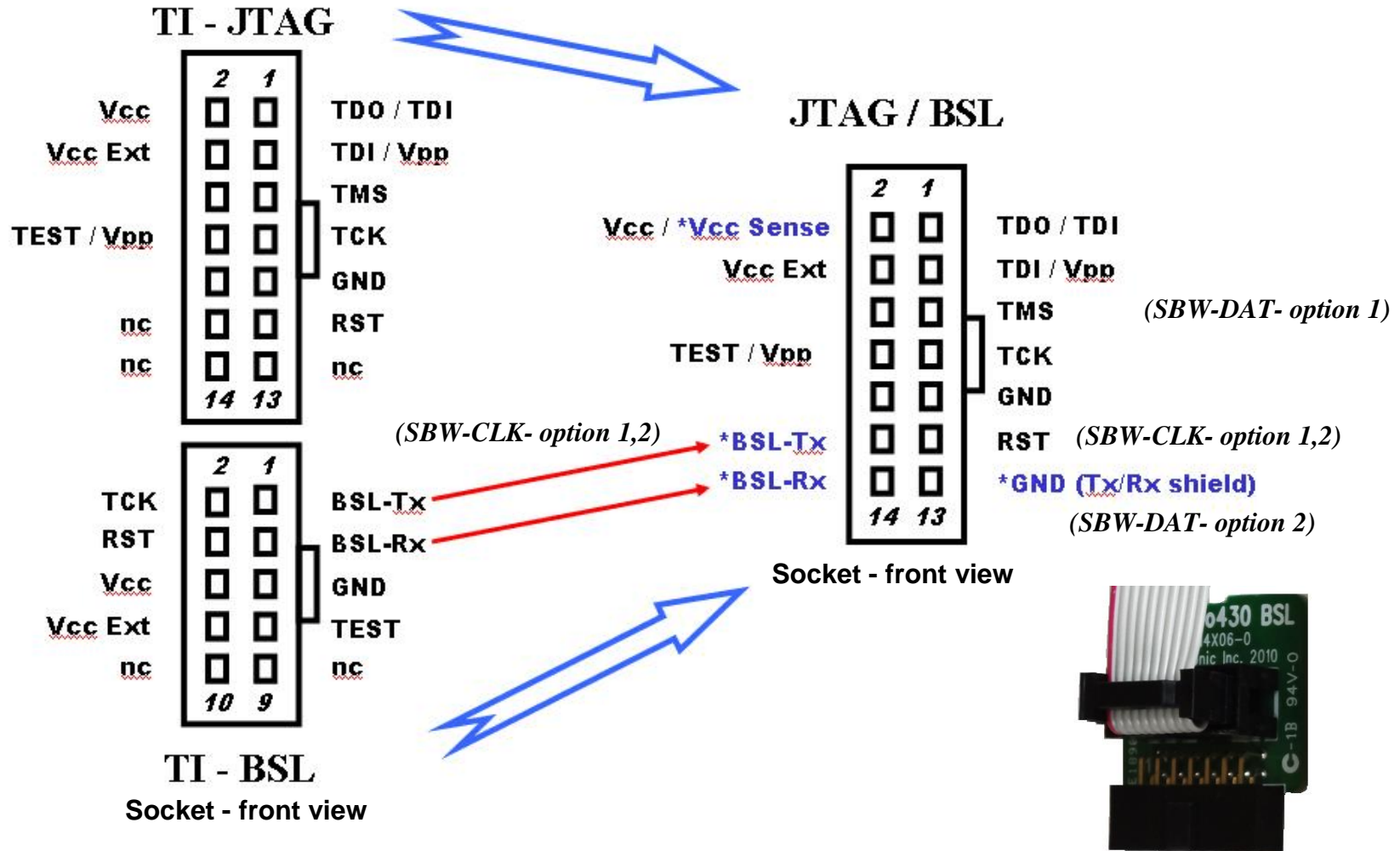
*PM037A02 rev. 1.1  
Mar.03.2020*

# 14-pin Connector from Programmer



Socket - front view

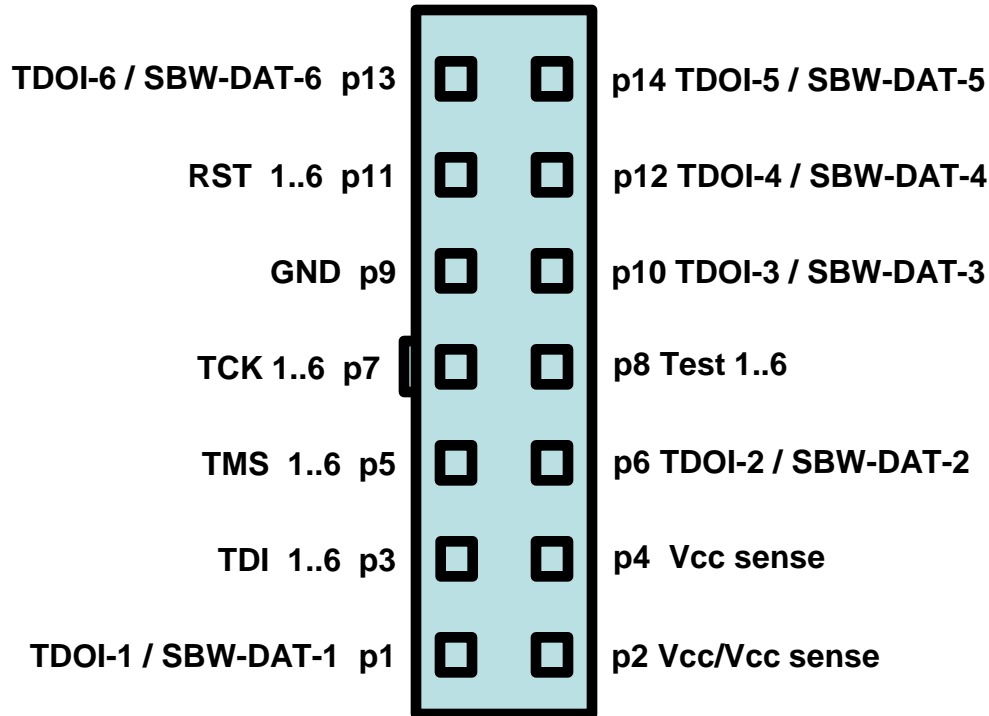
# Pinout in FlashPro430



Adapter from 14-pins connection to 10-pins BSL only connection.  
 PN: PE014X06

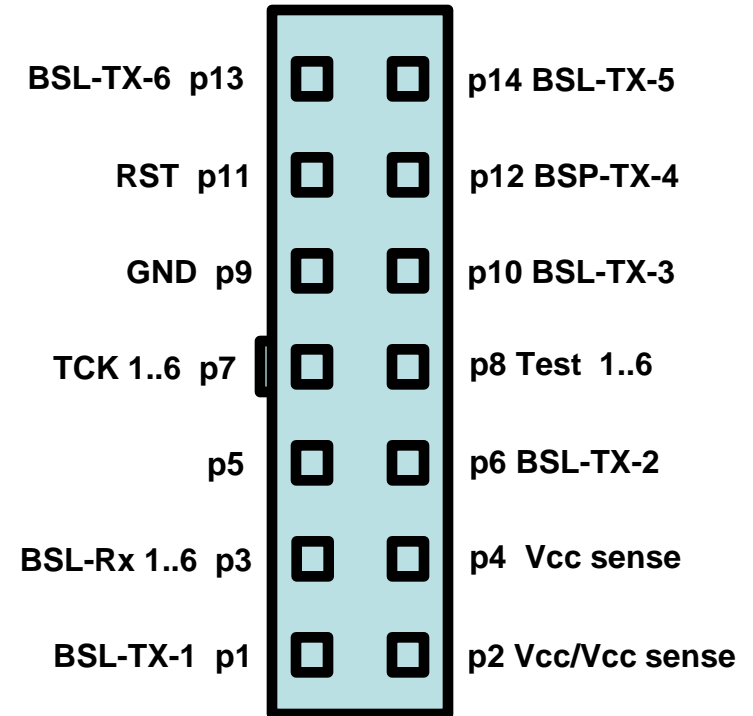
# Pinout in GangPro430

## JTAG / SBW



Socket - front view

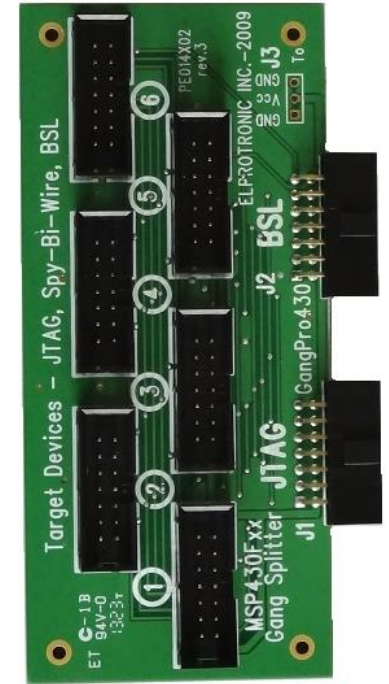
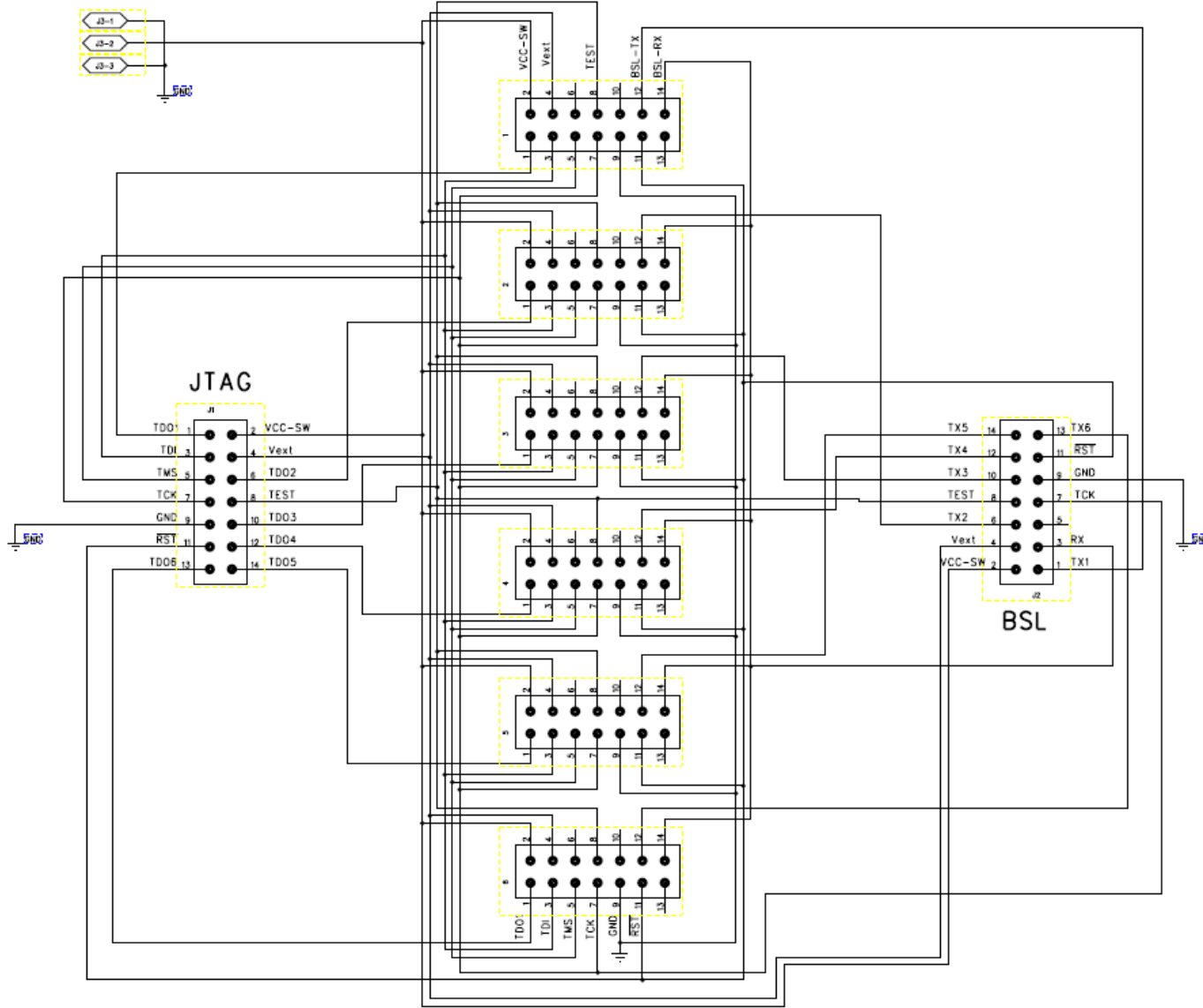
## BSL



Socket - front view

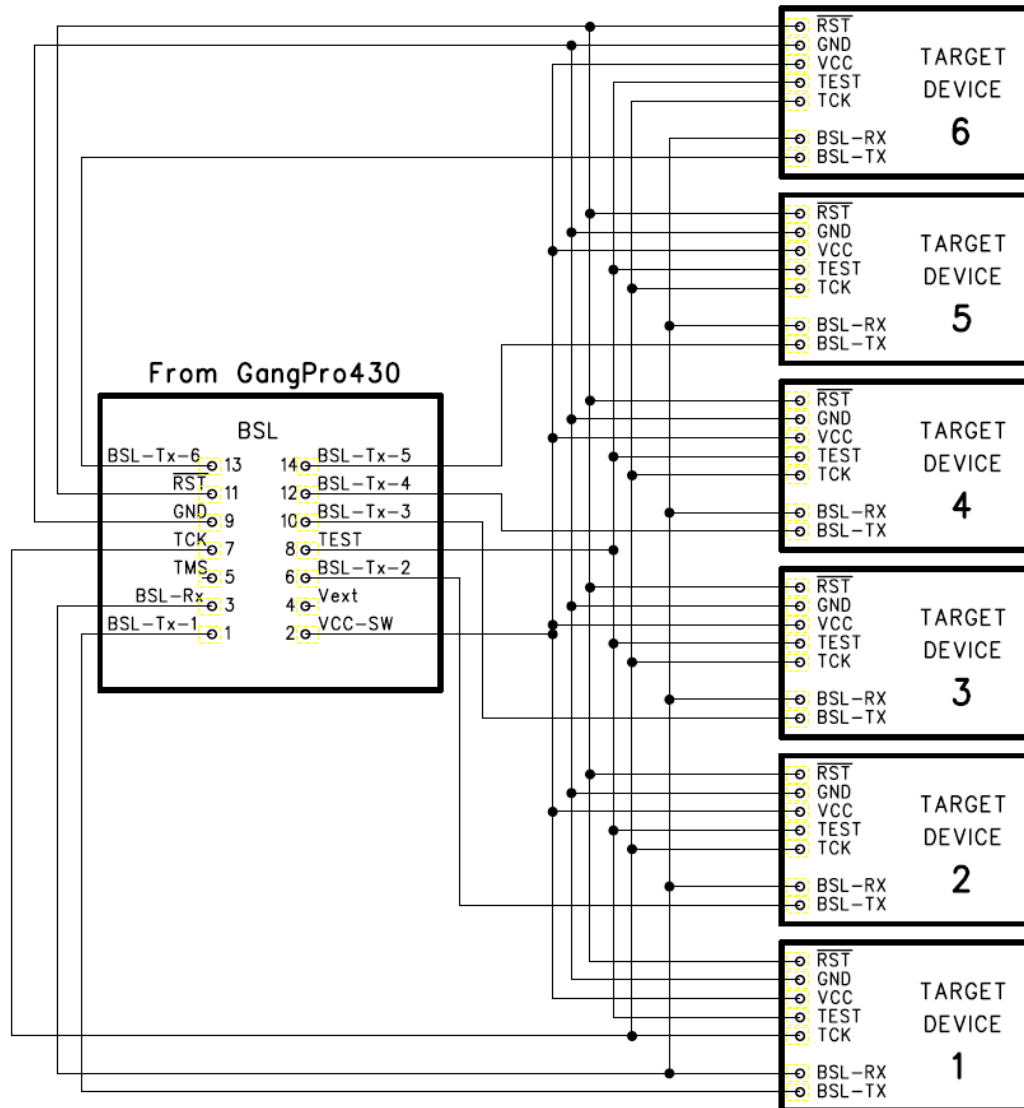
# Pinout in GangPro430

## GangPro430 Splitter PN:PE014X02



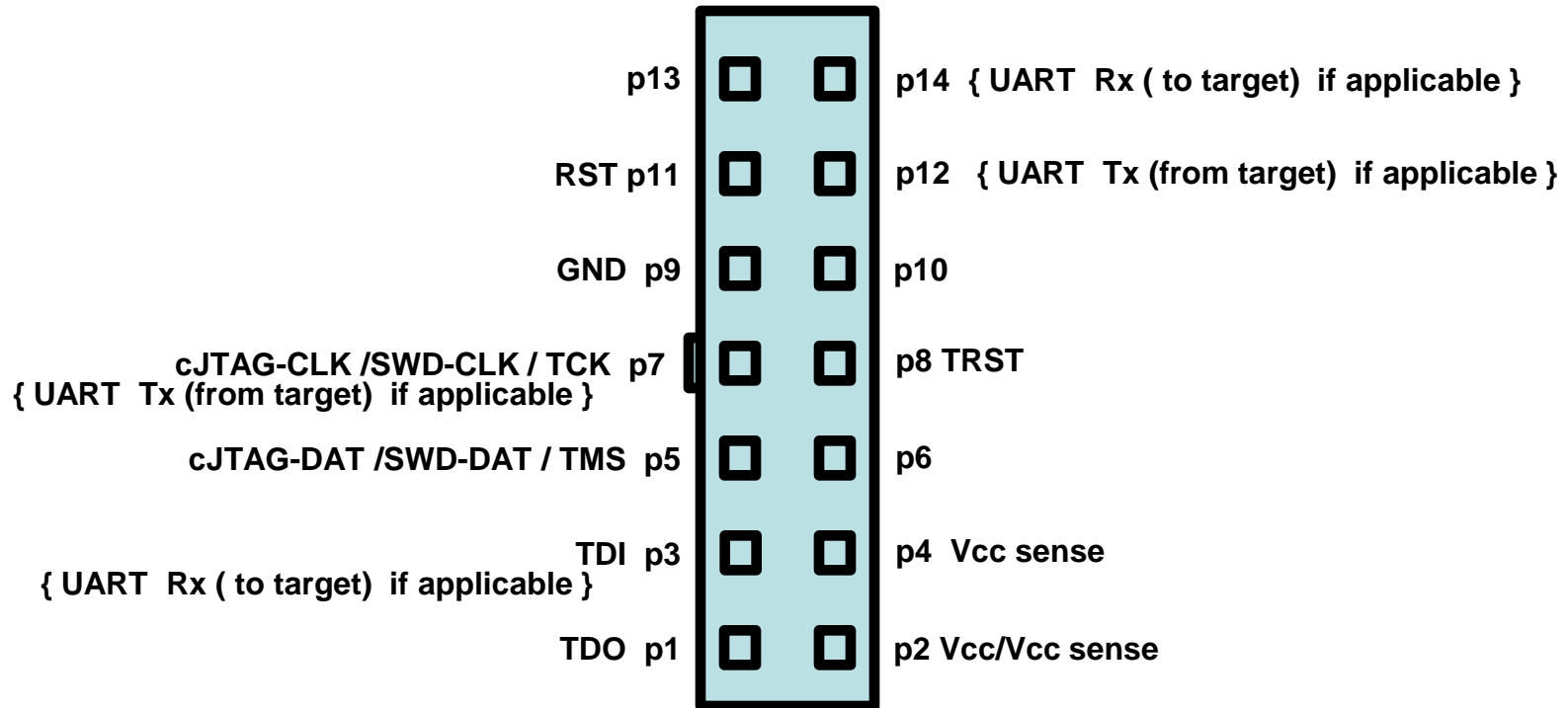
# Pinout in GangPro430

## BSL with GangPro430 connection



# Pinout in FlashPro-ARM

## JTAG / SWD

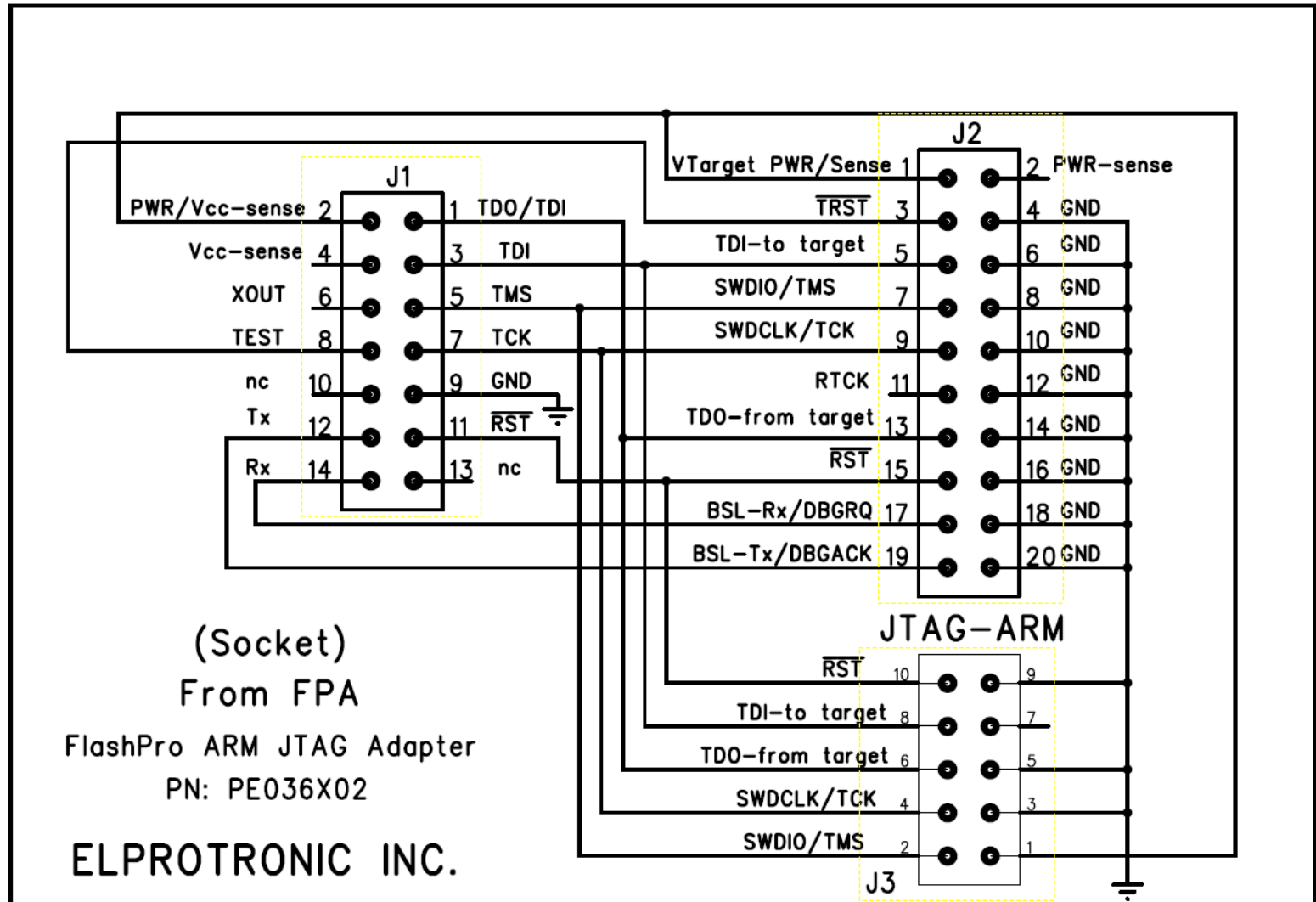


Socket - front view

# Pinout in FlashPro-ARM

Adapter 14-pins to ARM 20-pins 0.1" spacing and 10-pins 0.05" spacing

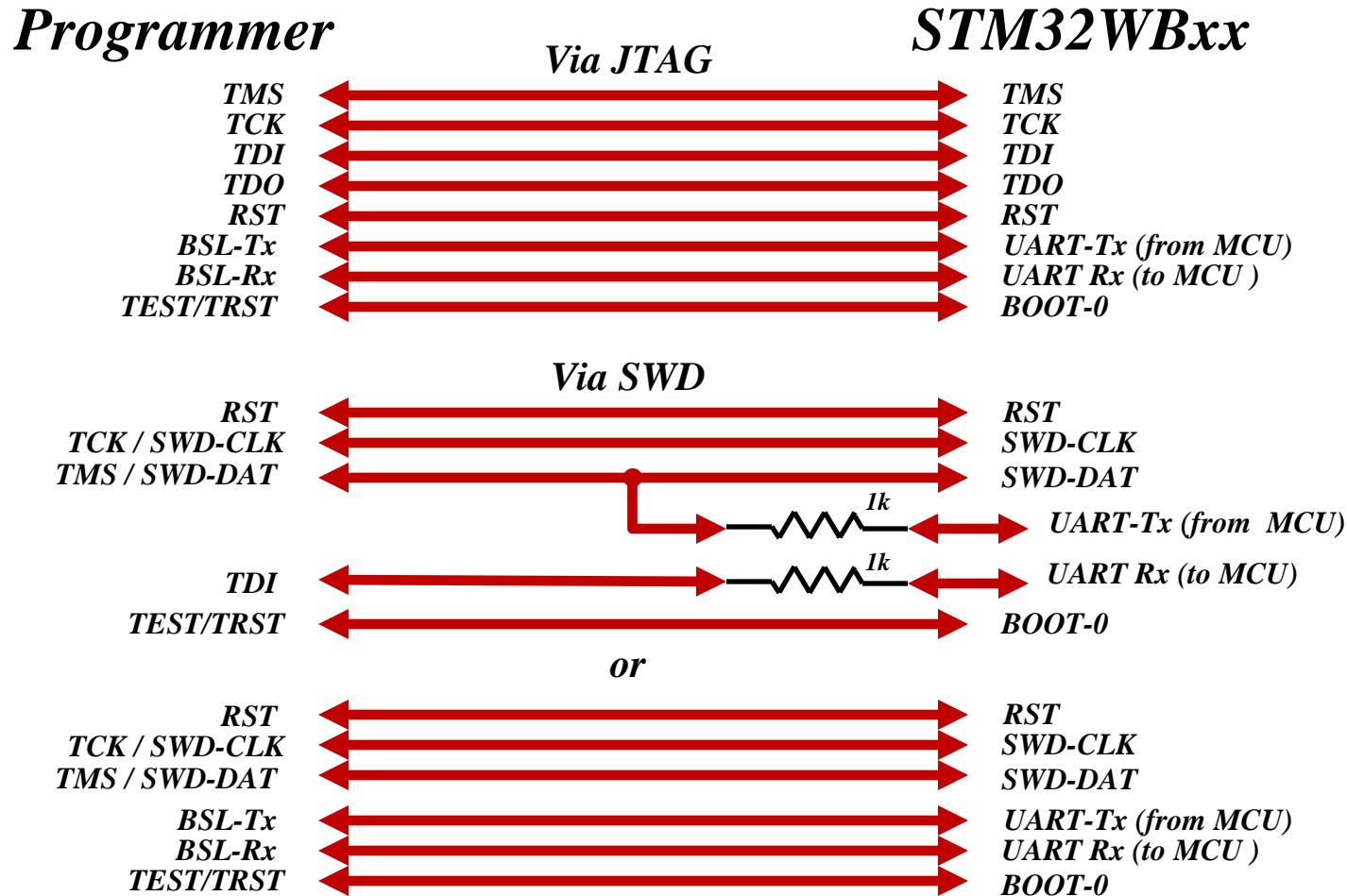
Adapter  
PN: PE036X02





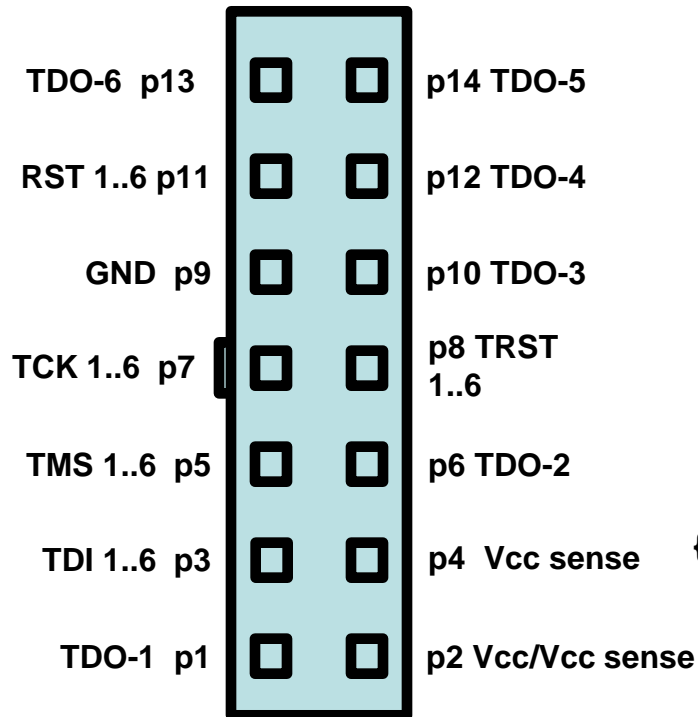
# Connection in FlashPro-ARM

**Connection with STM32WBxx – with JTAG/SWD and bootloader via UART.**  
*Note: Only with Xstream-Iso and XStreamPro-Iso Adapters. Not available in USB-FPA Adapters.*



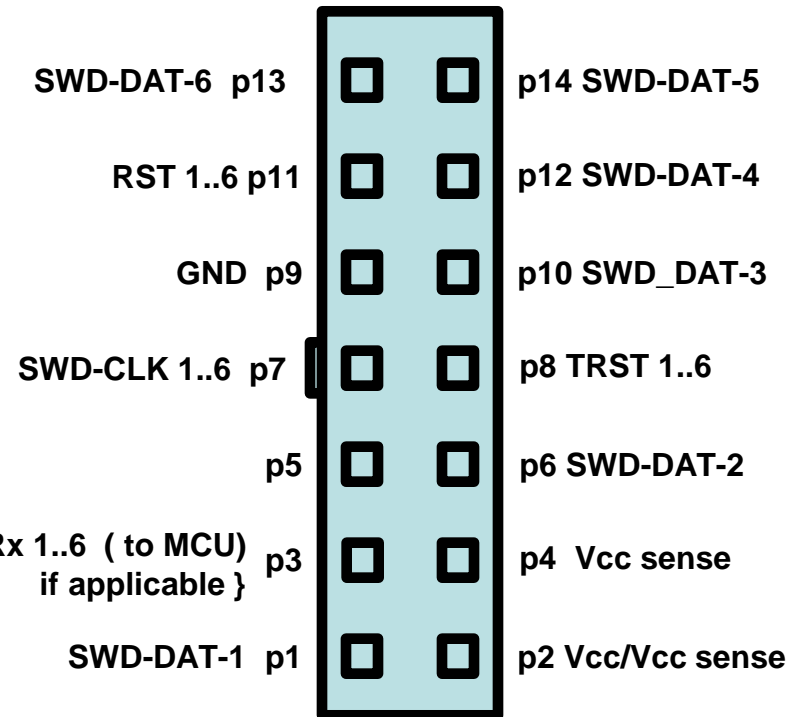
# Pinout in GangPro-ARM

## JTAG



Socket - front view

## SWD



Socket - front view

### Note:

cJTAG-CLK -> SWD-CLK

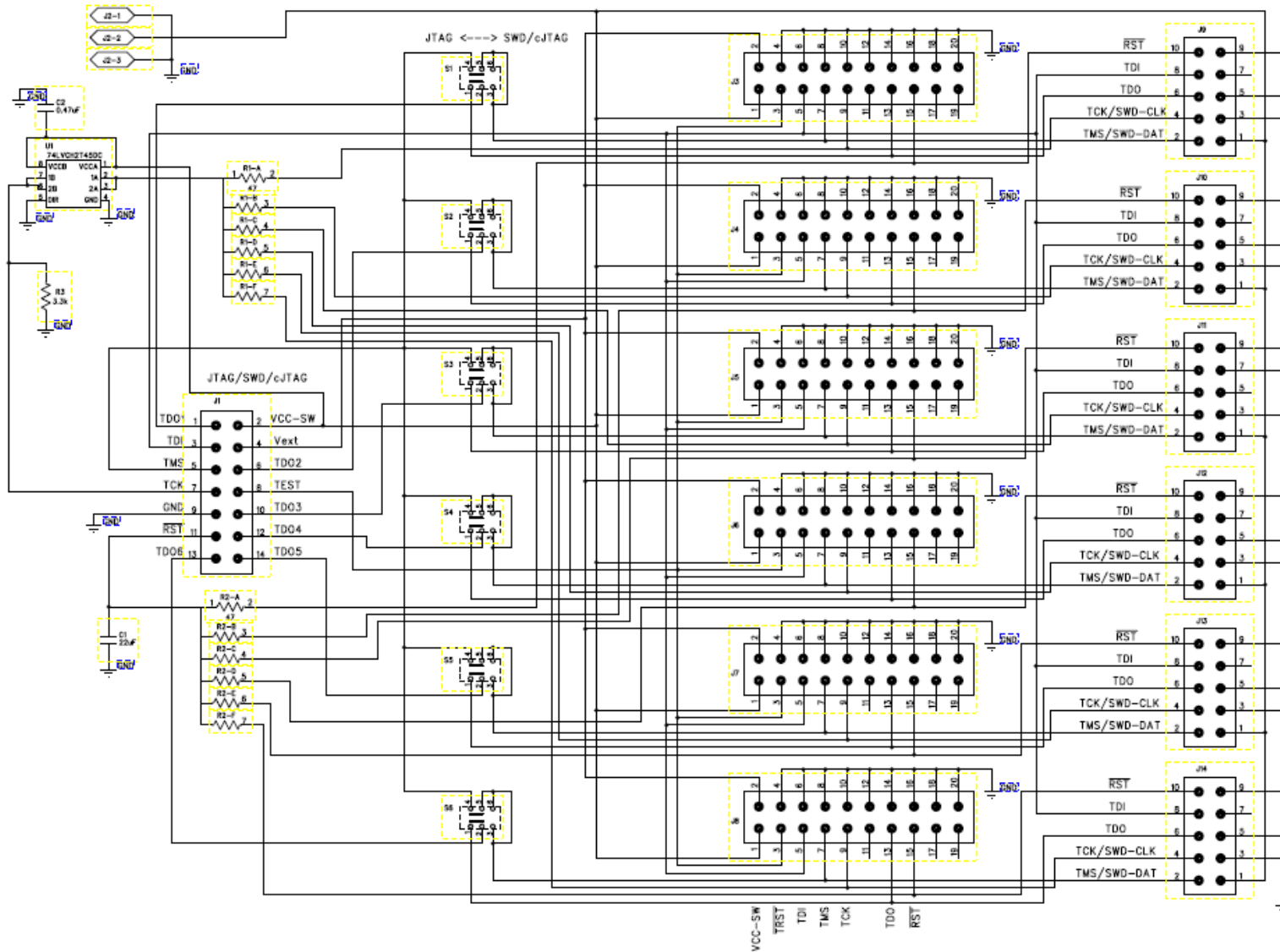
cJTAG-DAT-x -> SWD-DAT-x

SWD-DAT-x also can be used as UART Tx-x if applicable.

**UART – available only in Xstream-Iso and XStreamPro-Iso Adapters.**

# Pinout in GangPro-ARM

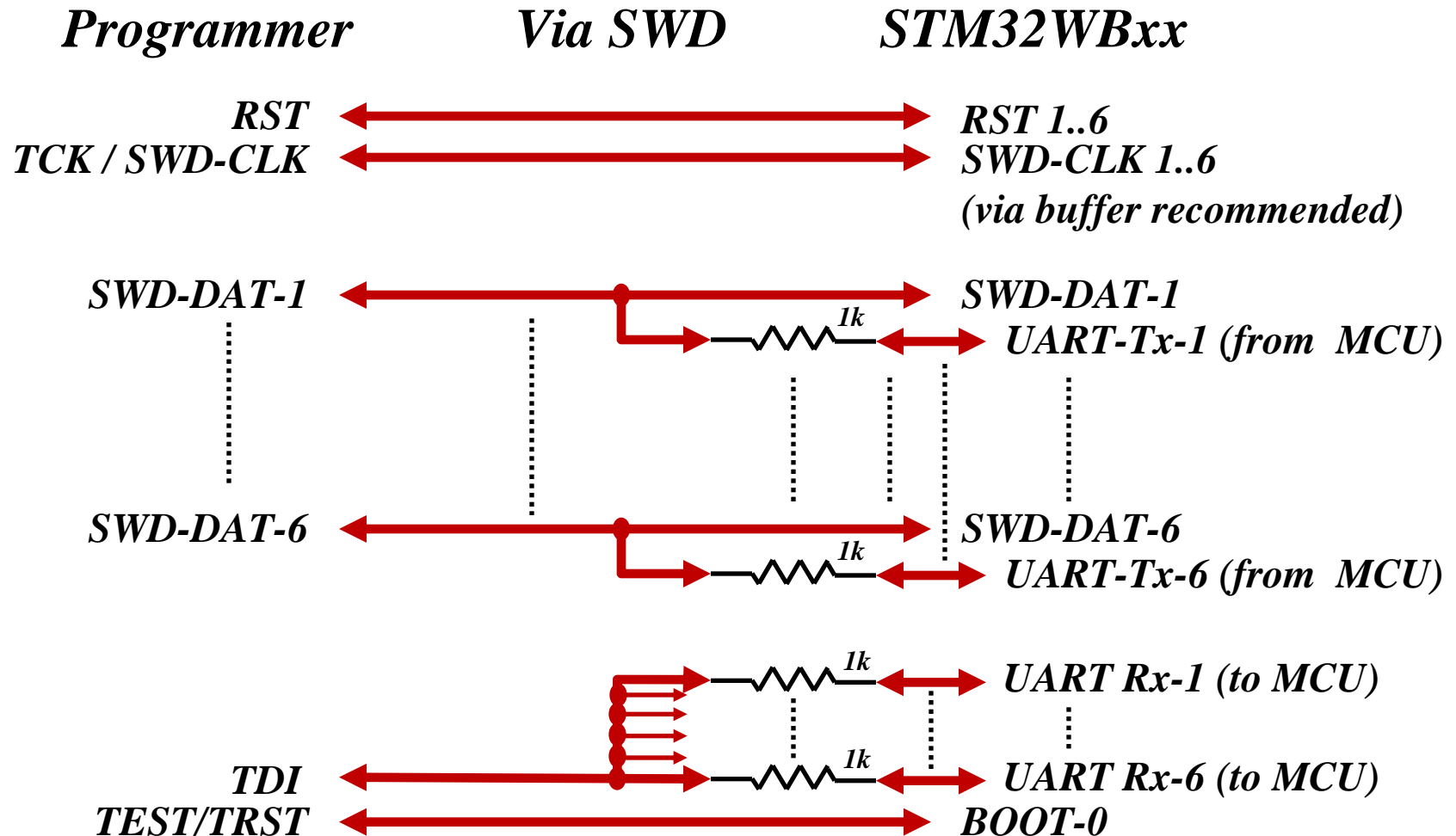
## ARM Gang Splitter PN: PE014X07



# Connection in GangPro-ARM

Connection with STM32WBxx – with SWD and bootloader via UART.

Note: Only with Xstream-Iso and XStreamPro-Iso Adapters. Not available in USB-FPA Adapters.



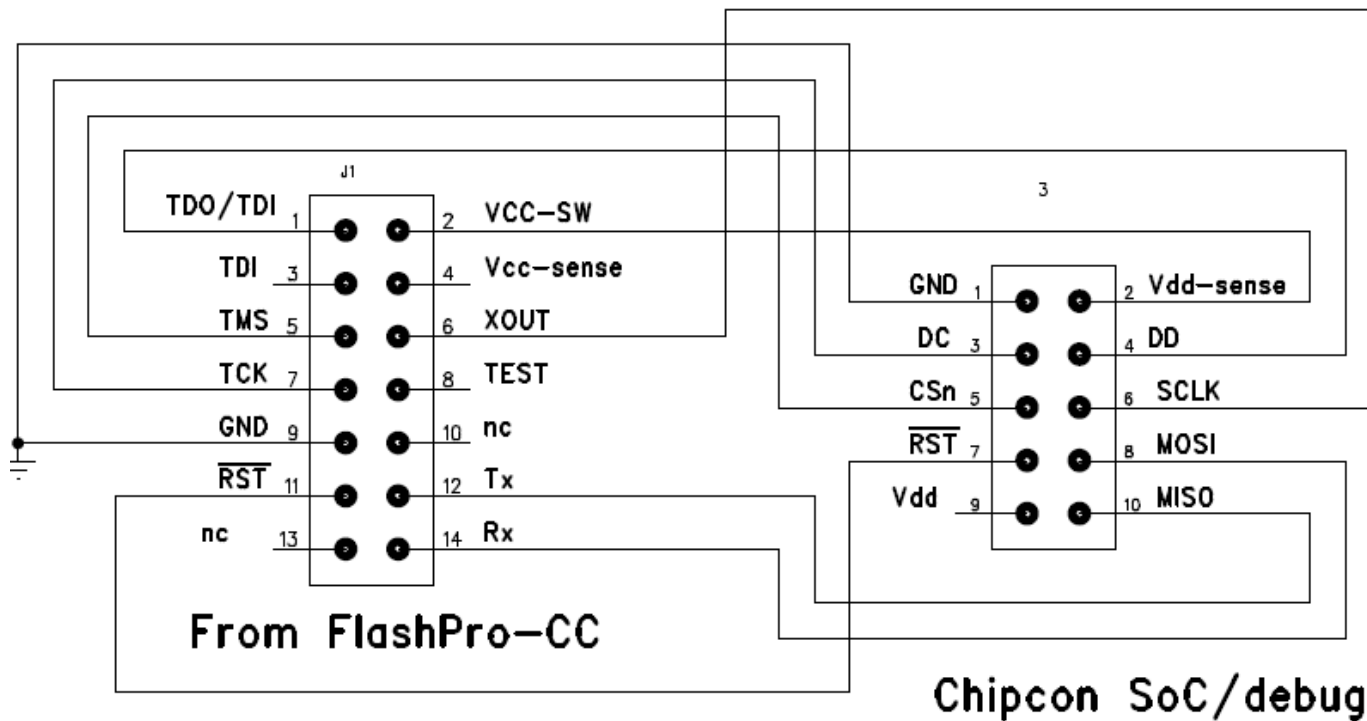
# Pinout in FlashPro-CC

## Connection with CC-xx MCU (8051 core) via Debug Port

Programmer 14-pins connector	Debug Port connection
1 – TDOI-1	Debug Data (DD)
2 – Vcc / Vcc sense	Vcc / Vcc sense
3 – TDI	--
4 – Vcc sense	Vcc sense
5 – TMS	--
6 – TDOI-2	--
7 – TCK	Debug Clock (DC)
8 – TEST	--
9 – GND	GND
10 – TDOI-3	--
11 – RST	RST
12 – TDO-4	--
13 – TDO-6	--
14 – TDOI-5	--

# Pinout in FlashPro-CC

Connection with CC-xx MCU (8051 core) via Debug Port



PN:PE014X046



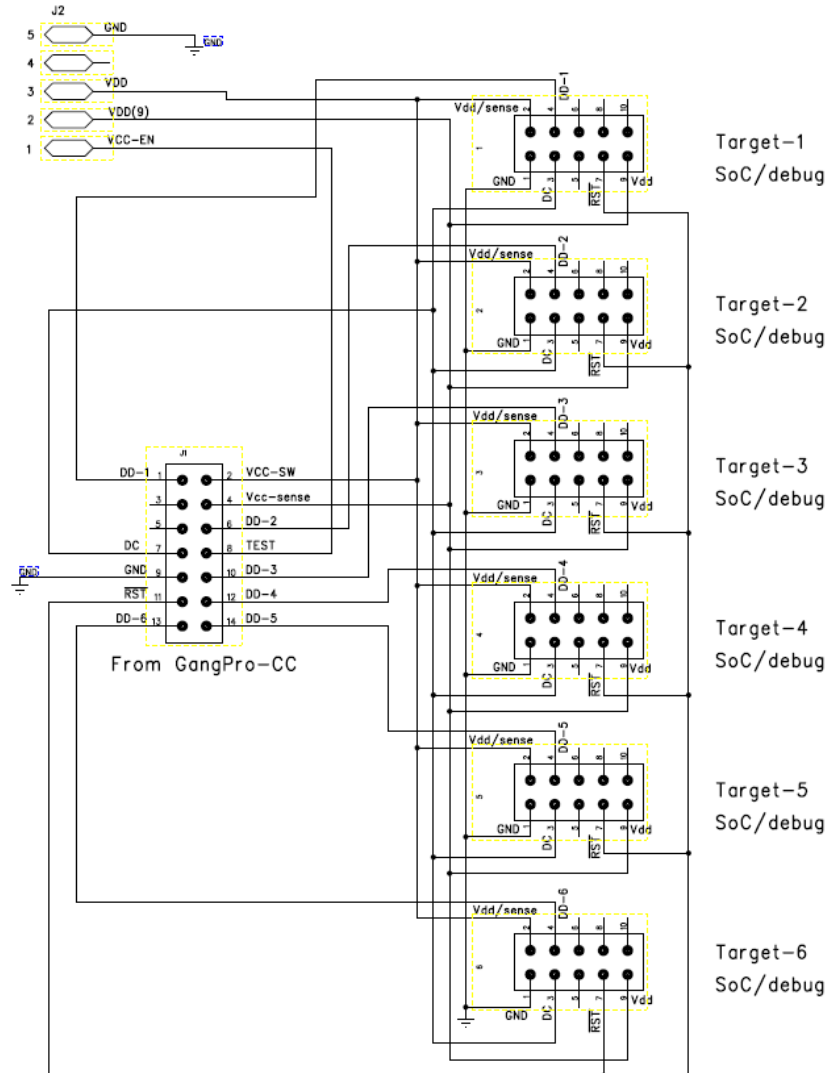
# Pinout in GangPro-CC

## Connection with CC-xx MCU (8051 core) via Debug Port

Programmer 14-pins connector	Debug Port connection
1 – TDOI-1	Debug Data (DD) - 1
2 – Vcc / Vcc sense	Vcc / Vcc sense
3 – TDI	--
4 – Vcc sense	Vcc sense
5 – TMS	--
6 – TDOI-2	Debug Data (DD) – 2
7 – TCK	Debug Clock (DC)
8 – TEST	--
9 – GND	GND
10 – TDOI-3	Debug Data (DD) – 3
11 – RST	RST
12 – TDO-4	Debug Data (DD) – 4
13 – TDO-6	Debug Data (DD) – 6
14 – TDOI-5	Debug Data (DD) - 5

# Pinout in GangPro-CC

Connection with CC-xx MCU (8051 core) via Debug Port



CC Gang Splitter  
PN: PE014X03





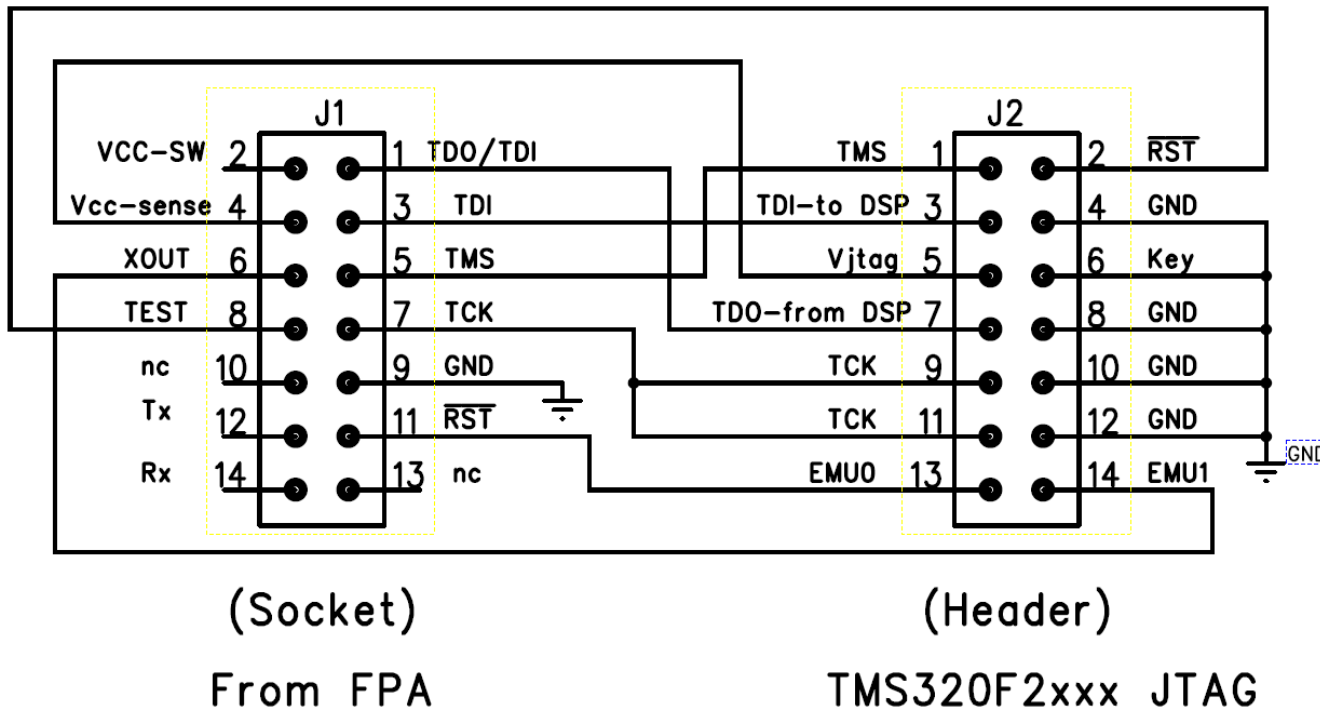
# Pinout in FlashPro-2000

## Connection with TMS320F28xx via JTAG and SCI

Programmer 14-pins connector	JTAG	SCI
1 – TDOI-1	TDO	--
2 – Vcc / Vcc sense	Vcc / Vcc sense	Vcc / Vcc sense
3 – TDI	TDI	--
4 – Vcc sense	Vcc sense	Vcc sense
5 – TMS	TMS	BOOT-SCI
6 – TDOI-2	EMU-1	RST
7 – TCK	TCK	--
8 – TEST	TRST	--
9 – GND	GND	GND
10 – TDOI-3	--	--
11 – RST	EMU-0	
12 – TDO-4	--	SCI – from MCU
13 – TDO-6	--	--
14 – TDOI-5	--	SCI – To MCU

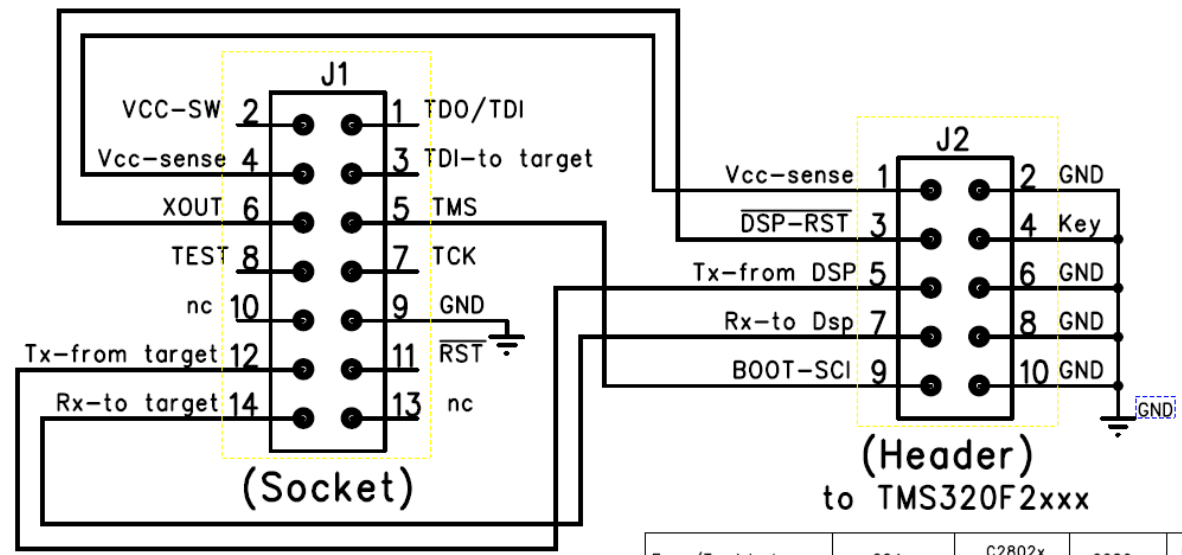
# Pinout in FlashPro-2000

Connection with TMS320F28xx via JTAG  
Adapter PN: PE034X02



# Pinout in FlashPro-2000

*Connection with TMS320F28xx via SCI  
Adapter PN: PE034X01*



From FPA



(Header)  
to TMS320F2xxx

From/To Adapter	C24xx	C2802x (Piccolo)	C280x	C2823x C2833x	C281x
Pin 3: $\overline{\text{DSP-RST}}$	XRSn	XRSn	XRSn	XRSn	XRSn
Pin 5: Tx-from DSP	SCITXD	SCIA-TX (GPIO-29)	SCIA-TX (GPIO-29)	SCIA-TX (GPIO-29)	SCIA-TX (GPIOF4)
Pin 7: Rx-to Dsp	SCIRXD	SCIA-RX (GPIO-28)	SCIA-RX (GPIO-28)	SCIA-RX (GPIO-28)	SCIA-RX (GPIOF5)
Pin 9: BOOT-SCI	BOOT-EN via resistor	GPIO-37 (TD0)	GPIO-34	GPIO-84	GPIOF4 via resistor
Pull-Down (via res 10-100k)	SPISIMO MP/MC	-	-	-	GPIOF12
Pull-Up (via res 10-100k)	-	GPIO-34	GPIO-18 GPIO-29	GPIO-85 GPIO-86 GPIO-87	GPIOF2 GPIOF3

# Pinout in FlashPro-M

## Connection with Serial Flash via SPI / QSPI

*Note: Only with Xstream-Iso and XStreamPro-Iso Adapters. Not available with USB-FPA Adapters.*

Programmer 14-pins connector	SPI / QSPI
1 – TDOI-1	SPI-MISO / QSPI-D1
2 – Vcc / Vcc sense	Vcc / Vcc sense
3 – TDI	SPI-MOSI / QSPI-D0
4 – Vcc sense	Vcc sense
5 – TMS	--
6 – TDOI-2	--
7 – TCK	SPI-CLK / QSPI-CLK
8 – TEST	SPI-CS / QSPI-CS
9 – GND	GND
10 – TDOI-3	--
11 – RST	--
12 – TDO-4	--
13 – TDO-6	--
14 – TDOI-5	--

# Pinout in GangPro-M

## Connection with Serial Flash via SPI / QSPI

*Note: Only with Xstream-Iso and XStreamPro-Iso Adapters. Not available with USB-FPA Adapters.*

Programmer 14-pins connector	SPI / QSPI
1 – TDOI-1	SPI-MISO – 1 / QSPI-D1 – 1
2 – Vcc / Vcc sense	Vcc / Vcc sense
3 – TDI	SPI-MOSI 1...6 / QSPI-D0 – 1...6
4 – Vcc sense	Vcc sense
5 – TMS	--
6 – TDOI-2	SPI-MISO – 2 / QSPI-D1 – 2
7 – TCK	SPI-CLK 1...6 / QSPI-CLK – 1...6
8 – TEST	SPI-CS / QSPI-CS – 1 ...6
9 – GND	GND
10 – TDOI-3	SPI-MISO – 3 / QSPI-D1 – 3
11 – RST	--
12 – TDO-4	SPI-MISO – 4 / QSPI-D1 – 4
13 – TDO-6	SPI-MISO – 6 / QSPI-D1 – 6
14 – TDOI-5	SPI-MISO – 5 / QSPI-D1 – 5

# Pinout in FlashPro-M

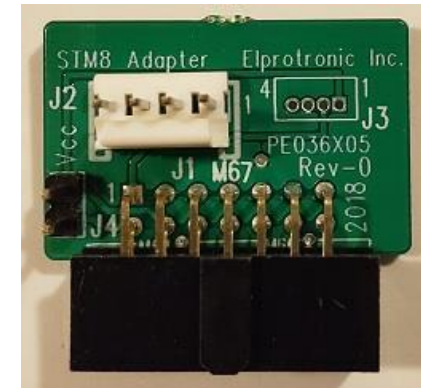
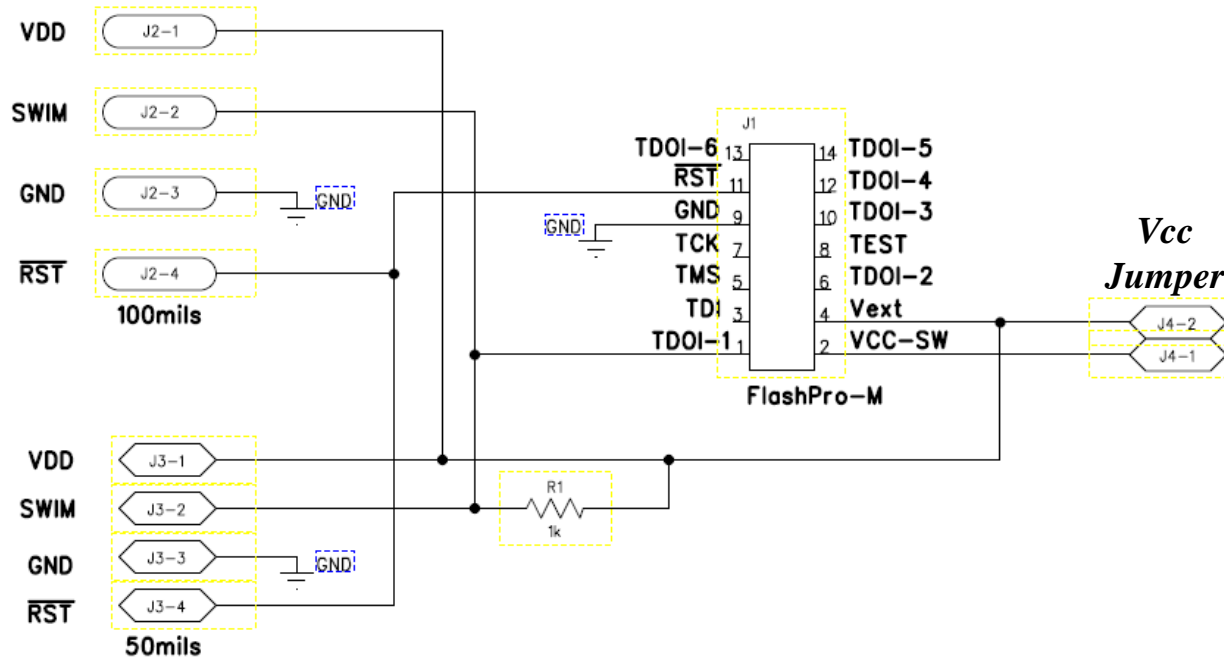
## Connection with STM-8 MCUs (ST Microelectronics)

*Note: Only with Xstream-Iso and XStreamPro-Iso Adapters. Not available with USB-FPA Adapters.*

Programmer 14-pins connector	SWIM
1 – TDOI-1	SWIM
2 – Vcc / Vcc sense	Vcc / Vcc sense
3 – TDI	--
4 – Vcc sense	Vcc sense
5 – TMS	--
6 – TDOI-2	--
7 – TCK	--
8 – TEST	--
9 – GND	GND
10 – TDOI-3	--
11 – RST	RST
12 – TDO-4	--
13 – TDO-6	--
14 – TDOI-5	--

# Pinout in FlashPro-M

## STM-8 Adapter PN: PE036X05



# Pinout in GangPro-M

## Connection with STM-8 (ST Microelectronics)

*Note: Only with Xstream-Iso and XStreamPro-Iso Adapters. Not available with USB-FPA Adapters.*

Programmer 14-pins connector	SWIM
1 – TDOI-1	SWIM – 1 (add 750 ohms pull-up to Vcc)
2 – Vcc / Vcc sense	Vcc / Vcc sense
3 – TDI	--
4 – Vcc sense	Vcc sense
5 – TMS	--
6 – TDOI-2	SWIM – 2 (add 750 ohms pull-up to Vcc)
7 – TCK	--
8 – TEST	--
9 – GND	GND
10 – TDOI-3	SWIM – 3 (add 750 ohms pull-up to Vcc)
11 – RST	--
12 – TDO-4	SWIM – 4 (add 750 ohms pull-up to Vcc)
13 – TDO-6	SWIM – 6 (add 750 ohms pull-up to Vcc)
14 – TDOI-5	SWIM – 5 (add 750 ohms pull-up to Vcc)



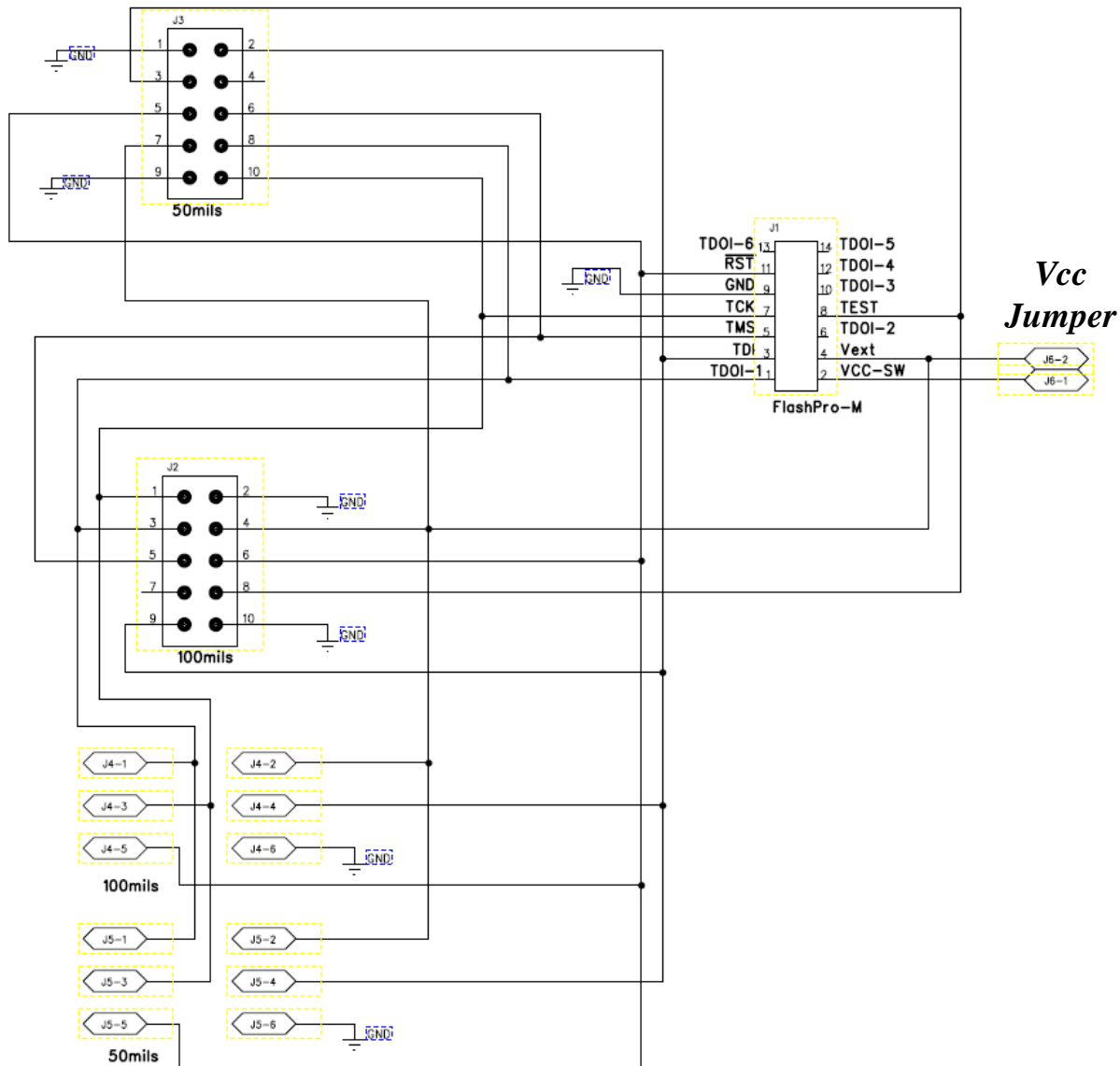
# Pinout in FlashPro-M

## Connection with AVR MCUs (Microchip/Atmel)

*Note: Only with Xstream-Iso and XStreamPro-Iso Adapters. Not available with USB-FPA Adapters.*

Programmer 14-pins connector	SPI "A"	SPI "B"	TPI "A"	TPI "B"	JTAG	PDI "A"	PDI "B"	UPDI "A"	UPDI "B"	UPDI "C"
1 – TDOI-1	MISO	--	Data	--	TDO	Data	--	UPDI	--	--
2 – Vcc / Sense	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc
3 – TDI	MOSI	--	--	--	TDI	--	--	--	--	--
4 – Vcc Sense	Sense	Sense	Sense	Sense	Sense	Sense	Sense	Sense	Sense	Sense
5 – TMS	--	--	--	--	TMS	--	--	--	--	--
6 – TDOI-2	--	CLK	--	CLK	--	--	--	--	--	--
7 – TCK	CLK	--	CLK	--	TCK	--	--	--	--	--
8 – TEST	--	--	--	--	--	--	--	--	--	--
9 – GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND
10 – TDOI-3	--	--	--	--	--	--	--	--	--	--
11 – RST	RST	RST	RST	RST	RST	CLK/RST	CLK/RST	--	UPDI	--
12 – TDO-4	--	MISO	--	--	--	--	--	--	--	--
13 – TDO-6	--	--	--	--	--	--	--	--	--	--
14 – TDOI-5	--	MOSI	--	Data	--	--	Data	--	--	UPDI

# Pinout in FlashPro-M



**AVR Adapter**  
**PN: PE036X04**



# Pinout in FlashPro-M

## Connection with PIC MCUs (Microchip)

*Note: Only with Xstream-Iso and XStreamPro-Iso Adapters. Not available with USB-FPA Adapters.*

Programmer 14-pins connector	ICSP
1 – TDOI-1	ICSP-DATA
2 – Vcc / Vcc sense	Vcc / Vcc sense
3 – TDI	--
4 – Vcc sense	Vcc sense
5 – TMS	--
6 – TDOI-2	--
7 – TCK	ICSP-CLK
8 – TEST	--
9 – GND	GND
10 – TDOI-3	--
11 – RST	RST
12 – TDO-4	--
13 – TDO-6	--
14 – TDOI-5	--

# *Pinout in FlashPro-M*

## *Connection with Serial Flash*

*Note: Only with Xstream-Iso and XStreamPro-Iso Adapters. Not available with USB-FPA Adapters.*

Programmer 14-pins connector	SPI / QSPI
1 – TDOI-1	SPI – MISO – D1
2 – Vcc / Vcc sense	Vcc / Vcc sense
3 – TDI	SPI – MOSI – D0
4 – Vcc sense	Vcc sense
5 – TMS	--
6 – TDOI-2	--
7 – TCK	SPI-CLK
8 – TEST	--
9 – GND	GND
10 – TDOI-3	--
11 – RST	--
12 – TDO-4	--
13 – TDO-6	--
14 – TDOI-5	--

# Pinout in GangPro-M

## Connection with Serial Flash

*Note: Only with Xstream-Iso and XStreamPro-Iso Adapters. Not available with USB-FPA Adapters.*

Programmer 14-pins connector	SPI / QSPI
1 – TDOI-1	SPI – MISO – 1
2 – Vcc / Vcc sense	Vcc / Vcc sense
3 – TDI	SPI – MOSI – 1...6
4 – Vcc sense	Vcc sense
5 – TMS	--
6 – TDOI-2	SPI – MISO – 2
7 – TCK	SPI – CLK – 1...6
8 – TEST	--
9 – GND	GND
10 – TDOI-3	SPI – MISO – 3
11 – RST	--
12 – TDO-4	SPI – MISO – 4
13 – TDO-6	SPI – MISO – 6
14 – TDOI-5	SPI – MISO – 5