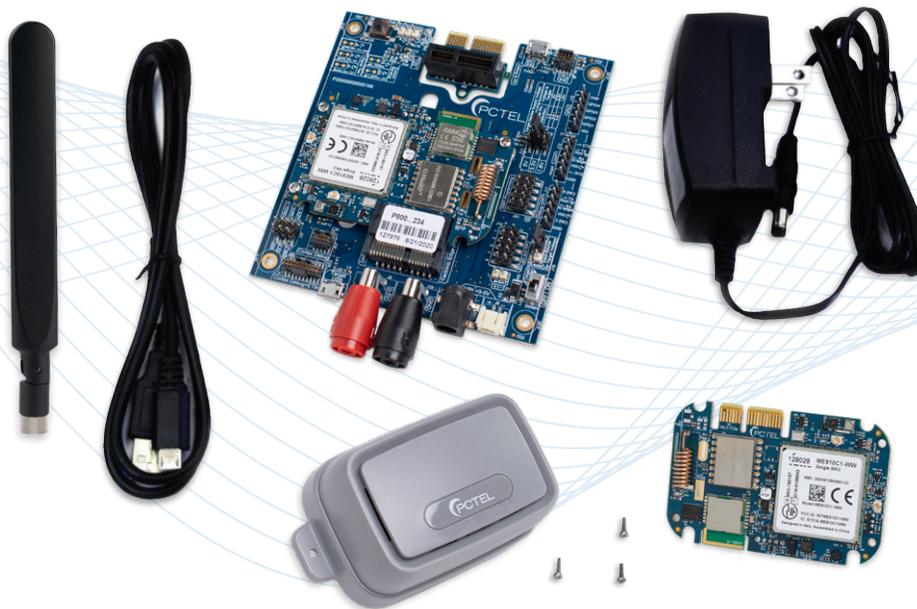


Wireless Sensor Development Kit

A Complete Environment for Creating Wireless Sensor Solutions

WSDK-1450-E, WSDK-1450-C



Kit Contents

- **WSDK-1450-E:** Wireless Sensor Endpoint (WSE-1450), Wireless Sensor Development System, Power supply, Antenna, USB cable
- **WSDK-1450-C:** Wireless Sensor Core (WSC-1450), Wireless Sensor Development System, Power supply, Antenna, USB cable

Connectivity

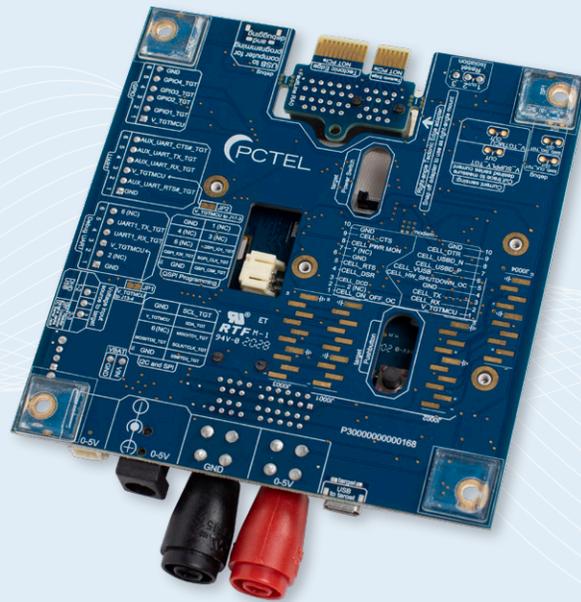
- Cellular Cat M1/NB-IoT
- LoRa
- Bluetooth® 5
- NFC
- 802.15.4

Features

- USB programmer/debugger interface
- Target USB interface
- Banana jack power connectors
- DAPLink debugger
- K20DX microcontroller DHD with firmware update capability

Sensors

- Air Quality
- Temperature
- Relative Humidity
- Acceleration
- Angular rate of change
- Magnetic Field
- Range
- Sound



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The PCTEL® WSDK-1450 supports development of both the WSE-1450 and the WSC-1450 using the common edge connector debug interface. The included Wireless Sensor Development System has several features and functions that are integrated into a single platform including the programmer and debugger, as well as connectivity to all of the interfaces in the product family.

The WSC-1450 can be plugged directly into the Wireless Sensor Development System. For WSE-1450 debugging, an adapter is included so that the endpoint can also be plugged in for development.

Programming and debugging are supported by a DAPLink interface using a Debug Host Device (DHD) connected through the USB interface. Additionally, the host microcontroller can be programmed/debugged through the Cortex Debug/+ETM interface.



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Features and Benefits

Feature	Benefit
On-board programmer / debugger	No need to purchase attach a 3rd party programmer. Attaches directly to a host computer via USB interface.
I/O interface breakout pins	Quickly integrate external components for proof of concept development.
Power source options	Connect power source as needed for development, testing and integration.

Card Edge Debug and Interface Connector

WSDS [signal]	WSC [generic function]	WSC [signal]	Pin	Pin	WSC [signal]	WSC [generic function]	WSDS [signal]
MISO/TD1_TGT	MISO/TRACEDATA1	LoRa_MISO	B1	A1	CELL_TX	TX [from Processor]	AUX_UART_TX_TGT
MOSI/TD2_TGT	MOSI/TRACEDATA2	LoRa_MOSI	B2	A2	CELL_RTS	RTS	AUX_UART_RTS#_TGT
SCLK/TCLK_TGT	SCLK/TRACECLK	LoRa_SCLK	B3	A3	CELL_RX	RX [to Processor]	AUX_UART_RX_TGT
SS#/TD3_TGT	SS#/TRACEDATA3	LoRa_SS#	B4	A4	CELL_CTS	CTS	AUX_UART_CTS#_TGT
GND	GND	GND	B5	A5	GND	GND	GND
SCL_TGT	I2C_SCL	SCL	B6	A6	I2S_WS	GPIO04	GPIO4_TGT [from board]
SDA_TGT	I2C_SDA	SDA	B7	A7	I2S_SCK	GPIO05	JTAG_TDI_TGT [to target device]
GND	GND	GND	B8	A8	GND	GND	GND
GPIO1_TGT	GPIO01/Analog1	CELL_ON_OFF	B9	A9	BT840_USB_P	USB_P	USB_TGT_P
GPIO2_TGT	GPIO02/Analog2	SENSOR_PWR_EN	B10	A10	BT840_USB_N	USB_N	USB_TGT_N
GPIO3_TGT	GPIO03	I2S_SD	B11	A11	BT840_VBUS	VBUS	VBUS_TGT
UART1_TX_TGT	DEBUG_TX [from Processor]	DEBUG_TX	B12	A12	VCC_33	VCC	V_TGTMCU
UART1_RX_TGT	DEBUG_RX [to Processor]	DEBUG_RX	B13	A13	VBAT	VBAT	V_SUPPLY_TGT
GND	GND	GND	B14	A14	GND	GND	GND
QSPI_CS#_TGT	QSPI_CS#	QSPI_CS#	B15	A15	BT840_SWDIO	SWDIO	SWD_DIO_TGT
QSPI_IO1_TGT	QSPI_DATA1	QSPI_IO1	B16	A16	BT840_SWDCLK	SWDCLK	SWD_CLK_TGT
QSPI_IO0_TGT	QSPI_DATA0	QSPI_IO0	B17	A17	BT840_RESET#	RESET#	RST_TGT
QSPI_CLK_TGT	QSPI_CLK	QSPI_CLK	B18	A18	BT840_SWO/TRACEDATA0	SWO/TRACEDATA0	SWO/TD0_TGT

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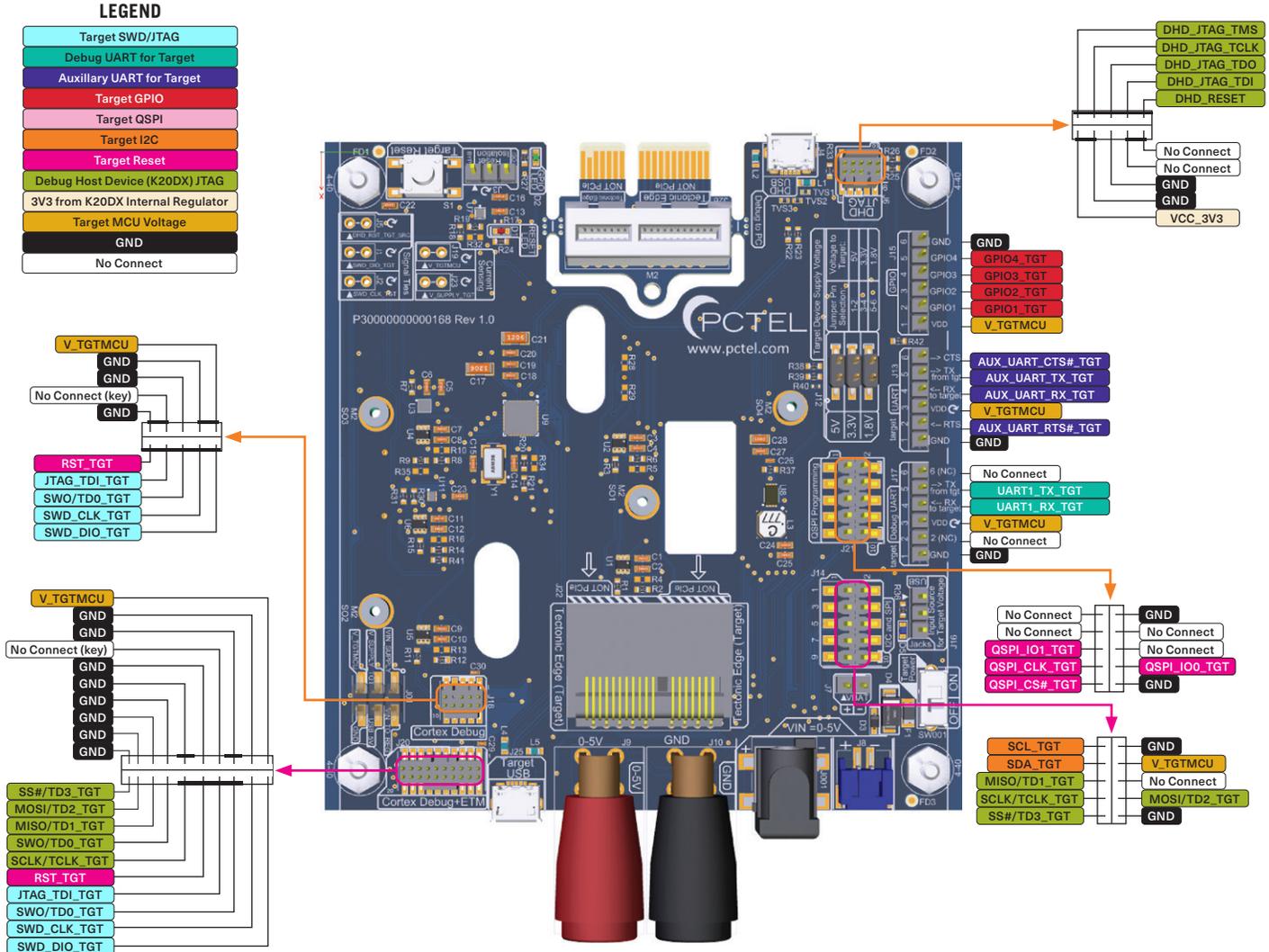
Connectors

Connector	Ref Des	Purpose
Card edge (target)	J22	Physically connect target device to Flidor for programming/debugging
Cortex debug	J18	External programming/debugging of target device
Cortex debug+ETM	J20	External programming/debugging of target device (with ETM capability)
Target USB	J25	USB lines broken out directly from target device
DC barrel jack	J001	Power input for target only (center-positive DC barrel jack)
JST connector	J8	Power input for target only (intended for battery use)
Banana jacks	J9, J10	Power input for target only (4mm banana jack)
VBAT	J7	Power input for target only (0.1"/2.54mm male pin header)
I2C and SPI	J14	I2C and SPI lines broken out directly from target device
QSPI programming	J21	QSPI lines broken out directly from target device
Debug UART	J17	UART lines broken out directly from target device (designated for debugging)
UART	J13	General use UART lines broken out directly from target device
GPIO	J1	GPIO lines broken out directly from target device
DHD JTAG	J16	JTAG pins broken out from the K20DX / Debug Host Device (DHD) for programming/debugging
DHD USB	J4	USB connection for the K20DX/DHD (May power WSDK and be Input Source for Target Power - see J16)
FaultLine	J26	Break-off physical right-angle connector for Tectonic Edge devices for extended orientation options

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Connector Identification Diagram



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Solving Complex Wireless Challenges

PCTEL is a leading global provider of wireless technology, including purpose-built Industrial IoT devices, antenna systems, and test and measurement solutions. Trusted by our customers for over 25 years, we solve complex wireless challenges to help organizations stay connected, transform, and grow.

Product Usage

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PCTEL, Inc.

T: +1 630 372 6800 | pctel.com