



Intel Radon Board

Version 1.3
Last update: 14-Jan-2016

Overview

The Intel Radon Board is a miniaturized version of the Arduino/Genuino 101 board. The Radon will run the same software, either from the Arduino IDE or from the ISPC targeted for the Arduino/Genuino 101 board.

Radon vs Arduino/Genuino 101

There are some mechanical and electrical differences between Radon and Arduino 101 boards.

Radon	Arduino 101/Genuino 101
Dimensions: 31mm x 29mm x 4.4mm	Dimensions: 70mm x 55mm x 20mm
Strictly 3.3V IO board. The Radon does not have the protective devices, thus may be damaged if exposed to IO levels in excess of 3.3 volts.	3.3V IO board with protection against 5V levels
Board has solderable holes. You may solder wires, header pins or sockets to the holes. They are standard 40-mil holes on a 0.1" pitch on either side of the board, and two placed on the third side next to the Bluetooth antenna.	Board has socket connectors
The IO connections have the same names and functions as the Arduino/Genuino 101 board. However, they are not placed in the same order. Instead, they are arranged in the most space-saving order. The IO holes are clearly marked on the bottom side silkscreen labels.	The IO connections are identical to Arduino UNO to enable shield compatibility.
The JTAG connector is not present. However, the necessary JTAG signals are available as marked test points on the bottom side of the board, along with ground and 3.3 volts (7 total wires). These can be temporarily soldered with a wire, or probed with spring pins from the bottom.	JTAG connector is available on the board.
The 6-pin, "ISP" header is not present. The signals are duplicated on other pins, as they are with the Arduino/Genuino 101.	The ISP header is available on the board.
There are 3 mounting holes, sized to accept standard #2-56 or M2 machine screws. The clearance is tight, but should clear most types of attaching hardware. You should check to be	Mounting holes on Arduino/Genuino 101 are mechanically identical Arduino Uno.

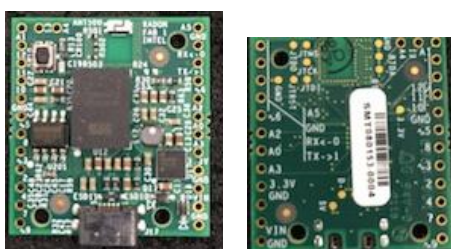
sure any hardware doesn't short a component, IO point or test pad.	
Radon has a micro-USB connector and may be powered and programmed in the same manner as the Arduino/Genuino 101. It has the same USB vid/pid, but will show a different board name and serial number to Device Manager or System Profiler, lsusb, etc. You should not need new drivers.	Arduino/Genuino 101 has a full size-USB connector which may be used to power or program the board.
Radon does not have a DC barrel jack. However, it does have a V-IN connection, which accepts unregulated DC input, from approximately 4.5v to 12v. (actual limits to be determined). This allows the board to be powered without USB from an external power source	Arduino/Genuino 101 has a DC jack which is also tied to the V-in pin to power the board from unregulated DC voltage from 7-15 volts.
There is no 5V power supply output pin	5V power supply output pin is available.
There is a master-reset button, but no software (sketch) reset button.	Both the reset buttons (master and sketch) are available on the board.
The following Arduino pins on the are not brought out on Radon: ATN, IOREF, RESET, 5V, AREF, SDA, SCL. SDA and SCL are duplicated on 5 and 6 on both Radon and Arduino/Genuino 101	ATN is not used, IOREF is equivalent to 3.3 volts, AREF not connected,
There is a regulated 3.3 volt power output. The current available is yet to be determined and is dependent on the raw input voltage applied (lower is better) and the amount of heat the regulator produces. We have not characterized the thermal properties of the board regulator and do not have limits at this time. We suggest a practical limit of 400ma or less at this time.	Arduino/Genuino 101 provides regulated 3.3 volt and 5-volt power outputs.
Radon is not FCC certified at this time and may not be sold or leased and remains the property of Intel Corporation.	Arduino/Genuino 101 is FCC Certified

Table of Connections and Equivalents

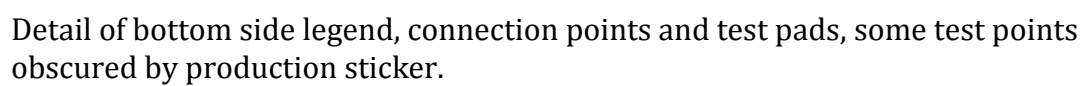
type	Radon Name	Arduino 101 name	
User IO hole/header	nc (not present)	ATN	User IO hole/header J10
User IO hole/header	nc (not present)	IOREF	User IO hole/header J10

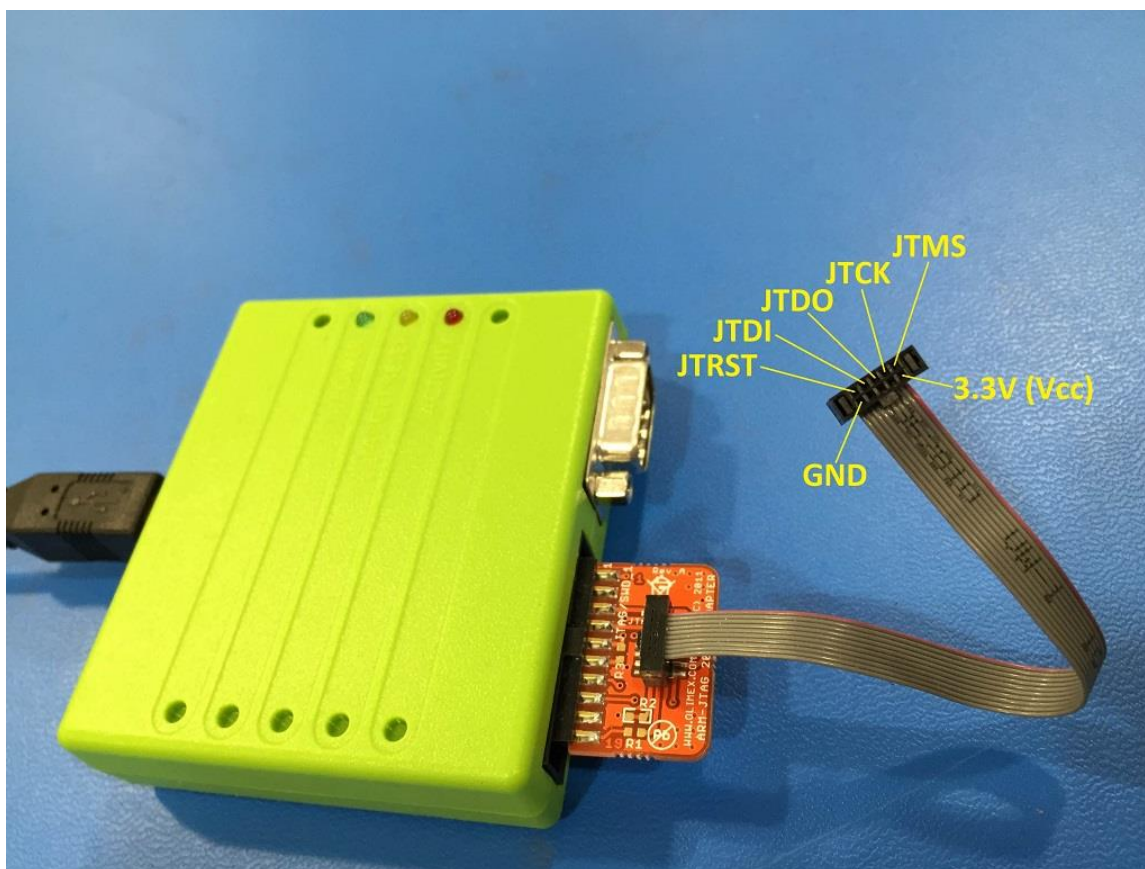
User IO hole/header	nc (not present)	RESET	User IO hole/header J10
User IO hole/header	3.3	3.3V	User IO hole/header J10
User IO hole/header	nc (not present)	5V	User IO hole/header J10
User IO hole/header	GND	GND	User IO hole/header J10
User IO hole/header	GND	GND	User IO hole/header J10
User IO hole/header	VIN	Vin	User IO hole/header J10
User IO hole/header	A0	A0	User IO hole/header J14
User IO hole/header	A1	A1	User IO hole/header J14
User IO hole/header	A2	A2	User IO hole/header J14
User IO hole/header	A3	A3	User IO hole/header J14
User IO hole/header	A4	A4	User IO hole/header J14
User IO hole/header	A5	A5	User IO hole/header J14
User IO hole/header	RX<-0	RX<-0	User IO hole/header J13
User IO hole/header	TX->1	TX->1	User IO hole/header J13
User IO hole/header	2	2	User IO hole/header J13
User IO hole/header	~3	~3	User IO hole/header J13
User IO hole/header	4	4	User IO hole/header J13
User IO hole/header	~5	~5	User IO hole/header J13
User IO hole/header	~6	~6	User IO hole/header J13
User IO hole/header	7	7	User IO hole/header J13
User IO hole/header	8	8	User IO hole/header J11
User IO hole/header	~9	~9	User IO hole/header J11
User IO hole/header	10	10	User IO hole/header J11
User IO hole/header	11	11	User IO hole/header J11
User IO hole/header	12	12	User IO hole/header J11
User IO hole/header	13	13	User IO hole/header J11
User IO hole/header	GND	GND	User IO hole/header J11
User IO hole/header	nc (not present)	AREF	User IO hole/header J11
User IO hole/header	nc (not present)	SDA	User IO hole/header J11
User IO hole/header	nc (not present)	SCL	User IO hole/header J11
USB test pad	5V	(no silkscreen)	USB jack J17 pin 1 USB_5V_PWR
USB test pad	D-	(no silkscreen)	USB jack J17 pin 2 USBDN_CONN
USB test pad	D+	(no silkscreen)	USB jack J17 pin 3 USBDP_CONN
JTAG test pad	JTMS	(no silkscreen)	JTAG header J15 pin 2
JTAG test pad	JTCK	(no silkscreen)	JTAG header J15 pin 4
JTAG test pad	JTDO	(no silkscreen)	JTAG header J15 pin 6

JTAG test pad	JTDI	(no silkscreen)	JTAG header J15 pin 8
JTAG test pad	JTRST	(no silkscreen)	JTAG header J15 pin 10
test pad	BTDA – (manufacturing use)	(no silkscreen) ?	test pad TPB10 NOR_SWD_SDA
test pad	BTCL - (manufacturing use)	(no silkscreen) ?	test pad TPB11 NOR_SWD_SCL



Approximate Size Top and Bottom sides.





Mapping of JTAG test points to Flyswatter Cable

