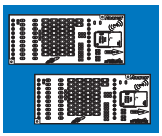
Prepare to take off with AIR

Texas Instruments

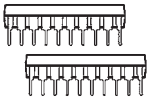
AIR *BoosterPack* Quick Start Guide

The Anaren Integrated Radio *(AIR) BoosterPack* is designed to provide instant wireless connectivity to the TI *LaunchPad* Development Tool. Just follow the simple instructions below and you'll be 'on the ***AIR***' in minutes.

This kit contains:



BoosterPack

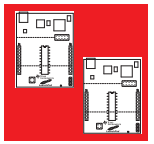


Firmware ICs

Software CD

You may also need/want:

Computer

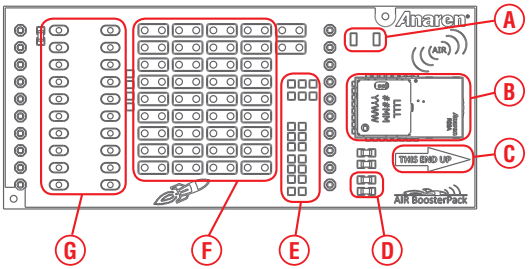


LaunchPad (2)

Soldering Iron
Solder
IC Puller
X-jumper
USB Battery

Tools/ Supplies

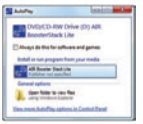
Layout & Function: See Users Manual for full description of all features



A Pads for optional SWITCH
B AIR Radio Module
C Range Test optimal orientation indicator (see Users Manual)
D Pads for optional LED
E Data path jumper settings (preset defaults)
F "Prototype area." Use these pads to build your project onboard
G Pads for MCU expansion

Installation & Launch: Follow these directions for quick setup <15.00

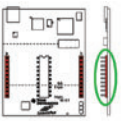
1. Insert the CD provided in the Anaren *BoosterPack* kit, and if prompted click the "Install AIR Booster Stack Lite" icon. If a menu of options does not automatically appear, click "autorun.exe" in the CD root menu.



2. If using on a computer where the *LaunchPad* drivers have not been previously installed, click the "Install *LaunchPad* USB Driver" menu option. The drivers are automatically installed.

3. Once the drivers are installed, follow the instructions in *LaunchPad* kit to verify hardware operation by running the 'temperature measurement' application.

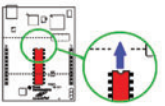
4. Disconnect the *Launchpad* from the computer, and if required, solder the two 10-pin **male** headers to each *LaunchPad*.



Continue on to get your BoosterPack running …

Installation & Launch: *(continued)*

5. Remove the 14-pin DIP ICs from each *LaunchPad*, and replace with the 20-pin DIP ICs included with the AIR-*BoosterPack* kit. When properly inserted, the DIP IC 'pin 1' notch will be towards the USB port.

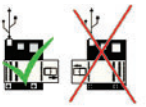


6. For proper operation of the UART interface to the computer, the *LaunchPad* J3 jumpers must be modified:
   - For *LaunchPad* v1.4 and earlier, remove the TxD & RxD shunt jumpers, and replaced with an "X-style" crossover pattern (not included).
   - For *LaunchPad* later versions, rotate the TxD and RxD shunt jumpers 90 degrees, as shown to the right.

v1.4 & earlier:

Later versions:

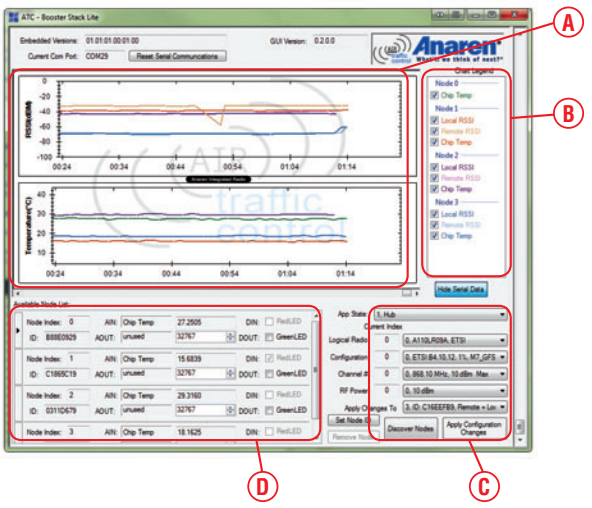
7. Plug a *BoosterPack* module into each *LaunchPad*, ensuring proper orientation. When properly installed, the Rocket logos will 'line-up' on the *LaunchPad* and *BoosterPack*.

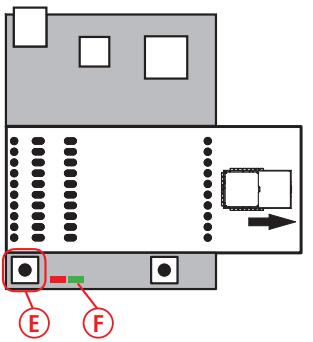


8. From the ATC-BoosterStack disc menu, click the "Install ATC-Booster Stack Lite GUI" menu option.

9. Connect the *LaunchPad*/*BoosterPack* assemblies to the USB ports, using the USB cables included in the *LaunchPad* kits.

ATC-BoosterStack GUI: See Users Manual for full description of all features





A Data traces (RSSI, temperature)
B Trace show/hide
C RF configuration control
D Paired node list
E S2 Switch (pairing)
F Green LED indicator

Installation & Launch: *(continued)*

10. Launch the ATC – BoosterStack Lite software. The GUI screen will appear, and a trace for hub-node temperature will appear.

IMPORTANT NOTE: The *BoosterPack* is designed to comply with regulations in the following regions:

Europe – ETSI (default)
North America – FCC / IC

If the intended location of use is not within these regions, then you must **first** check with local regulatory agencies to determine any permissions/license/etc. are required prior to operation.

See *Disclaimers and Regulatory Information* included with the kit for more information.

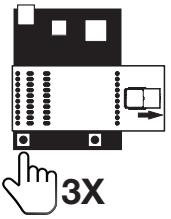
11a. For use in **Europe**, skip to step 12.

11b. For use in **North America**, follow these steps:

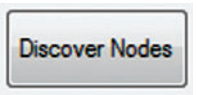
- Plug just one LaunchPad/*BoosterPack* USB cable into the computer.
- Under "Logical Radio" select "1 A110LR09A, FCC".
- Click "Apply Configuration Changes", the change is stored in the flash memory.
- Repeat this step for the remaining LaunchPad/*BoosterPack* units (plugging only one in at a time).
- Re-connect all LaunchPad/*BoosterPack* assemblies to the computer.

12. The *BoosterPack* firmware IC's are shipped by default as 'hub node' (non-transmitting on startup) to satisfy regulatory requirements, and one *BoosterPack* must be toggled to "sensor node" for pairing to occur. The following is a subset of the full instructions contained in the *BoosterPack* Users Manual (see CD documentation folder).

a) To toggle the *BoosterPack* from hub to sensor node, triple-click LaunchPad switch S2. The LaunchPad red LED will blink 3x to indicate successful change to 'sensor node'.

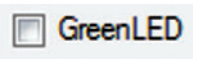


b) Press "Discover Nodes" on the GUI, and then immediately press and hold the sensor node "S2" switch for 2 seconds. When paired correctly, the sensor node will appear in the 'paired nodes' list.



NOTE: The GUI display may 'gray out' for up to 10 seconds while nodes are discovered, this is normal.

13. To identify a particular node, click the "Green LED" check box on the paired nodes list to toggle the node LED.



Still not connected? See Users Manual for troubleshooting!

Disclaimer & Regulatory Information

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For Feasibility Evaluation Only, in Laboratory/Development Environments. The EVM is not a complete product. It is intended solely for use for preliminary feasibility evaluation in laboratory/development environments by technically qualified electronics experts who are familiar with the dangers and application risks associated with handling electrical mechanical components, systems and subsystems. It should not be used as all or part of a finished end product.

Your Sole Responsibility and Risk. You acknowledge, represent and agree that:

1. You have unique knowledge concerning Federal, State and local regulatory requirements (including but not limited to Food and Drug Administration regulations, if applicable) which relate to your products and which relate to your use (and/or that of your employees, affiliates, con tractors or designees) of the EVM for evaluation, testing and other purposes.
2. You have full and exclusive responsibility to assure the safety and compliance of your products with all such laws and other applicable regulatory requirements, and also to assure the safety of any activities to be conducted by you and/or your employees, affiliates, contractors or designees, using the EVM. Further, you are responsible to assure that any interfaces (electronic and/or mechanical) between the EVM and any human body are designed with suitable isolation and means to safely limit accessible leakage currents to minimize the risk of electrical shock hazard.
3. Since the EVM is not a completed product, it may not meet all applicable regulatory and safety compliance standards which may normally be associated with similar items. You assume full responsibility to determine and/or assure compliance with any such standards and related certifications as may be applicable. You will employ reasonable safeguards to ensure that your use of the EVM will not result in any property damage, injury or death, even if the EVM should fail to perform as described or expected.
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Disclaimer & Regulatory Information: *(continued)*

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FCC, Part 15.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 - 15.247(a2) and 15.247(b) and 15.249 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Industrie Canada

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

Important Notice for Users of this Product in Japan

This development kit is NOT certified as Confirming to Technical Regulations of Radio Law of Japan !

If you use this product in Japan, you are required by Radio Law of Japan to follow the instructions below with respect to this product:

1. Use this product in a shielded room or any other test facility as defined in the notification #173 issued by Ministry of Internal Affairs and Communications on March 28, 2006, based on Sub-section 1.1 of Article 6 of the Ministry's Rule for Enforcement of Radio Law of Japan,
2. Use this product only after you obtained the license of Test Radio Station as provided in Radio Law of Japan with respect to this product, or
3. Use of this product only after you obtained the Technical Regulations Conformity Certification as provided in Radio Law of Japan with respect to this product.

Also, please do not transfer this product, unless you give the same notice above to the transferee.

Please note that if you could not follow the instructions above, you will be subject to penalties of Radio Law of Japan.

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RF Exposure

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

CAUTION! The AIR-*BoosterPack* contains ESD sensitive components. Precautions should be used when handling the device in order to prevent permanent damage.

For additional support, please visit the following website:

http://www.ti.com/launchpadwiki

http://www.ti.com/tool/430boost-cc110l

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