

Embedded Platform

Embedded Platform Selection:

1. 32 bit RISC, ARM CPU is recommended;
2. RTOS supported is desired and recommended;

RF Module Selection:

1. PSK is desired to match up to IEEE 802.11x and industrial
Commonly adopted RF modules, with balancing consideration of
performance, cost, and educational/class usage; FSK and ASK
are all ok for this class use. However, you may find ASK is the
most popular low cost RF module without MAC (Media Access
Layer) layer implementation (we will implement MAC layer in
C/C++ in the class) ;

Industrial IoT Aspect:

1. Use this high end RF module. 4 person team will be formed ,
each team with one module. Hence, you will be required to work
with other team for a project implementation.

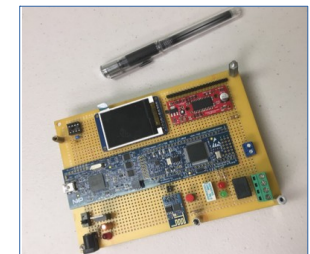
<https://www.digikey.com/product-detail/en/semtech-corporation/SX1276RF1IAS/SX1276RF1IAS-ND/4490401>



TX2 NVDA GPU



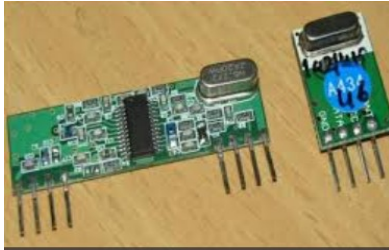
Raspberry Pie



NXP
LPC1769

Wireless Modules

Cat I



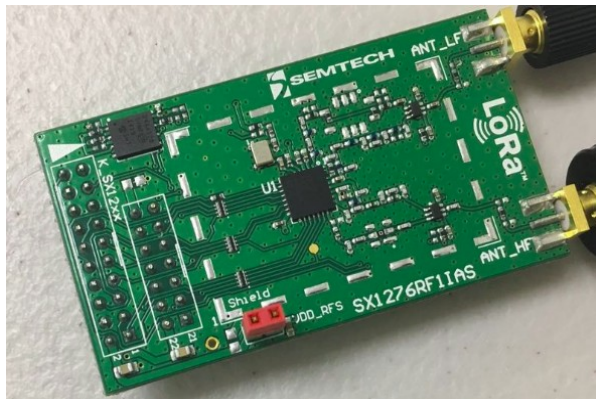
For Software Defined Radio and CR
(Cognitive Radio) Project Implementations

Google ASK RF module

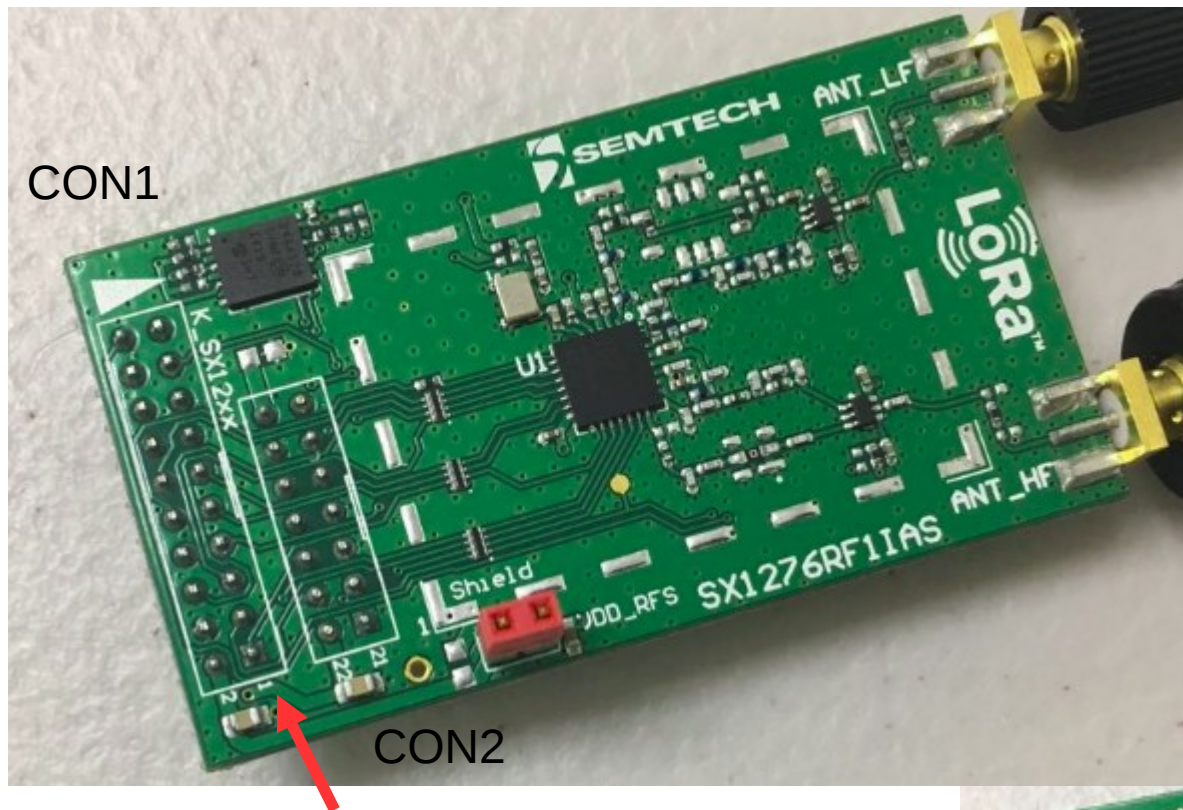
Cat II



For state-of-the-art
Industrial IoT applications



SX1276RF1IAS Modules I



For Real Industrial IoT Applications

For the design interface to embedded systems: SPI interface.

To Buy:

https://www.mouser.com/ProductDetail/Semtech/SX1276RF1IAS?qs=rBWM4%252bvDhleJeGldE033Lg%3D%3D&gclid=EAlaIqobChMI34irpMn_3AIVBMJkCh0e2gc8EAAYASAAEglWMPD_BwE



Document

1. IEEE 802.11b Standard for Software Defined Radio and CR (Cognitive Radio) implementation, also for theoretical/mathematical discussion.
2. Datasheet of sx1276rf1ias for state-of-the-art industrial IoT implementation throughout the semester.
3. Check my github for document, references and design notes, lecture notes and sample code

<https://github.com/hualili>

Other resources

<http://www.ctione.com/>