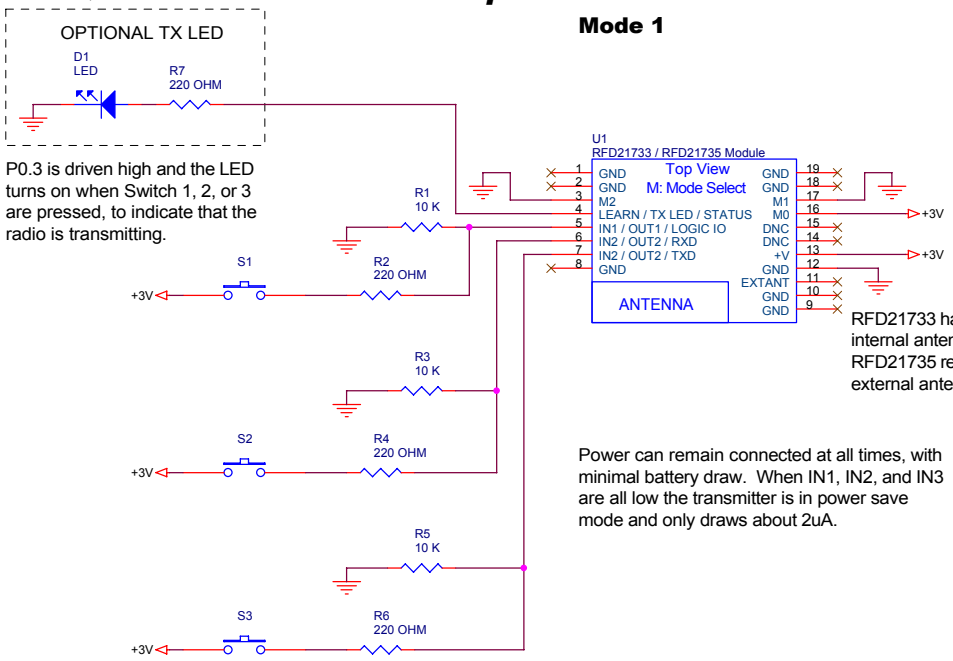
3 Input Switch Transmitter

Mode 1

If not used, leave P0.3 unconnected.



RFD21733 has internal antenna, RFD21735 requires external antenna.

Power can remain connected at all times, with minimal battery draw. When IN1, IN2, and IN3 are all low the transmitter is in power save mode and only draws about 2uA.

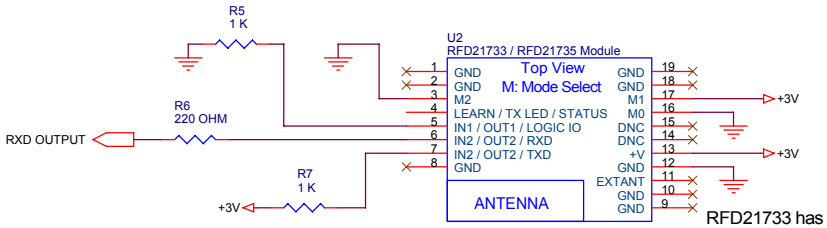
When Switch 1 is pressed, P0.4 (IN1) is driven high the radio will transmit.
When Switch 2 is pressed, P0.5 (IN2) is driven high the radio will transmit.
When Switch 3 is pressed, P0.6 (IN3) is driven high the radio will transmit.

In this mode P0.4, P0.5, P0.6 are always inputs, however the series resistors to between the inputs and the switchs are used for safety, just in case there was a mode misconfiguration during testing time that causes any of those pins to be configured as an output instead. The resistors are recommended. If you choose to remove them, you can connect all three inputs directly to +3V driving sources such as a switch to +3V or a driving IC etc.

+3V supply can be between +1.9V and +3.6V

9600,N,8,1 Serial UART Receiver

Mode 2



RFD21733 has internal antenna, RFD21735 requires external antenna.

As long as at least one of the 3 transmitters inputs are high. About every 15 milliseconds RXD pin will output 5 bytes. Byte 1 contains teh swtich status:
Bit 4 represents the transmitters input P0.4 (Switch IN1).
Bit 5 represents the transmitters input P0.5 (Switch IN2).
Bit 6 represents the transmitters input P0.6 (Switch IN3).
All other bits in byte 1 are zero.
The 4 following bytes, byte 2 through 5 will be the ESN of the transmitter.

The resistor on P0.4 is required. P0.4 is a switch IO signal, it is normally an input, so if left open it can float and cause the radio to go into transmit mode. If signal is received from another UART Serial Transmitter, to drive this pin, it will switch to an output and produce an active high output, so if you connect it directly to ground there will be a conflict. So the only option is to have the resistor there to keep it pulled low to as not to cause a transmission, and to be there as a load for when and if it receives a Logic I/O transmission and begins to drive.

The resistor on P0.5 RXD Output is not required but is only added for safety during prototyping. Use caution not to place too large of a resistor value as not to increase the slew rate. For most applications 220 ohm should be ideal. This pin is expecting to be connected to an input.

The resistor on P0.6 is not required but is recommended, just in case there is a mode misconfiguration that causes the radio to go to a mode that drives P0.6 and causes a conflict. If you choose to remove it, then connect P0.6 directly to the +3V supply.

The RXD output is at +3V logic level, you must use a level shifter to talk to an RS232 port, do not connect directly to an RS232 port.

+3V supply can be between +1.9V and +3.6V

Patents Pending

RFDP8 8-Mode Chart for RFD21733 / RFD21735
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		Mode Select Inputs						Learn / Status	
Mode	Description	2	1	0					
0	Active RFID Transmitter	0	0	0	IN 3	IN 2	IN 1	TX LED	
1	3 Input Switch Logic Transmitter	0	0	1	IN 3	IN 2	IN 1	TX LED	
2	Serial UART Transceiver, 9600, N, 8, 1	0	1	0	TXD IN	RXD OUT	LOGIC I/O	X	
3	Serial UART Transceiver, 9600, N, 8, 1	0	1	1	TXD IN	RXD OUT	LOGIC I/O	ESN LEARN	Network
4	3 Output Switch Logic Receiver - 500ms	1	0	0	OUT 3	OUT 2	OUT 1	X	
5	3 Output Switch Logic Receiver - 500ms	1	0	1	OUT 3	OUT 2	OUT 1	ESN LEARN	Network
6	3 Output Switch Logic Receiver - 20ms	1	1	0	OUT 3	OUT 2	OUT 1	X	
7	3 Output Switch Logic Receiver - 20ms	1	1	1	OUT 3	OUT 2	OUT 1	ESN LEARN	Network
	RFD21733 / RFD21735 Pin Number:	3	17	16	7	6	5	4	

Please contact RF Digital anytime for application support questions at support@rfdigital.com

3 SWITCH TX TO UART RX

Description:

Transmitter sends the status of its 3 switch logic inputs, along with it's ESN, the Serial UART receiver, receives and outputs the transmitters switch input status and it's ESN through its Serial RXD pin at 9600,N,8,1.

RFD76007 Application

For Part Number:
RFD21733 / RFD21735

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