



## 1 Typical USB Device Circuit

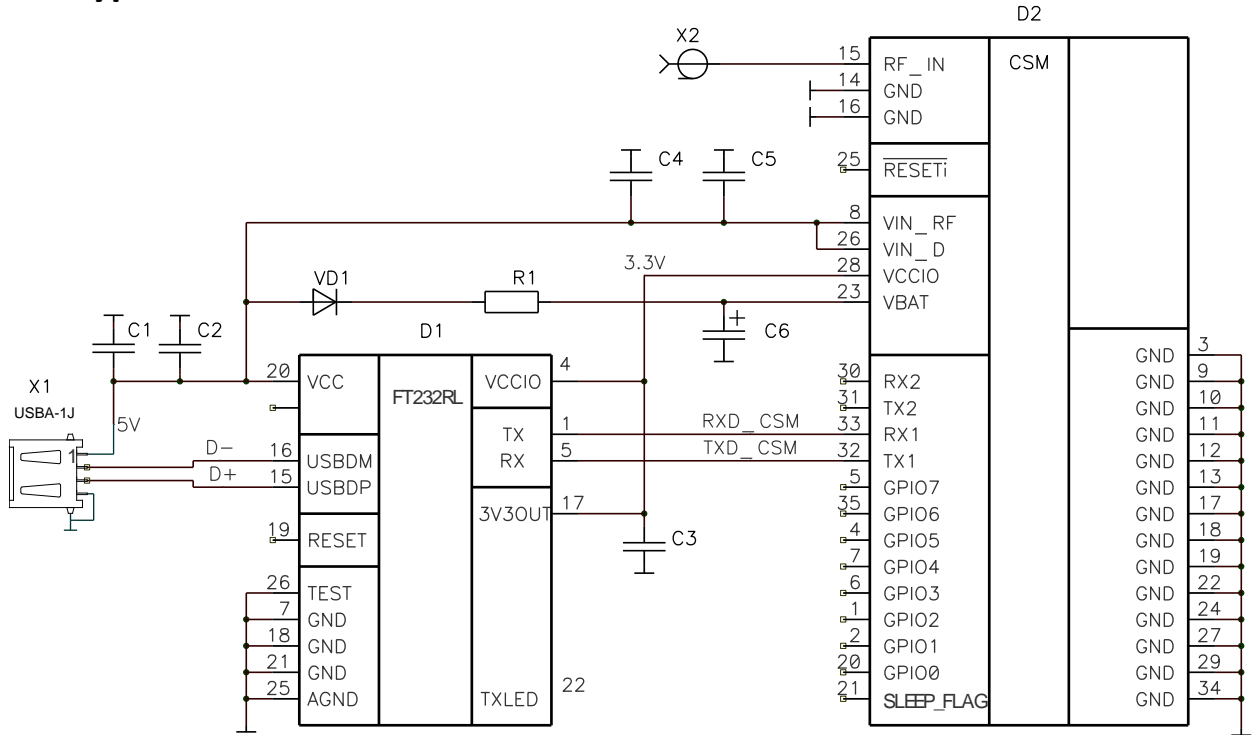


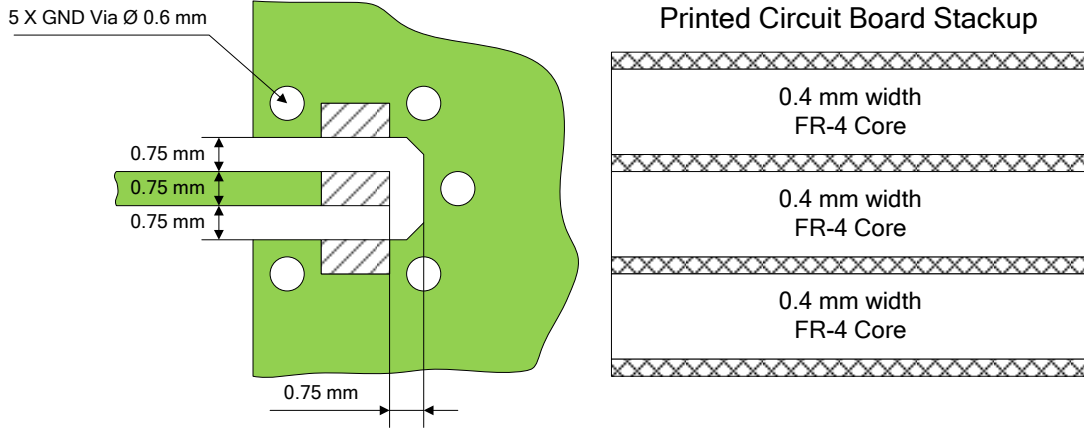
Figure 1. Typical USB Device Circuit

Table 1. Bill of Material

Designator	Part Number	Component Description	Manufacturer
C1	0805YC475KAT	Capacitor 0805, 4.7uF, 16V	AVX
C2...C5	04023D104KAT	Capacitor 0402, 100nF, 25V	AVX
C6	EECS5R5H105	Capacitor 1F, 5.5V	Panasonic
D1	FT232RL	IC USB to serial UART	FTDI CHIP
D2	NV08C-CSM	Receiver GPS/GLONASS	NVS
VD1	BAS32L	High-speed switching diode	NXP
X1	USBA-1J	USB A type Female SMT	NELTRON
X2	142-0701-851	RF Connector JACK .187" G	Emerson Network



## 2 RF Topology

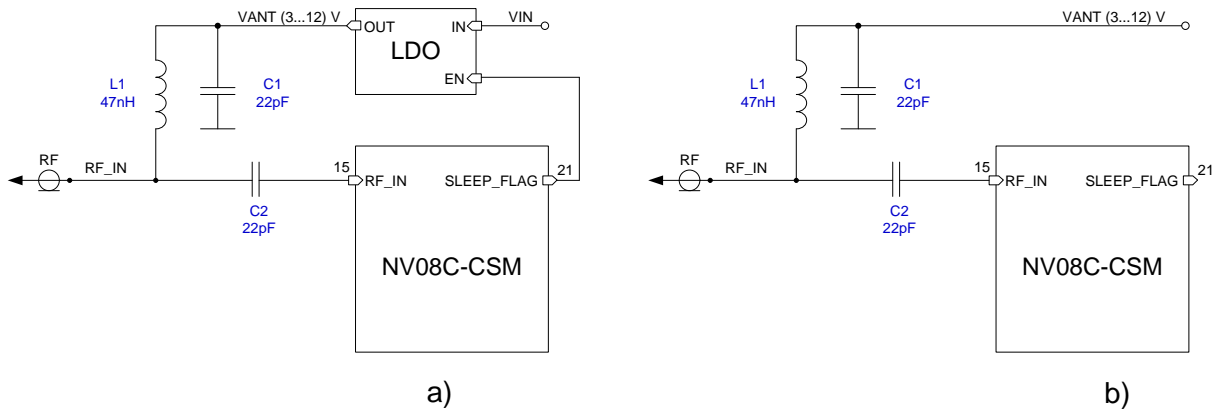


Note: Trace width and gap is shown for FR-4 with dielectric thickness 0.4 mm (please see attached board stackup)

**Figure 2. RF Topology**



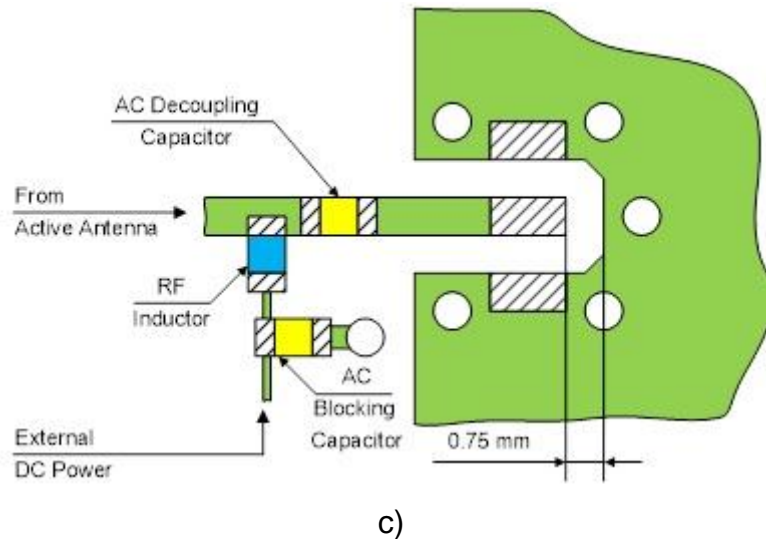
### 3 Connection Options for External Antenna Feeds



**Table 2.** Bill of Material

Designator	Part Number	Component Description	Manufacturer
L1	LQG15HN47NJ02D	Inductance 0402, 47nH, 5%	MURATA
C1, C2	04025A220JAT2A	Capacitor 0402, NPO, 22pF, 50V	AVX

#### Power Supply for Active Antenna



**Figure 2.** Connection Options for External Antenna Feeds