Base Station Bill of Material

2 pages

Part	Description	
Radio	RADIO, DNT900	
Antenna	Yagi, L-COM HG906YE (not shown on the schematic)	
Antenna Connector	X2/X3, U.FL to SMA cable assembly	This is a cable with a U.FL connector on one end and an SMA connector on the other.
RS-232 Translation Board	B3, RS-232 Translation Board (see Notes)	Sparkfun
Regulated Power Supply Kit	B1 and B2 (see Notes)	Kit 68, kitsrus.com
Battery	G1, 7.4 volts, 3300 mAh	
Battery	G2, 7.4 volts, 1800 mAh (see Notes)	
Switch	S1 and S2, SPST	
Connector	X1, 9 pin D-Connector	

Selfie Base Station Notes

Nov 2020

Radio

The radio was identified and selected in 2014. Since then, the product became part of Murata where it has been discontinued.

The radio is a 900 MHz frequency hopping spread spectrum transceiver. Two are required (see the Base Unit documentation). It was selected for its range (up to 40 miles line of sight) and power (up to 1 Watt).

While no longer available from Murata, the information on its set up and operation through the Arduino may be useful.

Be mindful of the current to support the radio. The specifications said up to 1.2 amps could be drawn when transmitting at full power.

RS-232 Board

This board is available from Sparkfun: https://www.sparkfun.com/products/11189.

This board provides the translation necessary to communicate with the Base Station custom tracking program written for Windows.

Voltage Regulator Kits

Use one regulator to supply the radio. Set its voltage at 5 volts.

Use one regulator to supply the RS-232 board. Set its voltage at 3.3 volts.

Battery

The 7.4 volt, 1800 mAh battery designated for the RS-232 board is more than required. It was available so it was used.

Build Notes

The components fit inside a Bud Box (PN-1335; available through Mouser.).

An RS-232/USB cable was required to connect to the computer.