

July 18, 2018

Exhibit 3: Blue Canyon Technologies S-band Software Defined Radio

This exhibit provides a detailed summary of the technical specifications for the Blue Canyon Technologies (BCT) S-band Software Defined Radio (SDR), which will be used in the demo for TT&C. The BCT SDR consists of a patch antenna. An image of the BCT S-band SDR is provided in Figure 1.

Technical Specifications:

- Part Number: 6ASM4135
- Output Power: 2W
- Uplink Parameters:
 - Operational Frequency Range: 2025 – 2110 MHz
 - Data Rates: 50 kbps and 100 kbps
 - Modulation: BPSK
 - Required Bandwidth: 0.2 MHz
- Downlink Parameters:
 - Frequency Range: 2200 – 2290 MHz
 - Data Rate: 1 Mbps
 - Modulation: OQPSK
 - Coding: Convolutional Coding ($k = 7$, rate = $\frac{1}{2}$)
 - Required Bandwidth: 2 MHz
- EIRP: 36 dBm (includes transmitter, cable, and filter loss + antenna gain)



Figure 1. BCT TT&C SDR