**Background**

With the explosion of connected electronic devices, wireless security efforts are being demanded. BlueDentist records and identifies local Bluetooth devices, which are traditionally hard to track due to unadvertised presence and frequency hopping.

**Key Components**

**Bluetooth SDR: XTRX**
- Monitors for Bluetooth activity
- 12 bit DAC/ADC Resolution
- Tuning range: 30 MHz to 3.8 GHz
- Up to 120 MSPS allows for high bandwidth monitoring

**System GPU: Nvidia Jetson Xavier**
- CUDA enabled: accelerates processing of radio data to identify Bluetooth signals
- 512-Core Volta GPU
- 64 Tensor cores

**Supervisor MCU: STM32L4R5ZIT6**
- Manages GPU and board peripherals

**Summary**

BlueDentist utilizes a software defined radio to collect data from a large band of frequencies. The on-board NVIDIA Jetson Xavier efficiently processes the large stream of data in order to provide identifying details of all local Bluetooth devices, recording them to the integrated SSD storage. The hardware platform is adaptable to monitor additional communication protocols.

**Software Flow**

1. Sample Bluetooth Band
2. Establish noise floor
3. Collect Data
4. Log Bluetooth activity and save packets for inspection
5. Identify Bluetooth access codes
6. Filter packets based on power threshold

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