

HERMES Hardware Description

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Abstract

This document describes the software setup of the sBitx v2 HF transceiver. The sBitx v2 radio is an ahead-of-its-time wide-band HF transceiver, fully controlled by software. The radio is composed by the analog radio-frequency circuitry, Raspberry Pi 4 (RPi 4), ATTiny85 microcontroller (for lambda bridge FWD and REF readings), battery-backed Real-Time-Clock, Wolfson wm8731 audio codec, 7 inches high-def touch screen and two knobs with “ button”,

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1 Introduction

This document address all the software details needed for the sBitx v2 hardware bringup.

2 sBitx v2 Hardware

2.1 Power consumption

3 Hardware interfaces to the computer (RPi 4)

3.1 Control I/O

3.1.1 I2C RTC

3.1.2 I2C Si5351

3.1.3 I2C ATtiny85 (FWD and REF)

3.1.4 Digital pins setup for knobs control

3.2 Signal I/O

3.2.1 I2S Wolfson wm8371

4 Linux setup for sBitx operation

4.1 Pin attribution setup for the RPi 4

4.2 Audio - ALSA subsystem

4.3 Ashhar's sbitx reference implementation