

PCTC

Product Compliance Test Center

2476 Swedesford Road, Malvern, PA 19355

OPERATIONAL DESCRIPTION

**MelodyWave Base Station
FCC ID: RXR0362024000**

**SCHULMERICH CARILLONS, INC.
SELLERSVILLE, PA**

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1.1 General Description

The MelodyWave Base Station Assembly is comprised of a 915 MHz RF transceiver mounted on a control PCB contained in a 3¼"x 6"x17" steel housing. Combined with the 36-2022 MelodyWave Baton Assembly and some form of tone generation, it forms a musical instrument. In simple terms, when the baton is actuated, it sends a message to the base station; the base station in turn processes this message and causes the tone generator to play a note via MIDI interface.

The instrument uses a TDM scheme to allow unfettered communication between up to 49 batons and the base station. Communication is performed on one pair of frequencies separated by 500 kHz. Base tick transmission occurs on the lower frequency and baton data occurs on the upper. Four possible frequency pairs are listed below:

Base Station Transmit Freq: 908.40 MHz or 909.40 MHz or 910.40 MHz or 911.40 MHz
Base Station Receive Freq: 908.90 MHz or 909.90 MHz or 910.90 MHz or 911.90 MHz

The base station emits a tick message every 53.25 msec from which all batons base their transmission times. In between ticks, the base station sits in receive mode listening for any baton messages. The tick packet contains 48 bits: 32 preamble and 16 synch word. It is modulated with FSK at 76.8 kbits/sec with a deviation of 39.6 kHz around its center frequency. Each packet is 625 µsec in duration.

The base station is powered via an external desktop power supply (60 Hz, 120 VAC, 24 VA). It supplies 12 VDC to the main PCB which powers the LCD backlight. The 12 VDC is regulated down to 3.0 VDC for the RF module and 5.0 VDC for all remaining control circuitry. Power is controlled via a front panel switch.