

# Memorandum

**To:** Larry Stillings, Compliance Worldwide  
**CC:** Cliff Brick, Dan Desimone, Safety1st, Inc.  
**From:** Ronald Pace, Safety1st, Inc.  
**Date:** 05/21/01  
**Re:** Model 49240 Circuit Description

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The 900 MHz “Grow with Me” Intercom Monitor model 49240 will be referred to as the equipment under test (EUT) in this report. The EUT is a nursery monitoring system designed to be a high quality, low cost audio two-way monitor for home use. This monitor will transmit audible sounds to and from the Child Unit and Parent Unit. The frequency band chosen for this product is the 902-928 MHz ISM band. This product is part of an ongoing family of nursery monitors provided by Safety 1<sup>st</sup>.

The Child and Parent units operate on one of four RF channel pairs. The units are full- duplex and their associated RF frequencies are listed in the attached in channel table. An external switch controls the channel selection on both units.

### **Child Unit – Device Operation**

When in transmit mode (default), the microphone picks up the room sounds and amplifies the signal through an audio amplifier. This signal is controlled by an automatic gain control (AGC) circuit to limit the FM modulation. The amplified audio signal is coupled directly into the audio input of the Samsung FM transceiver module. The transceiver module from Samsung is a complete full-duplex, 900 MHz, crystal controlled FM modulator/demodulator system. The RF transceiver input/output is connected to the external fixed antenna.

When in receive mode, the RF signal is collected at the antenna input of the transceiver module and FM demodulated to an audio signal. The recovered audio signal is amplified to a speaker for sound recovery. A 3.6V NiCAD battery or an AC/DC wall adapter powers the unit.

### **Parent Unit – Device Operation**

The Parent device operation is the same as the Child unit with the exception that the Parent unit requires a push-to-talk button to go into transmits mode. Receive mode is the default for the Parent unit. Four “AAA” alkaline batteries or an AC/DC wall adapter powers the unit.