SoniqCast

Introduction

This document provides the background technical data necessary for FCC submittal for the *802.11b transceiver* (FCC ID: RTC-1000WF) within the SoniqCast Aireo wireless audio player (model SQ-1000-NA). SoniqCast LLC is headquartered at 4400 Baker Road, Minnetonka, MN and has been assigned a FRN of 0010017416.

The Aireo player contains two transmitter functions, an IEEE *802.11b wireless transceiver* detailed herein, and a FM transmitter (FCC ID: RTC-1000FM) detailed in a separate submittal.

1 General Functions

The SoniqCast Aireo is a portable wireless audio player for the consumer electronics market. It plays audio content, including music and voice, in MP3, WMA and .wav digital formats. Content is stored on an internal hard disk and an optional removable SD format memory card. Content is loaded via a USB interface and/or an 802.11b wireless LAN connection. Audio output is via external headphones or is modulated onto a carrier in the 88-108 MHz band for receipt on a conventional FM radio receiver.

The user interface consists of a power button, keypad and LCD screen.

2 Circuit Operation

The block diagram (see 1000WF Block Diagram.pdf document) of the *802.11b transceiver* within the device illustrates functional blocks and operating frequencies. The transceiver is a 3rd party module integrated into the device, supplied by:

AirVast Technology, Inc.
4F-1, No. 1, Ln 21
Hsin Hua Rd
Kueishan Industrial Park
Taoyuan 330, Taiwan, R.O.C.

802.11b devices utilize a Direct Sequence Spread Spectrum modulation scheme in the 2.4 GHz band, operating on 1 of 11 channels in a half duplex manner.
Reference the external document 1000WF *802-11b_Schematics.pdf* for the *802.11b transceiver* circuit diagrams.

Characteristics of the *802.11b transceiver* are further detailed in Table A.

Product Feature & Specification				
1. Type of Modulation	DSSS/ DBPSK, DQPSK, CCK			
2. Number of Channels	USA/Canada: 11		European: 13	
	Japan: 13, 14	1~14	Other:	
3. Frequency Band	2400M~2495MHz			
4. Carrier Frequency of each channel	2412M, 2417M, 2422M,2427M, 2432M, 2437M,2442M,2447M,2452M, 2457M, 2462M,2467M,2472M,2484M,			
5. Bandwidth of each channel	5MHz			
6. Maximum Output Power to Antenna	15dBm			
7. IF & L.O. frequency	LO: 4824MHz(ch1); IF: none			
8. Type of Antenna Connector (Ex: SMA,TNC, MCX, MMCX, UFC……etc)	U.F.L			
9. Antenna Type / Class and **Gain**	1.5dBi			
10. Function Type	Transmitter		Transceiver	▪
11. Power Rating (DC/AC , Voltage)	3.3VDC			
12. Basic function of product	802.11b			

Table A

3 Device Antennas

As a battery powered portable product, no external grounding system is used with the unit antennas. All transmit antennas are internal to the unit with no provision for external antennas.

3.1 802.11b Transceiver

The Figure below shows the transmit/receive antenna used for the *802.11b transceiver.* The antenna has a gain of 1.5 dBi and connects via coax terminated with a UFL connector type. An antenna test report can be referenced in the external document file 1000WF *802-11b_antenna Test Report.pdf.*

WiFi Antenna