



Technical Note

ASWipLL 5.8

Wireless IP-Based Local Loop System

Hybrid Mode Hopping Algorithms and Compliance with FCC 15.247 (a) (1)

Leading the World in Wireless DSL

Revision Record: ASWipLL 5.8 Hybrid Compliance		
Pub/ Rev	Date	Update Description
01	Dec-04	Airspan. Author: MD
Publication No. 05120422-01		

© Copyright by **Airspan Networks LTD.**, 2003. All rights reserved worldwide.

The information contained in this document is proprietary and is subject to all relevant copyright, patent and other laws protecting intellectual property, as well as any specific agreement protecting **Airspan Networks LTD.** rights in the aforesaid information. Neither this document nor the information contained herein may be published, reproduced or disclosed to third parties, in whole or in part, without the express, prior, written permission of **Airspan Networks LTD.** In addition, any use of this document or the information contained herein for any purposes other than those for which it was disclosed is strictly forbidden.

Airspan Networks LTD. reserves the right, without prior notice or liability, to make changes in equipment design or specifications.

Information supplied by **Airspan Networks LTD.** is believed to be accurate and reliable. However, no responsibility is assumed by **Airspan Networks LTD.** for the use thereof nor for the rights of third parties which may be effected in any way by the use thereof.

Any representation(s) in this document concerning performance of **Airspan Networks LTD.** product(s) are for informational purposes only and are not warranties of future performance, either express or implied. **Airspan Networks LTD.** standard limited warranty, stated in its sales contract or order confirmation form, is the only warranty offered by **Airspan Networks LTD.** in relation thereto.

This document may contain flaws, omissions or typesetting errors; no warranty is granted nor liability assumed in relation thereto unless specifically undertaken in **Airspan Networks LTD.** sales contract or order confirmation. Information contained herein is periodically updated and changes will be incorporated into subsequent editions. If you have encountered an error, please notify **Airspan Networks LTD.** All specifications are subject to change without prior notice.

Contents

1. Introduction	4
2. Hybrid System Algorithms	4
3. Pseudo-random Hopping Frequencies for Hybrid Mode	5
4. Receiver and Transmitter Compliance	7
4.1. Receiver Compliance with 15.247 (a) (1) / 2.1033 (a) (10)	7
4.2. Transmitter Compliance with 15.247 (g), 15.247 (h)	7

1. Introduction

This document provides a description of the Hybrid ASWipLL 5.8 system (operating in the 5.8 GHz band). The Hybrid system is for 3 Mbps and 4 Mbps mode.

Hybrid System Algorithms

The Hybrid hopping algorithm is defined by a table of n frequencies. The frequencies in the table are all in the 5.726 to 5.849 range. The order of frequencies in the table is pseudo-random.

2. Pseudo-random Hopping Frequencies for Hybrid Mode

The tables below provide a pseudo-random hopping frequency table for the ASWipLL 5.8 Hybrid mode.

Table 1: Low Rate Hybrid Mode with Pseudo-Random Hopping

Frequency Assignment	Frequency (MHz)	Frequency Assignment	Frequency (MHz)
F1	5730	F32	5812
F2	5776	F33	5794
F3	5746	F34	5748
F4	5816	F35	5846
F5	5762	F36	5728
F6	5824	F37	5820
F7	5768	F38	5770
F8	5788	F39	5808
F9	5848	F40	5756
F10	5774	F41	5796
F11	5834	F42	5830
F12	5782	F43	5842
F13	5726	F44	5814
F14	5792	F45	5826
F15	5734	F46	5760
F16	5766	F47	5740
F17	5752	F48	5764
F18	5802	F49	5742
F19	5838	F50	5828
F20	5772	F51	5810
F21	5736	F52	5732
F22	5804	F53	5786
F23	5750	F54	5840
F24	5798	F55	5800
F25	5744	F56	5836
F26	5738	F57	5778
F27	5784	F58	5818
F28	5754	F59	5832
F29	5780	F60	5806
F30	5758	F61	5790
F31	5844	F62	5822

Table 2: High Rate Hybrid Mode with Pseudo-Random Hopping

Frequency Assignment	Frequency (MHz)	Frequency Assignment	Frequency (MHz)
F1	5730	F32	5812
F2	5776	F33	5794
F3	5746	F34	5748
F4	5816	F35	5846
F5	5762	F36	5728
F6	5824	F37	5820
F7	5768	F38	5770
F8	5788	F39	5808
F9	5848	F40	5756
F10	5774	F41	5796
F11	5834	F42	5830
F12	5782	F43	5842
F13	5726	F44	5814
F14	5792	F45	5826
F15	5734	F46	5760
F16	5766	F47	5740
F17	5752	F48	5764
F18	5802	F49	5742
F19	5838	F50	5828
F20	5772	F51	5810
F21	5736	F52	5732
F22	5804	F53	5786
F23	5750	F54	5840
F24	5798	F55	5800
F25	5744	F56	5836
F26	5738	F57	5778
F27	5784	F58	5818
F28	5754	F59	5832
F29	5780	F60	5806
F30	5758	F61	5790
F31	5844	F62	5822

3. Receiver and Transmitter Compliance

3.1. Receiver Compliance with 15.247 (a) (1) / 2.1033 (a) (10)

The system receiver has an input bandwidth that matches the hopping bandwidth of the corresponding transmitters. The receiver shifts its frequency in accordance with the same frequency hopping table and pattern as the transmitters.

3.2. Transmitter Compliance with 15.247 (g), 15.247 (h)

■ 15.247 (g):

The equipment fully complies with the requirements of this section. In our case, each transmission employs all available hopping channels, performed according to the requirements of 15.247.

■ 15.247 (h):

The equipment fully complies with the requirements of this section. There is no coordination between the systems to avoid simultaneous occupancy of the hopping frequencies by multiple transmitters. Each transmitter operates independently and there is no synchronization with other transmitters.