Technical Note

WipLL 1900 MHz

Wireless IP-Based Local Loop System

Hopping Algorithms

Connecting the World with Wireless Access Solutions

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Contents

1. Introduction 4

2. Hopping Time 4

3. Number of Channels 4

4. Resolution 4

5. Channel Distribution 4

6. Receiver Synchronization 4

7. Hop table example. 5

8. Customer Hop table. 5

1. Introduction

This document provides a description of the Hopping algorythm (HS) for WipLL 1900 MHz products.

- The hopping algorithm is defined by a table of ***n*** frequencies .The hopping sequence follows cyclically the frequencies in the table, remaining in each frequency for a constant period. The frequencies in the table are all in the 1930 to 1990 MHz range, with at least 2 MHz between any two frequencies in the table. The 80MHz offset between BSR and SPR frequencies has been done automatically by software. The order of frequencies in the table is pseudorandom.

2. Hopping Time

The hopping time in a given is constant (typically WipLL uses 50 msec).

3. Number of Channels

- The number of channels is determined by the table size ***n*** frequencies.

4. Resolution

The minimum difference between any two channels is 2 MHz.

5. Channel Distribution

Since any used channel is included once in the table, all the channels are equally used, each channel occupying ***1/n*** of the time.

6. Receiver Synchronization

The system receiver input bandwidth filter matches the hopping channel bandwidth and synchronizes with the corresponding transmitter on the hopping sequence.

7. Hop table example.

Index	Bsr Tx Freq.	SPR Tx Freq.
28	1958	1878
1	1931	1851
19	1949	1869
31	1961	1881
7	1937	1857
52	1982	1902
37	1967	1887
10	1940	1860
58	1988	1908
43	1973	1893
13	1943	1863
4	1934	1854
34	1964	1884
25	1955	1875
55	1985	1905
46	1976	1896
22	1952	1872
49	1979	1899
16	1946	1866
40	1970	1890

Where **Index** is a shift from the **Base Frequency (**1930 for BSR and 1850 for SPR).

8. Customer Hop table.

Customer (service provider) builds it's own Hop table according to acquired licensed band. All BSR/SPR units sent to the customer are preloaded with the customer's Hop table in the production line.