**Murandi**
**Communications Ltd.**
*Innovative Radio Frequency Solutions*

# Frequency Hopping Statement of Compliance

May 14, 2014

To: Federal Communications Commission
Equipment Authorization Branch - Laboratory Division
Office of Engineering and Technology
7435 Oakland Mills Road
Columbia, Maryland
USA
21046

Subject: Frequency Hopping Statement of Compliance

Applicant: Murandi Communications Ltd.
106, 4715 – 13 St. NE,
Calgary, Alberta,
Canada
T2E 6M3

Type of Equipment: Transceiver

FCC Identifier: KQNMLINK900

Dear Sir or Madam:

Please be advised that the manufacturer declares that the above mentioned product complies with the requirements for frequency Hopping operation subject to section 15.247 of the FCC ruling:

a. **Part 15.247(a)(1):** Please describe whether the system hops to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Provide an example of the hopping sequence channels per DA 00-705.
   I. Multiple pseudorandom sequences are generated using a LFSR polynomial which guarantees that no frequency is repeated twice within the sequence. The system hops to channel frequencies generated by these pseudorandom sequences at a max 5 Hz hopping rate. An example of the hopping frequencies is

| hopNum | RF Freq (MHz) |
|---|---|
| 0 | 922.205 |
| 1 | 918.965 |
| 2 | 911.045 |
| 3 | 924.365 |
| 4 | 920.765 |
| 5 | 916.805 |
| 6 | 909.605 |

| hopNum | RF Freq (MHz) |
|---|---|
| 17 | 924.725 |
| 18 | 914.285 |
| 19 | 925.805 |
| 20 | 920.045 |
| 21 | 917.165 |
| 22 | 915.725 |
| 23 | 916.445 |

| hopNum | RF Freq (MHz) |
|---|---|
| 35 | 907.445 |
| 36 | 905.285 |
| 37 | 904.205 |
| 38 | 921.845 |
| 39 | 912.845 |
| 40 | 926.525 |
| 41 | 919.685 |

| hopNum | RF Freq (MHz) |
|---|---|
| 7 | 906.365 |
| 8 | 923.645 |
| 9 | 918.245 |
| 10 | 910.685 |
| 11 | 906.725 |
| 12 | 904.925 |
| 13 | 921.485 |
| 14 | 919.325 |
| 15 | 917.525 |
| 16 | 910.325 |
| 17 | 924.725 |

| hopNum | RF Freq (MHz) |
|---|---|
| 24 | 916.085 |
| 25 | 909.245 |
| 26 | 925.085 |
| 27 | 920.405 |
| 28 | 912.125 |
| 29 | 924.005 |
| 30 | 913.925 |
| 31 | 908.165 |
| 32 | 905.645 |
| 33 | 921.125 |
| 34 | 912.485 |

| hopNum | RF Freq (MHz) |
|---|---|
| 42 | 911.405 |
| 43 | 907.085 |
| 44 | 923.285 |
| 45 | 913.565 |
| 46 | 926.165 |
| 47 | 915.005 |
| 48 | 925.445 |
| 49 | 914.645 |
| 50 | 908.525 |
| 51 | 922.565 |
| 52 | 913.205 |

b. **Part 15.247(a)(1):** Please describe whether each frequency is used equally on the average by each transmitter (e.g., that each new transmission event begins on the next channel in the hopping sequence after the final channel used in the previous transmission event)
   I. Both the receiver and transmitter are synchronized and hop from channel to channel at the hopping rate, using the same pseudorandom sequence, whether data is transmitted or not. Each RF frequency occurs ONCE in the pseudorandom sequence, and the ENTIRE sequence is executed in ORDER (hopNUM), repeating at the start when the top of the sequence is reached. On average each channel is equally used by each transmitter.

c. **Part 15.247(a)(1):** Please describe whether the system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and whether they shift frequencies in synchronization with the transmitted signals
   I. The receiver RF input bandwidth covers the entire 902 to 928 MHz band, which is reduced to the channel bandwidth of 100 to 200 kHz (depending on the data rate) and matches the transmitted signal. The receiver shifts frequency in synchronization with the transmitter.

Please contact the undersigned if you have any questions or need any further information.

Sincerely,

*David Goulbourne*
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