Bellman & Symfon AB

Document title				Document no.	Revision
BE1240 Radio and Antenna description				**BE1240_018DSP**	**001**
Issued by	Date	Approved by:	Date:	Info class:	
Göran Ivarsson	2011-02-03		-	**Strictly confidential**	

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REVISION	DATE	PARAGRAPHS CHANGED	SIGN.
001	2011-02-03	Description for BE1240	Giv

TABLE OF CONTENTS:

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1 Visit 433 Radio interface

1.1 General

The wireless communication shall use the 433 MHz SRD radio spectrum according to CEPT ERC recommendation 70-03E.

1.2 Frequency band

Carrier frequency shall be 433.92 MHz (± 200 kHz).

1.3 Modulation

Baud rate is approximately 333.34 bit/s.

On-Off Keying shall be used for modulation, where carrier present = "1", no carrier = "0".

1.4 Frame format

Data is transferred in a frame-format beginning with a back-off time of 12 bits, a reference bit (1/3 bit length) and 12 information bits.

The information bits represents 8 address-bits and 4 data bits, where the address corresponds to the selected channel and the 4 data bits holds information about that kind of alarm event that has occurred.

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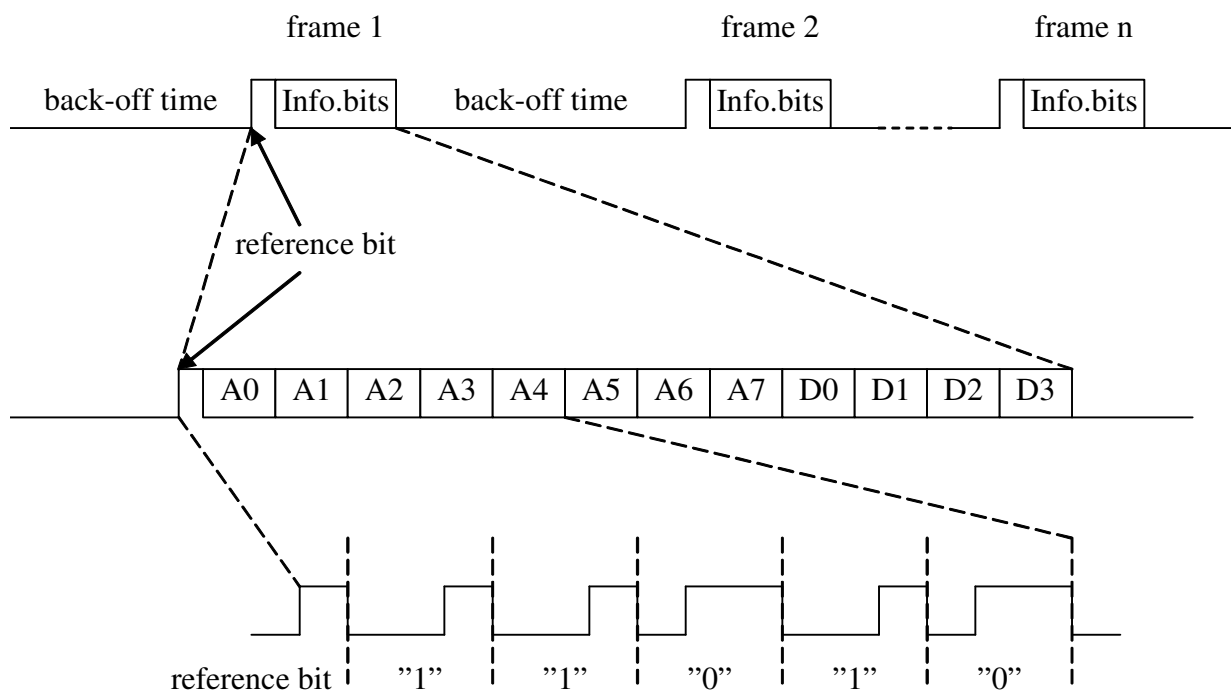

Figure 1: Visit frame format

The information bits are encoded using two different pulse-widths for representation of "1" and "0". The reference bit must be used as a timing reference, in order to decide the logical level of the received bits. The length of the reference bit is measured and a constant is added to achieve a threshold time. A measured pulse of the information bits that is longer than the threshold is considered a logical "0" and a shorter pulse is considered logical "1".

An alarm event will repeat transmit frames for a minimum of 1.3 s. The back-off time between frames should be at least the pilot time, which is 36 ms (12 bits).

The receiver expects no transmission for approximately 4-6ms (depending on product) before the reference bit is measured. At least 3 identical frames must be received before an alarm event is triggered in the receiver.

1.5   Antenna

Antenna type; Integral Helical Coil, Maximum antenna gain: -15.85 dBi.