



January 28, 2008

Timco Engineering Inc.
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Re: Signpost Data Modulation onto 125 KHz Channel

The Signpost is a device that transmits a unique identifier embedded into a localized Low Frequency RF field. The Signpost uses a low frequency transmitter centered at 125 KHz to achieve this.

Data is modulated onto this channel at a rate of 4 kbps using an On/Off keying modulation and employing a Differential Manchester encoding scheme. This reduces the effective data rate down to 2 kbps and ensures that any one message on the channel is DC balanced when consumed by the receiver. In other words the transmitter is turned on for half of each bit transmitted regardless of the data being sent.

For each message sent on the channel there is a short preamble followed by a start bit and 24 bits of data. Transmitter on time for any single message is under 10 ms total. The repeat rate for messages is once per 100 ms.

Regards,

A handwritten signature in blue ink, appearing to read "Dalibor", followed by a period.

Dalibor Pokrajac
VP of Engineering
Guard RFID Solutions Inc.