BarVision™ Spout Operational Description

FCC ID: Q4601

General:

A BarVision Spout is design to attach to a liquor bottle and provide inventory information about the liquor bottle. This information is transmitted to a BarVision radio receiver and combined with information from other BarVision Spouts in order to generate inventory related reports.

Sensors:

A BarVision Spout has a >90 degree tilt sensor, a >135 degree tilt sensor, and a bottle attach detect button. The tilt sensors are used to determine when a drink is poured and to estimate how much was dispensed.

Radio Transmissions:

The BarVision Spout operates in compliance with FCC Sections 15.231(a) and 15.231(e) of Title 47 of the Code of Federal Regulations. The transmission frequency is 433.28 MHz, the raw data rate is 4407 bits per second (with the exception of a preamble, the number of data bits is half of this for Manchester encoding), and it is OOK (On-Off Keying) encoded.

Transmission Types:

The BarVision Spout has two modes of transmission: immediate and periodic. Immediate transmissions occur after a drink is poured, when the spout is removed from a bottle, and when the spout is attached to a bottle. Periodic transmissions occur every ten seconds when one of these events has occurred within the last few minutes and otherwise every 60 seconds or less.

Both types of transmissions include a synchronization header, a Manchester Encoded body, and 16-bit CRC.

Immediate transmissions:

These transmissions are in response to a user pouring a drink, removing the spout, and/or replacing the spout and include an up to 32-bit control code uniquely identifying the Spout and control codes specifying what event occurred along with related data.

These transmissions are always less than five seconds.

Periodic Transmissions:

Generally these transmissions occur every 60 seconds or less often. However, when the sensors have detected that a drink has been poured within the last five minutes, the spout has been detached from a bottle, and/or attached to a bottle, then a Periodic Transmission occurs as often as every 10 seconds.

Periodic Transmissions include an up to 32-bit control code uniquely identifying the Spout and can also contain control codes specifying the details of one or more recent events. Periodic Transmissions can also include configuration data such as the software version number.

For Periodic Transmissions occurring within 10 seconds of a previous Periodic Transmission they are always shorter than 1/3 of a second in duration. In rare cases there are Periodic Transmissions up to one second but these are always followed by a period with no Periodic Transmissions at least 30 times longer.