91433

To: David Maina (BASYS TECHNOLOGY LTD)
From: Rich Fabina FCC Application Processing Branch
Date: September 23, 1998
FCC ID: N4GPAT2

Applicant Name: David Maina

Subject: ADDITIONAL INFORMATION ON FCC ID: N4GPAT2

The items indicated below must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 60 days may result in application dismissal pursuant to Section 2.917(c) and forfeiture of the filing fee pursuant to Section 1.1106

YOUR REPLY TO THIS REQUEST FOR ADDITIONAL INFORMATION MUST BE SUBMITTED ELECTRONICALLY VIA THE INTERNET. ONLY ONE ELECTRONIC RESPONSE PER REFERENCE NUMBER (shown at the end of this email) IS ACCEPTED ELECTRONICALLY VIA THE INTERNET. PLEASE DO NOT SUBMIT A PARTIAL RESPONSE OR ASK QUESTIONS ABOUT THIS REQUEST FOR ADDITIONAL INFORMATION VIA THE INTERNET. QUESTIONS ABOUT THIS REQUEST FOR ADDITIONAL INFORMATION MUST BE ASKED VIA TELEPHONE AT 301-725-1585, EXTENSION 220. YOUR COOPERATION IS APPRECIATED.

1. The application for this transmitter indicates that, in several of the transmitter's modes of operation, it transmits in a manner not compliant with Section 15.231(a)(2) of the FCC Rules, but an attempt is made to justify this by claiming that it may transmit continuously during the pendency of the alarm. This provision, found in Section 15.231(a)(4) of the Rules, pertains ONLY to those systems involved in safety of life issues. This includes security systems employed for personal safety (e.g., a transmitter carried on one's person, for use if there is a threat to one's personal well being), but does NOT include security systems used to protect material objects, such as computer equipment. As a result, several modes of operation do not comply with the timing requirements of Sections 15.231(a)(2) and (a)(3). If these timing requirements cannot be met, then the application will have to be DENIED. Please address.

2. A test report as required by Section 2.1033(b)(6) of the Rules. Be sure that this report shows compliance with the requirements in both the high and low power settings in all modes of operation. No test report was in the electronic exhibits for this electronic application.

3. Photographs showing the external case of this transmitter as required by Section 2.1033(b)(7). Be sure that these photos indicate the location of the FCC ID label as required.

4. Provide a copy of the compliance statement required by Section 15.19(a)(3) and confirm that it will be included into the final version of the user's manual pursuant to Section 15.19(a)(5) since it was not on the FCC ID label.

5. For your information - Please submit exhibits where they belong. For instance, the user's manual goes into the exhibit labeled user's manual not in the schematics exhibit!!! ETC.

DO NOT Reply to this email by using the 'Reply' button. In order for your response to be processed expeditiously, you must upload your response via the Internet at https://dettifoss.fcc.gov/beta/oet/index.html

Replies to this letter MUST contain the Reference Number: 3597

DEFERRED
11-30-98

Basys Technology

Intelitag Technical Product Description (FCC)

1 - General

The **Intelitag**™ electronic tagging system, also distributed under the ParSec trade name, is a radio based short to long range tagging system for the protection and monitoring of assets and the management of personnel movement. The system operates at a nominal frequency of 418MHz as a Low-Power, Non-Licensed Transmitter in accordance with FCC Part 15 Subpart C for intentional Radiators (TAGs) and Subpart B for unintentional radiators (Reader). The system is also type approved to MPT-1340 licence exempt frequency band by the UK Radiocommunications Agency. Approval number 13422 refers.

The basic system comprises a range of **tags** - compact radio frequency transmitters which communicate with a **universal reader**. The reader interprets the data received from a tag transmitting within its field of reception and, in turn, passes this data on to a controller or computer.

Using a combination of two power levels and differing data patterns, the universal reader is able to distinguish between 'long range' and 'short range' Intelitags. Long range tags are read at a nominal distance of up to 75m in free space, depending on the characteristics of the ambient RF environment, regardless of their proximity to the reader. Short range tags are only detected by the reader when they enter its short range zone, which is adjustable from a few cm to 25m in free space. It is the combination of short and long range detection within a single reader which, in conjunction with the properties of the different tag types described below, which gives the Intelitag system its unique performance characteristics.

Every tag has a unique identity which it transmits in conjunction with additional data relating to its operational status. Thus an asset or individual equipped with a tag can be uniquely identified by the system. The Intelitag system has been designed primarily for security applications although its use can also be extended to a wide range of asset tracking and management tasks.

A regular 'reporting' transmission from asset Intelitags provides both a security confidence check and an additional asset management (inventory) facility. Asset Intelitags incorporate anti-tamper switches which are detected at long range.

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2 - Tag Types

The **Static Intelitag (SAT)** has been designed primarily to protect equipment such as computers and their internal components, and all other types of static office equipment. However, the SAT is highly versatile and can be used to protect any static article including hospital and laboratory equipment, works of art and any item of significant value. The SAT incorporates a movement sensor and can be detected at a range of up to 75m in clear space.

The **Portable Intelitag (PAT)** has been designed to allow the movement of mobile assets within a controlled area or building, whilst denying or monitoring the removal from, and re-entry of the assets into the area. The PAT is normally detected when it enters the short range zone of a universal reader; however its other transmissions, including tamper, will be detected by a reader at long range.

The **Range Adjustment TAG** (R.A.T.), is used to remotely adjust the receiver's sensitivity to short range transmissions and accordingly this varies the range at which the other TAGs (SAT, PAT) in the product range transmission's can be received.

The R.A.T. comprises two PCB assemblies connected by a screened 6 core cable (approximatrely 6cms long) enclosed in an ABS enclosure with buttons. The main PCB is identical to the PCB in the SAT2 except that it's output power is reduced by means of a resistor change. Correspondingly, the second harmonic is also reduced.

The second PCB within the R.A.T. is used to mount miniature switches beneath the external buttons. This PCB contains no other components.

The R.A.T. is used generally once after installation of a system. The purpose for the R.A.T. is to calibrate and set up the operating range. Whilst the R.A.T. is operated, the duration of which is determined by a button press, the packet transmissions are every 0.6 seconds.

When transmitting, the output power and the transmitted packet duration (21.6 milliseconds) remain constant.

There a four types of transmitted packet which relate to four functions, determined by a particular key press, and are described below in sections 3 and 4.

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3 - Tag Operating Modes

Intelitags operate in several predetermined transmission modes of high and low power. High power transmission is approximately -28 dBm and low power is -33 dBm.

The transmitted data packet duration is constant for all tags at 21.6 milliseconds (all packets are identical in length). The power of the transmission and transmission repetition rates are determined by the tag type and its operating mode. The various operating modes for each tag are described below.

Static Intelitag (SAT)

1. Tamper mode
2. Wake mode
3. Routine report mode
4. Low battery mode

Portable Intelitag (PAT)

1. Tamper mode
2. Wake mode
3. Routine reporting mode
4. Low battery mode

Range Adjustment Intelitag (RAT)

1. See
2. Find
3. Plus range
4. Minus range

4 - Operating Mode Descriptions

TAMPER MODE (manually triggered transmission)
Tamper mode is triggered by the forcible removal of a **SAT** or **PAT** tag from the item to which it is attached. A micro switch is open circuited by the removal of the tag. The tag software continuously monitors the condition of the switch; when it changes to the ON state, the tag transmits continuously in high power every 0.6 seconds. The transmission is turned off by returning the switch to its OFF state.

WAKE MODE (manually triggered transmission)
When a **PAT** tag is disturbed, the change of state of its shock sensor causes the software to transmit packets every 0.6 seconds in low power. The duration of the transmission is 3.2 seconds. If, during the 3.2 second period, the shock sensor is disturbed again the transmission restarts.

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When a **SAT** tag is disturbed, the change of state of its shock sensor causes the software to transmit packets every 1.2 seconds in high power. The duration of the transmission is 3.6 seconds (3 cycles). If, during the 3.6 second period, the shock sensor is disturbed again the timed transmission restarts.

ROUTINE REPORTING (automatic transmission)
The PAT routine report comprises 5 packet transmissions at 0.6 second intervals in high power, repeated hourly. The hourly timer is reset if interrupted by movement of the PAT.

The SAT routine report comprises 5 packet transmissions at 1.2 second intervals in high power, repeated hourly.

LOW BATTERY (automatic transmission)
The low battery condition of a tag is indicated by the setting of a status flag during any report transmission, including routine reporting; detection of low battery does not trigger a special transmission. The battery is tested every 12 minutes and, if low, reported at the next transmission.

RANGE ADJUSTMENT (all manual transmissions)
FIND
The FIND button is used to set the range of the Receiver. The user sets the reader into a preset mode and stands to where the edge of range is desired. The FIND button is then depressed. The received analogue signal is compared to a variable voltage from a digital comparator which is modified until the signal is 'lost'. The voltage on the comparator is then incremented once. After 5-10 seconds of the key press the reader will respond with a buzzer sound indicating that the range has been set. The button is then released and the mode is returned to normal operation.

SEE
The SEE button is used to determine the range of a reader previously set. With the SEE button depressed the reader will respond with a buzzer when the R.A.T. is within the range.

PLUS and MINUS Range
The Plus and Minus range buttons are used to increment the range of the Reader either out or in respectively to the users desired position. Electronicaly this is adjusting the comparator voltage level. NB. The characteristics of the R.A.T. remain unaltered.

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5 - Other

These devices comply with part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) These devices may not cause harmful interference, and

(2) these devices must accept interference received, including interference that may cause undesired operation.

The user is cautioned that modifications or changes to an intentional or unintentional radiator not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The tags are powered are by standard Lithium coin cells and as such the following warning shall be noted:

CAUTION Danger of explosion if batteries are incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturers instructions.

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