reply® leaf – Battery Less Keypad

Technical Specifications

for

Reply® Batteryless Technology Based Audience Response Keypad

Enclosure

- Compact case. ABS plastic construction.
- Dimensions: 4.5 in. L x 1.5 in. W x .75 in. H
- Weight: Approximately 1 ounce.
- Color: Black with Reply Leaf Logo
- Special logo printing available upon request. Subject to additional costs and minimum purchase requirements.

User Identification

- Each keypad has an RF device identity in the form of a serial number and Pad ID (similar to address).
  - Serial numbers are unique, permanent, and set during manufacturing.
- Pad number and serial number identification are transmitted with each keypad's response.

User Input

- Keypads have 5 white elastomeric buttons for entering multiple-choice responses labeled 1/A, 2/B, 3/C, 4/D, 5/E
- Proprietary system transmission of user inputs.
  - Two Multiple transmission cycles per user input using a proprietary RF method.
- Base station acknowledges receipt of user inputs, and the Keypad will light either green (user input successfully received) or red (input not received).

Display

- LED illuminates green or red to indicate that the Base Station did or did not accept the user inputs.
- Illumination time of LED is limited due to the need to conserve E-Cell charge.

Range

- Designed to operate in an indoor area of up to 150 x 150. 70 x 70 feet with a centrally placed Base Station.
- A room's geometry, radio propagation characteristics, and proximity to RF interferers will influence actual range experienced. Elevating the base station often results in a performance advantage.

RF Technology

- Employs manufacturers-engineered 2.4 GHz transceivers optimized for range and user input
  - collection speed.
- Two-way patented and proprietary RF protocol uses eligible license-free/license-exempt frequencies to communicate key presses to the Base Station and receive from the Base Station acknowledgments of successful user inputs.
  - A channel consists of a Keypad transmission frequency and a Base transmission frequency. These are different frequencies to assure no collisions occur in each direction of system transmission.
  - Transmissions of Keypad user inputs are broadcast on three channels across the 2.4 GHz ISM band.
  - Acknowledgments are sent by the Base Station to the Keypads on a separate frequency corresponding to the system channel setting.
  - One channel may be set on each deployed Base Station. (Note: The system supports using a second or third Base Station. Thus in a typical single Base Station implementation, transmission by the Keypad on the two other channels are ignored.)
  - The Base Station reception channel may be changed via a software setting in situations requiring avoidance of WiFi or other interferers.
  - Integrated error checking discriminates system signals from all other RF traffic to ensure data accuracy and enhance security.
- Internal antenna is protected by the keypad enclosure.

Capacity

Optimized for groups of 50

Speed

- Virtually instantaneous (1.75 millisecond when first transmission captured based on a group of 50).

Power and Power Management

- Powered by E-Cell battery-free technology.
- Keypad powers down after each user input and response transmission to conserve charge.
- A fully conditioned and charged E-Cell can power approximately 300 responses.
  - Note: E-Cell charge level declines during storage. Anticipated use should determine the recommended charging sequence. For example, if stored unused after a complete charge cycle, approximately half the charge remains after 2 – 3 days.
- E-Cell recharge takes approximately 20 minutes.
  - A full charge cycle is not required. For example, a 5 minute charge can replenish capability for approximately 100 votes.
- E-Cell low power level can be transmitted via RF to the Base Station.

Communications Security

- A proprietary response verification protocol integral to the radio design provides a high degree of signal security.
- Proprietary data communication is an additional deterrent to clandestine interception.

Scalability

- Firmware resides in high performance microprocessor chips that can be reprogrammed at the factory. These chips are not RF update capable.
- Adding keypads to an existing system requires the serial number of the keypad to be added to the keypad list. The keypad serial number list is maintained in the base hardware and will be recalled when the base is powered up. The base can support up to 50 keypads at any given time.

Compliance and Patents

- RF is designed to be FCC, IC, CE certified. Call for details regarding these and other regulatory certifications.
- US Patent No. 7,747,261 and other U.S. and foreign patents and patents pending.
- Warranty
- 2 YEAR (limited warranty, factory parts and labor).

Additional System Components and Accessories

- Base Station for Leaf-Powered Reply® Technology Keypads
- A compact and programmable interface to your PC.
  - Operated by value-added software (priced separately).
- Dimensions: 3.1” L x 0.9” W x 0.57” H.
- Capacity: Up to 50 keypads per channel identity. Max depends on application.
- Connections: Attaches to operator’s PC by HID compliant USB connection.
- Power Source: USB. Current draw 50 mA.
- Note: Base stations do not include accessories such as software and carrycases. These additional items are priced separately.

Storage/Charging Case for Leaf-powered Reply® Technology Keypads

- Holds and charges up to 26 keypads, up to 34 keypads with a sidecar added.
- Dimensions: 17.75 in. L x 3.25 in. W x 3.0 in. H.
- Construction: Molded ABS plastic with embedded inductive charging coil.
- Keypads can be charged and stored indefinitely without damaging the E-Cell.
- Charger requires a 6 Volt, AC to DC adapter (included with case).

The Reply® Leaf Audience Response Systems are designed and assembled in the USA by our quality certified American Manufacturer.

All specifications and suggested resale prices are subject to change without notice.

reply® Wireless Interactive Technology

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