**Large LCD displays numbers, alpha characters and symbols, text messages, and custom graphics**

**Frequency Hopping Spread Spectrum (FHSS) radio frequency (RF) for superior range and security**

**The smart choice of audience response professionals**

**Technical Specifications for Wireless Keypad Model IQK 1000**

- **Enclosure**
  - Sleek, compact, and rugged molded plastic case.
  - Dimensions: 5.7" L x 2.8" W x 0.9" H.
  - Weight: Approx. 4 ounces, without batteries. (Add 1.4 ounces for three AAA batteries.)

- **User Identification**
  - Each keypad has a RF device identity (“address”) between 1 and 1500 plus a RF base station (“channel”) identity.
  - Keypad addresses are user programmable.
  - Users may also enter IDs up to 16 characters in length. These entries may be used to register the user in a polling session.
  - Software controls all registration (“log in”) by monitoring keypad activity, checking user entries, and acknowledging those entries with appropriate acceptance / rejection / assistance messages to the keypad LCD.
  - (Optional) An innovative miniature module plugs into the keypad’s expansion port to serve advanced functions, such as user identity verification and storage of all votes cast.

- **User Input**
  - A total of 21 keys are placed in common use zones that don’t intimidate or confuse the user.
  - Focus is on the practical-sized “numeric” keys for entering multivalue, multiple digit responses.
  - “Soft” keys across the top are separated from the numeric keys to clearly stand out as alternative inputs for items displayed on the LCD directly above.
  - Dedicated “special function” keys (alert / raised hand, clear, backspace, send) are shaped and colored differently than the other input keys.
  - A “Speed Scoring” mode can identify the order of user responses for time-sensitive applications like gaming and competition. Resolution is 0.05 second (50 millisecond).
  - A “Moment-to-Moment” mode offers continuous polling for advertising testing and other real-time perception measurement / analysis applications. Sampling rates are variable and can achieve 0.25 second (250 millisecond).
  - An “Alpha” mode allows entering full ASCII response by using the soft keys to navigate through letters, numbers, punctuation, and symbols.
  - (Optional) A “self-paced” or “offline” survey mode is accessible by the expansion module. Users can respond to the same or different question lists at their own pace. Results are later downloaded via the RF link.

- **Display**
  - Large graphics LCD. Size: 128 x 64.
  - Includes backlighting. Light turns off after time delay. Light may also be turned on or off via the RF link.
  - Displays multiple lines of alphanumeric text and symbols. Up to 7 lines of up to 20 characters message length per line may be viewed.
  - This messaging function is commonly used to display a question with its associated response choices, or deliver contextual feedback to user entries, or report interactive session results.
  - A reserved user entry line displays / echoes user inputs up to 16 large font characters in length.
  - These entries can be numeric, alphabetic, and symbolic for multidigit response, name entry, equations, and other complex inputs.
  - The LCD also coordinates with the 5 soft keys below it. Software can create prompts above these keys such as:
    - `- - - 0 + + +` for perception/preference measurement or continuum/scale evaluation
    - `A B C D E` (or `A B C`, etc.) for common multiple choices and easy rank ordering
    - Yes No (or `Y N A`, etc.) for simplified voting
  - Software can display horizontal bars on lines 1 - 7 of the LCD to depict group response for certain question types.
  - (Custom designs only) Supports custom logos, special character sets, and other graphics. Minimum quantities, customization costs, and extended delivery terms apply.
RF Technology
- Two-way RF keypad uses eligible license-free/license-exempt frequencies for communicating key presses to the Base Station and receiving Base Station control information and messages.
  - Employs Fleetwood UHF radio transceiver modules that offer excellent range, immunity to interference, and security.
  - There are 2 module styles: spread spectrum (frequency hopping), and synthesized frequency (multichannel). International radio regulatory agency rules dictate the type module offered with each keypad. Call for details.
  - Multiple channels provide installation flexibility. Up to 15 channel identities support up to 22,500 keypads per room.
- Patented and proprietary radio protocol.
  - Creates a secure communications network between keypads and their associated Base Station.
  - User entries can be verified (acknowledged) by Base Station.
  - Permits Reply® systems to operate reliably in the presence of other RF devices (WLANs, WIFI, PDAs, phones, etc.).
  - Integrated error checking discriminates signals from all other RF traffic to ensure data accuracy.
- Internal keypad antennas are protected by the enclosure.

Range
- A room’s geometry and RF propagation characteristics will influence actual range experienced. Assuming base station placement as recommended in operating guidelines:
  - (Spread spectrum models) Designed for reliable operation in an indoor area 600 x 600 feet.
  - (Synthesized frequency models) Designed for reliable operation in an indoor area 360 x 360 feet.
- Elevating the base station results in a performance advantage.

Power and Power Management
- Powered by three AAA alkaline replaceable cells (not included).
- Power management and “sleep” functions are under software control to extend battery life.
- (Optional) Powered by three AAA rechargeable cells. Requires separately purchased charging rack / shipping case combo. LED on keypad illuminates to indicate charging state.

Communications Security
- A response verification protocol integral in the patented radio design provides a high degree of signal security.
- (Spread Spectrum models) Frequency hopping communications and a proprietary data communications structure are additional deterrents to interference or clandestine data interception.

Control and Scalability
- Firmware resides in flash-structured, high performance microprocessor chips that can be reprogrammed to facilitate upgrade during the life of the product.
- Adding keypads to a Base Station requires them to be set to unused addresses. Up to its purchased permanent capacity (see IQB 500 Design Capacity*), no change is required on the Base Station when pads of the same radio channel are added.

Compliance and Patents
- FCC, IC, CE certified. Call for details regarding these and other international regulatory certifications.
- RoHS compliant.

Warranty
- 2YEAR (limited warranty, factory parts and labor). Call for details.

System Configuration
A basic Reply® IQ system consists of...
- one Reply® IQ Wireless Keypad per participant
- one Reply® IQ Base Station per 1,500 keypads* of the same radio channel in a room, and
- one copy of value-added application software.

Optional accessories (purchased separately) include base station and keypad carrycases. Training, on-site technical support, and similar ‘for fee’ services are also extra.

Additional System Components
Base Station Model IQB 500
- A compact, dual diversity, programmable interface to PCs and networks alike.
- Dimensions: 11.5" W x 4.5" D x 1.9" H.
- Unit Weight: 2 pounds. (Add 1.5 pounds for cables and power supply.)
- * Design Capacity: Up to 1,500 keypads per base station. Each base station ships with default permanent capacity of 300 keypads that can be expanded (for a fee, before or after purchase) in groups of 300 up to the design capacity.
  - Max capacity per system per site:
    Model 9SS: 15 channel sets allow 22,500 pads.
    Model 43X: 4 channel sets allow 6,000 pads.
- Speed: Base station polling cycles are adjustable to optimize speed to group size.
  - When 50 pads are polled, the base station’s transceivers process and acknowledge responses in a fraction of a second. When 300 pads are polled, the cycle is approximately 2 seconds. And when a single base is communicating with 1500 pads, the polling cycle is approximately 9 seconds.
  - When multiple base stations are operating on different channels, they can communicate with associated keypads concurrently. For example, US spread spectrum systems can poll up to 22,500 pads in a stadium application in under 10 seconds.
- RF: A special dual diversity transceiver design delivers superior coverage while providing redundancy in the event one transceiver becomes inoperative. A pair of high gain antennas are included.
- Connections: Attaches to the operator’s personal computer by Ethernet (RJ45) or serial cable (DB9). TCP/IP addressable controller and cables are provided.
- Power: Universal rated low voltage power supply. Input: 110-220 VAC. Output: 12 VDC. Current draw: < 0.5 A.
- Does not include software or carrycase. These and other accessories are available and priced separately.

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