

Reply® IQ



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

Frequency Hopping Spread Spectrum 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 multivalued, 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 system 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 micro-processor 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.
- U.S. Patent Nos. Re. 35,499; 5,724,357. European Patent No. EP 0 697 773. Other U.S. and foreign patents and patents pending.

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.



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