

Reply® IQ

Technical Specifications for Wireless Keypad Model IQK 1000



Reply® IQ is a revolutionary advancement in audience interaction technology. And as its name suggests, this product is the *smart* choice for industry professionals.

Enclosure

- Sleek, compact, and rugged molded plastic case.
- Dimensions: 5.7" L x 2.8" W x 0.9" H. (The cubic volume is *50% smaller* than Standard Reply keypads!)
- Weight: 5.3 ounces. (This is *20% lighter* than Standard Reply keypads!)

User Input

- A total of 21 keys are placed in common use zones that don't intimidate or confuse the user.
 - Natural focus is on the practical-sized numeric keys for entering multivalued, multiple digit information.
 - Soft keys across the top are well-separated from the numeric keys to clearly stand out as alternative inputs for items displayed on the LCD directly above.
 - Special function keys (alert/raised hand, backspace, clear, send) are shaped and colored differently than the other input keys.
- Input can be "speed scored" to a 0.05 second (50 millisecond) resolution to accurately identify user response sequence for gaming and other time-sensitive applications.
- A "moment-to-moment" function with a variable resolution setting as fine as 0.25 second (250 millisecond) facilitates continuous polling for advertising testing and other real-time perception measurement/analysis applications.

Display

- Each keypad has a unique address between 1 and 1500 and a radio frequency (RF) channel number.
 - Keypad addresses are programmable.
 - Using the numeric keyboard, and with the assistance of text instructions/feedback displayed on the keypad's LCD, users can request authorization to enter a polling session "on-the-fly" and receive confirmation of successful registration. Default configuration supports identification codes of up to 16 characters in length.
 - Software controls the registration/login process by monitoring keypad activity, interrogating user entries, and positively acknowledging those entries with appropriate acceptance/rejection/assistance messages to the keypad LCD.
 - (Optional) An innovative miniature module can plug into the keypad's expansion port to serve multiple advanced functions such as user identity confirmation and storage for votes cast.
- Large backlit *graphics* LCD. Size: 128 x 64.
 - Displays multiple lines of easily readable alphanumeric text and symbols for *dynamic* messaging. Up to 5 lines of 20 characters message length per line can be viewed. This messaging function is commonly used to show a question with its associated response choices, deliver feedback to user entries, and report interactive session results.
 - A *reserved* user entry line displays/echoes user inputs up to 16 characters in length. User entry characters are automatically sized larger than the message line characters to optimize viewing.
 - The display is formatted to coordinate with the "soft keys" below it. Depending on firmware version, software applications can create several prompts above the "soft keys":
 - -- - 0 + ++ ☞ for *continuum/scale evaluation or perception measurement/analysis*
 - 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*
 - (Custom designs only) Supports logos, special character sets and/or reformatting of the graphics display. Minimum quantities, engineering costs, and extended delivery terms apply.

RF Technology

- Proprietary radio design provides reliable, barrier-free operation between keypads and their associated Base Station.
- A unique and sophisticated radio protocol with integrated error checking discriminates system signals from all other radio data/noise to ensure data accuracy.
- Keypad uses eligible *license-free/license-exempt* frequencies for communicating key presses to the Base Station and receiving Base Station control and message information.
 - Employs Fleetwood-engineered UHF radio transceiver modules.
 - 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. (For example, FCC rules allow both modules for US operation in the 900 MHz spectrum, whereas EC rules permit use of synthesized modules on both 868 and 433 MHz.)
 - Innovative narrowband radio circuitry is more immune to both in-band and out-of-band interference than competitive RF technologies.
 - Proprietary RF protocol optimizes polling speed and range to expand user capacity without performance degradation.
 - Multiple channels provide installation flexibility.
- Internal antennas are integral to the circuit boards and protected by the keypad enclosure.

Range

- A room's geometry and RF propagation characteristics will influence actual range experienced. Elevating the base station results in a performance advantage.
 - (Spread spectrum models) Designed for reliable operation in an indoor area 500 x 500 feet, with multiple barriers present, assuming advantageous base station placement.
 - (Synthesized frequency models) Designed for reliable operation in an indoor area 300 x 300 feet.
- Various base station configurations are available for all models to expand coverage area.

Power

- Powered by 3 x AAA replaceable cells.
- Power management and "sleep" functions under software control extend battery life.
- (Optional) Powered by 3 x AAA rechargeable cells. Requires separately purchased charging rack/shipping case combo. LED on keypad illuminates to indicate charging state.

Communications Security

- A proprietary response verification protocol integral to the patented/patent pending 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 clandestine aerial data interception.

Control and Scalability

- Firmware is resident in flash-structured, high performance microprocessor chips, which can be reprogrammed to facilitate easy 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 spec*), no change is required on the Base Station when pads of the same radio channel are added.

Patents

- Covered by U.S. and European patents and patents pending.

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 carrycases 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: Approx. 2 pounds (3.5 pounds with 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.
- Polling Rate: The speed of data collection is under the control of software and can be optimized to group size. For example:
 - 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. (This allows US spread spectrum systems to poll up to 22,500 pads in a stadium application in under 10 seconds.)
- RF: A special (and patent pending) dual diversity transceiver design delivers superior coverage while providing redundancy in the event one transceiver becomes inoperative. Antennas are provided.
- Connections: Attaches to the operator's personal computer by Ethernet (RJ45) or serial cable (DB9). IP-addressable controller and cables are provided.
- Power: Universal rated low voltage power supply. Input: 110-220 VAC. Output: 12 VDC. Current draw: less than 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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