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XID Supported Protocols

XID devices support four different protocols for communicating with a personal computer. A protocol is a term used to describe the format of the information sent between two devices, in this case the XID device and your Mac or PC.

The supported protocols are:

- XID Mode
- RB Series Mode
- PST SRB Mode
- ASCII Mode



The XID mode is by far the most powerful one as it's the only mode that supports reaction time stamping of participants' responses. But it is also the harder of the four protocols to program for.

The other modes are implemented in order to provide compatibility with the largest number of application programs on the market. The advantages and disadvantages of each are described in this [tech note](#).

The Format of the XID Protocol

When in XID mode and the subject presses a key, the device sends several bytes describing which key was pressed, the port, and the time elapsed. The time elapsed is always relative to the last time the Reaction Time Timer was reset. See [Timing Features](#).

The XID device sends six bytes of information in the following format: <"**k**"><**key info**><**RT**>:

- The first parameter is simply the letter "**k**", lower case
- The second parameter consists of one byte, divided into the following bits:

Bits 0-3 store the port number. For Lumina LP-400, the push buttons and scanner trigger are on port 0; the RJ45 I/O lines are on port 1. For SV-1, voice key is on port 2 and the RJ45 is on port 1 – there is no port 0. For the RB-x30 response pads, the push buttons are on port 0 and the RJ45 port is on port 1.

Bit 4 stores an action flag. If set, the button has been pressed. If cleared, the button has been released.

Bits 5-7 indicate which push button was pressed.

- The reaction time consists of four bytes and is the time elapsed since the Reaction Time timer was last reset. See [command e5](#).

Switching Between Protocols

The following commands are the only ones that will always work regardless of which protocol the XID device is currently set to:

Command	Send Bytes	What Happens:
Set XID Protocol	c10	Sets the device protocol to XID mode
Set RB Series Protocol	c11	Sets the device protocol to RB Series mode
Set PST Protocol	c12	Sets the device protocol to PST mode. Note: This protocol does not work in SV-1.
Set ASCII Protocol	c13	Sets the device protocol to ASCII mode
Get Protocol	_c1	The XID device sends back _xid followed by a byte between 0 and 3 that indicates the current protocol

The Get Protocol **_c1** command is guaranteed to work regardless of the device's current setting.