



# ZYTRONIC DATA SHEET

## ZXY500™

The ZXY500™ range of controllers are based around a unique, proprietary Zytronic ASIC (Application Specific Integrated Circuit) and feature multi-touch functionality with palm rejection, higher noise immunity, faster speed of operation and the ability to offer reduced non-active borders for Zytronic multi-touch sensors.

### ADVANTAGES

- USB powered.
- Reduced controller size.
- Configurable up to 80 touches.
- Improved rapid touch detection and reduced latency.
- Palm rejection enabled and configurable.
- Windows 7, 8, 10, Linux and Android plug-and-play HID support.
- On board calibration storage and fully firmware upgradable.
- Operation with gloved hand and on-screen water conditions.
- Multiple on board configurable communication outputs – USB, Serial, I2C, SPI.
- Chip set available upon request.
- Pressure sensing, object recognition and virtual button firmware options available.

### IMPORTANT NOTE

- ZXY500™ controllers are NOT backward compatible with ZXY150/200/300 sensors due to advancement in the new ZXY500™ sensor designs.

### OPERATING SYSTEMS SUPPORTED

- Fully HID compliant "plug and play" under Windows (7,8,10), Linux and Android (Kernel 3.5.1+ needed for 10-point touch and Kernel 3.9.0+ for 40-point touch).
- Controller output protocol available on request for custom interface applications.

### OPERATION

Using state of the art Mutual Projected Capacitive Technology (MPCT™) the ZXY500™ range of controllers delivers full multitouch performance and flexibility.

The touch sensor is made up of a matrix of X-Y sensing cells, using an array of low resistance, microfine electrodes, which are near invisible to the human eye on a powered display. These electrodes are connected to the remotely mounted touch controller, where a charge is generated and applied to the sensing array.

When a finger, conductive stylus or known object approaches the surface of the sensor, a change in the charge applied to the array is detected at the electrode nodal crossing points within the sensing array. This change in charge is detected by the touch controller, the position of the applied touch is then determined by the powerful on-board touch detection algorithms to produce highly accurate position and movement on the screen. Unlike conventional surface capacitive and optical touch solutions, the active component of the MPCT is embedded behind the front substrate, providing protection, long life and stability.

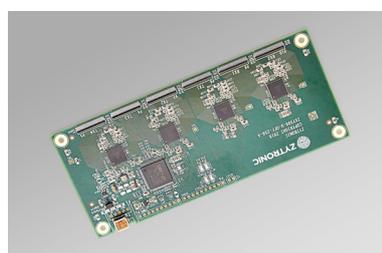
ZXY500-U-OFF-64-A  
FOR ZYBM SENSORS UP TO ~20"



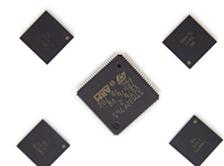
ZXY500-U-OFF-128-A  
FOR ZYBM SENSORS UP TO ~55"



ZXY500-U-OFF-256-A  
FOR ZYBM SENSORS >55"



ZXY500-U-OFF-256-A-CHIP SET



## CONTROLLER

- Controller technology – Mutual Projected Capacitance Technology (MPCT™) using custom Zytronic ASIC.
- Supported sensor sizes 5" to ~86".
- Controller type, Chip-on-Board (COB).
- Controller powered direct from USB VBUS 5V D.C. (tolerance 4.75V to 5.25V) with on board "charge pump" up to 40V for sensor transmit electrodes, to improve Signal-to-Noise Ratio (SNR) performance.
- Current consumption:
  - ZXY500-U-OFF-64-A <150mA.
  - ZXY500-U-OFF-128-A <200mA.
  - ZXY500-U-OFF-256-A <250mA.
- X-Y co-ordinate rate ~1ms at touch controller output, 8ms to 12ms at host over USB comms.
- Accuracy <1mm of touched position.
- Multi-touch output configurable up to 80 touches.
- Maximum recommended glass thickness for multi touch operation, 8mm.
- Fully on-board calibration data storage.
- Fully firmware upgradable via USB connection.
- Serial, I2C and SPI comms configurable on-board outputs.
- Pressure sensing, object recognition and virtual button outputs configurable on request.
- Operation with gloved hand.
- Operation with water on sensor.
- Palm rejection enabled and fully configurable.
- Onboard 0.3mm pitch ZIF connectors for reduced flexible cable and board size.
- Chip set solution and reference design guidelines available on request/agreement.

## SOFTWARE SUPPORT TOOLS

- Auto setup via associated ZyConfig™ tools for easy and optimum production line, or on-site configuration.
- Custom calibration options available via ZyConfig™ tool to allow configurable touch active areas on the sensor.
- For further details see: <http://zytronic.co.uk/support/>

## APPROVALS

- RoHS Compliant.
- CE EN55032 Class B and EN55024 with Conducted Susceptibility EN61000-4-6 up to 10V/m. ESD EN61000-4-2 up to ±27kV Air Discharge and ±10kV Contact Discharge when integrated within a compliant enclosure.
- FCC Class B.
- UL approved.
- For further details see: <http://zytronic.co.uk/quality-assurance/>

## FLEXIBLE PRINTED CIRCUIT (FPC) TAILS

### FOR ZXY500-U-OFF-64-A CONTROLLER

120MM IN LENGTH



### FOR ZXY500-U-OFF-128-A CONTROLLER

120MM IN LENGTH



### FOR ZXY500-U-OFF-256-A CONTROLLER

120MM IN LENGTH

