

## NextWindow Serial Packet Protocol v2.3

### Introduction

NextWindow has added a simple serial protocol and serial hardware to their USB touch screens. This protocol reports X and Y coordinates with mouse button status. This document is aimed at developers who want to make their own serial driver for use with NextWindow touch screens.

### Footer

(string that terminates an incoming serial packet)

All packets from the NextWindow touch device end with the following ASCII string. "<END>"+ Cr (Cr being a carriage return or ASCII 0x0D)

Equivalent Hex = 0x3C 0x45 0x4E 0x44 0x3E 0x0D

< E N D > Cr

### Signal

(Instruction that defines a packet's content)

The signal byte is the immediate byte before the footer string.

The signal byte determines the packet's size and \*length

\*Length is currently not being used but could be in the future.

### Other Signals

USB signal

'u' or 0x75 = USB cable is plugged in and should be unplugged for serial use.

0XXXXXXXXX 0YYYYYYYY 0x75 0x3C 0x45 0x4E 0x44 0x3E 0x0D

Serial packet

's' or 0x73 = Serial model signal.

0XXXXXXXXX 0MMmmYYYY 0x73 0x3C 0x45 0x4E 0x44 0x3E 0x0D

X's = unsigned long = Serial number

MM's =Firmware version major

mm's =Firmware version minor

Version = MM. mm e.g. v2.30

Typical calibration packet

'k' or 0x6B = Calibration status signal

0XXXXXXXXX 0YYYYYYYY 0x6B 0x3C 0x45 0x4E 0x44 0x3E 0x0D

X's ignored, Y's being a 4 byte float,

The following values represent Y

-1 = Calibration canceled

0 = Calibration complete

1 = Calibration started

2 to 24 = Calibrating

## Touch Signals

(coordinate and button)

On screen signals (signals on visible LCD etc)

0x00 = No mouse button down at XY (lift off or hover)

0x01 = Left mouse button at XY

0x02 = Right mouse button at XY

Off screen signal (signals outside visible LCD etc)

0x0A = No button down at XY (lift off or hover off screen)

0x0B = Left button at XY off screen

0x0C = Right button at XY off screen (not in use)

Typical touch packet

0xXXXXXXXX 0xYYYYYYYY 0xSS 0x3C 0x45 0x4E 0x44 0x3E 0x0D

X's being a 4 byte float

Y's being a 4 byte float

S's are a single byte signal

## Messages

(strings sent to the touch device)

"nwgs" + Cr = Get serial number and firmware version

"nwk0" + Cr = Cancel calibration (beep)

"nwk1" + Cr = Start calibration

"nwk?" + Cr = Get calibration status

## Notes

Dragging should be turned off (within driver program) when in calibration mode.

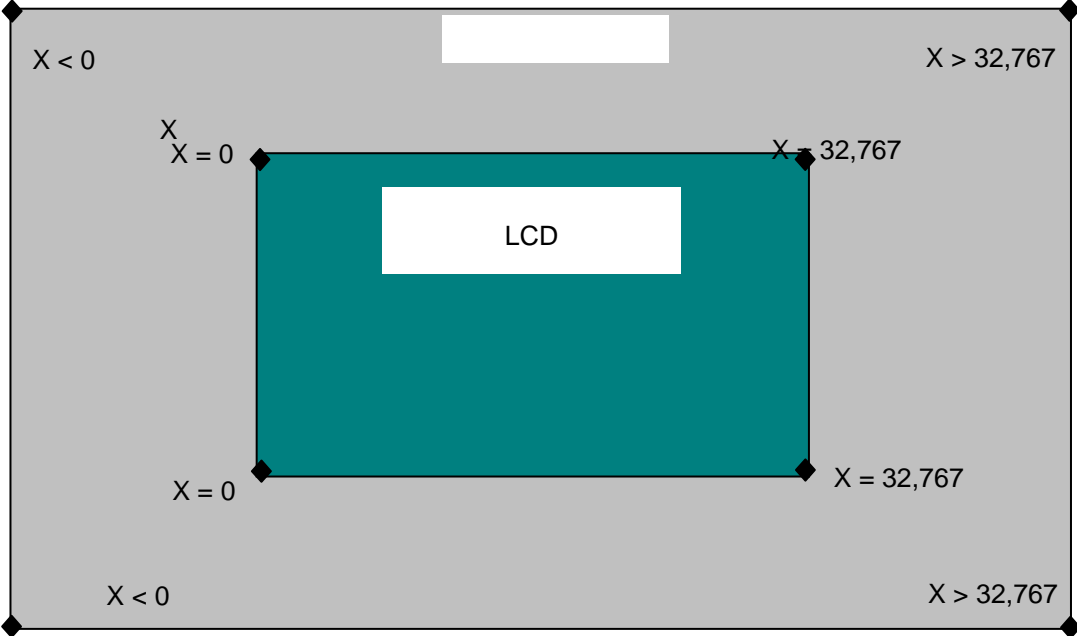
Floats are 4 byte IEEE standard single precision Big Endian.

Longs are 4 byte Big Endian.

**Mapping to the screen**

$$\text{Pixel\_X} = (X / 32767) * \text{Total\_Pixels\_X}$$

$$\text{Pixel\_Y} = (Y / 32767) * \text{Total\_Pixels\_Y}$$



X,Y coordinates outside the visible screen scale linearly to the visible screen pixels.

Rev1 NW Serial Document by Keith Colson