

Stylus Base Station Instructions and Installation Manual

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Notices

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

This device has been designed to operate with antenna TP-Link TL-ANT2405CL, which has a maximum gain of 5 dBi. An antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

A final product containing this device must be labeled with the notation "Contains FCC ID: ZX6014900", and "Contains IC ID: 9875A-014900".

A final product containing this device must be tested for compliance with all applicable regulations, including FCC regulations with respect to radiated emissions as an unintentional radiator. If this device is integrated in a final product that contains multiple radio-frequency transmitters, then that final product must be assessed as a final product for compliance to regulatory limits on spurious emissions and SAR.

This device is intended only for internal use within Perceptive Pixel, Inc. It is intended only for use in conjunction with the capacitive touch controller "master" board or its equivalent, connected in the same way as in the test setup described below.

This device has maximum output power of +4 dBm, with center frequency between 2.404 GHz and 2.478 GHz. This device must be installed in compliance with all applicable SAR regulations.

Instructions

The base station module is a single printed circuit board. It is connected:

- to its antenna, with an RP-SMA connector; and
- to the rest of the system, with a 6x2 pin 2mm header.

In normal operation, the base station module receives a synchronization signal from the rest of the system. On each rising edge of that synchronization signal, it transmits a synchronization packet. The format of that synchronization packet is determined only by firmware inside the module. The power and modulation scheme are determined by the system-on-chip radio in use, the nRF24L01+. In normal operation, the on-board LED flashes purple. When a stylus is present, the on-board LED will flash green; but the data transmitted by the base station module are unchanged, regardless of whether a stylus is or is not present.

For test purposes only, the base station module may be configured to output continuous unmodulated carrier, or mostly-continuous modulated data. To enter this test mode, press the tact switch labeled “prog” on the module printed circuit board. The on-board LED will illuminate as follows, advancing one step with each press of the button:

- steady red - unmodulated carrier, 2.404 GHz
- steady green - unmodulated carrier, 2.440 GHz
- steady blue - unmodulated carrier, 2.478 GHz
- blinking red - data, $f_c = 2.404$ GHz
- blinking green - data, $f_c = 2.440$ GHz
- blinking blue - data, $f_c = 2.478$ GHz

A seventh button press will exit test mode, and return to normal operation.

For test purposes, the base station module may be connected to a master board, which will provide power and the synchronization signal. (This master board is also used, unmodified, as a component of the end-unit monitors that will use this module.) The boards should then be connected as follows:

- “to master” connector on base station to “spare” connector on master board
- power supply to coaxial DC power connector on master board

The master board may be connected to a computer over USB, but the base station will operate identically, regardless of whether the master board is connected over USB.