

TI-Navigator™ Classroom Learning System and TI-Nspire™ Navigator™ System FAQ

The purpose of this document is to answer technical questions about the TI-Navigator and TI-Nspire Navigator systems and help the sales and CSC teams engaging with IT departments.

For any additional questions or clarifications,
please contact techexpert@list.ti.com.

FAQ

What is the difference between the TI-Navigator™ and TI-Nspire™ Navigator™ systems?

The TI-Navigator system is a classroom networking product, which supports the TI-84 Plus, TI-83 Plus, TI-73 Explorer™ graphing calculators and TI-Nspire™ handhelds that accept TI-84 Plus keypads. The TI-Navigator system uses hubs as wireless devices and supports four calculators per hub. The TI-Nspire Navigator systems support the TI-Nspire™ family of handhelds only (CX, Touchpad and Clickpad models and CAS versions.) The systems use one wireless cradle or wireless network adapter per handheld.

What wireless technology is used in the TI-Nspire Navigator and TI-Navigator systems?

Both TI-Nspire Navigator and TI-Navigator use IEEE 802.11 b/g (aka Wi-Fi) wireless networking technology.

Do the systems support the 5 GHz frequency band?

At this time, the systems are limited to the 2.4 GHz band. They do not work in the 5 GHz band.

Can I use both systems outside the U.S.?

Yes – you can use TI-Nspire Navigator and TI-Navigator systems outside the United States. However, you will need to ensure that you have the “worldwide” version of the product if your system uses the TI-Navigator™ Access Point. Please contact your dealer, ETC or ISC for details.

What is the difference between the TI-Navigator Access Point and the TI-Nspire™ Navigator™ Access Point?

The TI-Nspire Navigator Access Point is a new product that is supported by TI-Nspire™ Navigator™ Teacher Software version 3.2 or later. The table below compares the two products.



Category	TI-Navigator Access Point	TI-Nspire Navigator Access Point
Form factor		
Power source	DC Jack (TI Adapter AC9930)	USB connection to PC (same port also used for data transfer)
Wireless technology	802.11 b/g (2.4 GHz frequency band)	802.11 b/g (2.4 GHz frequency band)
LEDs	4 LEDs – power, “test”, wired LAN, wireless LAN	2 LEDs – 1 power, 1 wireless network activity
Connection to PC	Standard-B USB port	Micro-B USB port
Antenna	One external antenna	Two internal antennas
‘Reset’ button behavior	Configuration settings revert to factory settings	No reset button
Supported products	TI-83 Plus, TI-84 Plus family, TI-73 Explorer™ graphing calculators, TI-Nspire family of handhelds	TI-Nspire family of handhelds
Worldwide operation	Different products for U.S. and worldwide operations	Single product – system defaults to U.S. regulatory domain

Table 1 Comparison between TI WLAN access points

Will these networks interfere with existing wireless networks? What about interference between different TI-Navigator™ networks?

The TI-Navigator networks share the frequency band with other Wi-Fi networks that use the 2.4Ghz band. The underlying wireless networking technology (IEEE 802.11) allows for multiple networks to share the same frequency band, which allows for the networks to coexist. The typical usage pattern of the TI-Navigator™ and TI-Nspire™ Navigator™ system in a classroom does not require high throughput from the wireless network. This results in limited impact to other networks in the area.

Please note: As the number of co-located TI-Navigator and/or TI-Nspire Navigator networks increases, the school IT team may have to implement channel mapping to minimize interference between the TI-Navigator and/or TI-Nspire Navigator networks and between the TI-Navigator and/or TI-Nspire Navigator systems and the school network.

We are a 1:1 school and all our students have laptops/tablet PCs. Can our students connect to the TI-Navigator and/or TI-Nspire Navigator network?

Please note that the student laptops and tablets will “see” the TI-Navigator and/or TI-Nspire Navigator networks because the TI-Navigator™ and/or TI-Nspire™ Navigator™ Access Points broadcast their SSIDs to allow network discovery by TI wireless clients.

However, the network created by the TI-Navigator and/or TI-Nspire Navigator Access Point is a “private” network designed to communicate solely with TI graphing calculators.

The access points implement an “access control list” (ACL) that allows only the wireless clients that have been configured with the AP to connect to the AP.

As a result, other technology such as laptops, tablet PCs and smartphones will not be able to connect to or communicate with other devices on the TI-Navigator and/or TI-Nspire Navigator network.

Can the TI-Nspire Navigator and TI-Navigator systems use a school’s existing wireless network? If the school already has a wireless network installed, do we still have to buy the access point?

The TI-Nspire Navigator and TI-Navigator systems are “island” networks; i.e. they are self-contained networks that do not use any infrastructure networks that may be available.

How much configuration/customization is possible for the wireless network?

The user can configure the channel that will be used by the network. On the TI-Navigator Access Point the user can also configure the regulatory domain (country) where the product is used to ensure that it complies with the local regulatory rules.

Starting with version 3.2 of the TI-Nspire Navigator system, part of the SSID is user configurable. The range (transmit power) of the access points is not configurable.

What is the range of the TI-Navigator or TI-Nspire Navigator Access Point?

TI-Navigator or TI-Nspire Navigator Access Points uses a low-power access point with an operational range of approximately 70 feet.

Can I configure the TI-Navigator or TI-Nspire Navigator Access Point to use any wireless channel from channel 1 to channel 11?

Even though the access point supports all channels from 1 to 11, it is recommended that you configure the TI-Navigator or TI-Nspire Navigator Access Point to only use channels 1, 6 or 11. Due to the way the channels are assigned, using other channels may result in reduced performance.

Can the TI-Navigator or TI-Nspire Navigator Access Points be remotely configured?

No – the TI-Navigator or TI-Nspire Navigator Access Points are USB devices and do not allow remote access. They need to be configured from a PC that is connected to the access point by a USB cable. The “Network Manager” application provides a GUI interface to configuring the entire network as well as the access point.

Additionally, only one instance of the “TI-Nspire™ Navigator™” desktop application can be running at a time. This may limit configuring the APs through a remote login session.

What is the network name (a.k.a. SSID) of the TI-Navigator and/or TI-Nspire Navigator networks?

The default TI-Navigator or TI-Nspire Navigator Access Point SSID is based on the MAC Address of the access point. Starting with version 3.2 of the TI-Nspire Navigator system, part of the SSID is user configurable. The SSID will always start with “TI-NAV-”.

There are three variants of the SSID depending on the mode and the system version: during setup mode, the network name starts with “TI-NAV-I-” for version 3.2 or later; earlier versions start with “TI-NAV-S-”. During normal operation, the network starts with “TI-NAV-N-”. For example, a teacher in Room 301A could use this room number in the network name; the resulting SSID would be “TI-NAV-N-Room301A”.

If the school has an intrusion detection/prevention system, please add these network names (SSIDs) to the “whitelist” for correct operation of the TI-Navigator and/or TI-Nspire Navigator networks.

What is the security protocol used by the wireless network? How are the encryption keys managed?

The TI-Navigator network uses 128-bit WEP for data security and the TI-Nspire Navigator uses the WPA2-PEAP (aka WPA2-Enterprise) security protocol. In both cases, the keys for encrypting the data are randomly generated and assigned by the system.