



AnywhereWx[®] with XM WX Satellite Weather System Installation, Configuration, and Troubleshooting Guide



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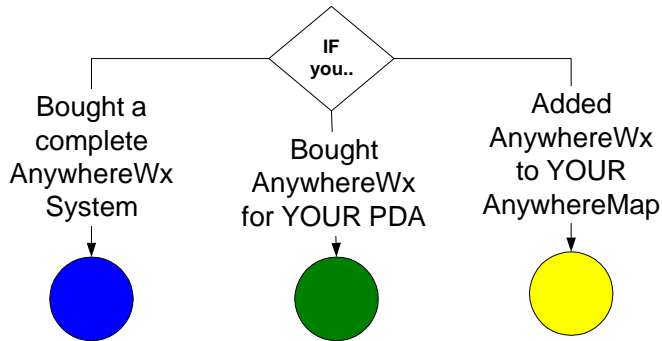
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Use of the AnywhereWx system is totally at user's own risk. Information presented on the Map should not be used as the sole basis for decision-making.

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AnywhereWx System Set Up and Configuration Checklist



Use this guide to determine which steps to perform to set up and configure your AnywhereWx system.

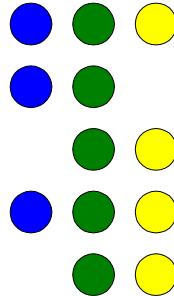
First determine the color dot that applies to your situation based on your purchase. Use the flowchart at left.

Each step in the chart below has a corresponding chapter or section in this manual. A colored dot signifies its relevance to your system. Only do the steps whose dots match your color.

When you reach Step (Chapter) 5, perform the steps that match not only the color, but the shape based on your hardware configuration. For example, if you are following the green path and you have a BT GPS and wired XM module, only do the steps that have green rectangles associated with them. If no shapes are specified, but your color dot is there, perform the step.

After completing a step, simply check the box in the colored dot.

Chapters in Manual
1. Register Software
2. Install Active Sync on your PC
3. Install / Activate Wx Software
4. Plug it in
5. Configure Software

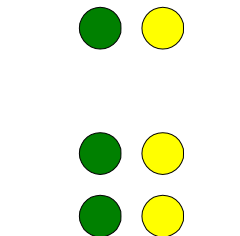
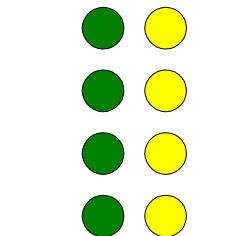
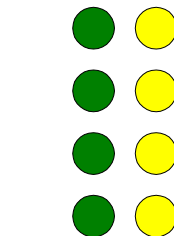


**Bluetooth GPS
Bluetooth XM**

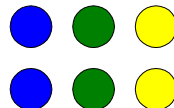
**Wired GPS
Bluetooth XM**

**Bluetooth GPS
Wired XM**

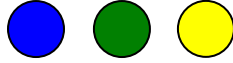
5A. XM / GPS / IPAQ Power Up
5B. XM BT Manager Config
5C. Set COMs
5D. Exit / Save / Restart



6. Standard Start Up / Shut Down
7. Using AnywhereWx



1. *Register Software*



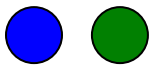
You must register the software before you start installation and configuration. This also starts the free subscription period included with your purchase.

- 1) Go to our website www.anywheremap.com.
- 2) Place your mouse over the blue **Support** button, and then click **Product Registration**.
- 3) If you already own one of our software products, log in using your Username and Password.
- 4) If you are a new user of our software, click **Create ID** and then fill out all the user information.
- 5) Now carefully enter the software serial numbers from your software CD envelopes. They are case-sensitive!
- 6) Your Username and password will be shown at the top of the Registration Complete page and also confirmed in an email sent to you shortly after you complete the registration. Copy them into the boxes below for future use.

Username

Password

2. *Install Active Sync*



Active Sync is a free product from Microsoft® that allows the iPAQ to talk to your home/laptop computer. By installing this software, you make ready for the AnywhereMap/Wx software to be installed, verified, and updated through time. We assume your PC / laptop has an Internet connection and it is from our Internet website that the updates are retrieved. Therefore, your PC / laptop acts as the software update “manager” for AnywhereWx on your PDA.

NOTE: If you already had your own PDA (green dot) then you may have already installed Active Sync and would not need to do it again.

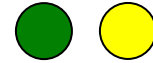
Active Sync installation software is located in the following places and any of them are suitable for your use:

1. Microsoft’s web page:
 - a. www.microsoft.com
 - b. Type “active sync” in the Search box at upper right, then press enter.
 - c. The first link should be “Download Active Sync version 3.7.1”. Click this link
 - d. Click Download at right.
 - e. A window opens with the option to Save or Open (or Run). Click Open (Run).
 - f. Follow the instructions for installing the software
2. Our website (requires an existing Username and Password to login):
 - a. Log in to the Downloads section
 - b. Click AnywhereMap or AnywhereWx section
 - c. Scroll to find the Active Sync section.
 - d. Click Download
 - e. Follow the installation directions as installation progresses.
3. The CD that came in your iPAQ box
 - a. Insert the CD
 - b. Click Install Active Sync Only
 - c. Follow the installation directions as installation progresses.

Initiate the Active Sync software installation either by running the program from the website or by inserting the CD. Follow the instructions for installation and be careful to NOT connect the cradle/PDA until told to do so.

When the first iPAQ “partnership” is created (after software installation is complete), you will be prompted to check those items from Microsoft Outlook that you want “synchronized” between your PC and the iPAQ. Generally our customers sync their Contacts, Calendar, Tasks, and Appointments. **We strongly recommend that you do NOT sync your Inbox or Internet sites. This will consume a tremendous amount of memory in the iPAQ and severely limit the operation of AnywhereMap!**

3. *Install / Activate AnywhereWx Software on your PDA*



FIRST THINGS FIRST: Check the time and date on your PDA. They **MUST** be correct in order for weather data to display properly. Tap the Date and Time at the top of the “Today” screen and then set the date and time **making sure the time zone is also correct**. When asked if you want to save the settings you’ve just made, answer Yes.

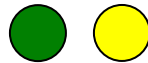
A. *Preparing to Install AnywhereWx Software*



If you already have AnywhereMap installed on your iPAQ, then do this step. Otherwise, proceed to Section B below.

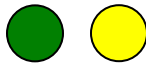
- 1) Insert the SD card in your iPAQ’s slot
- 2) Tap Start > Programs > File Explorer
- 3) Tap in the gray bar at the top where it says “My Documents” or something like that with a small down-arrow immediately to the right.
- 4) Tap “My Device”
- 5) Tap SD Storage Card
- 6) Tap AWDBMover
- 7) Make sure the location to which the files will be moved is the SD Storage card as shown in the box. If not, tap the box and select SD Card.
- 8) Tap Move. This moves most of the AnywhereMap files to a DAT subdirectory on the storage card. It is important to do this step because it frees up valuable main memory for the operation of AnywhereWx software.

B. *Installing AnywhereWx Software*



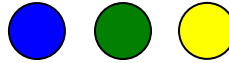
- 1) Soft reset the PDA to ensure that no programs are running on it.
- 2) Insert the PDA in its cradle and ensure it is synchronized with the desktop/laptop computer.
- 3) Install the software using the CD provided in your package from us.
 - a) Insert the 64Mb SD card into the top slot of your PDA. (It is not necessary to run AWDBMover as described above.)
 - b) Put the CD in the drive. The installer will automatically run.
 - c) Click on Install AnywhereWx Software
 - d) Click on Install AnywhereWx Software
 - e) Continue with Full Installation and respond to the default prompts unless you need to load different database components as listed in the window.
 - f) When you are prompted for your Username and password, enter the ones you have from the registration process.
 - g) When prompted for the Installation Location, click the box and select the **SD Card**. Click OK. This may occur several times.
 - h) When prompted to install the keyboard, respond “Yes” to the prompts.
 - i) Once completed, click the X in the upper right corner to end the installation program.
- 4) Select SD Storage Card in the box prompting you for the file storage location.
- 5) Tap Move. Once completed, tap to close that window and the Programs window.
- 6) Remove the iPAQ from the cradle and soft reset the PDA. (See iPAQ directions for the soft reset button location.)
- 7) Reinsert the PDA into the cradle and let it sync.
- 8) This prepares it for the next step: Activating the XM software. Do NOT run AnywhereMap at this time!

C. *XM Software Activation*



- a. **Make sure you have registered the software! This is critical to continuing the installation!**
- b. Make sure your PDA is in the cradle and Active Sync is synchronized.
- c. On your Internet-connected computer, go to www.anywheremap.com, place your mouse over the blue **Support** button, then click **Downloads**.
- d. Log in using your username and password.
- e. In the box at right called **Account Utilities**, you'll find a link for **XM Activation Utility**. Click there.
- f. Click in the red circle.
- g. A window pops up preparing to download a file. Click Open.
- h. The PDA's serial number will be retrieved and displayed in a pop-up window.
- i. Click "Submit Serial Number". Then click Close. Then close your Internet windows.
- j. The XM software code is automatically entered into the XM Enabled code in the XM Settings screen of AnywhereMap. We'll check this later.

4. *Plugging In*

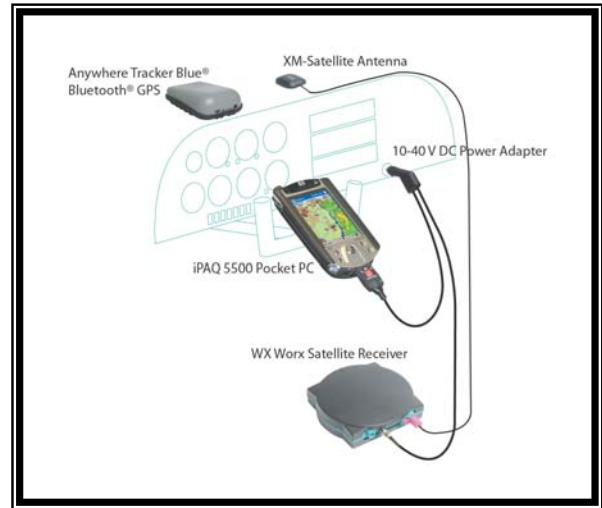


Installing hardware in the airplane can be done in many different ways. We suggest you set up the system for the first time using your car, since the power and wiring will be equal to the airplane, but your access to another telephone, etc. may be better.

NOTE 1: You MUST follow these directions in order, especially for initializing the GPS!

Here are the components you should have:

- a. iPAQ computer with AnywhereWx installed.
- b. IPAQ serial number from Chapter 1.
- c. XM receiver box with antenna and power cable.
- d. Power/data cables that connect all components to DC power. Depending on your configuration, these cables may only supply power or they may supply power and data. In any case, the plugs are specific to a device so you can't confuse which devices connect via which cables.
- e. Yoke mount



Instructions for connecting and powering up AnywhereWx System:

- 1) Hardware Installation / Power Connections
 - a) There are three primary components of the weather system: 1) iPAQ, 2) XM radio with antenna, and 3) GPS. Generally, all have a wired power connection which keeps their internal batteries charged while in operation even if they are Bluetooth devices (wireless data communications). In some cases such as the Tracker GPS or the original XM WX radio, the power wire is also a data wire. In any event, the connections are basically the same from a power standpoint.
 - b) Plug the power cords into the power plug of the car or aircraft. You may have a power plug splitter that accommodates two power plugs or you may have a single plug that powers all three devices.
 - c) iPAQ:
 - i) If you have the Citadel mount, then insert the iPAQ plug into the plug mount on the Citadel, AnywhereMap logo facing you (or, smooth side up if no logo sticker). Then, place the top plate on the plug mount with the snap pins ready to slide into the slots on either side of the plug mount. The cut out on the top plate **MUST** be facing the bottom of the plug mount! It provides room for the plug stress relief to expand in that area. Press gently on either side until the pins snap into the slots. To remove, press each pin toward the plug housing while gently lifting up on the top plate. Do one side at a time, and the top plate will lift off.
 - ii) If you do not have a Citadel mount (<http://www.anywheremap.com/detail.aspx?ID=113>), simply insert the plug into the bottom of the iPAQ, smooth side up.
 - iii) The Citadel and Standard mounts are designed to clamp to the push-pull tubes on most aircraft yokes. This places the iPAQ between the yoke ram horns and just below the DG so it's easy to keep the AnywhereMap in your scan.

- iv) Now slide the iPAQ into the mount and make sure it securely engages the plug end that protrudes from mount holder.
- d) If you have XM WX Radio (WxWorx) Wired do this step, otherwise, do (e):**
 - i) With the wired version, both power and data run down the single wire that connects to the XM WX radio using the silver barrel connector.
 - ii) Plug the silver barrel connector end of the XM power plug into the XM radio receiver, pushing gently and turning the XM box until the plug snaps into place. To remove it, slide the silver sleeve toward you to release the plug.
- e) If you have XM WX Radio (WxWorx) Bluetooth:**
 - i) Insert the power plug into the power receptacle in the XM WX box.
- f) XM Antenna:
 - i) Insert the pink antenna plug into the right-most antenna receptacle on the XM radio receiver. This is the receptacle labeled “RF In”.
 - ii) Place the XM antenna in the window or as close to outside as you can, with no obstructions. When testing in the car, try to locate yourself so there is a clear view of the southern sky where the XM satellite are located.
- g) If you have GPS Wired (Tracker or GPS35) do this step, otherwise do step (h):**
 - i) The wired GPSs are permanently wired so no additional connection is required. Power and data run down the wire to/from the power plug and iPAQ.
 - ii) Place the GPS where it has a clear view of the sky.
- h) If you have GPS Wireless (Tracker Blue):**
 - i) Insert the power plug into the GPS power receptacle.
 - ii) Place the GPS where it has a clear view of the sky.

Turn on power to the aircraft of car, if required, to energize the power plug. You should now see red LED lights on all power plugs, a yellow charging light on the GPS (the right-most light), an orange charge status light on the iPAQ. You will also see an LED light on the upper edge of the XM box. This LED usually alternates red/green until AnywhereMap software is activated.

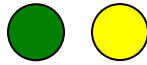
5. *Configuring AnywhereWx Software*

A. *Initial System Start Up*

- i) Turn on the GPS by sliding the power switch to the left. The center LED should illuminate and will be green if the battery charge status is good or reddish green if the status is low.
- j) Turn on the iPAQ by briefly pressing the power button. On iPAQ 5500s the power button is the round silver one on the front of the iPAQ. On iPAQ 4700, the power button is on the top right side and is a long silver one. NOTE: Pressing and holding the iPAQ power button when the system is on will turn the backlight on or off alternatively. When turning the machine on or off, press the button only briefly.
- k) Check the time and date. MAKE SURE they are accurate otherwise NEXRAD radar will not display. If they are not, tap the first line on the main iPAQ screen where the time and date are listed. The time and date settings screen is displayed. By tapping each setting, correct them so they are accurate. Make sure the time zone is correct! The tap "OK" and respond "Yes" when asked if you want to save clock changes.
- l) Check the iPAQ Bluetooth Radio status by tapping once on the little radio antenna icon on the lower right of the display.
 - i) For iPAQ 5500s and 2210s: A menu will pop up that has a couple items on it. If the top item shows "Turn Bluetooth Off" then simply tap somewhere else on the screen to cancel the menu. Bluetooth is already on and you should see a blue light flashing on and off already. If the menu item shows "Turn Bluetooth On", then tap that menu item. The blue light will begin flashing.
 - ii) For iPAQ 4700s: If you see the Wireless Tutorial window, click X in the upper right corner to close that window. Now you should see a screen that has two large round buttons, one for Wifi and one for Bluetooth.
 - (1) The upper button for Wifi should be gray. Do not turn this on.
 - (2) The Bluetooth button control should be green colored and the blue light on the front of the iPAQ should be illuminated. If it is, the Bluetooth radio is already on. If it is gray it will have a little red circle with an "x" in it. Simply tap the round button and wait a second or two. The button will turn green, denoting that the Bluetooth radio has been turned on.
 - (a) NOTE 1: Some iPAQ 4700s will have severe start up issues if the system is soft booted with wifi (wireless Internet) turned on. When you are in the wireless set up screen described above, MAKE SURE wifi (the upper button) is gray! If it is not, tap it once to turn off wifi.
 - (b) NOTE 2: The blue light on the GPS will NOT be illuminated at this point! The blue light on the iPAQ simply means the Bluetooth radio is turned and ready to talk to a device. Without this on, the GPS will never connect, which is why we talk you through checking it,
 - (c) NOTE 3: Once the date/time and Bluetooth radio are correctly configured you should not need to do them again however; it doesn't hurt to check them on occasion. The AnywhereMap system will not function properly if these two are not set properly.

DO NOT EXIT THE WIRELESS CONFIG SCREEN. DO NOT START ANYWHERE MAP YET!

B. *BTWX Configuration*



**Bluetooth GPS
Bluetooth XM**

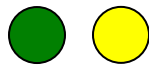
**Wired GPS
Bluetooth XM**

NOTE! This step ONLY applies to configurations with Bluetooth (wireless) XM units!!! DO NOT DO THIS STEP IF YOU HAVE A WIRED XM DEVICE!

- 1) While on the iPAQ Wireless Control screen, tap Manager to the right of the Bluetooth “power” button.
- 2) The Bluetooth Shortcuts window appears. Tap New in the lower left corner.
- 3) A new window appears with “Explore a Bluetooth device” highlighted.
- 4) Tap Next in the lower right corner.
- 5) The Bluetooth Connection Wizard screen appears. Wait until the blue icon stops turning. You should not have three icons being displayed: Pocket_PC, Tracker Blue 2, and XM Blue.
- 6) Double-tap the XM Blue icon.
- 7) The XM Blue device should appear with a box below that lists XM Data in it. Single-tap XM Data.
- 8) Tap Next in the lower right corner.
- 9) Tap Finish in the lower right corner.
- 10) You are returned to the “My Shortcuts” screen with the XM Blue: XM Data icon being displayed.
- 11) Double-tap the icon.
- 12) A new screen appears with a box that prompts for the “connection to use”. Double-tap the words “New Connection...”.
- 13) A new screen appears prompting you to enter the Connection Name. Tap on the keyboard icon (lower right) to open the keyboard. Tap in the box, and then tap in “XM”.
- 14) Tap “OK” in the upper right corner.
- 15) You go to the Network Log On screen. Tap Cancel.
- 16) A message box appears that says “Bluetooth manager cancelled by the user”. Tap OK to clear the box.
- 17) The XM BLUE XM DATA message box now shows. It notes that the connection failed. It actually did not fail, it was connected and we just shut it down so this is normal. Tap OK.
- 18) Now the Bluetooth Shortcuts screen appears. Tap “X” in the upper right corner.
- 19) Now you’re back to the Wireless Manager screen. Tap “OK” in the upper right corner to close the iPAQ Wireless. You should now be at the main iPAQ screen.

Fortunately, this only is done once. And after you back up the iPAQ, these settings will be restored from the back up should restoration be necessary.

C. *Set COMs*



This steps sets the communication ports (COM) for the GPS and XM radio. Please be careful to use the table below to determine the specific COM settings for YOUR configuration.

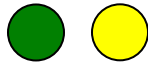
- 1) Tap Start > Programs > AnywhereMap
- 2) Now we need to set the COM ports based on your hardware configuration.
- 3) GPS COM Settings:
 - a) Tap File > Settings > GPS Settings
 - b) Set the Communication Port to the value shown in the table below based on the type of GPS you have, wired Tracker or wireless Tracker Blue. Tap the little down arrow at the right edge of the box to open the list. Tap on the proper value.
 - c) Tap Done in the lower right corner.
 - d) If Bluetooth Browser appears, tap Cancel, and then tap OK when the message box appears.
 - e) You should return to the Map display.
- 4) XM COM Settings:
 - a) Tap File > Settings > Wx Settings
 - b) Tap XM WX at right.
 - c) Verify that there is a 5-character code in the Activation Code box.
 - d) Check the “Enable XM” Box if it is not.
 - e) Set Communications port at the bottom to the proper value based on the table below and your type of XM unit: wired or wireless.
 - f) Tap OK.
 - g) Check ON the weather products along the left column that you want displayed. See Section 7 for details on weather products and their use. At least, check on radar, METARs, TAFs, and Signal Q.
 - h) Tap Close.
 - i) If your XM device is wireless (Bluetooth) the blue light on the radio should now be on steadily and the signal strength should show GOOD as it alternates with the weather age in the upper left corner of the map.

Proceed to the next step to complete the configuration. **DO NOT USE THE SYSTEM WITHOUT COMPLETING THE NEXT STEPS!!**

COM Settings

System	Device	COM Setting
XM Bluetooth, GPS wired	XM Unit	Bluetooth Port 1
	GPS Unit	Serial Cable COM 1
XM Bluetooth, GPS Bluetooth	XM Unit	Bluetooth Port 1
	GPS Unit	Bluetooth COM 8
XM wired, GPS Bluetooth	XM Unit	Serial Cable COM 1
	GPS Unit	Bluetooth COM 8

D. *Exit, Save, Restart*



It is very important that AnywhereMap software be shut down and restarted following a set procedure. This will help ensure that the software operates the same way each time with the same operational parameters. When you close the AnywhereMap software properly, the settings file is updated to reflect the settings parameters at the time you closed it. The system will restart the same way the next time.

- 5) To exit the software, Tap File > Exit.
- 6) The system prompts to see if you really want to exit AnywhereMap. Tap “Yes”.
- 7) Soft reset the iPAQ using the small reset button and the stylus.

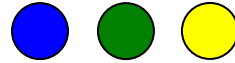
A word about soft resets:

It is a good idea to soft reset the iPAQ before flying. This is because 1) it makes sure the system starts cleanly, with no other programs running, and 2) it closes any other programs that could contend with memory usage.

It is not common knowledge that the “X” in the upper right corner of most iPAQ applications does NOT close a software application (such as Word, Excel, or Solitaire) the way it does on a PC or laptop. For some reason, the folks at Microsoft decided to do it differently. So “X” only minimizes the application but leaves it running. You can’t see that it’s still running, but it is. The only thing you’ll notice when this happens is that other applications (such as AnywhereMap) run slowly since they are contending for memory space.

This is why the software reset is so important.

6. *System Start Up and Shut Down Instructions*



The following procedures should be used for start up and shut down of the AnywhereWx software when using XM WX Wired, XM WX Bluetooth, Wired GPS and Bluetooth GPSs. Doing so will produce consistent results in operation and performance. These procedures apply to the iPAQ 5500 series and the new 4700 series and assume you have everything plugged in but not turned on.

NOTE: Also refer to the checklist on the Laminated Card included with your system!

A. *Initial Start Up and Shut Down*

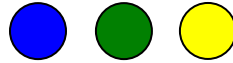
- 1) Turn on GPS by sliding switch to the left.
- 2) Turn on iPAQ (or soft reset it to accomplish the same thing)
- 3) Start AnywhereMap by tapping the four-colored start icon in the upper left corner, then tapping Programs, then tapping the red AnywhereMap icon. If AnywhereMap has been run before, the red logo will show in the Start menu. You can use this one as well!
- 4) **If you have a Bluetooth GPS**, during start up you will see the Bluetooth Browser screen appear. There will be an icon labeled “Tracker Blue 2” and it will have a large question mark on it. Double-tap (tap-tap) this icon and then wait. The software will continue loading. You will also see the blue LED on the GPS illuminate denoting a connection has been established between it and the iPAQ.
- 5) If you have a wired GPS, you will simply see the Map appear with the blue light on the XM device.
- 6) Once you see the map, you should see the following on the screen:
 - a) GPS data: (Upper right corner)
 - i) GS: Ground speed should be 0 and in black letters
 - ii) ALT: GPS altitude in feet MSL
 - iii) NOTE: If this is the first time you have started the system since receiving it, and especially if you live a long distance from Kansas you may see “NoSat” in this area. It can take the GPS up to 15 minutes to “find itself” on initial start up because the GPS remembers its last location which is now completely off base. Once it knows, subsequent start-ups will be nearly instantaneous unless the GPS is moved a great distance while it is off.
 - b) Weather Status (Upper left corner)
 - i) WX: Denotes age of NEXRAD radar file currently being displayed. This should range from 0 to 5 or 6 minutes and then start over again once a new radar file is received from the XM link.
 - ii) We generally set this to alternate between weather age (as above) and signal strength. On initial start up, you will see this alternate between WX: N/A and GOOD (signal strength). It will take up to 15 minutes before an entire set of XM files are on board (due to the scheduled transmission of the files) and therefore the status will continue to show N/A until the complete set is on board.
 - iii) See Chapter 7 for more instructions on how to set up and use weather settings.

B. Shutting Down AnywhereWx

You MUST shut the software down this way to protect your current settings and to ensure the software is shut down properly. This will also significantly contribute to consistent operation in the future.

- 1) Tap File > Exit. Tap Yes to confirm closing down the software.
- 2) Turn off the iPAQ by briefly pressing the power button.
- 3) Turn off the GPS by sliding the power switch.

C. *Backing Up and Restoring Your iPAQ*



If you purchased an entire system from us, we have not only installed all the software but also backed it up to a storage card we installed in the iPAQ. It is important to know that the software we installed can be lost if the battery charge is exhausted. A fully charged battery will last approximately 4 days *even if shut off* before the battery charge is exhausted. ***We suggest you keep the iPAQ in the charge cradle or connected to the AC charger when not in use!*** While you can easily reinstall this from the CD we provided, it is even easier to restore the iPAQ using the backup file we created.

Backing Up your iPAQ

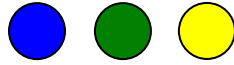
1. Tap Start > Programs > iPAQ BackUp
2. Set the backup destination to the storage card
3. Tap Back Up.

You only need to restore the system if the battery charge is exhausted and/or the iPAQ fails to operate properly. We suggest you get AnywhereMap completely set up with aircraft profiles, weight and balance, and user-defined views and then back the system up again to secure this “perfect” configuration. This way, any future failure can be quickly restored.

Restoring your iPAQ

1. Apply power to the iPAQ and turn it on. If the battery has been discharged for a long period, it may need to charge a while before the unit will turn on.
2. Follow any screen prompts for starting the iPAQ (screen alignment, etc.) until you see the main screen.
3. Set the date and time.
4. Check to see that the Bluetooth radio is on by tapping the icon in the lower right corner and verifying that the Bluetooth is on. Then tap OK to close.
5. Tap Start > Programs > iPAQ Backup.
6. Tap Restore tab at bottom
7. Tap Restore to use the most recent back up file. After about four minutes, the system will be fully restored to its previous state of operation.

7. *Using the Weather Software*



A. *Available Weather Products*

The following weather products are available for display on the AnywhereMap:

1. NEXRAD radar: presented in 1 mile square tiles on the map in colors (see below)
2. Echo Tops (XM only): presented in 1 mile square tiles on the map in shades of gray
3. IR Sat Image (AnywhereLink/Globalstar only): presented in 4 mile square tiles on the map in shades of gray to light purple
4. Light Precip: presented in 1 mile square tiles (XM) or 4 mile square tiles (AWLink/G*)
5. METARs: presented in text under the associated airport data, graphical “flags” on the map (See below)
6. TAFs: presented in text under the associated airport data
7. XM Signal Q (quality): presented on the map, alternating with NEXRAD radar file age
8. Lightning: presented on the map in lightning bolts

B. *Timing of Weather Product Updates*

XM Weather

XM is a continuous broadcast of the weather data to the XM radio in the airplane. The data is broadcast to the airplane in individual computer files, one for each weather product (i.e. a radar file, lightning file, etc.). The broadcast is serial, that is, one file at a time. Therefore, the files are sent on a schedule that keeps the weather data current but also allows many difference files to be sent.

The schedule is approximately as follows:

- NEXRAD (radar): once every 5 minutes
- Lightning: once every 5 minutes
- METAR/TAF: once every 12 minutes
- Echo Tops: once every 15 minutes

AnywhereLink and Globalstar

These systems use request/reply instead of continuous broadcast. Therefore, you initiate the update by pressing a button on the iPAQ and then the current files are sent to the iPAQ from the server on the ground via the Globalstar satellite phone or the AnywhereLink (via wifi, cell phone, Internet connection, etc.)

The data is sent in individual computer files just like XM but you can select which weather products to retrieve and when to get them. The files are updated on our servers on a regular basis so you can be sure that each time you retrieve them, you’re getting the latest available.

The server update schedule is approximately as follows:

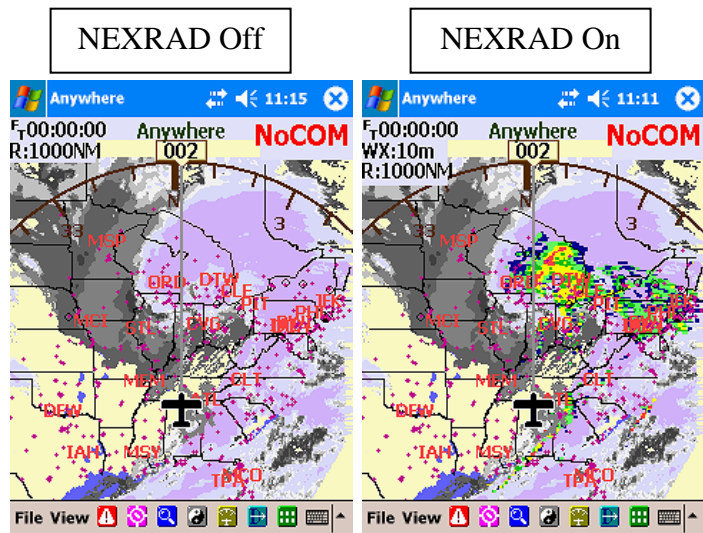
- NEXRAD (radar): updated every 5 minutes
- IR sat photo: updated once per hour
- METARs/TAFs: updated once per hour
- Lightning: Update once per minute

C. Sequence of Display on AnywhereMap

The sequence of display on the map is important to understand because some information can obscure other information, depending on the intensity of the weather conditions, map zoom level, etc. (See below for an example of how NEXRAD overlays satellite imagery). The order that the AnywhereMap “paints” the weather products, from first to last (on top) is:

1. Echo Tops or IR Sat Image
2. NEXRAD
3. Lightning (slowly cycles on and off)
4. METAR/TAF Flags

The reason it’s important to know this is because, for example, there are times when there is so much lightning activity that the lightning strike graphics can actually obscure the NEXRAD graphics since lightning is painted on top of NEXRAD. (That’s a whopper of a storm!) So it is useful to turn the lightning off (that’s also why we flash it on and off) so you can see the NEXRAD radar presentation un-obscured by the lightning. To see the complete echo top presentation, you need to turn off NEXRAD (radar), and so on.

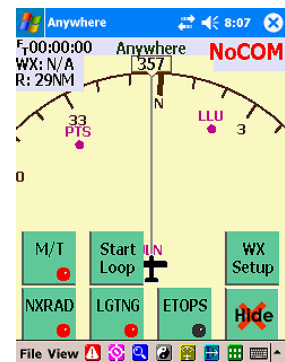


D. Turning weather products on and off

Generally a pilot wants to see radar (NEXRAD), which is the color-coded Doppler radar presentation, and so you’ll normally want that product turned on for display. However, there are other weather products that can clutter the screen and are not useful depending on weather conditions. There are two places to control weather product display.

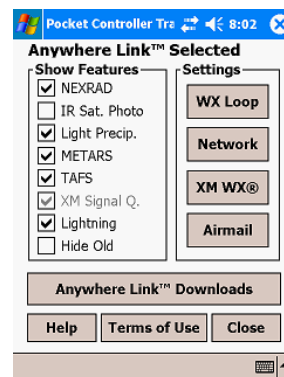
1. Toolbar:

- a. Tap the green square icon toward the right of the lower toolbar on the map screen.
- b. A series of large green buttons appear one of which is for weather (wx). Tap it.
- c. A new series of buttons appears (see right); four of which have little round dots on them. Think of these as “power lights”. If they’re black, the item is off, if red, the item is on. To change the status simply taps them.
- d. M/T: METAR/TAF display. This turns the METAR/TAF flags on or off. The text for the METAR/TAF is always available under the associated airport information screen. This control simply turns on the display of the color-coded flags that show on the map.
- e. NXRAD: Turns the color-coded radar display on or off.
- f. LGTNG: Turns lightning on or off. (The XM weather subscription and/or AnywhereLink subscription dictates whether lightning is a part of your plan.)
- g. ETOPS: Echo Tops on or off. See description below for details.



2. Settings

- a. Tap File > Settings > Wx Settings
- b. Notice the check boxes along the left column. Turn the weather product displays on or of using these check boxes. Also see Views for information on how to save weather settings as part of a user defined view.
- c. Tap Close to save and exit to the map.

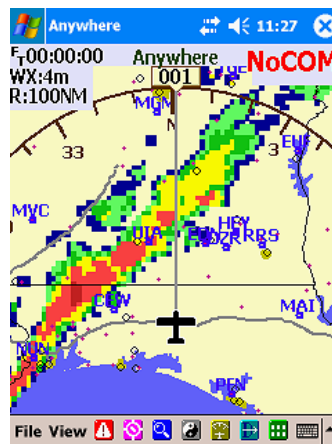


NOTE: Remember that weather show/hide parameters are saved in a View – so changing views will override your weather settings unless you save them as part of each view.

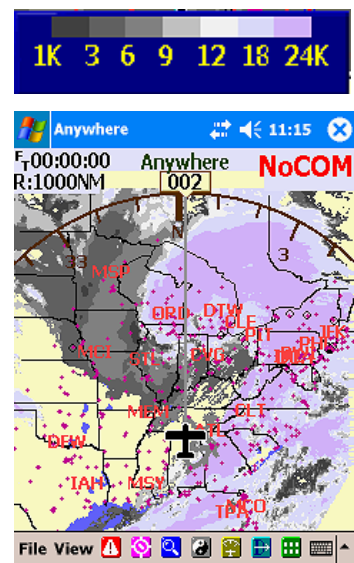
E. Weather Products in Detail

1. NEXRAD (Radar): This is the same color-coded precipitation view that is commonly seen on TV and Internet weather sites. The levels of color (**least intense** < blue, light green, dark green, yellow, red, magenta and white > **most intense**) denote the levels of precipitation intensity as measured by a network of Doppler weather radar systems across the lower 48 states. Since Doppler radars see not only precipitation but also precipitation intensity based on turbulence, the color-coding provides excellent information for pilots to decide where to fly and where not to fly. From our experience, we can simplify your enroute weather avoidance decision-making by providing the following advice:

- a. The NEXRAD file is a static, composite “snapshot” of the entire US radar that is updated every 5 minutes and sent to the AnywhereMap system every 5 minutes. It is very accurate since nearly every spot in the US is looked upon by at least two Doppler radars. So the others surrounding it generally cancel the attenuation that can occur with any individual radar. The NEXRAD presentation is very accurate but remember: it is a static snapshot! That means the actual conditions can be different! **Use the presentation to determine where you WON'T fly, and circumnavigate those areas by a large margin.** The goal is to complete a trip that you wouldn't otherwise take, not do it in the fastest time!
- b. **Do NOT fly in any yellow color area** unless you are POSITIVE that the precipitation is associated with non-convective activity. If it's convective, give yellow areas a berth of at least 10 and even better, 20+ miles. We aren't kidding here folks.
- c. It might go without saying, but we'll say it anyway: **DO NOT fly anywhere near any red, magenta, or white color radar tiles! THERE ISN'T ANY SITUATION WHERE THESE COLOR TILES DENOTE ANYTHING OTHER THAN SEVERE, AIRFRAME BUSTING CONDITIONS. DON'T DO IT. DON'T EVEN GET NEAR THEM.** This isn't our lawyer talking; this is one group of pilots telling another. If you get near these areas, you're going to get hurt.
- d. Areas of lighter precipitation can be flown through as long as you keep the following in mind: if it's cold, you might get ice, REALLY FAST. If it's convective, these areas can still be very turbulent and can turn into nasty conditions very quickly.








- e. “Clear” areas between cells can be flown through with the following in mind: you are in a convective situation. You need to know if conditions are building or diminishing. If building, the space between the cells can close before you get through. Remember, all Datalink NEXRAD systems have a delay of several minutes from real time. Come visit us in Kansas next May if you want to see the difference 5 minutes makes in thunderstorm development! If the area in which you’re flying is IMC and the cells are embedded, the space between the cells should be wide – like more than 30 miles – or don’t go through go around. If you’re VMC, then compare what you see out the window with what’s on the AnywhereMap. Finally, if one gap is closing, others are too. Make SURE you have a way out. Forward is not the only direction the aircraft can go.
 - f. If you use AnywhereLink, there are two lower levels of light precip below the blue on XM NEXRAD: “dithered” blue and “dithered” green. These show very light precip and can be handy when the air is very cold (you might get ice) and to denote virga (you might get bounced around a bit).
2. Echo Tops (XM only): Echo tops are the highest (in altitude) radar echo returns in each 1 mile square area, color coded in shades of gray from dark (a low top) to light (a high top). Echo tops are easily confused with satellite imagery of clouds. A stratus cloud that has no precip and no turbulence will not even show on an echo top presentation. A cloud can actually be much thicker (and have a higher top) that the echo top shows. The easiest way to differentiate them is to remember: echo tops are created by radar and cloud images are created by satellite imagery (pictures). Echo tops normally mean more to the high altitude guys than those of us down low. And since NEXRAD is painted on top of echo tops (on AnywhereMap) most of the time you won’t even see the echo top presentation unless you turn off NEXRAD. However, there can be instances where the echo top is helpful down low. For example, you might be skirting around some individual cells at night. You might be avoiding the NEXRAD areas but decide to fly through a few of the echo top areas that protrude out from under the NEXRAD. Be aware that these areas are lead in areas to the cells. There isn’t enough activity for NEXRAD to pick it up, but radar still sees something. You would be wise to either go around, or tighten your belts.
 3. IR Sat Photo (AnywhereLink/Globalstar) Only: This is available only on the AnywhereLink connection, as XM does not currently provide this data. The sat image is a satellite picture; color coded to cloud tops and is truly the tops of the clouds, within a thousand feet or so. Below 12,000 feet msl the colors break every 3,000 feet. Above 12,000’ there are only three additional color breaks. See the diagram at right for details and a very cool example of the sat image from a winter low-pressure system. For most general aviation aircraft that fly below 12,000’, the sat photo is most useful to locate areas of clouds versus clear areas and also to estimate the tops of the overcast on cold days (i.e. can I get on top and out of the cold clouds?)
 4. Light Precip: To de-clutter the screen and only show the nasty stuff, you can turn off the light precip colors. Be aware that if you turn it off, you can possibly miss seeing some areas that are developing in a convective situation.
 5. METAR/TAF: This is the pesky text-based data that is provided by larger airports, some airports with ASOS/AWOS and also forecasts from NWS. They come to AnywhereMap via text files and we place the text under the airport information screens for their associated



airports. Since we hate having to read the things for basic information like ceilings and visibilities, we also convert these two data values to a graphic that displays on the map.

a. When “turned on” the METAR flags show on the map next to the airport that generated the data. The flag (see diagram) is split diagonally – the upper left corner is the ceiling and the lower right is visibility.

b. They are each color coded to VFR/IFR conditions and are independent of one another. Consequently, you can see at a glance whether the observed conditions for ceiling and visibility at an airport are VFR (white), marginal VFR (yellow), IFR (red), or low IFR (purple).

	Ceil. >3000 ft Vis. >5 mi
	Ceil. 1-3000 ft Vis. >5 mi
	Ceil. 1-3000 ft Vis. 3-5 mi
	Ceil. 500-1000 ft Vis. 1-3 mi
	Ceil. <500 ft Vis. <1 mi

c. If a TAF (forecast) has been received for that airport, a small square is attached to the upper left corner of the METAR flag. Since the TAF covers a time period, there is no graphic that represents data values like the METAR. Therefore, you have to look under the associated airport information screen to see the TAF text.

d. If you want to see details of the METAR and the TAF data, simply double-tap the airport symbol for which the METAR flag is associated. Then tap the WX tab. The METAR is decoded at the top for easier reading (do you remember all the METAR precipitation codes???) and the complete coded METAR is just below. If a TAF was received for that airport, the TAF is below that and can be accessed by scrolling down.

e. METAR/TAF info is received on the XM link for entire US while in flight about every 12 minutes. You will be amazed at the increased safety and pro-active flight management that can be done when you have this data updated continuously while enroute. Unless weather conditions are changing very rapidly (like a cold front, or fog forming) there is no reason to be surprised by the weather at your destination or your fuel stop. You can watch it the entire time you’re in flight!

f. To see the weather at ANY airport while enroute, regardless of if that airport is displayed on the map at the time, simply tap the airport icon (bottom toolbar) and then tap in the airport identifier. Then tap the WX tab. You can read the latest conditions for that airport without even seeing it on the map. Once again, the ability to pro-actively make destination, fuel stop, and fuel management decisions enroute is truly fantastic!

6. XM Signal Q: Sets the weather age number in the upper left corner of the screen to alternate with the quality of the XM signal as seen by the XM antenna. Useful just as a quick check of XM signal quality.

7. Lightning: Turns lightning on or off. The lightning file is static just like all the rest and shows cloud to ground strikes for the entire US. It is sent to the AnywhereMap system every 5 minutes, just prior to the NEXRAD file being set.

8. *Troubleshooting*

This section outlines some of the problems and solutions for setting up and using AnywhereWx with XM WM weather. *Please check these items first before seeking technical support.*

Problem	Solution
COM port settings for GPS and XM devices with the XM weather system	<p>The following COM port settings should be used in AnywhereWx for XM systems.</p> <p>XM System: wired XM and iPAQ, BT GPS</p> <ul style="list-style-type: none"> • XM: Serial cable COM1 • GPS: Bluetooth COM8 <p>XM System: BT XM, wired iPAQ and GPS</p> <ul style="list-style-type: none"> • XM: Bluetooth Port 1 • GPS: Serial cable COM1 <p>XM System: BT XM and GPS</p> <ul style="list-style-type: none"> • XM: Bluetooth Port 1 • GPS: Bluetooth COM 8
Not receiving XM weather	<ul style="list-style-type: none"> • Check that entire system has power. Green LED on XM box, red LED on power plug, and charging light on iPAQ. • Check software activation: Tap File, Settings, WX Settings, XM WX. Verify activation code is in grey box and the check box for XM is checked. • Check that a Radio ID is displayed at the top of the XM Settings screen. NOTE: Radio Inactive does NOT mean you must re-activate the radio, only that the radio is not being seen by the iPAQ! Do not attempt to reactivate the XM radio! • Verify that the system is set to XM Mode and not to Anywhere Link™ mode.
iPAQ start up with Bluetooth	<p>When the iPAQ is powered on it is important to check that the Bluetooth radio is also on and ready to connect to the GPS and/or XM radio. To do so, check the lower right corner of the iPAQ main screen where the wireless icon is displayed. For iPAQ 5550 this might look like a vertical oval with a zig-zag graphic – the Bluetooth indicator. Make sure the Bluetooth radio is turned on before starting AnywhereMap.</p>
Not showing the weather information expected	<p>Tap File, Settings, WX Settings, and ensure the weather products desired are checked for display. This is particularly important if you have changed Views. The weather display parameters MUST be set for each user-defined view and the View must be saved in order for weather to appear consistently. See User Views for more information.</p>

<p>Bluetooth GPS or XM won't connect</p>	<ol style="list-style-type: none"> 1. Check to make sure the Bluetooth radio is on before starting the program. 2. Check to make sure the GPS and/or XM Bluetooth device is turned on before you start the program. 3. Check the COM port settings (see Bluetooth COM setting above) for both the GPS and the XM radio.
<p>Still need help?</p>	<p>We suggest you try our support facilities in the following order:</p> <ol style="list-style-type: none"> 1. docs.controlvision.com: software documentation and demonstrations 2. kb.controlvision.com: knowledgebase articles 3. Live Chat with Tech Support: 8-8 M-T, 8-5 F central 4. Email tech support 5. Tech Support Hours: 9-6 central, M-T, 9-5 F central