



TUtil

w^{*}intercom

***Programming and Configuration
software Utility***

Version 4.0.2.1

December 20, 2012

Installation and operation Manual

Technical Support

Support can be obtained from your Teletics distributor, or by calling Teletics Technical Support at:

916 947 7444

Computer operating system requirements

TUtil ZipLine 24 software has been tested on computers using the following operating systems:

Microsoft Windows XP with Service Pack 2 or above.

Microsoft Vista and windows 7 operating systems requires turning off IPV6. See page 11 for details.

Copyright

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Warranty

Teletics Inc. provides this software at no charge to its customers on a best efforts basis. No warranty or suitability for any use is implied.

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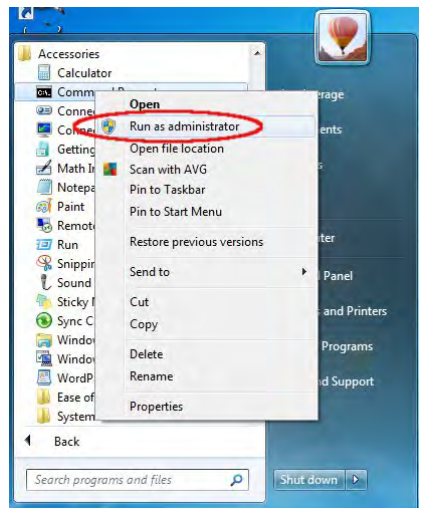
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Getting and Installing the Software

IMPORTANT! – If you are using VISTA or Windows 7, before you download the TUtil software, you must enable a hidden administrator account in windows. Here is how you do this.

1. Click on the lower left hand round windows button.
2. Click on “All Programs”
3. Click on “Accessories”
4. Right Click on “Command Prompt”.

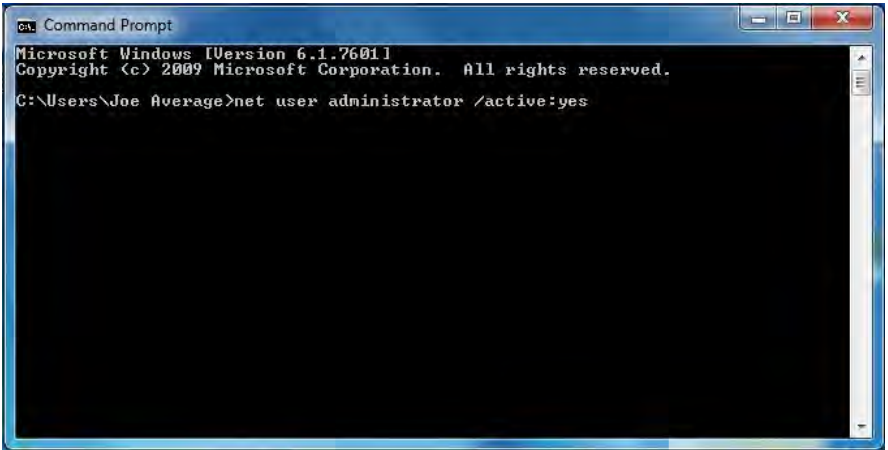
5. Select “Run as Administrator” from the menu:



6. Next, you will need to enter the administrator password for windows. If someone else installed windows on your computer, you will need to get this password from them. Remember this admin password. You will need it every time you want to run TUtil in the future.



7. You will now see a black command prompt box, like this. You need to enter the command shown EXACTLY as you see it here.

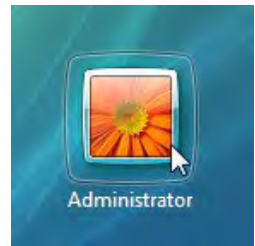


```
ca: Command Prompt
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Users\Joe Average>net user administrator /active:yes
```

The exact command is:

```
net user administrator /active:yes
```

8. Hit the enter key. If everything worked you should see a reply that says “The command completed successfully”. If you do not see this reply, close this window and repeat steps 1 through 7 again.
9. Once you see that the command completed, you should reboot your computer.
10. Once the computer has rebooted, you should now see the new Administrator login icon.
11. Login as administrator, and install TUtil w*intercom 58 software. You will need to login as the Administrator to run TUtil from now on.



TUtil w*intercom software may be obtained from the Teletics website, at www.teletics.com/support. You should also have downloaded this manual.


To install the software, download it to your computer. Double click the file labeled TUtil wintercom58 4.0.2.1 and then double click the setup icon. TUtil w*intercom will install and download any additional Microsoft software automatically.

Once TUtil has installed, it will immediately start up.

TUtil Startup



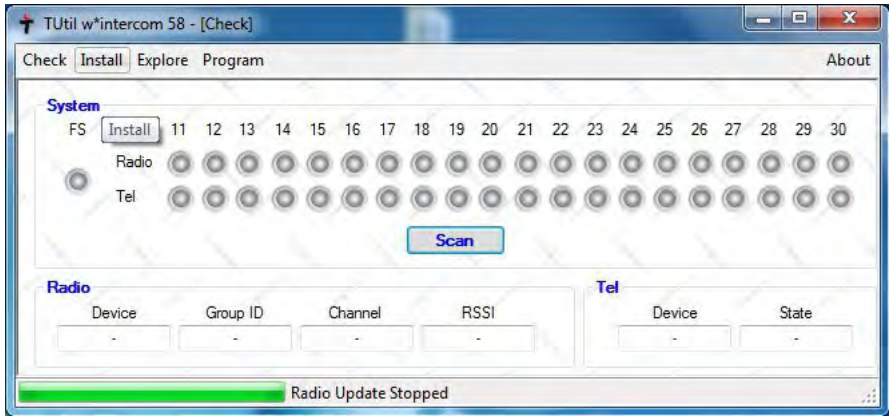
When TUtil starts, you will see the startup splash screen below. During this time, TUtil is waiting for windows to automatically configure its LAN port. At this time, you should attach your LAN cable to the w*intercom device that you wish to program. Or, if you are doing an installation and want to test the system or check radio signal strength, you should plug your LAN cable into w*intercom II.

 Note that this window will stay displayed until windows adjusts the network settings automatically. If you get stuck on this screen for a long time, make certain that you are only plugged into the w*intercom II unit, and that it is not attached to another network hub or switch.

The initial splash screen will appear for up to 90 seconds. This is normal. If this screen stays for longer than 2 minutes, check that your network cable is only attached to a w*intercom system, and not your office network.

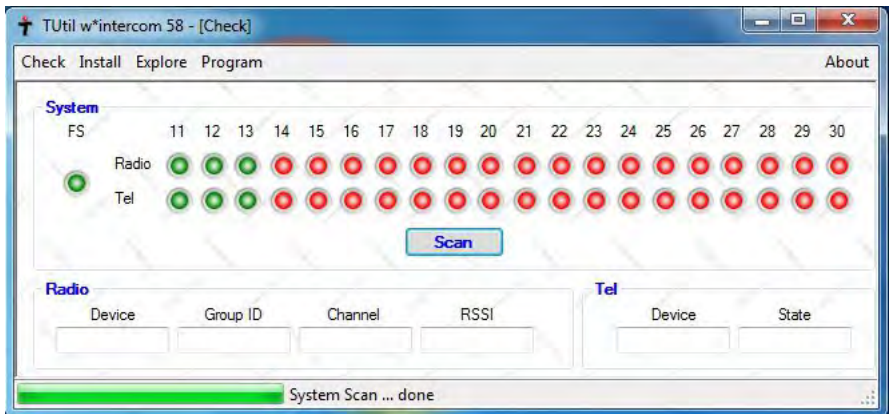
TUtil Check Function

Once the startup has completed, you will see the initial “**Check**” screen:



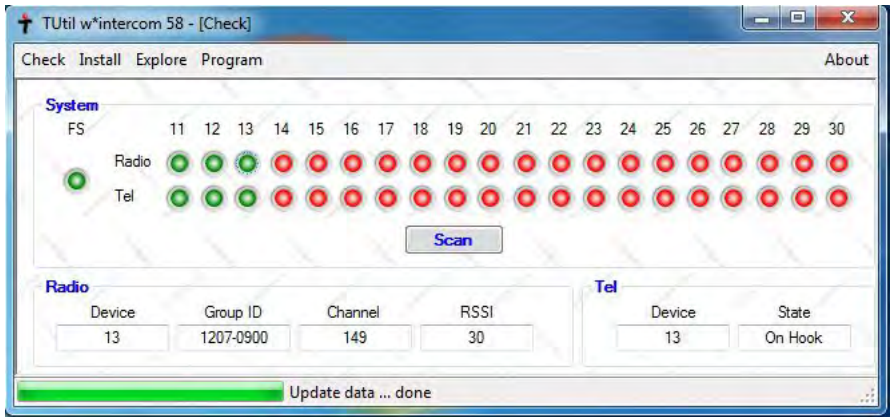
The **Check** Function allows you to determine what devices are installed properly as part of a complete w*intercom system, as well as to obtain basic settings on any one device.

When you are plugged into a working w*intercom system, clicking on the **Scan** button will give you a screen similar to this:



This **Scan** shows that there are w*intercoms 11, 12, and 13, and a Feature Server in this system. The Green lights indicate that the w*intercoms are all able to talk to each other and the system is programmed correctly.

If you click your mouse pointer on either 13 button (Radio or Tel), you will get the following display:



TUtil is telling you:

- Radio 13 is programmed with **Group ID 1207-0900**
- The Radio is using channel **149**
- The signal strength between 13 and 11 (The Master Radio) is **30**
- The Phone on unit 13 is not being used (this is called **On Hook**)

If you are going to add another w*intercom radio to this system, you need to know that the **Group ID** is **1207-0900** in order to program it.

It is worth noting that the **Channel** is only set in the Master w*intercom, which is w*intercom 11.

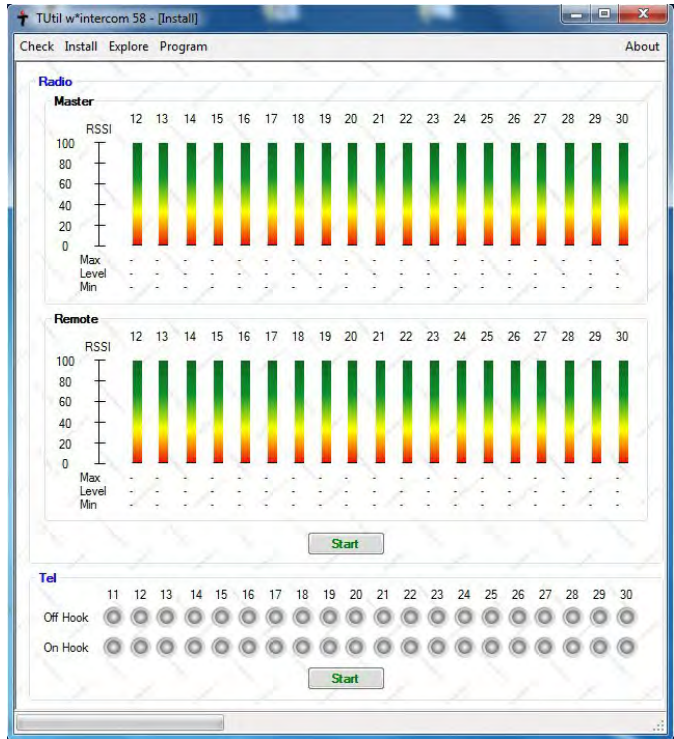
Any signal strength of 40 or better is considered normal for operation. But for more details on signal strength monitoring, please continue reading until the **Install** Utility section.

If your **Scan** show that the phone is in a different state than **On Hook** when it is not being used, you should check the phone you are using, and the cable to make certain that they are okay.

TUtil Install Function

If you click on the word “Install” in the top menu, you will activate the Install Function:

Install gives similar information to Check, but in much greater detail, and can be used to continuously check things like Radio Signal Strength and Telephone State on all w*intercom units at once.



For proper operation, the Signal Strength tests should be run while your computer is plugged into unit 11 (Master).

When you click on the **Start** button that is just below the signal strength indicators, TUtil will shade out any w*intercoms that it does not detect in the system, and it will start to display radio signal strength as seen by the **Master** w*intercom (from the other units), and the lower signal strength indicators show how much radio signal is being received from the **Master** from each **Remote**.

Good signal strength between w*intercoms is crucial to reliable w*intercom system operation. Especially when installed at a site, and any w*intercom with a signal level of 40 or lower should have corrective action taken. This generally indicates a bad antenna/radio cable, or that

the installation of the antenna on the trailers or drilling rig location is not proper for line of sight operation.

The most typical reasons for low signal strength are:

- Damaged (kinked) radio cables
- Incorrect antenna placement
- Antenna connectors that have had been protected from weather

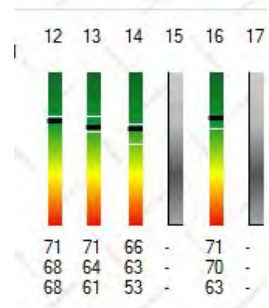
General Rules for Antennas and Radio Cables

Antennas get broken. When the system gets moved, there is a chance that the antennas can get damaged. Keep spares!

The types of radio cable used for 5.8 GHz operation cannot be measured properly with an ohm meter. If the cable has any kind of kinks, or twists from being bent at sharp angles, there is a good chance that it is a short at 5.8 GHz and may not only cause bad operation, but may damage the w*intercom.

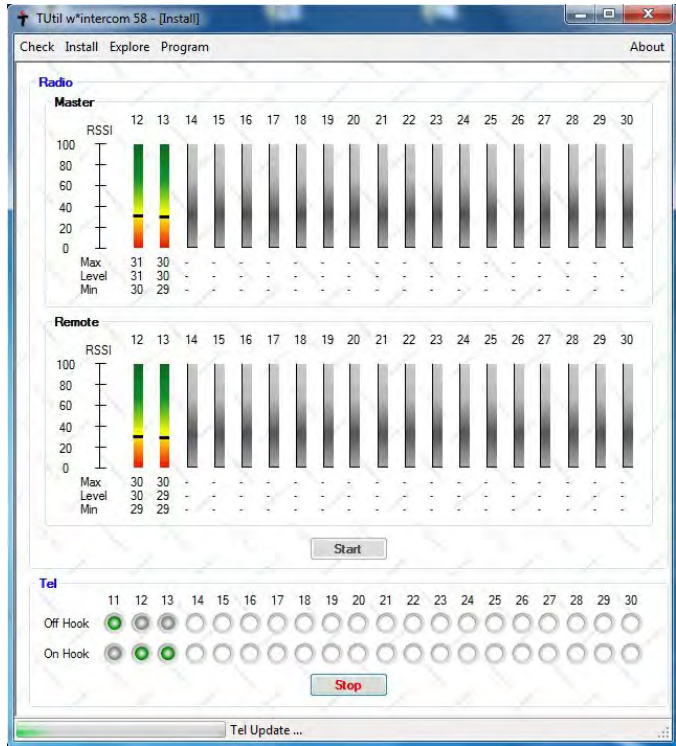
Any antenna connector, or antenna/cable connection that is exposed to weather will eventually trap enough moisture to short out at 5.8 Ghz. Our support group can always tell where the rain is, because that is where the support calls come from. Teletics distributors can either sell you antennas and cables that are pre-weather sealed, or they can supply you with SELF FUSING RUBBER TAPE. If you are not familiar with the tape, please contact our Distributors (or Teletics) for a lesson in how to properly apply it.

If you run the signal strength program for a few minutes, you will start to notice white lines above and below the black line indicating signal strength:



These indicate the maximum and minimum signal that was measured since you started the test. The example to the right shows what a reasonable variation.

In the **Tel** section, clicking the **Start** button will tell **Install** to continuously monitor all phones installed on the w*intercom system. This example shows that someone has just picked up **Phone 11**.



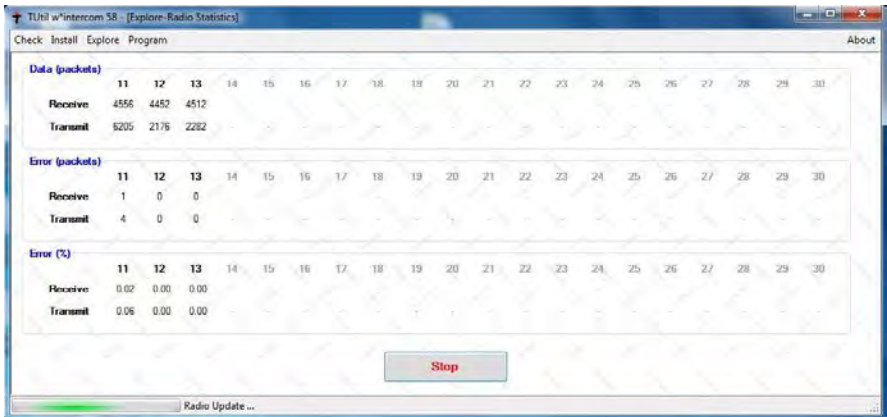
This diagnostic is handy in determining phones that are in need of repair, or telephone cables that are open or shorted.

TUtil Explore Function

Although suitable signal strength levels are required, signal strength is not the only requirement for flawless system operation.

Understanding when transmitted or received error packets are occurring in a system can also point to either interference at the site from other equipment, failing w*intercom radios, bad antennas, or any combination of these factors.

Clicking on **Explore** → **Statistics** followed by clicking on the green **Start** button brings up the following screen:



Each w*intercom continuously monitors the number of packets it sends and receives, and keeps a running accumulated count of good and bad packets. The only way to clear out these counters is to power cycle the w*intercom.

The example screen shows a small typical system with no unusual errors. The few bad packets that have occurred can be attributed to the normal startup process.

There are two key things to keep in mind. First, the overall percentage of packet errors **MUST** decline over time. For example, if the initial **Error** percentage is 2.13%, and while you're watching it, this goes to 2.12%, then 2.11 percent, it indicates that the connections are okay and you should not expect any long term issues. **Error (%)** of greater than 5% is cause for further investigation.

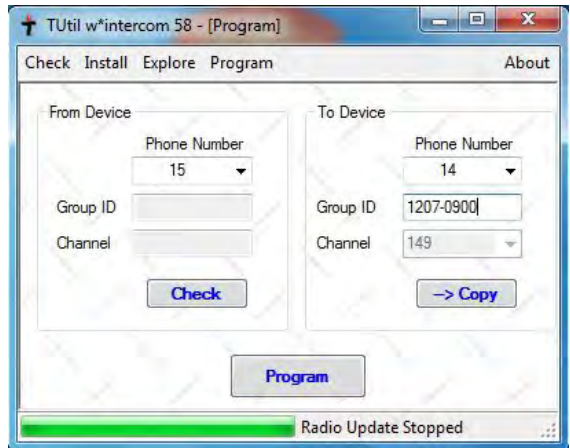
Should the **Error** percentage be increasing over time, you should power cycle each w*intercom in the system, one at a time, while stopping and starting **Explore** to ensure that the cause of the **Error** packets in the system is not a bad w*intercom.

TUtil Program Function

To program a w*intercom as a different phone number, or to move a w*intercom from one system to another requires the **Program** function in TUtil.

Program allows you to also change the radio channel the w*intercom system is using, and to

fetch the **Group ID** and **Channel** of the system, or an individual radio.



Please note that programming the **Channel** setting is only applicable to **Phone 11**. The other w*intercoms simply scan until they find the master with a matching **Group ID**.

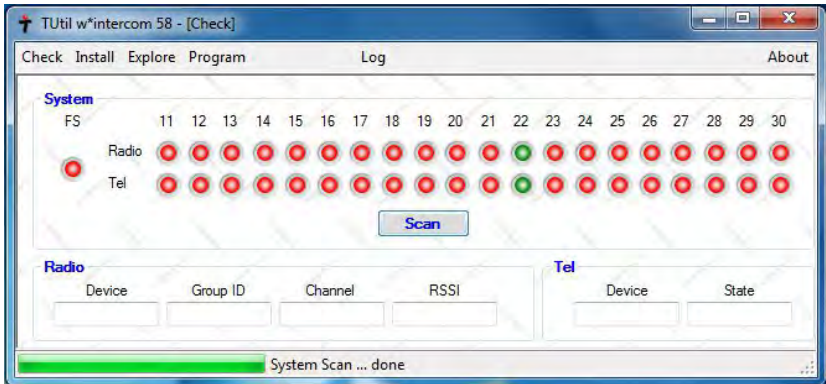
On the left hand side is the current device settings. This is titled “**From Device**”. The “**To Device**” section is what you want the w*intercom to be **after** you have programmed it.

You can use the **Program** function to change a device that is already installed in a working system, or you can simply program one unit to join an existing w*intercom system.

For example, if you have a w*intercom system with 5 working stations numbered 11, 12, 13, 14 and 15, and you need to add a new station 16:

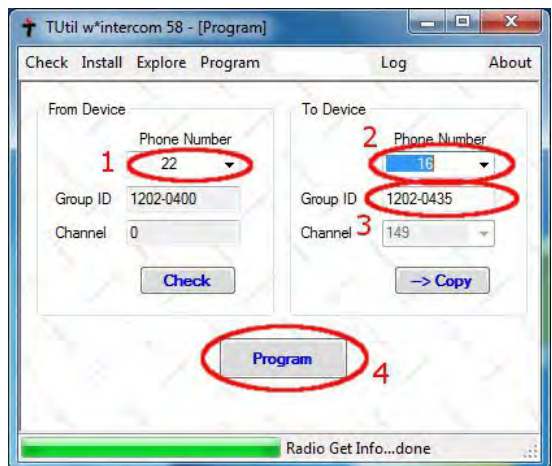
- Plug your computer’s network cable into the **new** w*intercom that you want to add to the system.

- Run TUtil **Check** → **Scan**. You will learn what phone number the new w*intercom is programmed as, and you will find out its current **Group ID**. Both these settings may need to be changed.



- Once you know what number the new w*intercom radio is, you can run the Program function to program the correct **Group ID** by performing the following steps:

1. Choose the current **Phone** number of w*intercom that you want to add to the system. In our example, 22.
2. Choose the **Phone** number you want it to be in the existing system.
3. Set the **Group ID** to the **Group ID** of the existing system that the new w*intercom will be used with.
4. Click the **Program** button.



- Programming takes about 2 minutes.

A second example would be if you have a working w*intercom system with w*intercoms 11, 12, 13, 14, 15, and 22, and you want to change 22 to 16.

You essentially perform the same procedure. TUtil **Check** → **Scan** will show you all 6 w*intercoms. You can then run **Program** to “move” the w*intercom 22 to w*intercom 16.

The → **Copy** button is a quick way to use the same **Group ID** as you started with. **Copy** is a handy way to make certain that you keep the correct **Group ID**. If you forget to use **Copy**, the **Group ID** will be wrong.

When programming a master (11) w*intercom, it is a good idea to not have any other w*intercoms powered up.

Group ID Explanation

The **Group ID** (as shown above) is the serial number of the system or any 30 digit string of your choice. It is important that all units in a w*intercom system be programmed with identical **Group IDs** or the system will not recognize all the w*intercoms.

When Teletics w*intercom systems leave the factory, they are tested and shipped as systems with one master and 4 remotes. They are numbered 11, 12, 13, 14, and 15, and the **Group ID** for the system is the same as the serial number for the Unit 11 master. The factory default channel is channel 149. These systems may be deployed right out of the carton as a 5 station system.

However, for example, let’s assume that we have a brand new w*intercom system in its carton in our shop, and we have two additional “loose” units that we want to make into one 7 station system. For our example let’s assume that they have the following serial numbers:

w*intercom	Group ID	Serial Number
Phone 11	0805-0360	0805-0360

Phone 12	0805-0360	0805-0361
Phone 13	0805-0360	0805-0362
Phone 14	0805-0360	0805-0363
Phone 15	0805-0360	0805-0364

Loose Units:

Phone 12	unknown	0802-0301
Phone 14	unknown	0802-0303

Therefore, the fastest way to program our example system is to program the loose units to Unit 16 and Unit 17 using TUtil, using the **Group ID** of the new, complete system, which is 0805-0360.

One other way to accomplish the same thing is to reprogram all of the units using a serial number of your choice, such as A1B2C3D4, or SITE4567.

Keep in mind that all serial numbers are case sensitive!

It is noteworthy that Teletics Feature Server units do not require any kind of programming. They will only talk to the system that they are physically connected to.

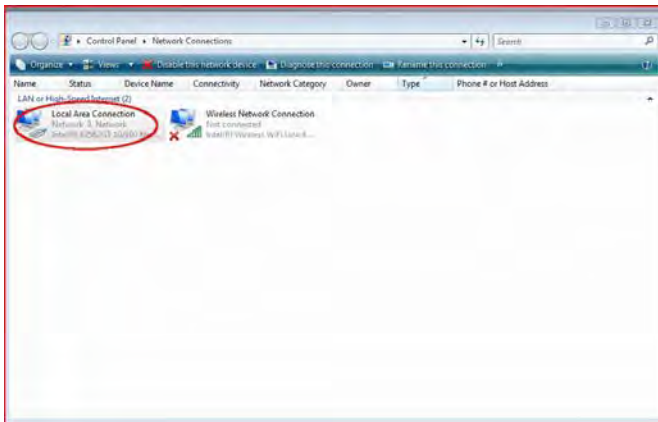
Once you have the w*intercom units programmed, it is a good idea to test them as a system to ensure that each unit can call the other units in the system. You connect one of the units to the Teletics Feature Server unit, and once you have antennas and phones connected to each unit, you should apply power to all of them. You can refer to the w*intercom manual on what the LEDs on the front panel mean.

Once all of the w*intercom units can call each other, you can attach PA speakers to their outputs and try doing a PA message across the system. Be warned that the volume produced by multiple w*intercom units on one bench can be a bit overwhelming. You should start with the volume at about a quarter and go from there.

Finally, once the complete system is working on a phone to phone or PA basis, you can then attach the outside lines to the Feature Server RM (if equipped with outside lines) and test the functionality of the outside phone lines.

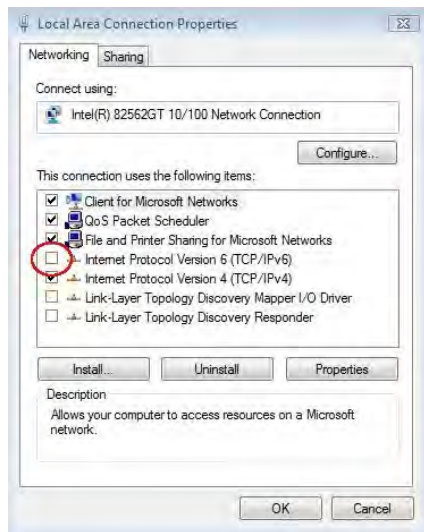
Turning off IPV6 in Windows Vista and Windows 7

From the Start button select Control Panel and then select Network Connections to display the screen below.



Right the Local Area Connection icon and from the menu select Properties to display the Local Area Connections Properties as shown on the following page.

Clear the check mark next to Internet Protocol Version 6 (TCP/IPV6) as shown below and select OK.



Troubleshooting

Radio and Tel are on two different settings in one w*intercom.

(For example, **Radio** might be 18 and **Tel** might be 12)

Corrective action is to simply run program on the problem w*intercom with the setting of the Tel to match the current radio. So, for the example above, make the “**From Device**” 18 and the “**To Device**” 12, and program the w*intercom. What happens is the programming will fail after setting the Radio from 18 to 12. Then both the **Radio** and **Tel** will now match, at 12.

When starting, TUtil splash page never goes away

If this happens, and you have tried to ensure that the w*intercom system is not connected to any other network, you can attempt to force TUtil to finish initializing by starting TUtil, and then open a command prompt in windows, and typing `ipconfig /release <enter>`.

Remember that you need to plug your computer into only the w*intercom system prior to starting TUtil. If the w*intercom system is plugged into, or is part of, another network, TUtil’s splash page will stay on indefinitely.

If this does not work, contact Teletics technical support for further assistance.

Phone on a w*intercom system says “Device not Registered”

The w*intercom radio cannot connect to the Feature Server. You should check that the **Group ID** of this particular radio matches the **Group ID** of the rest of the system. If this seems correct, check that the radio signal strength for that particular w*intercom is okay.

The **Group ID** seems to match, but the w*intercoms won’t connect

Group ID has to be absolutely identical. Upper and lower case matters, as does the differences between l and I, for example. When in doubt, blank out the **Group ID** and re-enter the **Group ID** you want, and re program the w*intercoms in question.

Some w*intercom radios do not appear in signal strength tests

Occasionally, you will notice that one or more w*intercom radios will not appear if you start / stop / and restart the signal strength tests. This is normal behavior. The w*intercom radios that are not present will reappear automatically after a few minutes.

I accidentally programmed a w*intercom as one that already exists in the system. What should I do now?

To fix this, you should unplug all the w*intercoms in the system, and power only one up only at a time. Then you can find the w*intercom that is incorrectly programmed, and reprogram it correctly. After that, you should be able to turn on all the units and locate them using the TUtil Check function.

Transmit or Receive Packet Errors

There are a number of causes of packet errors.

The most common problem that we encounter is bad antennas or RF cables. You should stick to a good quality LMR400 type radio cable, and try to keep the lengths at 30 feet or less. Replace radio cables that are kinked or damaged.

Too much signal strength is another possibility. RSSI levels of 70 or greater can create errors.

If there is other communications equipment running in the 5.8 GHz band, you may encounter a higher percentage of packet errors. In this case, assuming that the percentage of packet errors is not degrading the operation of the w*intercom system, this might be tolerable. Check the Feature Server logs for “Unreachable” messages. This indicates that the w*intercoms have disconnected due to sporadic communications. If not Unreachable errors exist, the slight interference may not be a problem.

Lastly, a very high percentage of packet errors, such as 30% or more, can sometimes indicate a damaged w*intercom. You should unplug all w*intercoms, and then plug them in one at a time until the packet error

percentage suddenly increases, indicating that the most recently powered up unit is at fault.

Additional Technical Support can be obtained through your Teletics distributor, or by calling Teletics Technical Support at:

916 947 7444