# Teletics Application Note

# Nortel PBX Extensions with the *ZipLine*

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# Background

Many customers ask us about using the ZipLine with Nortel PBX systems. These clients have either a Nortel phone system in one building, and wish to have phones in a building across the street using the ZipLine.

This application note explains how to do this, and also gives multiple options on how to accomplish this.

# Technical Discussion

First, a basic description of the ZipLine is in order.

POTS stands for Plain Old Telephone Service. This is the type of phone line most people have in their home.

Ethernet is the connection that everyone uses in their home and office to connect their computers to the internet, and to other computers in their office or home.

The ZipLine extends one or two POTS lines and an ethernet connection between two locations up to a mile apart. It is a "ready to go, out of the box" system that almost anyone with basic skills with tools can install.

Next, a basic understanding of how an office desk phone's call features are implemented is required.

PBXs such as the Nortel Norstar or Meridian use something called feature codes from each deskset to tell the PBX what to do when someone using a phone wants their voicemail, or to transfer calls, and so on. For example, if you have a Norstar at the office, when you push the VOICEMAIL key on your phone, what is actually happening is the phone is dialling a special extension, which is called "Feature 981". The PBX understands this command and answers your call and asks you for your voicemail password, and so on. The "Feature" button is actually the * button on the keypad.

You can try this on your regular Nortel phones at the office and it should work just as described, assuming you have a Norstar. The Meridian may have different feature codes. Try picking up your desk phone and dialing *981. You should be asked for your voicemail password.

Another example of this is if you have every had your local telephone company install features on your phone line, such as voicemail, or a second line, or call waiting, you will need to dial special code, usually starting with the * character, to get to your voicemail, etc.

Third item on the list of things to know is that even though Nortel isn't around anymore, you can still buy new phones that will work with a Nortel system. One example we have successfully tested with the ZipLine is the Aastra Telecom 8009. You can find these on Aastra's website: http://www.aastra.ca in their analog phones section. These phones are less than $100 on the internet.
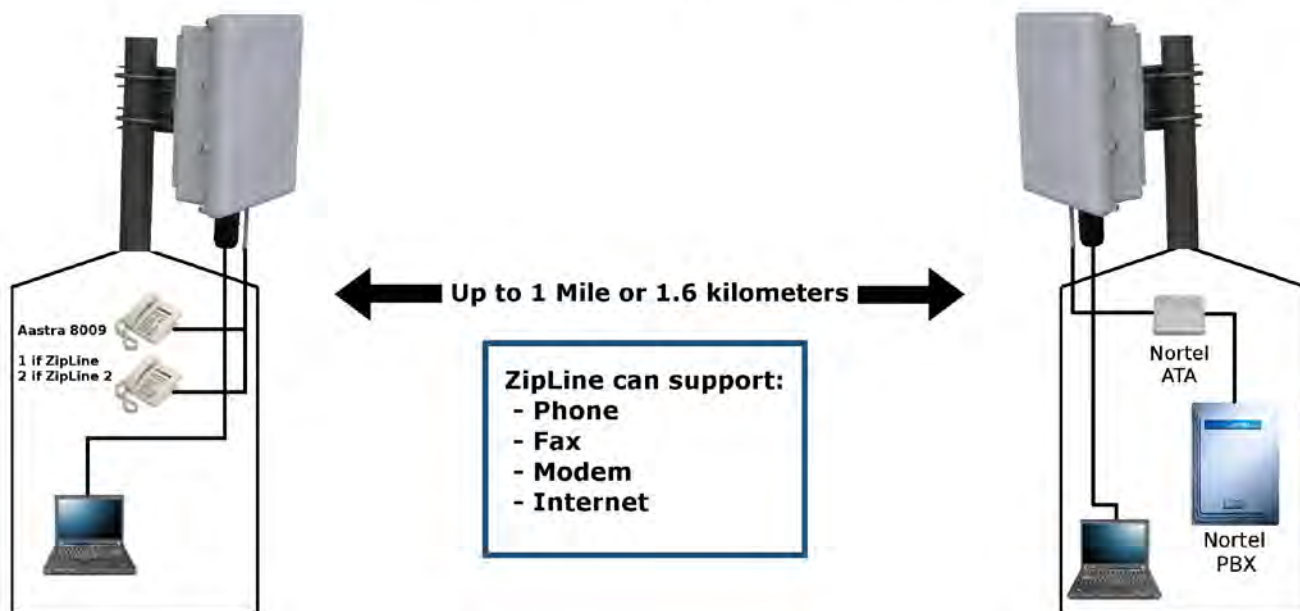
Lastly, to implement the ZipLine with a Nortel PBX, we need to convert the PBX's "digital connection" to a regular POTS connection. Nortel made a device for doing this with both the Norstar and Meridian. This device was called an "ATA", which stands for analog telephone adapter. When you plug this into your Nortel PBX, you can use any analog phone you like (including the $10 variety) with your PBX. Even a $10 phone will behave like

any other phone on your Nortel system.  You can call other extensions, and assuming you know the feature codes (like *981 for voicemail), you can do anything you could with the expensive Nortel desk phones.

Nortel ATAs are widely available from Nortel dealers.  Online, they can routinely be found for under $100.  They provide 2 POTS lines into your Nortel PBX that can be extended by the ZipLine to the next building.  This is the most economical solution for customers who need only 1 or 2 phone lines from their Nortel PBX to be extended to the next building.  If you are really cost conscious, you could even use a $10 single line phone in the next building and simply tell the user that *981 is for voicemail, and they could put it on a note of paper on the wall, instead of paying the extra for the Aastra 8009.  We often see this where the next building is a maintenance facility at a golf course, where the people in the remote building only need basic phone features.

All connected up, here is what a complete system would look like:



## Teletics ZipLine System Diagram

Up to 1 Mile or 1.6 kilometers

ZipLine can support:
- Phone
- Fax
- Modem
- Internet

Aastra 8009
1 if ZipLine
2 if ZipLine 2

Nortel ATA

Nortel PBX

# Providing more than 2 Nortel phones at the second location – 2 Options

If you need to provide more than 2 phone lines to the other building from your Nortel PBX, there are a couple more options you may consider.

# Option 1

Citel www.citel.com manufactures a product called the EXTender that converts Nortels "Digital" lines to ethernet, and vice versa, so you can use the ZipLine wireless ethernet connection between the buildings.
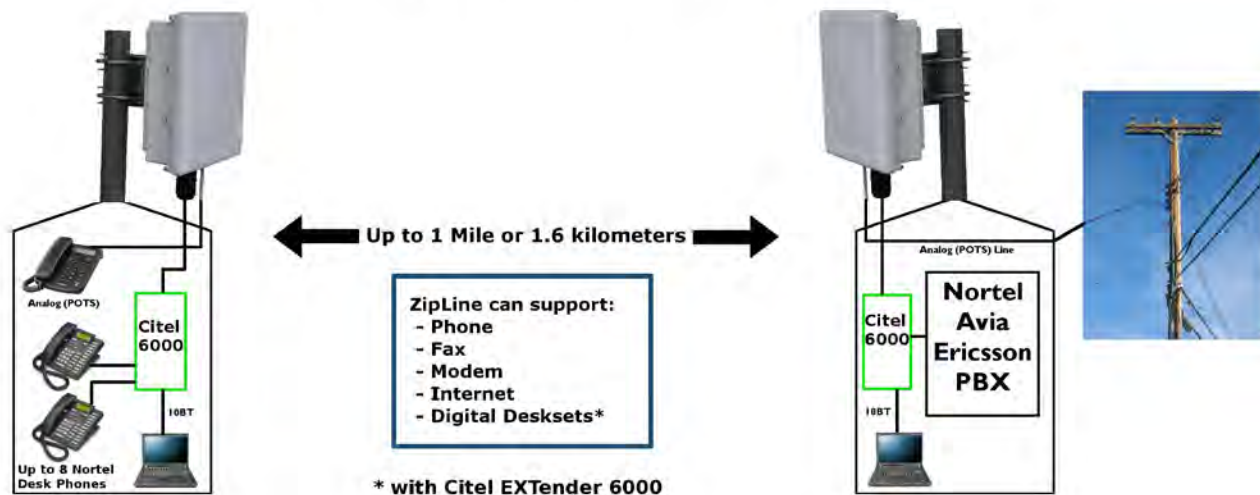
Their Extender 6000 series has been tested with the ZipLine. It will successfully extend 8 Nortel "Digital" lines from one building to the other, up to a mile. This equipment plugs in and behaves just like 8 Nortel lines, and it even has similar connectors to the Nortel system.

Although this solution works, it has been met with little acceptance by our customers, primarily due to its cost. The Extender 6000 is a rather expensive device. It usually sells in the thousands of dollars, and you need one at each end.

If this option interests you, please contact us. We can put you in touch with a Citel distributor, or Citel directly, and possibly arrange better pricing for you than you would find shopping on your own.

Here is how this system is connected:



## Option 2

Newer Nortel PBXs (as well as PBXs from other manufacturers) often have an option to allow support of the newer VoIP phones, the Nortel BCM and CS series being two examples.

If your PBX has this option, you should check pricing on this option. Once this option is installed, you can install almost an unlimited number of phones in the second building via a ZipLine, ZipLine ethernet, or ZipLine Ethernet Extreme system.

VoIP phones simply use an ethernet connection back to the PBX. Since the second location will usually require an internet connection anyway, the ethernet connection provided by any ZipLine product will generally serve

both purposes.

Many customers find that for up to 16 phones, a standard ZipLine or ZipLine ethernet works fine.  For customers with heavy computer users in the second building, or for those using more than 16 phones in the second building, the ZipLine Ethernet Extreme is a better choice.

## Teletics ZipLine Ethernet System Diagram
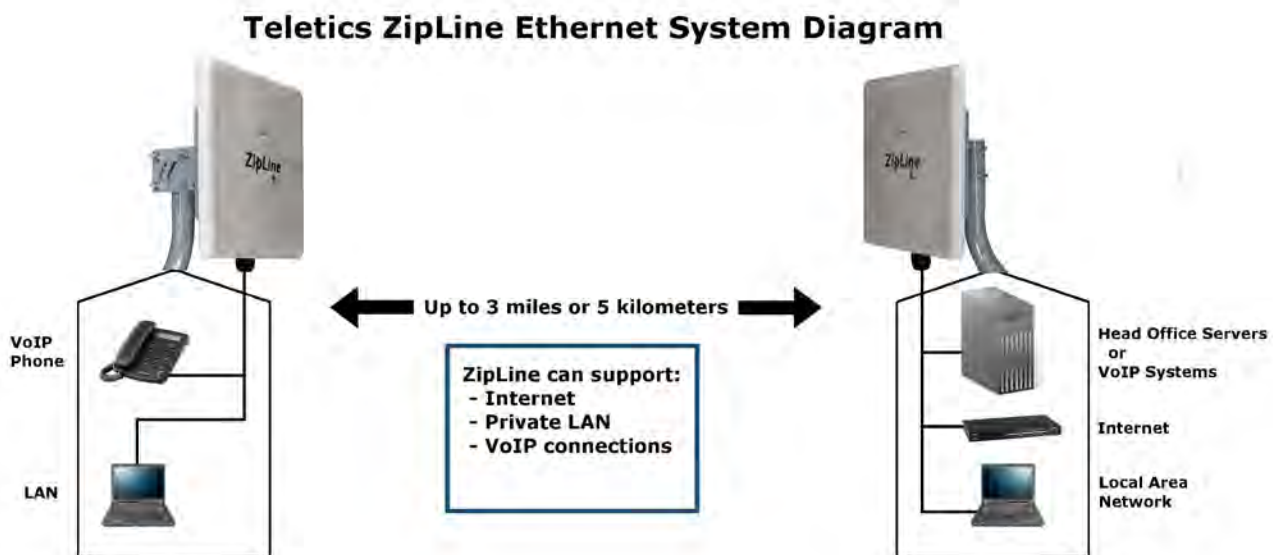


## Summary

The ZipLine and ZipLine 2 provides a very economical way to extend one or two phone lines and internet to a second building, even with legacy Nortel PBX systems.

3 or more lines becomes more complicated, but can certainly be accomplished.  When doing this, the customer will usually carefully consider the investment they are making in their legacy phone system in comparison to adopting newer standards, like VoIP.

In either situation, Teletics can provide a wireless connection between the two buildings.  All of these options have been installed and field tested for a number of years.

For more information, please contact Teletics, or your Teletics distributor.