



Using Nano Bridge Point to Point Protocol

Luaay Abdlwahed Shihab

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Luaay abdlwahed shihab

ABSTRACT The Internet one of the most important information resources in this area and is a network association for a wide range of computer networks which are spread throughout the world, and this has increased the speed of the Internet to the extent required has been linked by Tower Earth link and has been the way in My use of linking Nano bridge m2 Tower linked with tower Nano Tower Other in Earth link tower sent and that our point-to-point and then been linked Nano bridge a cable 20 meters UTP and cable linking fonts router then distributed on computers .

1- Introduction

All wireless networks, such as cellular telephone networks and wireless local area networks, or WLANs, rely on broadcasting stations that transmit signals. These stations, which include large cellular antenna towers as well routers, transmit signals at particular radio frequencies. Unfortunately for users of wireless devices, several other machines can output signals at the same frequencies as wireless broadcasting stations, making it difficult for wireless signals to flow smoothly.(1) When such disruptions occur, the phenomenon is known as interference. Noise is a more significant problem in wireless systems than in hard-wired systems. In general, noise originating from outside the system is inversely proportional to the frequency, and directly proportional to the wavelength.(10) At a low frequency such as 300 kHz, atmospheric and electrical noise are much more severe than at a high frequency like 300 megahertz. Noise generated inside wireless receivers, known as *internal noise*, is less dependent on frequency. Engineers are more concerned about internal noise at high frequencies than at low frequencies, because the less external noise there is, the more significant the internal noise becomes. as small wireless Internet

2- System architecture

structure of the system is the need to two Nano Tower and cable length of 20 meters with a distributor router and when linking nanotechnology tower and column length of 6 meters and be directed towards the Tower second column earth link then linking nanotechnology Tower II in a column Earthlink and this after the broadcast special frequency within the prompt differ broadcast to others and this our connecting point to point and does not have any loss in this link of data with proper antennas and clear line of sight reliable point to point in excess of thirty kilo meters are possible and there is no any effects or frequencies affect the data access and when wiring cable and connects to router will then be broadcast in the form of Wireless and work Broadband for each calculator connected on the net has been calculated signal before and after the link points to points, according to the table below fig(1)



Fig(1) System Structure

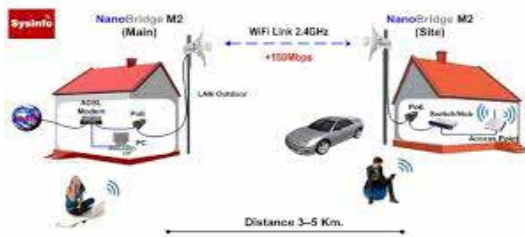
3- point to point protocol

link typically provide an internet connection where such access isn't otherwise available one side of a point – to – point link will have an internet connection .Point –to – point link don't necessarily have to involve internet access suppose you have to physical drive to a remote weather monitoring station , high in the hills ,in order to collect the data which it records over time you could connect the site with a point – to – point link ,(4) allowing data collection and monitoring to happen in real time ,(2) without the need to actually travel to the site .wireless network can provide enough bandwidth to carry large amounts of data (in cluding audio and video) between any two point that have a connection to each other ,even if there is no direct connection to the internet fig(2)



Fig(2) point – to – point

the Point-to-Point Protocol (PPP). Today, millions of Internet users who need to connect their home computers to the server of an Internet service provider use PPP. The majority of these users have a traditional modem; they are connected to the internet through a telephone line, which provides the services of the physical layer. (3) But to control and manage the transfer of data, there is a need for a point-to-point protocol at the data link layer. PPP is by far the most common On the other hand; to keep PPP simple, several services are missing PPP does not provide flow control .A sender can send several frames one after another with no concern about overwhelming the receiver PPP has a very simple mechanism for error control .Lack of error control and sequence numbering may cause a packet to be received out of order.



Fig(3)line of sight link

4- Bandwidth

bandwidth is the maximum frequency range that can be practically supported by a medium is usually expressed in kilo hz (khz) or mega hz (mhz), (9) which denotes the maximum number of bits per second (bps) that can be transmitted. for example, (7) a data rate of 10 mbps means that 10 million bits of data can be transmitted in each second.

bandwidth = 100*

Return loss (in db) = 20 log

bandwidth = 100 ×

F_h = highest frequency

F_l = lowest frequency

F_c = center frequency

it is easy to see that the bandwidth we define here is closely related to the amount of data you can transmit with it the more room in frequency space the more data you can fit in the at a given moment, (11) the term bandwidth is often used for something we should rather call a data rate, as in my internet connection has 1 mbps of bandwidth meaning it can transmit data at 1 megabit per second but speed does not mean never really connect, (6) but means the maximum speed possible accessible But were not those speed up its online and can we call the maximum performance possible to reach his network fig(4).



Fig(4) Broadcasting System

Fast Ethernet :

Many of the application used on modern networks demand more bandwidth than what s provided by the 10 mbps network standards to address this need for faster network the ieee has developed the ieee 802.3u specifications, (5) of

which there are three variations:

100base tx

100base t4

100base fx

Noise:

Noise is unwanted electrical or electromagnetic energy that degrades the quality of signals and data. Noise occurs in digital and analog systems, and can affect files and communications of all types, including text, programs, images, audio, and telemetry.

5- Types of noise(10)

o Communication scholars classify four types of noise: physical, psychological, physiological and semantic.

a- Physical Noise

o Physical noise is external to the speaker and listener. It includes things such as the sounds of road construction outside your window that make it difficult to hear what is being said.

b- Psychological Noise

o Psychological noise is mental interference that prevents you from listening. If your mind is wandering when someone is speaking to you, the noise in your head is preventing communication.

c- Physiological Noise

o Physiological noise is any physiological issue that interferes with communication. For example, if you have a migraine, it may be difficult to speak to others or listen to them when they speak to you.

d- Semantic Noise

o Semantic noise occurs when there is no shared meaning in a communication. This often occurs when someone is dealing with medical professionals, lawyers, scientists or others who use terminology that lay people may not understand.

6- Types of Nano Bridge(8) :

- Nano Bridge M2 2.4 GH
- Nano Bridge M5-22 5 GHz, 22 dBi
- Nano Bridge M5-25 5 GHz, 25 dBi
- Nano Bridge M3 3.3-3.7 GHz
- Nano Bridge M365 3.65-3.675 GHz
- Nano Bridge M9 900 MHz

7- Experimental results

Nano Bridge single

download	upload	pinc	connection	noise
211 k bit	35 k bit	864 ms	744 cpm	A m
576 k bit	165 k bit	155 ms	744 cpm	P m
201 k bit	23 k bit	835 ms	744 cpm	A m
676 k bit	183 k bit	190 ms	744 cpm	P m
670 k bit	179 k bit	180 ms	744 cpm	P m
757 k bit	438 k bit	250 ms	744 cpm	P m

Nano Bridge using point to point

download	upload	pinc	connection	noise
1568 k bit	77 k bit	839 ms	744 cpm	A m
1776 k bit	39 k bit	123 ms	744 cpm	P m
1559 k bit	61 k bit	175 ms	744 cpm	A m
1679 k bit	53 k bit	733 ms	744 cpm	P m
1566 k bit	70 k bit	855 ms	744 cpm	A m
1491 k bit	59 k bit	250 ms	744 cpm	P m

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