Hub Troubleshooting Guide

We have had very few failures in these units. The warranty on the Gemini Express Star Hub GX-2045 is three years, Return-to-factory.

These are the questions that need to be answered to determine where the problem is.

1) What happens to the lights when it loses the connection?

2) How far is the hub from the host?

3) Is the host an AS400 or System 36?

4) How far is the hub from the end device(s)?

5) Do all of the devices drop out at once?

6) How many devices are connected?

7) What type of wiring do you have?

8) What type of environment is it in?

9) What baluns are you using?

10) What are the lights on the unit doing?

http://www.nlynx.com/html/tb-whattwinax.htm

http://www.nlynx.com/html/tb-devicenaming.htm

ftp://ftp.nlynx.com/pub/Twinax_Multiplexers/baluns.pdf

PROBLEM:

Some terminals come up, and then go back down. The cursor jumps from the upper left, to the upper right.

CAUSE:

This is typical of a station address conflict. A common misunderstanding with hubs is that you do not have to observe station address conflicts.

SOLUTION:

You cannot duplicate station addresses on the same hub.

PROBLEM:

The first terminal comes up, but then drops.

CAUSE:

If you move off of a balanced network (twinax) to an UNbalanced network (balUN) what you are UNbalancing is the impedance.

SOLUTION:

You can make it up on one of RJ45 ends at the cost of decreasing the maximum cable distance, or you can add a bit of cable, OR you can use baluns that have a short piece of twinax tail. Some balun manufacturers recommend a minimum cable length of 15 feet.

PROBLEM:

It does not work at all.

CAUSE:

You could have a polarity mismatch. Twinax has two conductors, (so that means 2 Tips, and Zero rings), so you cannot truly say that any balun is Tip or Ring. The two conductors on Twinax cable are called Phase A and Phase B. All that you can say is which pins are active, and which pins of the RJ connector connects to A or B of the Twinax connector.

SOLUTION:

Our Gemini hubs use auto-sensing and don't care what baluns are on the hinter ends, but you must match the polarity of the host connection to the ports. If you use passive hubs, or connect the baluns back to back, the baluns must be in pairs.

Flip the connector by snipping the cable, flipping and putting a new connector on. If most devices are working you will change the devices that do not work. If none work, then you should change the host end.

PROBLEM:

The first terminal works, the last terminal works, but the ones in between, do not.

CAUSE:

This is typical of an impedance balance mismatch. IBM's Twinax cabling connections use balanced signal. With Twinax it is required that there is 100 ohms of impedance. Twinax cable itself provides impedance as well. This combined with the other components provides the correct impedance. When you use RJ wiring, the direct connection between the devices is lost. Therefore the balun needs to provide that same impedance. The resistor in the balun provides 45 ohms.

Because the problem with impedance balancing you are not supposed to configure in a daisy chain.

SOLUTION:

If you are configured with a daisy chain, carefully resolve your impedance balancing.

If not, do not use flat (silver satin) cable. Only UTP.
If using STP, it must have nominal impedance very close to 100 ohms.
Allow a 10-foot service loop at each end.
To estimate differences of existing wire, perform a DC resistance measurement. Must match balun specification.

PROBLEM:
When he is able to get a connection, the terminals come up, but the screen is not completely displayed, they are slow and then finally drop out.

CAUSE:
There are two polling groups. Each polling group has been divided into two port groups.

Polling group #1 consists of ports 0 - 3 (port groups A & B) and polling group #2 consists of ports 4 - 7 (port groups C & D).

Ports within a polling group must be connected to ports from a common controller.

The reason for this is to support the new AS/400 Split Controller function used in the 5250 Express Data Stream.

It splits the addresses 0-3 and 4-7 logically

SOLUTION:

When plugging the CAT5 connections in, make certain that the workstation addresses are grouped such that the devices in addresses 0-3 are in the same group and 4-7 are in a different group from the 0-3 group.