

# NEWTEK NDI™ –SOLVING PROBLEMS

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## INTRODUCTION

Like any network based system, NDI depends on at least two machines or devices being able to connect and communicate with each-other; of course there are a number of reasons why this might not be successful in any environment. This document will help explain the most common issues and help you diagnose and correct them to get the full benefit of NDI.

## OVERVIEW

Basically, NDI networking consists of just two operations:

1. It detects other NDI sources on the network using mDNS. mDNS uses port 5353.
2. It establishes direct communication between sources using ports provided by the operating system. In Microsoft Windows, for example, you can determine what range of port numbers might be used with:  
`netsh int ipv4 show dynamicport tcp`  
High port numbers are relatively common. On modern OSes the port numbers typically start around 49000.

## RESOLVING ISSUES

Obviously your local network router or switch must permit communication using the ports assigned to NDI. Although most common networks do not block the mDNS port, it is not uncommon for networks to be configured to block high port numbers. This would prevent NDI from transmitting video.

Similarly, a software based firewall on the system itself might block the ports used by NDI. It is best to first test with firewalls turned off, then add the relevant firewall rules as needed.

Although it is not recommended, the default range of ports are used for dynamic allocation can be configured in most modern OSes. For instance, Microsoft Windows can be instructed to use ports 10000-11000 with the following command:

```
netsh int ipv4 set dynamicport tcp start=10000 num=1000
```

Note, too, that WIFI routers often block multicast traffic or transfer over certain port ranges between wired and wireless networks.

If you cannot see other NDI sources on the network, the three most common causes are:

1. The NDI sources might not be in the same NDI groups as you are monitoring. The easiest way to check this is to use the NDI Group Manager (provided in NDI Tools) and remove to all of the listed sending and receiving groups for both systems.
2. The mDNS ports are blocked on either the sender, receiver or network.
3. Computers must be on the same “sub-net” in order to discover each-other.

If you can see other NDI sources on the network, the most common cause is that the port numbers required for video transfer are blocked by local firewalls, or by the network hub itself.

To debug failed connections, proceed as follows:

1. Run reliable NDI sending and receiving applications (such as NDI Test Patterns and NDI Video Monitor, both in NDI Tools) on the same computer system. This approach bypasses the local network infrastructure. If they fail to connect, then the problem is either your NDI group configuration, or local software based firewalls.
2. Connect two computers together using a network crossover cable. If NDI connections succeed in this configuration but fail when attached to the network, the network infrastructure is the most likely cause of the problem.

## APPLICATIONS

NewTek iVGA PRO	This application is not supported for NDI, having been replaced by “NDI Scan Converter”. The latter is included in NDI Tools, which you can download without cost from <a href="http://NDI.NewTek.Com">NDI.NewTek.Com</a>
NewTek LiveText	Native NDI support is provided by LiveText 3.0, which will be a free download from the main NewTek downloads page.
NewTek TriCaster MINI, NewTek TriCaster MINI SDI, NewTek TriCaster 410, NewTek TriCaster 460, NewTek TriCaster 860, NewTek TriCaster 8000	Version 2-5 for these systems provides support for NDI using the Net 1 and 2 inputs and Network output. This update may be downloaded from the NewTek website.
TriCaster Advanced Edition	<p>The TriCaster Advanced Edition version 3-2 provides support for NDI using the Net 1 and 2 inputs and Network output, and may be downloaded from the NewTek website.</p> <p>The upcoming TriCaster Advanced Edition IP version offers a complete, end-to-end, NDI and IP based workflow on every input and output.</p>
Other TriCaster models	NDI has not been extended to other TriCaster models at the current time, but may be added in the future.
NewTek TalkShow	The TalkShow version 1-2 update (or better) available from the NewTek website adds full NDI support.
NewTek 3Play	In the very near future, software updates providing native NDI output for all current 3Play models will be

	available from the NewTek website.
Applications created prior to March 2016 by other vendors that support Network Inputs using AirSend	The “NewTek AirSend Updater”, available from NDI.NewTek.Com, locates any AirSend applications and updates them to support NDI automatically.

## KNOWN ISSUES

### SCAN CONVERTOR DISPLAYS BLACK OR INCORRECT VIDEO FOR SOME APPLICATIONS

When you have two discrete graphics cards (nVidia and Intel) then Windows is not correctly able to capture the application contents for some specific applications (e.g. Google Chrome). Disabling one of the GPUs will resolve this issue.

If windows AERO (also known as DWM) is disabled it is not possible to capture all application contents when other applications obscure them and so the relevant area of the desktop will be captured in that case.