GENERAL

This application note describes a method and the required hardware components to implement an Ethernet type communications connection between an Aries Communication Server computer and an ASC/2M Master Controller.

Ethernet type communications between an ASC/2M Master and Local Intersection controllers is not supported in any manner or form.

There are many factors involved in a successful implementation of an Ethernet type Communications Network. Most of these are beyond the scope of this Application Note and will not be discussed. It is assumed that the reader is knowledgeable with the various Microsoft Windows® operating systems, administrative functions, and general LAN/WAN terminology and topologies.

Figure 1 shows the basic design discussed in this document.
**Product Type: Aries®**

**Subject: ASC/2M Ethernet Connection Using Comtrol DeviceMaster RTS**

## HARDWARE

The *Aries* Communications Server function supports only Dial-up and Direct Connection type of communications to an ASC/2M Master. The core component of the Ethernet design shown in Figure 1 is the Single Port, Device Master – RTS unit from Comtrol Corporation, [www.comtrol.com](http://www.comtrol.com).

The Device Master unit in conjunction with its Driver software, NS-LINK, allows configuring a remote COM Port accessible via an Ethernet connection. The remote port appears as and is accessed as a local hardware COM Port from Windows. This design provides the equivalent of a basic direct connection between the server computer and the ASC/2M Zone Master.

Following is a complete list of the hardware components and their function as shown in Figure 1.

- **Computer:** This unit is the typical *Aries* computer. It may be either a standalone “server” hosting the *Aries* Communications Server function as may be found in a Networked *Aries* system or a single-computer *Aries* installation.
- **Layer-2 LAN Switch:** This device is a typical LAN Switch. It may be either a managed type or unmanaged. Units are available from a variety of manufactures such as 3Com, etc. and come in a variety of port configurations (4, 8, 16 and 32-port units are most common). Allow one port for the *Aries* Communications server computer, and one or more ports for connections to the field (depending on LAN design) and additional ports for other computers.
- **Media Converter:** In general, Category-5 LAN cabling is limited to a maximum distance of 100-meters (~300 feet). A variety of methods are available to extend a LAN over greater distances such as twisted-pair, Wireless and Fiber Optics.
- **Device Master-RTS:** The Device Master unit is available in a variety of configurations including single, 4, 8 and 16-port units. Each unit is supplied with a separate plug-in power supply. The Device Master unit *does not* meet the NEMA temperature range specification, however it is temperature hardened for operation from –20C to +60C. The unit supports both 10base-t and 100base-tx Ethernet speeds and auto negotiates the correct duplex operation. RS232 connections to the Master are accomplished via a DB-9, male type connector.

## LAN DESIGN CONSIDERATIONS

The preferred method of addressing the Device Master unit is via its MAC address. This is the simplest and most reliable method. If the LAN design incorporates Routers or other devices that perform Layer 3 switching it will be necessary to configure the unit with and address it via a TCP/IP address.
Device Configuration: (Device Master RTS-Aries®-ASC/2M)

- **Install Driver for the Device Master RTS**

1. In the Windows Control Panel - Select **Add Hardware**

   ![Add/Remove Hardware Wizard](image)

   Welcome to the Add/Remove Hardware Wizard

   This wizard helps you add, remove, unplug, and troubleshoot your hardware.

   To continue, click Next.

2. Select **Add or I've Already connected the hardware**

   ![Add/Remove Hardware Wizard](image)

   Choose a Hardware Task
   Which hardware task do you want to perform?

   Select the hardware task you want to perform, and then click Next.

   - **Add/Remove a device**
     Choose this option if you are adding a new device to your computer or are having problems getting a device working.

   - **Uninstall/Unplug a device**
     Choose this option to uninstall a device or to prepare the computer to unplug a device.

   ![Add/Remove Hardware Wizard](image)
3. Select Add a new device

4. Select the Multi-port serial adapter
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5. Select Have Disk

This screenshot shows a system that had drivers previously installed.

6. Use the Browse button to locate the unzipped installation files and select Open

It is not necessary to select a file, just browse to the directory and select Open
7. Select OK

8. From the Models list, highlight the **DeviceMaster RTS 1 Port** and click **Next**
9. Start Hardware Installation, click **Next**

   **Add/Remove Hardware Wizard**

   **Start Hardware Installation**
   Windows is ready to install drivers for your new hardware.

   ![DeviceMaster RTS 1 Port](image)

   Windows will use default settings to install the software for this hardware device. To install the software for your new hardware, click Next.

10. Select the **Finish** button to complete the driver installation process

   **Add/Remove Hardware Wizard**

   **Completing the Add/Remove Hardware Wizard**
   The following hardware was installed:
   DeviceMaster RTS 1 Port

   Windows has finished installing the software for this device.

   To close this wizard, click Finish.
11. Right click on My Computer and select Manage
12. Right click on the DeviceMaster RTS 1 Port and select Properties

13. Select MAC MODE and select the MAC address of the unit (The MAC address is listed on the back of the RTS 1 unit)
14. Program Address into Device
15. Select the **Port Settings** tab
16. Click **Properties**

17. Select **RS Mode = 232**

Click on the pull down and select **RS232 communications**.

This is your virtual comm port that the driver created.
Setup Aries® Communications Server

1. From the Aries Zone Manager – Launch the Communications Server

   ![Launch Aries® Comm Server here]

2. Select File, Setup and Wizard

   ![Aries Communications Server]

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For further information, contact Econolite Technical Support 800-225-6480 / support@econolite.com
3. Select Next

4. Select an unused Aries® channel
5. Enter your **Virtual Comm Port Number**, created by NS Link Driver for the DeviceMaster RTS 1 Port.

![Aries Communications Channel Setup Wizard](image)

Now specify the communication port to use for this channel. The port must not be in use by any application. The port will be dedicated to Aries communication server, whenever it is running.

After selecting the port and clicking Next, the port will be tested. If the port fails in any way, you will be unable to proceed with channel setup.

Please select a port, then click Next.

6. Select **Direct**

![Aries Communications Channel Setup Wizard](image)

Do you intend to use this channel for connection through modem, or direct connection to a master or local controller?

Please select Modem or Direct, then click Next.
7. Select 9600

You have chosen to use this channel for direct connection. You must now select the communications data rate. This rate must match the rate of the communication port to which you wish to connect.

8. Select **Use this channel to initiate calls** and **Use this channel to answer incoming calls**

The communications mode determines whether the channel will be used to initiate calls to field devices, answer calls from field devices, or both.

- Use this channel to initiate calls
- Use this channel to answer incoming calls

Select one or both check boxes, then click Next.
9. Deselect **Use this channel to initiate calls to any zone**

10. Select the **Zone** that has the Comtrol Device Master
11. Select **Zone Number Verification**

**Aries Communications Channel Setup Wizard**

An option exists to verify zone number when connection to a zone master, or zone number and intersection number when connecting to a local controller or intersection monitor.

Setting this option is recommended unless this channel will be used to access multiple zones with the same zone number, as may be the case when monitoring zones from different jurisdictions.

- Enable Zone Number Verification

12. Select **Finish**

**Aries Communications Channel Setup Wizard**

Click Finish to save the channel configuration and end the Aries Communications Server setup wizard. If you want to review your settings, click Back.
Setup ASC/2M-1000 master controller

1. MM 1,0,6

2. Select Next Screen (F2) and Cursor Down Arrow

COMM TYPE=DIRECT
CONNECTS VIA=PORT 2

SPEED (bps) = 9600
DATA FORMAT = 7,E,1

COMM TYPE=DIRECT
CONNECTS VIA=PORT 2

SPEED (bps) = 9600
DATA FORMAT = 7,E,1
2. Open door on ASC/2M and set **Switch S1 to TERM**

3. Plug a standard Straight thru DB9F RS232 cable from the Comtrol RTS 1 Port to the ASC/2M PORT 2 DB25M.

4. Plug a CAT 5 cable into the RJ45 of the Comtrol RTS Port 1 to the Ethernet switch.