

Reference: AN1064 Date: 6/22/05

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.



Figure 1 – Basic Design







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, <u>www.comtrol.com</u>.

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 100meters (~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 <u>does not</u> 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.



Prepared By: Steve Outon 2 of 17

Approved By: Gary Duncan - Approved for General Release -

REV: NC



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

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

Welcome to the Add/Remove Hardware Wizard This wizard helps you add, remove, unplug, and troubleshoot your hardware.
< Back Next > Cancel

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

Add/Remove Hardware Wizard
Choose a Hardware Task Which hardware task do you want to perform?
Select the hardware task you want to perform, and then click Next.
< <u>B</u> ack <u>N</u> ext > Cancel







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

3. Select Add a new device

Add/Remove Hardware Wizard
Choose a Hardware Device Which hardware device do you want to troubleshoot?
The following hardware is already installed on your computer. If you are having problems with one of these devices, select the device, and then click Next. If you are attempting to add a device and it is not shown below, select Add a new device, and then click Next.
Devices
Add a new device PCI Device Microsoft AC Adapter ACPI Fixed Feature Button Programmable interrupt controller System timer
< <u>B</u> ack <u>N</u> ext > Cancel

4. Select the Multi-port serial adapter

Add/Remove Hardware Wizard	
Hardware Type What type of hardware do you want to install?	
Select the type of hardware you want to install.	
Imaging devices Infrared devices Modems Infrared adapters Infulti-port serial adapters Information of the serial adap	
< <u>B</u> ack <u>N</u> ext >	Cancel







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

5. Select Have Disk

Add/Remove Hardware Wizard		
Select a Device Driver Which driver do you want to		
Select the manufacturer ar have a disk that contains t		
<u>Manufacturers:</u> Comtrol Corporation Digi International Equinox Systems Inc. Specialix International Ltd. Stallion Technologies	Models: DeviceMaster AIR DeviceMaster Pro 16 Port DeviceMaster Pro 8 Port DeviceMaster RTS 1 Port DeviceMaster RTS 16 Port DeviceMaster RTS 2 Port DeviceMaster RTS 32 Port	This screenshot shows a system that had drivers previously installed.
	< <u>B</u> ack <u>N</u> ext > Cancel	

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

L	ocate File					? ×
	Look jn:	Comtrol		•	🗢 🗈 💣 🎫	
	istory History Desktop	CTMPROTO.inf				
	My Computer					
		File <u>n</u> ame:	CTMPROTO.inf		•	<u>O</u> pen
		Files of type:	Setup Information (*.inf)		7	Cancel

It is not necessary to select a file, just browse to the directory and select Open





Install Fro	om Disk	×
_	Insert the manufacturer's installation disk into the drive selected, and then click OK.	OK Cancel
	Copy manufacturer's files from:	Browse

8. From the Models list, highlight the DeviceMaster RTS 1 Port and click Next

Add/Ren	n <mark>ove Hardware Wi</mark> za	rd			
Selec V	ct a Device Driver Vhich driver do you want	to install for this	device?		e la
×1	Select the manufacture have a disk that contai	r and model of yo ns the driver you	our hardware de want to install, c	vice and then lick Have Disl	click Next. If you k.
Models: Device Device Device Device Device Device	Master AIR Master Pro 16 Port Master Pro 8 Port Master RTS 1 Port Master RTS 16 Port Master RTS 32 Port Master RTS 4 Port				▲ ▼ <u>H</u> ave Disk
			< <u>B</u> ack	<u>N</u> ext >	Cancel

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



7. Select OK



9. Start Hardware Installation, click Next



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



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



Prepared By: Steve Outon 7 of 17



- 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

DeviceMaster RTS 1 Port Properties	? ×
General Network Connections Port Settings Device Settings Advisor D	Driver
Network Connection Mode	
© MAC Mode 00 C0 4E 15 07 C6	
C IP Mode 192.168.1.140	DEV CE-MASTER
Device Network Addresses	
MAC Address: 00 C0 4E 15 07 C6	
IP Address: 192.168.1.140 Program A into Devic	Addresses ce
Gateway: 192.168.1.1	Device
Retrieve Network Addresses from the Device	
OK Can	cel Help

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



Prepared By: Steve Outon 8 of 17



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

15. Select the Port Settings tab



17. Select **RS Mode = 232**







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

- Setup Aries® Communications Server
- 1. From the Aries Zone Manager Launch the Communications Sever



2. Select File, Setup and Wizard









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

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.



6. Select Direct

Aries Communications Channel Setup Wizard 🛛 🔀				
	Do you intend to use this channel for connection through modem, or direct connection to a master or local controller?			
<u>2</u>	Please select Modem or Direct, then click Next.			
	C Modem ⊙ Direct			
	< <u>B</u> ack <u>N</u> ext > Cancel			

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



Prepared By: Steve Outon 12 of 17



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

7. Select 9600



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



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



Prepared By: Steve Outon 13 of 17





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

9. Deselect Use this channel to initiate calls to any zone



10. Select the Zone that has the Comtrol Device Master

Aries Communications Channel Setup Wizard				
	Select from the list below, the zones that this channel will initiate a call to.			
	1 2 3 4 5 6			
	7 8 9 10 11			
	< <u>B</u> ack <u>N</u> ext > Cancel			







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

11. Select Zone Number Verification



12. Select Finish







Product Type: Aries®

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

- Setup ASC/2M-1000 master controller
- 1. MM 1,0,6

	DNFIGURATION	
ARIES or ZMIV:	COMM TYPE. CONNECTS UIA PORT. PORT 2 RETRY COUNT	
EVENT REPORT:	MAX RETRY INTERUAL: 5 TELEPHONE # DPS PORT	COMM TYPE=DIRECT CONNECTS VIA=PORT 2
MAINTENANCE:	DPS PORT. TELEPHONE # DPS PORT.	
ADDITIONAL PAGE	E(S)	

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







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

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.



(III)			L	-				•	N	Ц								
	c	0	N	т	R	0	L.	P	R	0		U	C	т	s,		N	C.
Sc	blu	tic	on	s	tł	าอ	t	N	10	Ve	e t	h	e	S	/0	nlo	8	

Prepared By: Steve Outon	Approved By: Gary Duncan
17 of 17	- Approved for General Release -