



## eNode™IV/GR4 Lon/IP 852 & Lon/WiFi 852 Router Datasheet

### Features

- ◆ Standards based ANSI IP 852/709.1 Lon® over IP Router for up to 128 devices per channel
- ◆ Remote web configuration, real time clock
- ◆ 709 port: FT-10 or RS - 485 (78Kbps)
- ◆ Choice of 10/100 Base-T Ethernet or 801.11b WiFi
- ◆ IP Multicast support, NAT and Dynamic DNS support
- ◆ Flood mode “invisible links” for legacy integration
- ◆ Interoperates with LonMaker™, i.LON®, Configuration Server, and Coactive™ Router –LL Configuration Server
- ◆ High availability applications with optional redundant twin mode
- ◆ Large scale Lon IP 852 support with optional 852 to 852
- ◆ 5V DC, 280mA Max input
- ◆ EMC rated for Building and Industrial environments
- ◆ CE Mark and RoHS Compliant



### Description

The **eNode™IV/GR4 Lon/IP 852** Router is based upon Adept System’s class leading GadgetTek™ technology for Lon over IP routing products. The **eNode™IV/GR4 Lon/IP 852** Router brings an innovative and very compact modular design for optimal scalability, minimum space and granular cost effectiveness. The **eNode™IV/GR4 Lon/IP 852** Router

further widens our leadership in price performance for EIA 852/709.1 routers by significantly reducing the cost per channel, see fig 1 below.

**eNode™IV Lon/IP 852** Router module accepts 5V DC. The power connector uses a 2 pin 5.0 mm Euro screw terminal connector for ease of daisy chaining devices together. Also included is a real time clock and optional integrated FT-10 termination. The integrated FT-10 termination is jumper selectable for off, bus, or free topology. The internal port transceiver can be ordered with either FT-10 or RS-485 (78Kbps) option.



**Fig 1 Multiple DIN eNode™IV Lon/IP 852 Router Modules**

This latest addition to the eNode™ Lon/IP family has a very small DIN rail footprint just 35mm and with its competitive price allows a very granular strategy to system scaling from both the perspective of cost and size. Unique to the **eNode™IV Lon/IP 852** Router is the choice of either 10/100 Base-T Ethernet (CAT 5) or 802.11b WiFi wireless Ethernet network interface.

The **eNode™IV Lon/IP 852** Router is offered with two input power options;

- 1) Regulated 5V DC, internal
- 2) 90 – 264V AC to 5V regulated DC Mains Adapter, external

The Mains power adapter is in addition available to power either 3 or 5 **eNode™IV Lon/IP 852 modules**. This again offers additional cost and space saving.



*Fig 2, Distributed Multi site Network*

## Interoperability

**eNode™IV Lon/IP 852 Router** was designed to be compliant with existing LonWorks router network management and configuration software to make upgrades easy for system's integrators (such as that for the i.Lon®). IP communications are based on the open ANSI IP 852 standard specification for interoperable ANSI 709.1 to IP 852 routers and tunnelling repeaters.

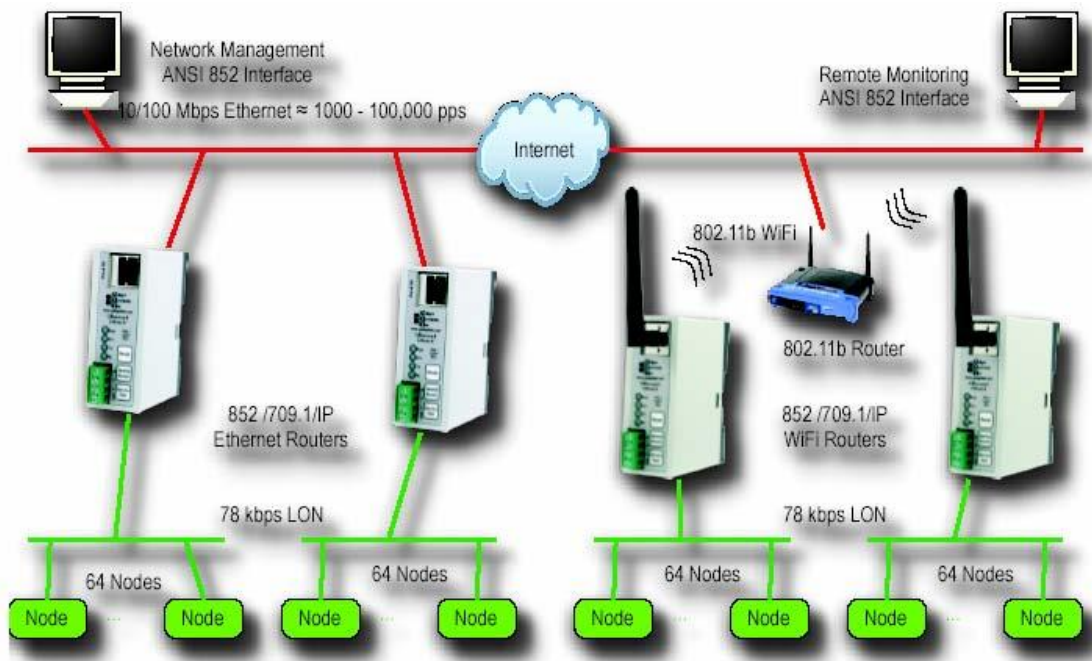
**eNode™IV Lon/IP 852 Router** is designed for seamless integration into existing LonWorks© control networks and is highly interoperable with existing management tools, nodes, gateways, and routers, such as, the iLon 600 or 1000. It supports a direct IP connection to LNS or LonMaker running on a PC. The **eNode™IV Lon/IP 852 Router** also interoperates with and/or replaces legacy "Router-LL" systems.

In flood mode two or more routers will be "invisible" to other Lon network components and network management tools. This allows seamless connection of remote channels over a LAN or the internet such that they all appear as members of the local subnet. Multicast makes flood mode efficient and scalable.

Where the IP network infrastructure includes slow speed links for example wireless technologies such as GSM problems can be experienced when configuring Lon IP 852

devices. The difficulties are due to the slow speed of connection relative to the Ethernet cable side and the re packetisation of the Lon IP 852 data by the GSM modems with no guarantee that the transmitted packets will be received in the same order as sent. This can cause major problems particularly when configuring the network and devices because of the high level of burst traffic created by the IP 852 network management. eNode™IV has a feature which can be enabled to manage IP 852 management traffic over such challenging networks.

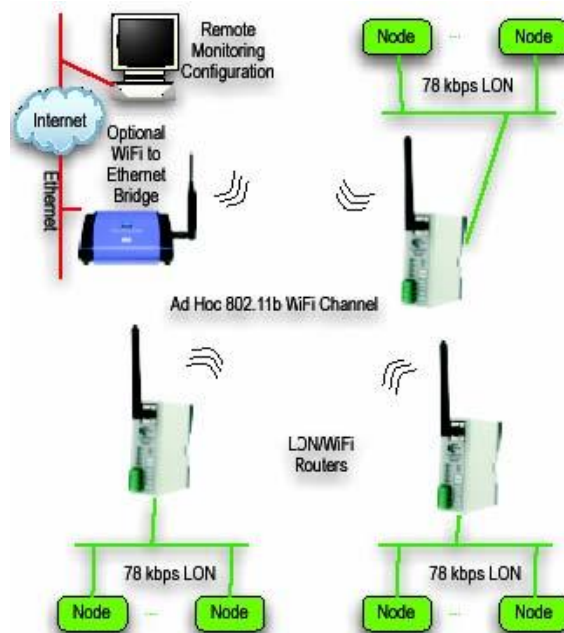
**eNode™IV Lon/IP 852 Router** includes an on-board web server for remote configuration. The web configuration page includes a service pin and reset buttons to enable remote commissioning in either Normal or Manual mode. The new look web interface includes even more functionality than previous versions to include a reboot log that uses its real time clock to record uptime and a list of power cycle or reboot times. The web interface allows remote display of these logs in addition to existing diagnostics information.



**Fig 3 Scalable component network with IP backbone using eNode™IV IP 852 Lon IP Router**

## Integrated WiFi Support

**eNode™IV Lon/IP 852 Router** is the first ever ANSI IP 852 router to provide integrated 802.11b WiFi support. With the WiFi option the Ethernet port is replaced with a WiFi port. The standard configuration includes a removable 2dBi Omni directional whip antenna which connects via a standard RP-SMA antenna connector. Other antennas are available. This makes it convenient to extend the network between buildings and other remote sites or for retrofit applications.

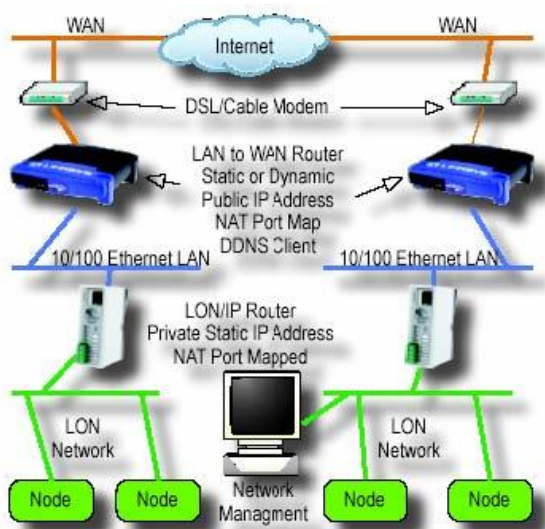


*Fig 4, eNode™IV AdHoc WiFi channel*

## WAN Support with NAT and DDNS

**eNode™IV Lon/IP 852 Router** provides support for Network Address Translation (NAT) when installed on a LAN. Unique to **eNode™IV Lon/IP 852 Router** is support for Dynamic DNS (DDNS). With a DDNS compliant NAT router such as the LinkSys™ BEFSX41, the **eNode™IV Lon/IP 852 Router** will do DNS lookups to track changing IP addresses of its

local WAN access point and those of other **eNode™IV Lon/IP 852** Routers. This saves the expense of static IP addresses for widely distributed sites. The web server port for the **eNode™IV Lon/IP 852** Router is also user configurable to avoid conflicts when used behind a NAT router.

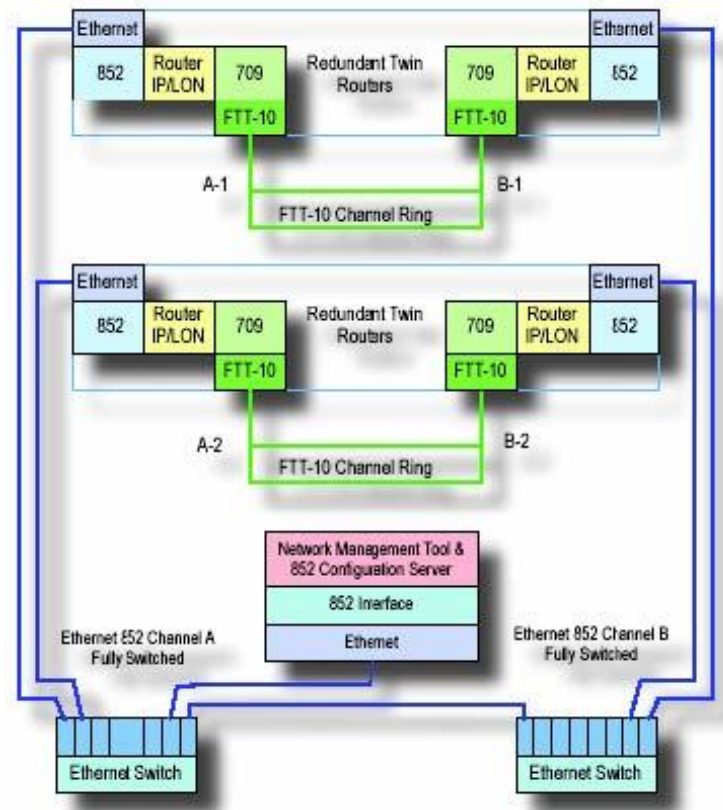


*Fig 5, WAN Application with DDNS and NATS Routing*

## High Availability Redundant Twin Mode

The **eNode™IV Lon/IP 852** Router supports an optional Redundant Twin mode with enhanced reliability for high availability applications. In redundant twin mode two routers connect to the same Lon channel but without duplicate forwarding of packets. This provides greater reliability without the scalability problems of excess duplicate packet traffic. The twins monitor, diagnose, and report faults. The secondary twin will automatically go active if the primary fails. Should there be a fault in either interface then both routers will go active and forward traffic until the fault has been healed. The router configuration is periodically automatically synchronised between the two routers to reduce fail-over time and increase the fidelity between the backup and primary router operation. Standard Alarm SNVTs send out notification of faults.

For more details on this product please refer to the **eNode™IV Redundant Lon/IP 852** router data sheet, Application Note and User Manual.



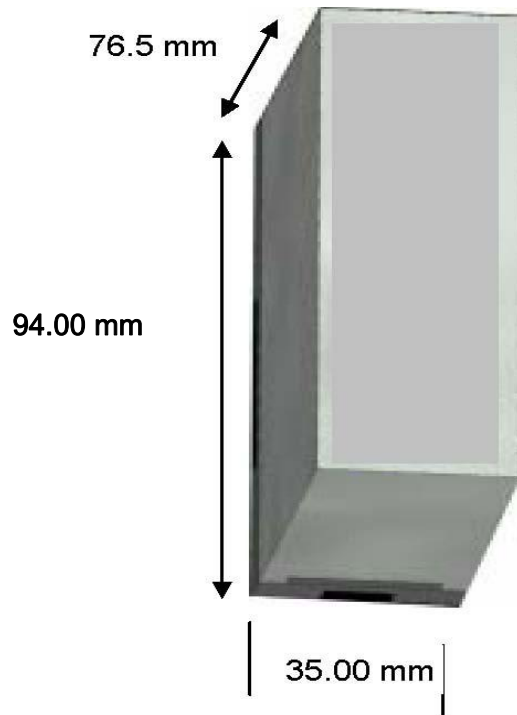
**Fig 6, High availability Redundant Twin Mode**

## Bridging Router Mode

The **eNode™IV Lon/IP 852** uniquely supports an optional IP 852 to IP 852 bridging router mode for traffic management in large installations. This mode routes packets directly between two IP 852 channels. With bridging router mode, a hierarchy of IP 852 channels can be built for installations large numbers of LON/IP routers. Multiple IP 852 channels can inter-network for an inherently scalable architecture of LON networks connected by IP 852 networks.

## Specification

### Mechanical Drawing –

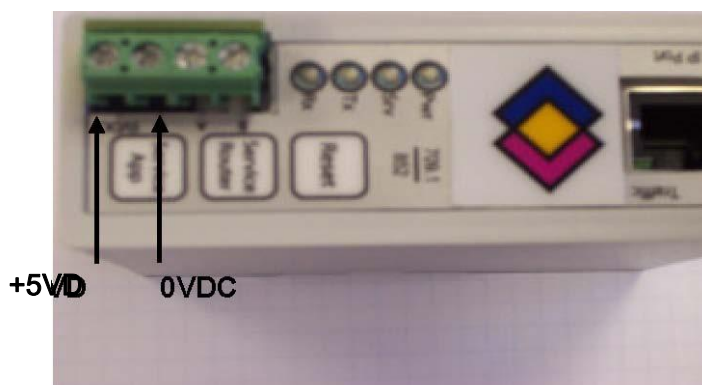


### Electrical

#### Warning polarity sensitive

Power Supply: Regulated 5V DC, 280mA, maximum

Power Connector: 2.5 mm Screw connector





## Operational

Standard Operating temperature -40 to +85 C

Storage temperature: -25 - 85 C

Operating Humidity: 10 - 90%RH @ 50 C, non-condensing

Non-operating Humidity: 95% RH @ 50 C, non-condensing

## Approvals

CE, FCC Class B, UL

WiFi Version –

- FCC, Part 15 Class B
- EN 55022, Class B
- EN 61000-3-2 and EN 61000-3-3
- ICES-003, Class B
- VCCI, Class II
- AS 3548
- FCC Part 15 Subpart C Section 15.247
- IC (Industry Canada) RSS-210 Issue 5 Section 6.2.2(o)
- EN 300 328
- EN 301 489-3
- UL 60950-1
- EN 60950 (European Union)
- CSA C22.2, No. 60950
- EN 55024

## Ordering Information

CNSNeNode IV/A/B/C	
<b>A =&gt; 1</b>	SP1 single Port FTT10
2	SP2 single port RS485
<b>B =&gt; 1</b>	Nothing standard Lon/IP Routing,
2	R redundant Lon/IP routing,
3	B Lon/IP bridge functionality,
<b>C =&gt; 1</b>	Ethernet copper
2	Ethernet wireless

For more information visit our website to download latest news and User Manual.

## **Other CNS products to use with the eNode™IV Lon/IP 852 Router;**

### ***eNode™ Lon IP/WiFi Router Module Power Supplies:-***

eNode™IV Lon AC Plug Adapter PSU/UK/Euro/US

### ***eNode™IV Lon IP 852 Router Options:-***

eNode™IV Lon/WiFi 852 Router

eNode™IV Lon/IP 852 Bridging Router

eNode™IV Lon/IP 852 Twin Redundant Router

### ***eNode™Ethernet Network Infrastructure Products:-***

eNode™ DIN mounted Sub miniature 5 & 8-Port Ethernet Switches

## **Contact**

### **Control Network Solutions Ltd**

Studio 7,

Intec 2,

Intec Business Park,

Wade Road,

BASINGSTOKE,

Hampshire, RG24 8AG, England

Tel: +44 (0) 1256 818700

Fax: +44 (0) 1256 812520

Email: [sales@control-network-solutions.co.uk](mailto:sales@control-network-solutions.co.uk)

Web: [www.control-network-solutions.co.uk](http://www.control-network-solutions.co.uk)

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