



vadEDGE™ SADIS 2G Receiver | User Guide

Providing Converged Integrated Solutions

## SADIS 2G Receiver User Guide



### Version Control Table

Version Number	Date Issued	Reason for Issue
1.1	15 November 2007	Text Corrections

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## 1. List of parts

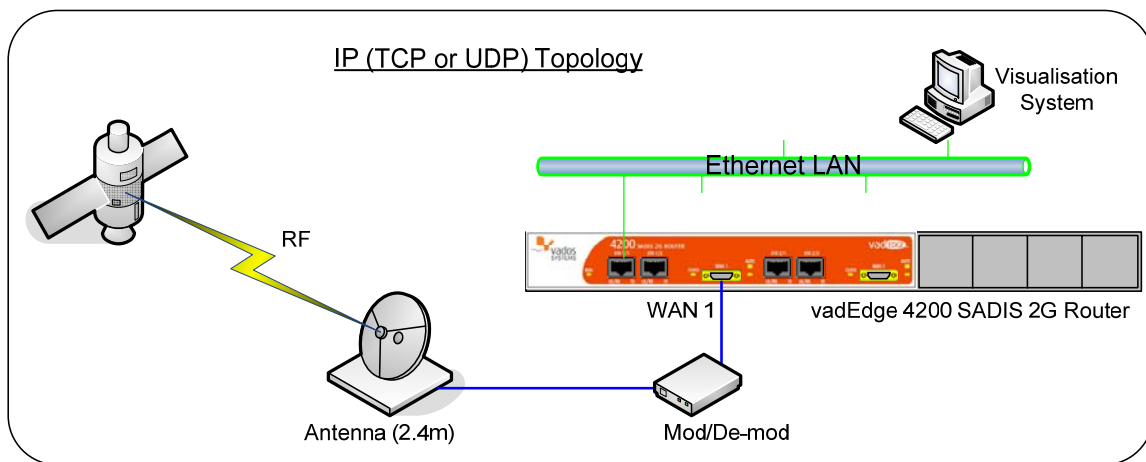
- vadEDGE 4200 SADIS 2G Router
- Mains cable
- Satellite modem cable
- Control port cable
- Cage nuts and bolts
- Mounting brackets
- Configurator (Free download)

## 2. Migration from 1G to 2G.

The 1G system comprises Satellite antenna & LNB, Astrium receiver and X.25 workstation. In order to upgrade to 2G, it is necessary to replace the Astrium receiver with a modulator/demodulator and vadEDGE 4200 SADIS 2G Router. The X.25 workstation can be re-utilised as the 2G equipment is backwards compatible with 1G. Alternatively an IP based workstations could be used which can be either TCP or UDP multicast (as described in section 3). The existing antenna need not be replaced but the LNB and external cabling will need to be checked. It is recommended that the LNB and external RF cables are replaced if they are more than five years old.

The vadEDGE 4200 SADIS 2G Router can be configured as X.25, TCP or UDP using the Configurator script supplied by Vados Systems. The SADIS 2G Configurator script is free and can be download from the Vados website @ [www.vados.com/support](http://www.vados.com/support) . Users need to register on the website before they download the Configurator script. Configurator runs on a Windows XP system, with the Microsoft .NET framework loaded. This needs to be connected via the COM port to the vadEDGE 4200 SADIS 2G Router's control port as described in section 4.

Fig. 1 Connection topologies



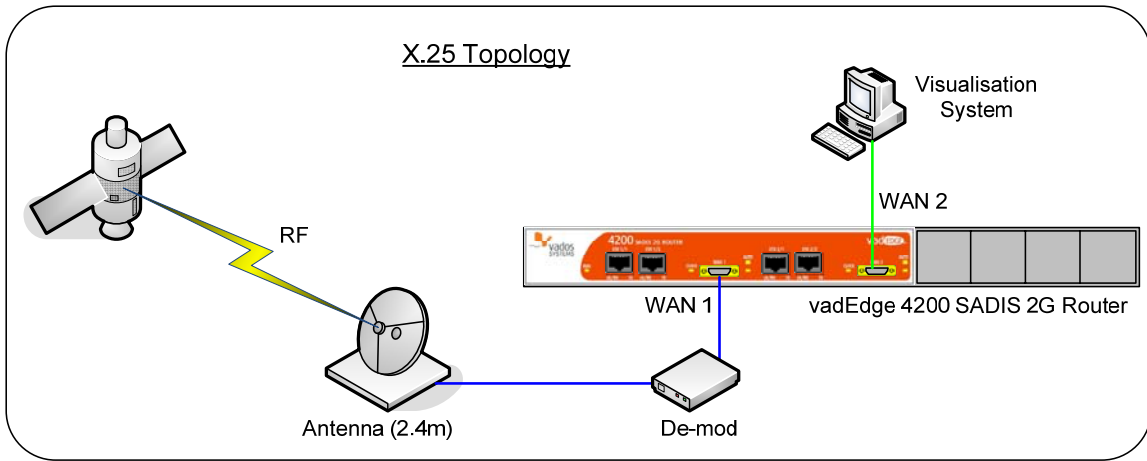


Fig. 1 shows the connection topologies required for the different configurations. X.25 configurations use the port labelled WAN2 to connect to the workstation. A transition cable is required to provide a 15-way D-type socket for connection to the X25 terminal. The TCP and UDP configurations require the VadEDGE 4200 SADIS 2G Router to be connected to a LAN via either of the Ethernet 1 ports (ETH 1/1 or ETH 1/2). The Ethernet ports are 10/100Mbps and are auto sensing allowing either a straight or crossed patch lead to be used.

Note: In all cases, the demodulator MUST be connected to WAN1.



Fig.2 Front view of 4200 SADIS 2G Router.



Fig 3 Rear view of 4200 SADIS 2G Router

**Control Port Settings**

- Speed: 38400
- Data bits: 8
- Parity: none
- Stop Bits: 1
- Flow Control: None

### 3. Overview of protocols used.

#### X.25.

X.25 is presented on WAN 2. Connect the transition cable into WAN2 to provide a standard X.21 15-way DCE socket.

This interface is functionally equivalent to the X.21 interface provided on the SADIS 1G systems. Notably the vadEDGE 4200 SADIS 2G Router WAN2 interface will be – Physical DCE, providing clocks @ 128Kbps

Address DCE  
Packet size 256  
T.1 timer 0.5 seconds  
Level 2 window 7  
Level 3 window 7

PVC 1 – GRIB  
PVC 2 – OPMET  
PVC 3 – T4 charts & BUFR

#### TCP.

Using TCP, a session is created between the vadEDGE 4200 SADIS 2G Router and the workstation for each of the three different data types. By default the port numbers used are –

10001 for GRIB  
10002 for OPMET  
10003 for T4 & BUFR

The port numbers are configurable using the Configurator script. It is possible to configure a backup workstation (server) using the Configurator script. The backup workstation will be used if the primary workstation is not available.

#### UDP.

Using UDP, all of the data streams are multicast to the all routers address 224.0.0.1 (by default) using a single port number 10,000 (by default). Because the data is multicast it can be taken by any number of workstations in the same subnet that are listening on the correct multicast address and port number. The data streams all share the same UDP port number (this is configurable), and are distinguished at the workstation by use of a 5 byte header.

The first Data byte is a HEX counter which starts at 00 then increments up to FF, this cycle then continues for ever. The next three bytes are for internal use (Note: they might not always be zero's (00 00 00)). The next two bytes are the frame relay header, from this you can work out the DLCI Number as shown below:

Convert the bytes from Hex into Binary

aaaaaann  
1C = 00011100

bbbbnnnn  
51 = 01010001

If you then take the a & b section and put them together like this;

aaaaaabbbb  
0001110101 = 117

If you then convert the binary number into decimal you will get the DLCI number. In this example it is DLCI number 117.

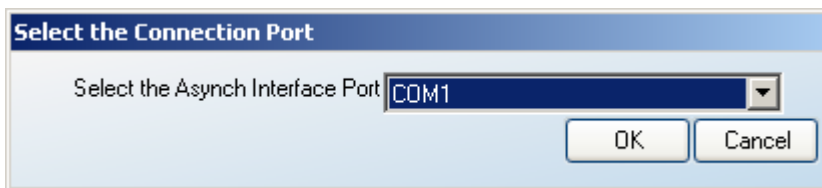
#### 4. Installation and running of Configurator.

You will need a PC running windows XP with the Microsoft .NET framework environment loaded. (available to download from the website)

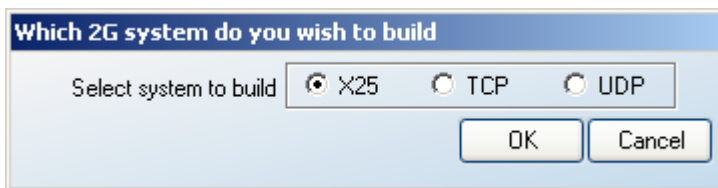
The PC must have a COM port for serial connection to the 4200 control port.

Download Configurator and Microsoft .NET framework onto your hard drive and run the ConfiguratorInstall.exe program, following the instructions.

Double click the SADIS icon found under the Vados systems folder on the desktop. A dialog box will ask you for your connection method – accept a COM port.



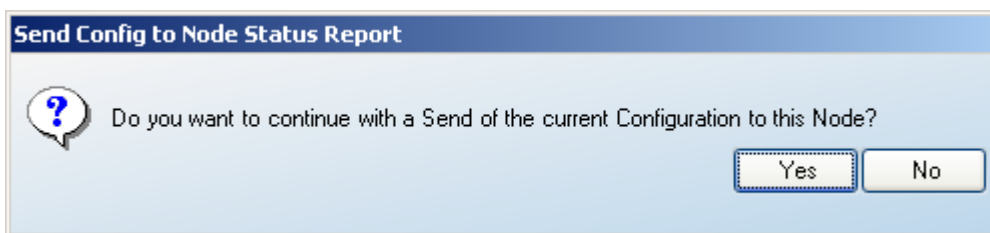
You will then be asked which type of configuration you want to your vadEDGE 4200 SADIS 2G Router to have –



#### X.25 configuration.

If your workstation end system connects via X.25, then select X25 and click OK.

You will then see this dialog box –

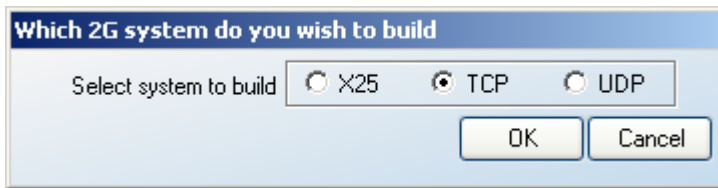


Click on the Yes button and Configurator will download the configuration to the vadEDGE 4200 SADIS 2G Router.

Connect the Satellite cable between WAN1 and the RF demodulator. Connect the X.21 cable to WAN2 and connect the workstation to the 15 way female connector.

## TCP configuration.

If your workstation uses TCP to receive SADIS data then select TCP and click OK.

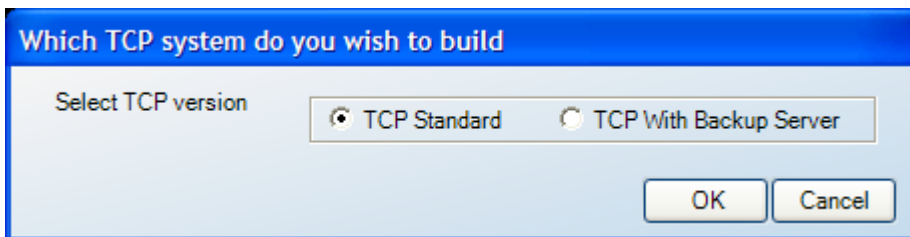


A dialog box titled "Which 2G system do you wish to build". It contains a label "Select system to build" followed by three radio button options: "X25", "TCP" (which is selected), and "UDP". At the bottom right, there are two buttons: "OK" and "Cancel".

You then need to select the required configuration.

TCP Standard – Single server solution.

TCP With Backup Server – Dual server solution (Primary and Backup)



A dialog box titled "Which TCP system do you wish to build". It contains a label "Select TCP version" followed by two radio button options: "TCP Standard" (which is selected) and "TCP With Backup Server". At the bottom right, there are two buttons: "OK" and "Cancel".

You will then be asked for the relevant IP addresses –



A "Configuration Wizard" dialog box for "vados SYSTEMS Configurator". The title bar says "Configuration Wizard". The main area has the "vados SYSTEMS" logo and the word "Configurator" in large font. Below this, it says "TCP configuration step 1/2". There are five input fields with labels: "Client IP Address", "Subnet Mask", "Primary Server IP Address", "Backup Server IP Address (optional)", and "Default Gateway (optional)". At the bottom, there are four buttons: "Help", "Cancel", "<< Back", and "Next >>".

Client IP address - the IP address you want to give your vadEDGE 4200 SADIS 2G Router.

Primary Server IP address - the IP address of your workstation server.

Backup Server IP address - if you have a backup server, then this can be configured also. The receiver will attempt to connect to this if the primary server is unavailable. It is not mandatory to have a backup server configured, this option is available if you selected the TCP with backup Server.

Default Gateway - if your workstation is on a different subnet to the receiver, then it is necessary to configure a default gateway.

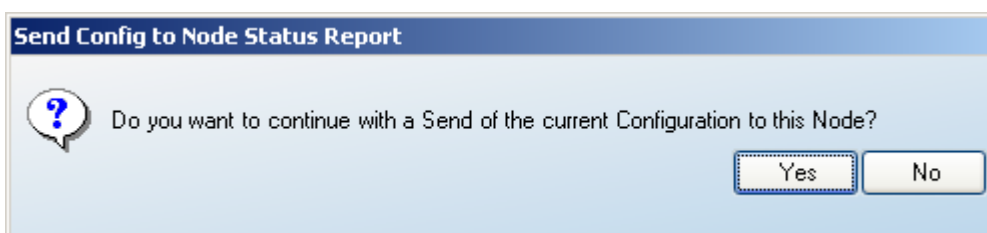
When finished, click Next. You will then be asked for the TCP port numbers (10001, 10002 & 10003 are the defaults)



The screenshot shows a 'Configuration Wizard' window titled 'Configurator' from 'vados SYSTEMS'. It is at 'TCP configuration step 2/2'. The window contains three input fields: 'GRIB Port (10001)' with the value '10001', 'OPMET Port (10002)' with the value '10002', and 'T4 Port (10003)' with the value '10003'. At the bottom, there are four buttons: 'Help', 'Cancel', '<< Back', and 'Finish'.

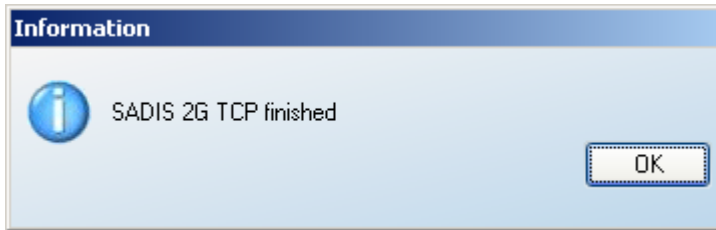
The port numbers used by the workstation for the 3 different data types are configured here. By clicking the Finish button you will accept the default values. Edit the numbers to match your workstation, should you require.

After selecting Finish, you will be asked if you want to send this configuration to the 4200.

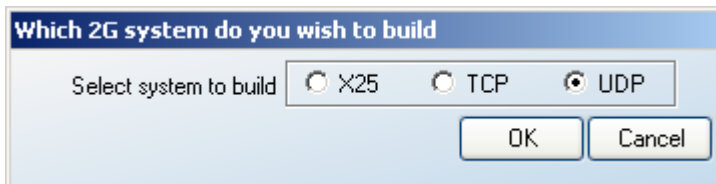


The screenshot shows a dialog box titled 'Send Config to Node Status Report'. It contains a question mark icon and the text: 'Do you want to continue with a Send of the current Configuration to this Node?'. At the bottom right, there are two buttons: 'Yes' and 'No'.

Click yes. A dialog will inform you when the vadEDGE 4200 SADIS 2G Router is configured and ready to receive data



UDP configuration.



If your configuration uses UDP, then select UDP and click OK.

You will then be asked for the IP address and subnet mask for the vadEDGE 4200 SADIS 2G Router as well as the destination multicast IP address. This defaults to 224.0.0.1, but can be overwritten. (Please take care if you do not use the default multicast address as many addresses in this range are already assigned for other uses)

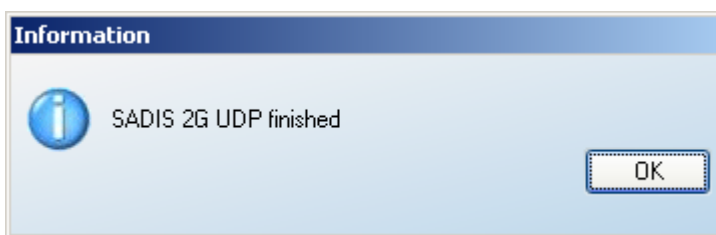


The next dialog box asks for the source and destination UDP port numbers , these are required for transmission on the LAN.

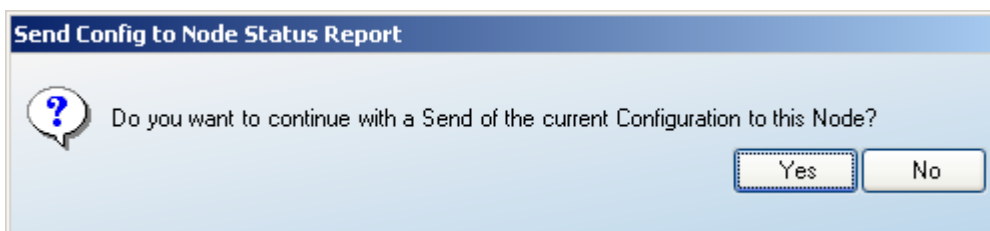


Unlike the TCP configuration where three ports are required – one for each of the three data types, the UDP configuration transmits all data on to the LAN using the same port number. Each of the three streams is separated out at the workstation server using the five byte header – the first byte is a rotating sequence number (00 – FF), the next three are for internal use (can be non zero's) and the last two bytes donate which of the three streams the data belongs to, as described in section 3.

When you have entered the port numbers required, click Finish and the following dialog appears –



You will then be asked if you want to send this configuration. Click yes and Configurator will download the UDP configuration to the vadEDGE 4200 SADIS 2G Router



## 5. Contacts

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Support: [www.vados.com/supportcall/index.php](http://www.vados.com/supportcall/index.php)  
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## About Vados Systems

Vados Systems enables organisations to provide reliable voice and multi-service data communication at their critical points of operation, often where it is impossible to establish traditional communications networks. Serving the precise needs of global customers in specialist markets, its range of single platform communications equipment represents a robust and highly supportable solution to providing Quality of Service across efficiently managed network bandwidth.

Whether used to enable real-time news broadcasts, deployment of remote military field operations or voice and commerce services aboard ships in international waters, Vados products simplify communication delivery whilst reducing operating cost.