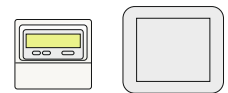




The MitsCity Driver



The MitsCity driver interfaces to the Mitsubishi Electric City Multi VRF air-conditioning system. Available for ObSys and Commander.

This document relates to MitsCity driver version 1.0

Please read the *Commander Manual* or *ObSys Manual* alongside this document, available from www.northbt.com

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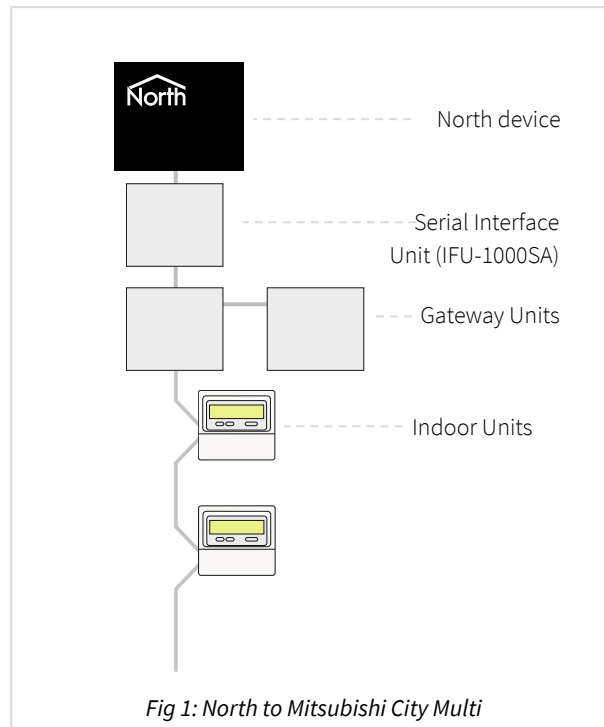
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Compatibility with the Mitsubishi System

The MitsCity driver allows North to interface to the Mitsubishi Electric City Multi VRF air-conditioning system. The City Multi system is suitable for larger premises such as office blocks, hotels, and shopping centers.

The driver connects, via RS232, to a Mitsubishi Serial Interface Unit (IFU-1000SA) (Fig. 1). Connected to the Main-Bus of the serial interface unit are a network of up to 20 gateway units. Each gateway unit then connects to a network of up to 50 indoor units.

The MitsubishiG50 driver is also available for modern installations, connecting via an Ethernet network to a Mitsubishi AE-200 or similar controller.



Equipment

Mitsubishi City Multi series compatible with the driver include:

- City Multi Y series
- City Multi R2 series

Values

Depending on the type of Mitsubishi indoor units connected, each can typically have the following values available:

- Status
- Operating mode
- Temperature
- Humidity
- Air speed
- Louver
- Damper

Prerequisites

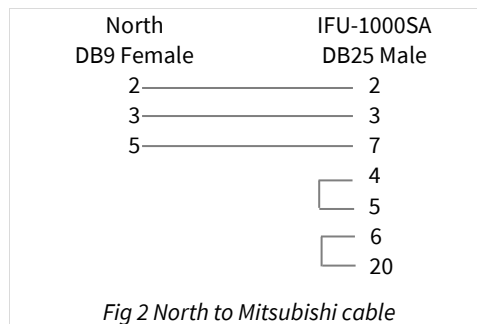
Set the Mitsubishi Serial Interface Unit speed to 9600 baud (SW03).

Using the Driver

On ObSys and Commander, the MitsCity driver is pre-installed. On all of these North devices, you can use the driver to create an interface to Mitsubishi City Multi. Once started, you will need to set up the driver before it can communicate with the Mitsubishi system.

Making the Cable

Using the RS232 cable specification, connect the North Device COM port to the IFU-1000SA 'RS232-1' port. Connector types at each end of the cable are shown.



The maximum RS232 cable length is 15m and should be as short as possible.

Cables are available from North, order code CABLE/MITSCITY.

Starting the Interface

- 🖥️ To start an interface using the MitsCity driver, follow these steps:
 - **Start Engineering** your North device using ObSys
 - Navigate to **Configuration, Interfaces**, and set an unused **Interface** to 'MitsCity' to start the interface
 - Navigate to the top-level of your North device, then rescan it

The driver setup object (Mc), labelled **MitsCity Setup**, should now be available. If this object is not available, check an interface licence is available and the driver is installed.

Setting up the Driver

- 🖥️ To set up the driver, follow these steps:
 - Navigate to the **MitsCity Setup** object (Mc). For example, if you started interface 1 with the driver earlier, then the object reference will be 'M1'
 - Set the **RS232 Com Port** (RS.COM) to select which serial port on the North Device is connected to the MitsCity device.

Checking Communications

You can check that the interface is communicating by reading the **Device Communicating** object (DS). A value of 'Yes' indicates the driver has connected to, and is communicating with, the Mitsubishi system.

Object Specifications

Once an interface is started, one or more extra objects become available within the top-level object of the device. As with all North objects, each of these extra objects may contain sub-objects, (and each of these may contain sub-objects, and so on) - the whole object structure being a multi-layer hierarchy. It is possible to navigate around the objects using the ObSys Engineering Software.

Each object is specified below, along with its sub-objects.

Example Object Reference

An example of a reference to an object in the same device: the MitsCity System (S1) contains Gateway 1 (G1), which itself contains Indoor Unit 1 (I1), which has a status (S). Therefore, the complete object reference is 'S1.G1.I1.S'

An example of a reference to an object in a different device: the IP network object (IP) contains Default Commander object (CDIP), which contains the object above ('S1.G1.I1.S') - therefore the complete object reference is 'IP.CDIP.S1.G1.I1.S'

Device Top-Level Objects

When an interface is started using the MitsCity driver, the objects below become available within the top-level object of the device. For example, if interface 1 is started, then the object references 'M1' and 'S1' become available.

Description	Reference	Type
MitsCity Setup Set up the MitsCity driver, started on interface <i>c</i> (<i>c</i> is the interface number)	Mc	Fixed Container: On the Commander platform this will be <i>[CDM v20\MitsCity v10]</i> On the ObSys platform this will be <i>[OSM v20\MitsCity v10]</i>
MitsCity System Access Mitsubishi City Multi system connected to interface <i>c</i> (<i>c</i> is the interface number)	Sc	Fixed Container: <i>[MitsCity v10]</i>

MitsCity Driver Setup

Object Type: [OSM v20\MitsCity v10]

Object Type: [CDM v20\MitsCity v10]

The MitsCity driver contains the following objects:

Description	Reference	Type
RS232 COM Port	RS.COM	Obj\Num:1...8; Adjustable
Device Label	DL	Obj\Text: 20 chars; Adjustable
Device Communicating	DS	Obj\NoYes

MitsCity System

Object Type: *[MitsCity v10]*

A Mitsubishi Electric City Multi air conditioning system consists of networks of indoor units that can be accessed through up to 20 gateway units.

The MitsCity System contains the following objects:

Description	Reference	Type
Date and Time	TIME	Obj\DateTime; Adjustable
Gateway x The gateway address, x, can be in the range 1...40.	Gx	Fixed Container: <i>[MitsCity v10\Gateway]</i>

Gateway

Object Type: *[MitsCity v10\Gateway]*

A Mitsubishi Electric City Multi gateway unit allows access to a network of indoor units and is capable of monitoring error codes of all points on the network.

The MitsCity gateway contains the following objects:

Description	Reference	Type
Indoor unit y The indoor unit address, y, can be in the range 1...50.	ly	Fixed Container: <i>[MitsCity v10\Indoor]</i>
Point z – Error code monitor The point address, z, can be in the range 1...250, where: 1...50 Indoor unit 51...100 Outdoor unit 101...150 Remote Controller 151...200 Remote controller (slave) 201...250 Centralized controller	Pz.E	Obj\Num: 0...8000 Value 8000 = OK

Indoor

Object Type: [MitsCity v10\Indoor]

The MitsCity indoor contains the following objects:

Description	Reference	Type
Status	S	Obj\Enum: 0...6; Adjustable Values: 0=Stop, 1=Run, 2=Trial run, 3=Forced run, 5=Emergency stop, 6=Emergency stop
Operating Mode	OP	Obj\Enum: 0...8; Adjustable Values: 0=Draft, 1=Cooling, 2=Heating, 3=Dry, 4=Automatic, 5=Ventilation, 6=Automatic Cooling, 7=Automatic Heating, 8=External Air cooling.
Temperature – Current Value	T.V	Obj\Float
Temperature – Setpoint	T.SP	Obj\Float; Adjustable
Temperature – Setpoint (within limits) Reads the temperature setpoint, limiting to the value within the limits <i>ll...hh</i> . <i>ll</i> is a two-digit low limit, 00...99 <i>hh</i> is a two-digit high limit, 00...99	T.SP <i>llhh</i>	Obj\Float: <i>ll...hh</i>
Humidity – Setpoint	H.SP	Obj\Float: 0...100; Adjustable
Air speed	AF	Obj\Enum: 0...3; Adjustable Values: 0=Low, 1=Medium 1, Medium 2, 3=High
Louver status	L	Obj\OffOn; Adjustable
Vane status	V	Obj\Enum: 0...4; Adjustable 0=Horizontal, 1=60%, 2=80%, 3=100% 4=Swing
Damper status	D	Obj\Enum: 0...3; Adjustable 0=Close, 1=Open, 2=Auto, 3=Auto release
Filter reset	F	Obj\NoYes; Adjustable-only

Driver Versions

Version	Build Date	Details
1.0	18/06/2002	Driver released
1.0	11/03/2003	Added Temperature Setpoint (with limits) Added checking for gateway and indoor numbers. Reduced timeout to 1s
1.0	14/01/2013	Updated for Commander platform

Next Steps...

If you require help, contact support on 01273 694422 or visit www.northbt.com/support



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Document issued 08/09/2022.