

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

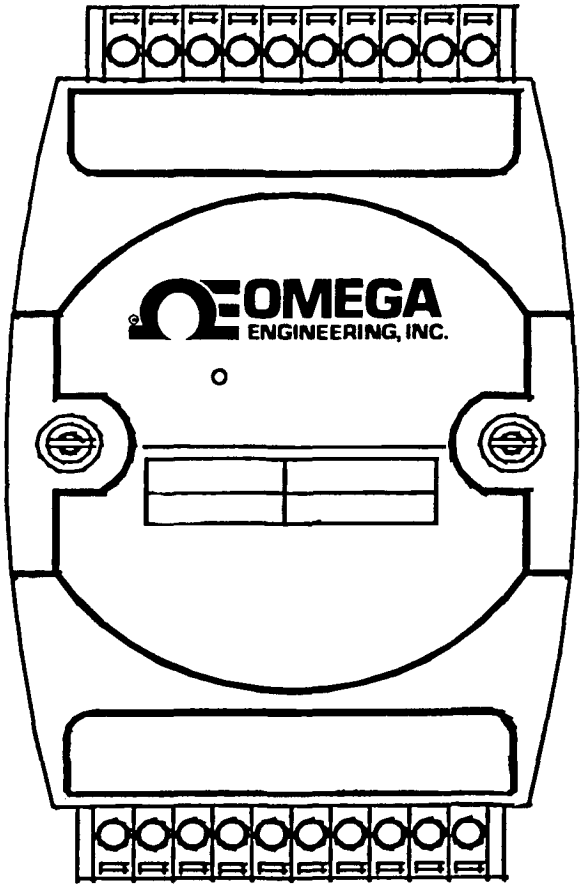
Visit our website - *Click HERE*

M-3581 for

OMR-6520 RS-232 to RS-422/RS-485 Converter

OMR-6510 RS-422/RS-485 Repeater

User's Guide



Contents

1. INTRODUCTION 1-1

1.1 WHAT IS OMR ? 1-1
1.2 OUTSTANDING FEATURES OF OMR 1-1
1.3 OMR-6000 SERIES PRODUCTS OVERVIEW 1-3
1.4 EIA RS-485 STANDARD 1-3
1.5 RS-485 ON OMR 1-4
1.6 OMR RS-485 NETWORK CONFIGURATIONS 1-4
1.7 CONSTRUCTING A OMR NETWORK 1-5
1.8 TERMINATION BUS 1-6
1.9. SHIELDING 1-6
1.10. HOW TO CALCULATE CHECKSUM VALUE 1-7

2. OMR-6520 2-1

2.1. OVERVIEW 2-1
2.2. SETUP 2-6
2.3. INSTALLATION 2-7
2.4 PROGRAMMING 2-8

3. OMR-6510 3-1

3.1. OVERVIEW 3-1
3.2. SETUP 3-5
3.3 INSTALLATION 3-6
3.4 PROGRAMMING 3-7

4. INSTALL A BRAND-NEW OMR 4-1

4.1 INITIALIZE A BRAND-NEW OMR 4-1
4.2 INSTALL A NEW OMR TO A EXISTING NETWORK 4-3

5. SOFTWARE UTILITY 5-1

5.1 SOFTWARE INSTALLATION 5-1
5.2 HOW TO EXECUTE THE OMR ADMINISTRATION 5-1
5.3 OMR ADMINISTRATION FUNCTION OVERVIEW 5-2

6. TROUBLESHOOTING AND MAINTENANCE 6-1

1. Introduction

1.1 What is OMR ?

OMR is a series of data acquisition modules. It provides a total solution of the data acquisition network and control system. You can remotely control up to 256 OMR modules on RS-485 network. All you need is to use a host computer, like a PC (Personal Computer), with one RS-232 serial port for controlling the whole system. The maximum communication distance is 4000 feet from the host computer.

OMR is based on the RS-485 multi-drop network system, each module has a unique address ID. Using simple ASCII command & response protocol through standard RS-485 interface can control all the OMR modules in the RS-485 network.

The OMR modules provide direct linkage to a wide variety of sensors and perform all signal conditioning, scaling, linearization and conversion. The modules can be used to measure temperature, pressure, flow, voltage, current and numerous types of digital signals.

1.2 Outstanding Features of OMR

- ***Industry standard networking***
  All OMR modules use the RS-485 communication protocol for transmitting and receiving at high rates and over long distance.
- ***Two-wire and multi-drop communication***
  A single twisted pair of wires is used to transmit and receive data between modules. Multi-drop capability makes system configuration more flexible and easy set-up of a network.
- ***High transfer speed***
  OMR modules provide up to 115.2K bps data / command transfer rate. It can promote system bandwidth.
- ***Simple command / response protocol***
  All communications are performed with printable ASCII characters. This allows the information to be processed with string functions common to the most high-level languages.
- ***Industrial design***
  The screw terminal plug connectors on every OMR module ensure simple installation and easy modification. The compact size allows the modules to be mounted on DIN rail, back-panel wall-mount, etc.
- ***Watch-dog supervisory***
  OMR contains a watch-dog supervisory circuitry that will automatically reset the module when the system fails. In addition, a user-programmable software timer provides a 'safe' output signal in the event of host computer failure.
- ***High isolation voltage***
  OMR provides photo-isolators, which ensure high isolation voltage, between the data acquisition circuits and the communication port. The fatal electric-shock won't go through and damage all the modules on the network.
- ***Noise immunity***
  The OMR provide extra noise immunity capability. An electrode, which is coated inside the ABS case, can reduce electro-magnetic interference (EMI) and noise.
- ***Harsh environmental protection***

A surface coating covers on the PCB and electronic components of the OMR. It allows superior resistance to harsh environment such as humidity, salt spry and most harsh chemicals.

1.3 OMR-6000 series products overview

The OMR-6000 series provides the complete sets of data acquisition modules, including the communication modules, the analog input modules, the analog output modules, and the digital I/O modules.

Communication Module

- OMR-6510: RS-422/RS-485 Repeater
- OMR-6520: RS-232 to RS-422/RS-485 Converter
- OMR-6530: USB to RS-422/RS-485 Converter

Analog Input Modules

- OMR-6011: Multifunction High Gain Analog Input Module (with DI/O)
- OMR-6011D: Multifunction High Gain Analog Input with 5 ½digit LED Display (with DI/O)
- OMR-6012: Analog Input Module (with DI/O)
- OMR-6012D: Analog Input Module with 5 1/2 digit LED Display (with DI/O)
- OMR-6013: 3-channel RTD Input Module
- OMR-6014D: Analog (Transmitter) Input Module with 5 1/2 digit LED Display
- OMR-6017: 8-channel Analog Input Module
- OMR-6018: 8-channel Thermocouple Input Module

Analog Output Modules

- OMR-6021: Single Channel Analog Output Module
- OMR-6024: 4-channel Analog Output Module (with DI)

Digital I/O Modules

- OMR-6050: Module with 7 DI channels and 8 DO channels
- OMR-6052: Isolated Digital Input Module
- OMR-6053: 16-channel digital Input Module
- OMR-6054: 15-channel digital Input Module
- OMR-6056: 15-channel digital Output Module
- OMR-6058: 28-channel programmable digital I/O Module
- OMR-6060: 4-channel Relay Output & Digital Input Module
- OMR-6063: 8-channel Relay Output Module
- OMR-6080: Counter/Frequency Input Module

1.4 EIA RS-485 Standard

The EIA RS-485 interface is a communication standard developed for multi-dropped systems that can communicate at high rate over long distance. The standard RS-485 can operate at speed up to 10 M bps over cable length up to 4000 feet.

The RS-485 interface can support up to 32 drivers / receivers on the same line. This allows actual networking applications on a parity line system (sometimes called multi-drop).

The RS-485 uses differential transmission on a balance line. Its easy wiring makes it popular to use in industrial applications.

1.5 RS-485 on OMR

The OMR improves the RS-485 capability for minimizing the user's cost. On each OMR module, a half-duplex RS-485 transceiver is used to communicate with other modules. A single twisted pair of wires, which provides standard differential transmission, is used to transmit and receive data between modules. The high input impedance of each OMR receiver allows up to ***128*** OMR modules on the same RS-485 bus without using a signal repeater.

The maximum transfer rate of OMR is 115.2Kbps, which is lower than the maximum speed of the RS-485 standard. The slew-rate limiter on every RS-485 transceiver of OMR is very useful for transmitting error-free data, minimizing EMI, and reducing reflections caused by improperly terminated cables.

The OMR on a network may not use the same power supply. Therefore, the voltage difference between grounds of the modules may exist.

Excessive output current and power dissipation caused by faults or by bus contention are prevented by the current limiter and the thermal shutdown circuitry inside the OMR.

1.6 OMR RS-485 Network Configurations

OMR-6000 series is designed under RS-485 multi-drop network architecture. Up to 256 OMR modules can be controlled in a multi-drop network. The limit of 256 is due to command code. The network can be connected by simple topology (Figure 1-1) or branch topology (Figure 1-2) or free topology (Figure 1-3).

The OMR-6520 and OMR-6510 are the two basic communication modules to construct a RS-485 network. The OMR-6520 is a RS-232 to RS-485/RS-422 converter. The OMR-6520 is used to build a RS-485 port for the host computer by converting standard RS-232 signal into RS-485 signal.

The OMR-6510 is the RS-485 signal repeater, which is used to extend or to lengthen the network distance. An OMR bus can connect up to 256 modules, each segment is up to 128 modules. Whenever the numbers of the modules excess 128, the repeater should be used. In addition, the length of a standard RS-485 bus is up to 4000 feet, the repeater should be used whenever the length of a signal bus is more than 4000 feet.

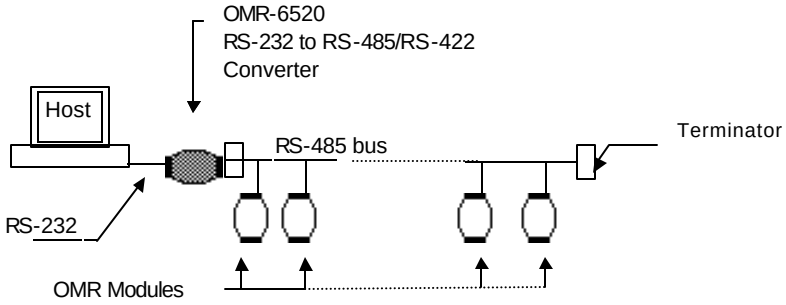


Figure 1-1 Simple Topology

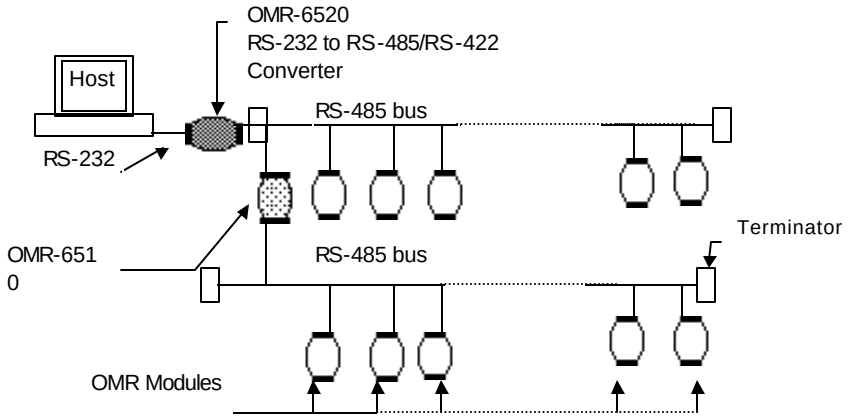


Figure 1-2 Branch Topology

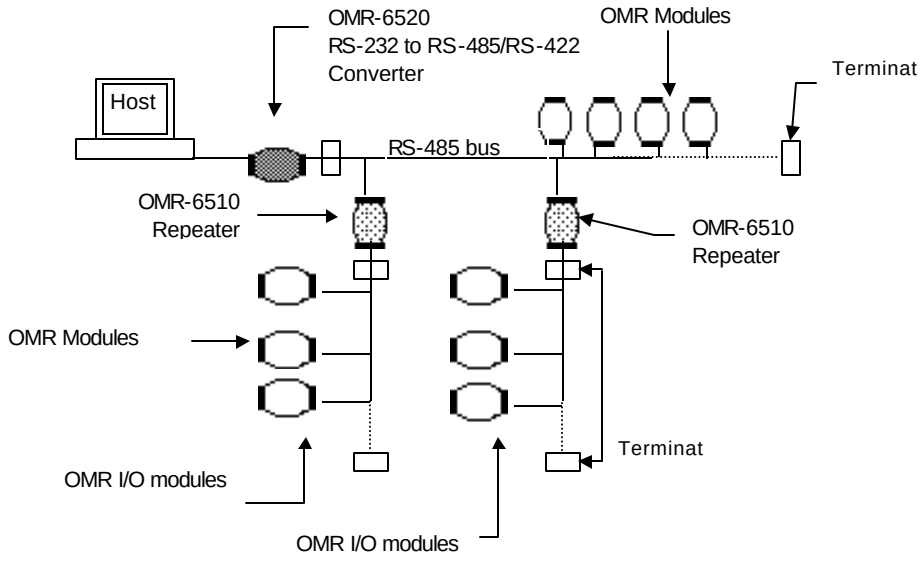


Figure 1-3 Free Topology

1.7 Constructing a OMR Network

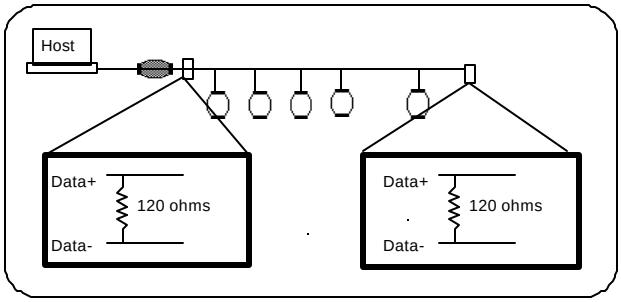
Go through the following steps, the user can construct an OMR network easily.

1. Setup an OMR-6520.
2. Connect the host computer with the OMR-6520.
3. Setup one or more OMR-6510 if necessary.
4. Connect the OMR-6510 to extend to RS-485 bus if necessary.
5. Install the OMR utility software from disk.
6. Initialize the brand-new OMR modules.
7. Add the new OMR modules into RS-485 network.

Refer to chapter 2 for executing step 1 and 2. Refer to chapter 3 for executing step 3, 4 and for understanding the time to install OMR-6510. The knowledge about the software for operating the OMR is in chapter 5. For executing the step 6 and step 7, refer to chapter 4.

1.8 Termination Bus

In order to avoid signal reflections on the bus, each bus segment has to be blanked off at its physical beginning and at its end with the characteristic impedance. A termination resister (Rt) is installed for this purpose. The Rt value - 120Ω ± 2% is recommended, and the detailed connection of Rt can be referred from the “Terminator Connection” diagram below.



Terminator Connection

1.9. Shielding

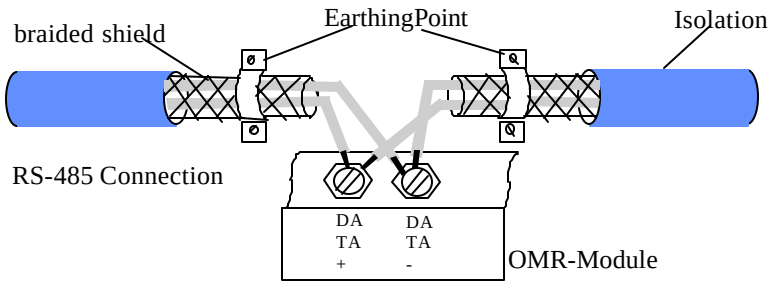
In case of increased interference, a shielded bus cables is recommended to use for wiring between module and modules. In addition, a shielding also should be done for the cable of power supply and for the signal cables.

Some experiences and recommendations are concerning for shield connection.

1. The shield should be connected with protective earthing at each bus connection.

2. The shield should be applied additionally several times along the course of the cable.

3. The Computer should be applied the shield directly to the appliance or to separate shield rails.



1.10. How to Calculate Checksum Value

Format of OMR Commands

(LeadingCode)(Addr)(Command)(Data)**[Checksum]**<CR>

When checksum is enable then **[Checksum]** is needed, it is 2-character.

[Checksum] = ((LeadingCode)+(Addr)+(Command)+(Data)**) MOD 0x100**

Example 1: checksum is **disable**

User Command : $012<CR>
Response : !01400600

Example 2: checksum is **enable**

User Command : $012**B7**<CR>
Response : !01400600**AC**

'$' = 0x24 '0' = 0x30 '1' = 0x31 '2' = 0x30

B7 = (0x24 + 0x30 + 0x31 + 0x32 **) MOD 0x100**

'!' = 0x24 '0' = 0x30 '1' = 0x31 '4' = 0x34
'6' = 0x36

AC = **(** 0x24 + 0x30 + 0x31 + 0x34 + 0x30 + 0x30 + 0x36 + 0x30 + 0x30 **) MOD 0x100**

2. OMR-6520

2.1. Overview

What is OMR-6520 ?

OMR-6520 is a RS-232 to RS-422/RS-485 converter, it converts the RS-232 signal to the RS-422/RS-485 signals. The OMR-6520 can be considered as an extension RS-422/RS-485 serial port for the host computer. A standard 9-pin D-type connector is used to connect the host computer and the OMR-6520. Hence, the OMR-6520 can connect with all kinds the PC, IPC or Notebook PC, which install a standard RS-232 interface.

Features of OMR-6520

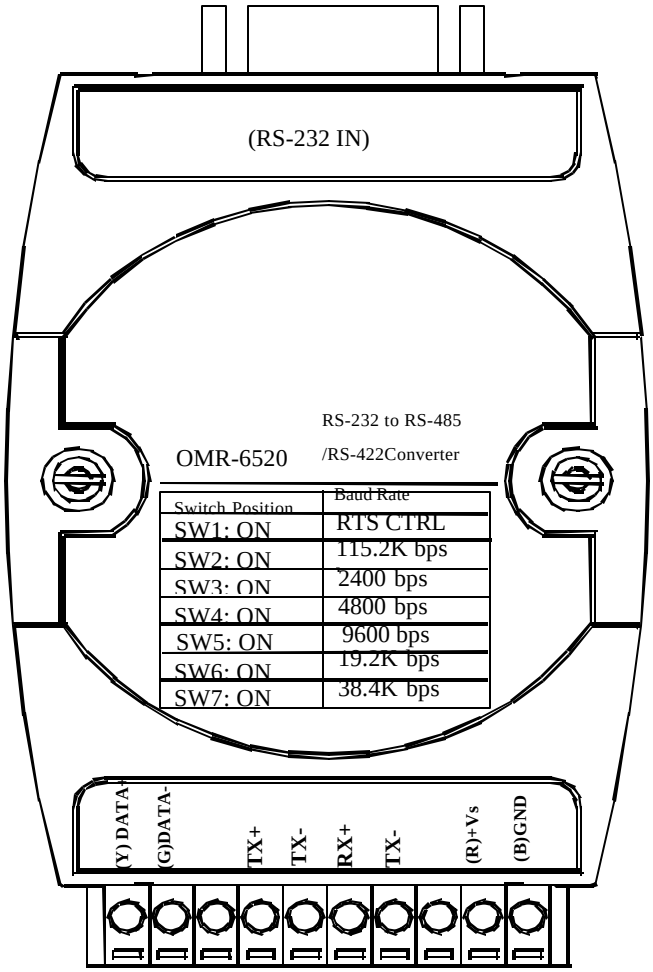
- RS-422/RS-485 transceiver
- Differential 2-wire half-duplex RS-485
- Easily setup and installation
- Auto direction flow control
- Maximum 128 OMR on a bus without using repeaters
- Maximum 256 addressable OMR modules
- High transfer speed
- High isolation voltage
- Lower power consumption

Specifications of OMR-6520

- ✧ **Input**
  - Interface : standard RS-232 9 pin female D-type connector
  - Speed (bps) : 1200(115.2K[1]), 2400, 4800, 9600, 19.2K, 38.4K, RTS
  - Data Format : 9 bits, 10 bits, 11 bits, or 12 bits
- ✧ **Output**
  - Interface : RS-485, differential, 2 half-duplex wires
RS-422, differential, 4 full-duplex wires
  - Speed (bps) : 1200(115.2K[1]), 2400, 4800, 9600, 19.2K, 38.4K, RTS
  - Max RS-485 network bus distance : 4000 ft. (1200m)
- ✧ **Isolation**
  - Isolation voltage : 5000 Vrms(between RS-422/RS-485 network and host computer)
- ✧ **Bus**
  - Max loading : 128 OMRs on a RS-485 network
  - Max modules : 256 OMRs with one OMR-6510 repeater
- ✧ **Power**
  - Power Supply : +10V to +30V
  - Power Consumption : 0.95 W

Note 1: 115.2K is supported by version A1.2 or later.

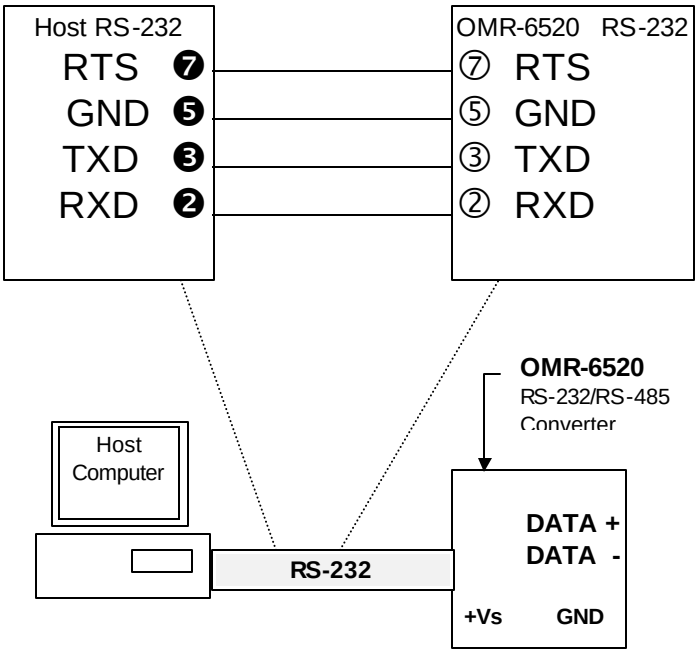
A Look at OMR-6520 & Pin Assignment



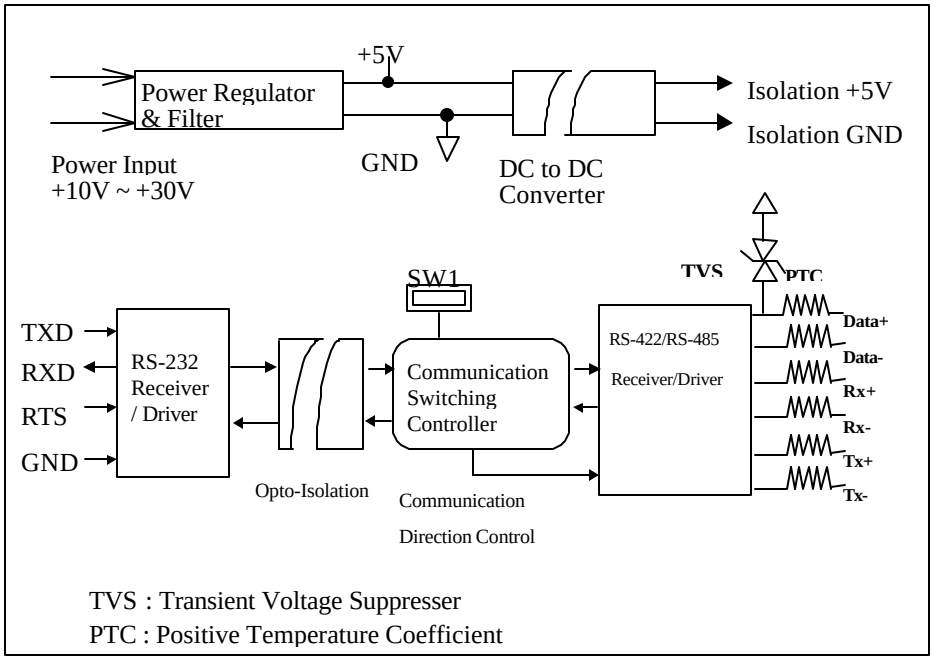
Pin Definitions

Pin #	Signal Name	Description
1	(Y)DATA+	RS-485 transmission line, positive
2	(G)DATA-	RS-485 transmission line, negative
4	TX+	RS-422 transmission line, positive
5	TX-	RS-422 transmission line, negative
6	RX+	RS-422 receiving line, positive
7	RX-	RS-422 receiving line, negative
9	(R)+VS	OMR power supply, +10V~+30V
10	(B)GND	OMR ground
--	RS-232 IN	9-pin RS-232 connector

Connection Between Host and OMR-6520



Functional Block Diagram



TVS : Transient Voltage Suppresser
PTC : Positive Temperature Coefficient

2.2. Setup

Objective of Setup

In normal condition, it is not necessary to setup the OMR-6520. The default configuration of this communication module is 9600 bps and data format of 8 data bits with 1 start bit, 1 stop bit, and no parity check. Note that the data format is reserved to be compatible with other brand's communication port; it should not be modified if only OMR is used in a system. The baud rate can be configured according applications' requirement.

Setup Equipments

Only screwdriver is used to open the case. Software, power supply, and wiring are not necessary.

Setup Procedure

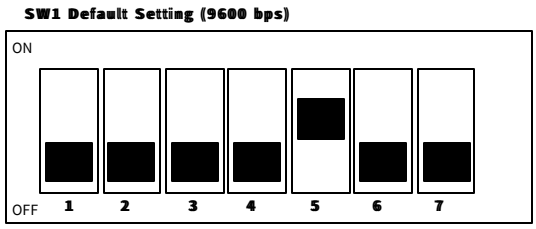
Only hardware switch setting can be setup in OMR-6520. The user can set the speed of the serial interface (RS-232 and RS-422/RS-485), and the serial data format. The speed and the data format on the whole RS-485 network must be identity otherwise the communication will be not correct.

To setup the OMR-6520, use the screwdriver to open the case, then change the switch setting. The new setting is available after power on. The case must be put back and locked carefully. Note that do not scratch the surface of the circuit while setting up, otherwise the surface coating or even the circuits will be damaged.

Default Setting

- 9600 baud rate
- 10 bits series data format : one start bit, eight data bits, one stop bit, no parity check

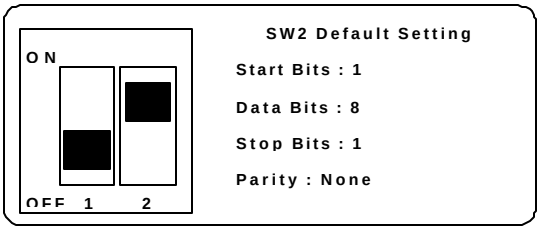
SW1 Setting



1	2	3	4	5	6	7	Baud Rate
ON	OFF	OFF	OFF	OFF	OFF	OFF	RTS Control
OFF	**ON**	OFF	OFF	OFF	OFF	OFF	1200 or 115.2k[1] bps
OFF	OFF	**ON**	OFF	OFF	OFF	OFF	2400 bps
OFF	OFF	OFF	**ON**	OFF	OFF	OFF	4800 bps
OFF	OFF	OFF	OFF	**ON**	OFF	OFF	9600 bps
OFF	OFF	OFF	OFF	OFF	**ON**	OFF	19200 bps
OFF	OFF	OFF	OFF	OFF	OFF	**ON**	38400 bps

Note 1: 115.2kbps is supported by version A1.2 or later.

SW2 Setting



1	2	Start Bit	Data Bits	Stop Bit	Parity	Packet Data Bits
OFF	OFF	1	7	1	0	9
		1	6	1	1	
OFF	ON	1	8	1	0	10
		1	7	1	1	
ON	OFF	1	9	1	0	11
		1	8	1	1	
ON	ON	1	10	1	0	12
		1	9	1	1	

2.3. Installation

Software Utility

Software is not necessary for this module.

Equipments for Installation

A host computer with RS-232 port
RS-232 cable (DB-9 female)
DC Power supply (+10V~+30V) (NDP-243u is recommended)
Wires (shielded and grounded is recommended)

Installation Procedure

1. Make sure the host computer is power off.
2. Use RS-232 cable to connect OMR-6520 with host computer.
3. Wire the power supply to OMR. Note that the power supply should meet the specification.
4. Wire other OMRs.

Application Wiring

The Figure 2-1 shows the application wiring of OMR-6520.

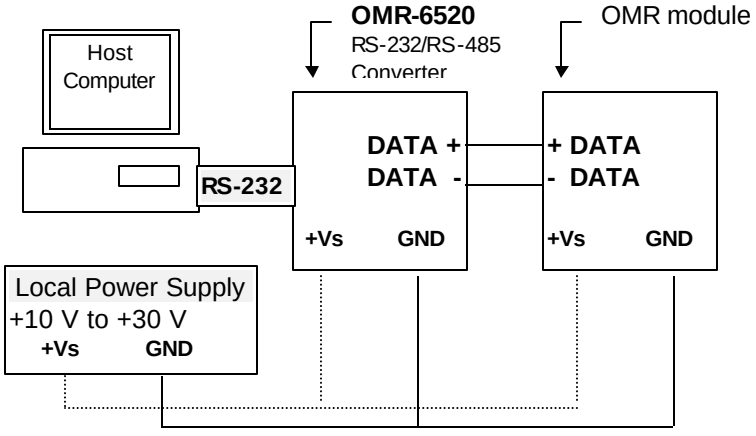


Figure 2-1 Application wiring of OMR-6520

2.4 Programming

The OMR-6520 is a communication module, it is not necessary to be programmed.

3. OMR-6510

3.1. Overview

What is OMR-6510 ?

The OMR-6510 is the RS-422/RS-485 signal repeater which is used to extend or to lengthen the network distance. A OMR bus can connect up to 128 modules. The repeater should be used when the numbers of the modules excess 128. In addition, the repeater should also be used when the length of a signal bus is more than 4000 feet.

Features of OMR-6510

- RS-422/RS-485 signal transceiver & repeater
- Bi-directions signal transmission for both RS-422/RS-485 ports
- Automatic transmission direction control
- Easily setup and installation
- Maximum 128 OMR on a bus
- Maximum 256 addressable OMR modules
- High transfer speed
- Surge protection
- Lower power consumption

Specifications of OMR-6510

✧ **Input / Output**

- Interface : RS-485, differential 2 half-duplex wires
  RS-422, differential, 4 full-duplex wires
- Speed (bps) : 1200(115.2K[1)], 2400, 4800, 9600, 19.2K, 38.4K
- Data Format : 9 bits, 10 bits, 11 bits, or 12 bits
- Max RS-485 network bus distance : 4000 ft. (1200m)

Note 1: 115.2k is supported by version A1.2 or later.

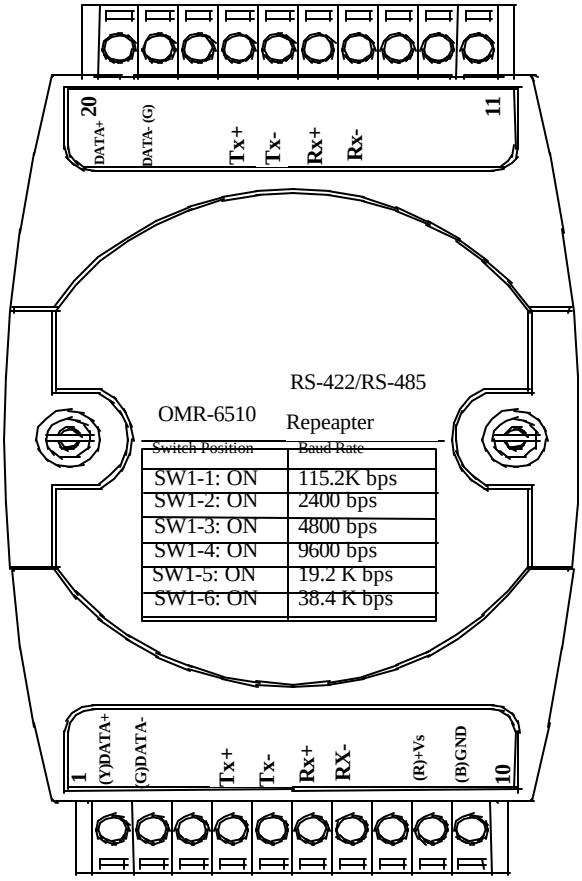
✧ **Bus**

- Max Loading : 128 OMRs on a bus

✧ **Power**

- DC Power Supply : +10V to +30V
- Power Consumption : 0.9 W

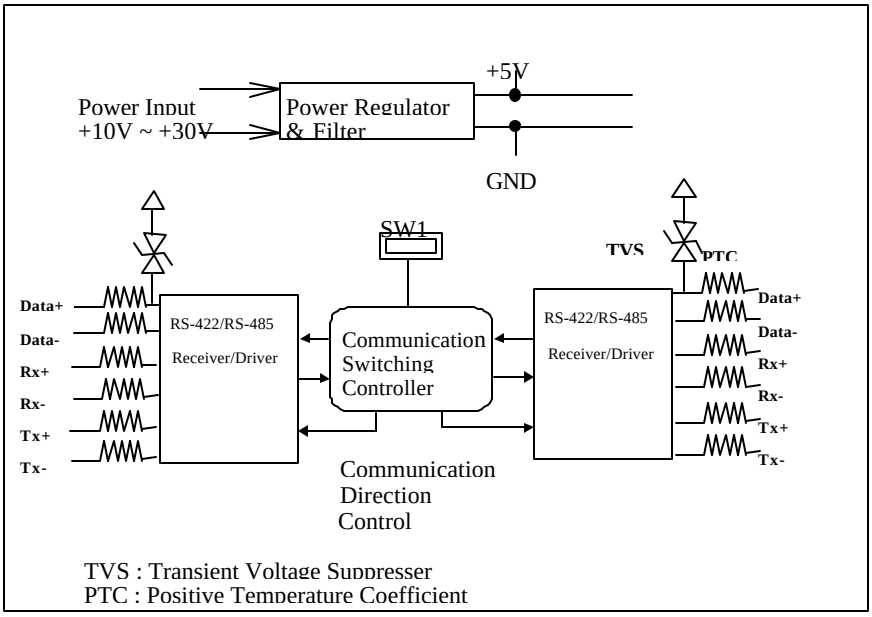
A Look at OMR-6510 & Pin Assignment


20
DATA+
DATA- (G)
Tx+
Tx-
Rx+
Rx-
11
RS-422/RS-485
OMR-6510
Repeapter
Switch Position
Baud Rate
SW1-1: ON
115.2K bps
SW1-2: ON
2400 bps
SW1-3: ON
4800 bps
SW1-4: ON
9600 bps
SW1-5: ON
19.2 K bps
SW1-6: ON
38.4 K bps
1
(Y)DATA+
(G)DATA-
Tx+
Tx-
Rx+
RX-
(R)+Vs
(B)GND
10

Pin Definitions

Pin #	Signal Name	Description
1	(Y)DATA+	RS-485 transmission line, positive
2	(G)DATA-	RS-485 transmission line, negative
4	TXIN+	RS-422 transmission input line, positive
5	TXIN-	RS-422 transmission input line, negative
6	RXOUT+	RS-422 receiving output line, positive
7	RXOUT-	RS-422 receiving output line, negative
9	(R)+VS	OMR power supply, +10V~+30V
10	(B)GND	OMR ground
14	RXIN-	RS-422 receiving input line, negative
15	RXIN+	RS-422 receiving input line, positive
16	TXOUT-	RS-422 transmission output line, negative
17	TXOUT+	RS-422 transmission output line, positive
19	(G)DATA-	RS-485 transmission line, negative
20	(Y)DATA+	RS-485 transmission line, positive

OMR-6510 Functional Block Diagram



3.2. Setup

Objective of Setup

In normal condition, it only needs to setup the OMR-6510 when the OMR bus with more than 128 modules or the distance exceeds 4000 feet long. The default configuration of this communication module is 9600 bps and data format of 8 data bits with 1 start bit, 1 stop bit, and no parity check. Note that the data format is reserved to be compatible with other brand's communication port, it should not be modified if only OMR is used in a system. The baud rate can be configured according user's requirement.

Setup Equipments

Only screw driver is used to open the case. Software, power supply, and wiring are not necessary.

Setup Procedure

Only hardware switch setting can be setup in OMR-6510. The user can set the speed and the data format of the RS-422/RS-485 interface. The speed and the data format on the whole network must be identity otherwise the communication may be not correct.

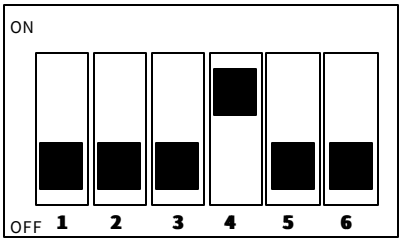
To setup the OMR-6510, use the screw driver to open the case, then change the switch setting. The new setting is available after power on. The case must be put back and locked carefully. Note that do not scratch the surface of the circuit while setting up, otherwise the surface coating or even the circuits will be damaged.

Default Setting

- 9600 Baud rate
- 10 bits serial data format : one start bit, eight data bits, one stop bit, no parity check

SW1 Setting

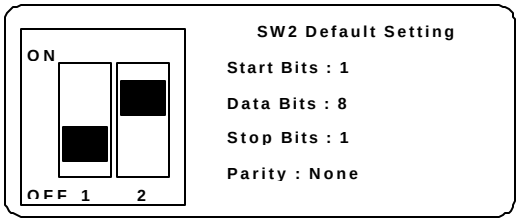
SW1 Default Setting (9600 bps)



1	2	3	4	5	6	Baud Rate
ON	OFF	OFF	OFF	OFF	OFF	1200 or 115.2k[1] bps
OFF	**ON**	OFF	OFF	OFF	OFF	2400 bps
OFF	OFF	**ON**	OFF	OFF	OFF	4800 bps
OFF	OFF	OFF	**ON**	OFF	OFF	9600 bps
OFF	OFF	OFF	OFF	**ON**	OFF	19200 bps
OFF	OFF	OFF	OFF	OFF	**ON**	38400 bps

Note 1: 115.2kbps is supported by version A1.2 or later.

SW2 Setting



1	2	Start Bit	Data Bits	Stop Bit	Parity	Packet Data Bits
OFF	OFF	1	7	1	0	9
		1	6	1	1	
OFF	ON	1	8	1	0	10
		1	7	1	1	
ON	OFF	1	9	1	0	11
		1	8	1	1	
ON	ON	1	10	1	0	12
		1	9	1	1	

3.3 Installation

Software Utility

Software is not necessary.

Equipments for Installation

A 2-wire RS-485 network or 4-wire RS-422 network.
DC Power supply (+10V~+30V)
Wires

Installation Procedure

1. Make sure the original RS-422/RS-485 network is power off.
2. Wire the power supply to OMR-6510. Note that the power supply should meet the specification.
3. Wire other OMRs to the extend RS-485 bus.

Application Wiring

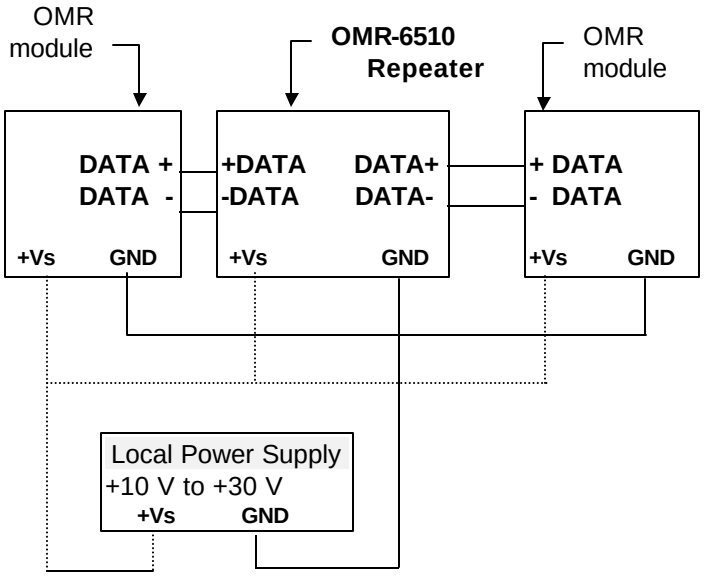


Figure 3-1 OMR-6510 wiring.

3.4 Programming

The OMR-6510 is a communication module, it is not necessary to be programmed

4. Install a Brand New OMR

4.1 Initialize a Brand-New OMR

Objective of Initializing a Brand-New OMR

All OMR modules. except OMR-6520 and OMR-6510, in a RS-485 network must have an *unique* address ID, however, every brand-new OMR has a factory default setting as following:

- Baud rate is 9600 bps.
- Address ID is 01.
- Checksum is disable.
- Host watchdog timer is disable.

Therefore, to configure the brand-new OMR before using is necessary, otherwise the address ID will conflict with others. The baud rate may also be changed according to user's requirements.

The following initialization procedures are need not only for a brand-new module, but also for a installed OMR module. When the user want to change the setting, the initialization procedure can also be used.

Initial State

The OMR I/O modules must be set a *Initial State* when you want to change the default settings of the modules, such as the ID address, baud rate, check-sum status etc. All OMR I/O modules have an special pin labeled as **Default***. "The module will be set as *Initial State* if the **Default*** pin is shorted to ground." Under this state, the default configuration is set as following:

- Address ID is 00.
- Baud rate is 9600 bps.
- Checksum is disable.
- Host watchdog timer is disable.

Initialization Equipments

- Host computer with an RS-232 port.
- An installed RS-485 module (OMR-6520) with 9600 baud rate.
- The brand new OMR module
- DC Power supply (+10 to +30 V_{DC}) for OMR modules
- A OMR-6510 if the connection distance is more than 4000 ft.

Initialization Procedure A

-- As Baud rate is 9600 bps and check-sum is disable

1. Power off the host computer and the installed OMR-6520. Be suring the baud rate of the OMR-6520 is 9600 bps.
2. Connect a brand new OMR module with the RS-485. Refer to Figure 4.1 for detail wiring.
3. Power on the host computer.
4. Power on the power supply for OMR modules.
5. Use the OMR Administrating utility to configure the address ID, Baud rate and check-sum status of the module.

Initialization Procedure B

-- As Baud rate is not 9600 bps or check-sum is not disable

1. Power off the host computer and the installed OMR-6520.
2. Connect a brand new OMR module with the RS-485. Refer to Figure 4.1 for detail wiring.
3. Configure the OMR-6520 to Baud rate 9600 bps.
4. Short the **DEFAULT*** pin of the brand-new module.
5. Power on the host computer.

6. Power on the power supply for OMR modules.
7. Use the OMR Administrating utility to configure the address ID, Baud rate and check-sum status of the module.
8. Power of the local power supply.
9. Disconnect the **DEFAULT*** pin.
10. Configure the OMR-6520 to desired Baud rate.
11. Power on the local power supply
12. Use OMR Administration utility to check the module‘s new setting.

Initialization Wiring

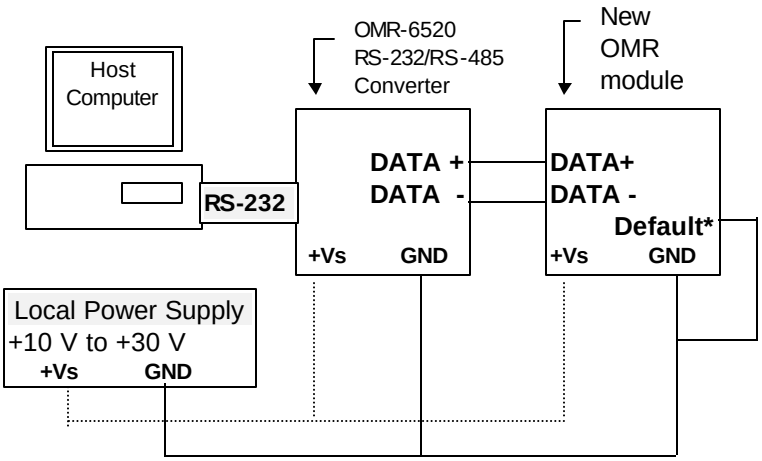


Figure 4-1 Layout for Configuring the OMR module

4.2 Install a New OMR to a Existing Network

Equipments for Install a New Module

- A existing OMR network
- New OMR modules.
- DC Power supply (+10 to +30 V_{DC}).

Installing Procedure

1. Configure the new OMR module according the initialization procedure in section 4.1.
2. The baud rate and check-sum status must be identity with the existing RS-485 network. The address ID must not be conflict with other OMR modules.
3. Power off the OMR local power supply of the existing RS-485 network.
4. Power off the host computer.
5. Add the new module to the existing RS-485 network.
6. Power on the host computer.
7. Power on the OMR local power supply.
8. Use the OMR administration utility to check entire network.

5. Software Utility

5.1 Software Installation

1. Insert “ADLink All-in-one CD” into your CDROM driver.
2. Move cursor on OMR and click.
3. Move cursor on OMR 6000 Admin Utility and click.
4. Select the driver you want to install and follow the setup instructions on screen.

5.2 How to Execute the OMR Administration

What environment you needed?

1. At least one RS-232 communication port.
2. Microsoft Windows (version 3.1, 95/98/NT)
3. At least 2MB Hard Drive Space
4. A VGA monitor (optional)
5. Mouse (optional)

Execute the OMR Administration Utility

- Run “OMR Administration Utility” Icon.

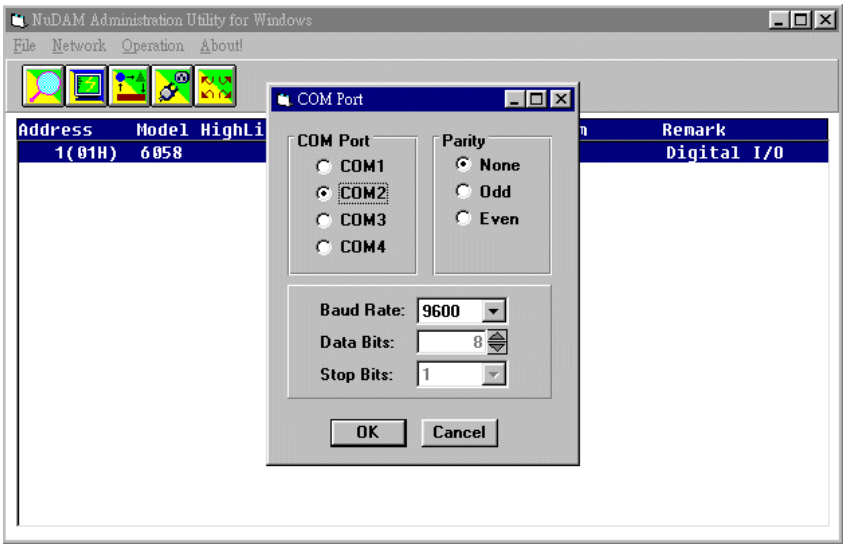
5.3 OMR Administration Function Overview

Default RS-232 Communication Port Setting.

- Communication Port : **COM2**
- Baud Rate : **9600**
- Data Bits : **8**
- Stop Bits : **1**
- Parity : **None**

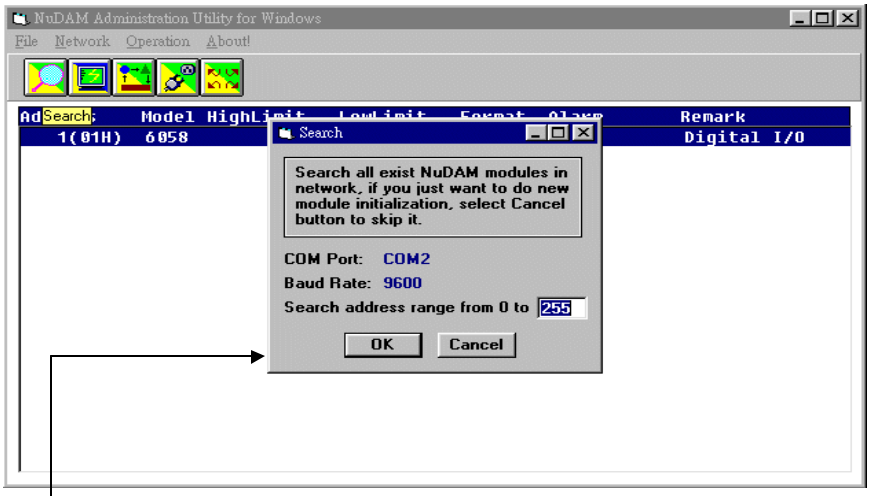
5.3.1 Change RS-232 Communication Port Setting.

Choose “Network-ComPort” to change setting.



5.3.2 Search all exist OMR modules

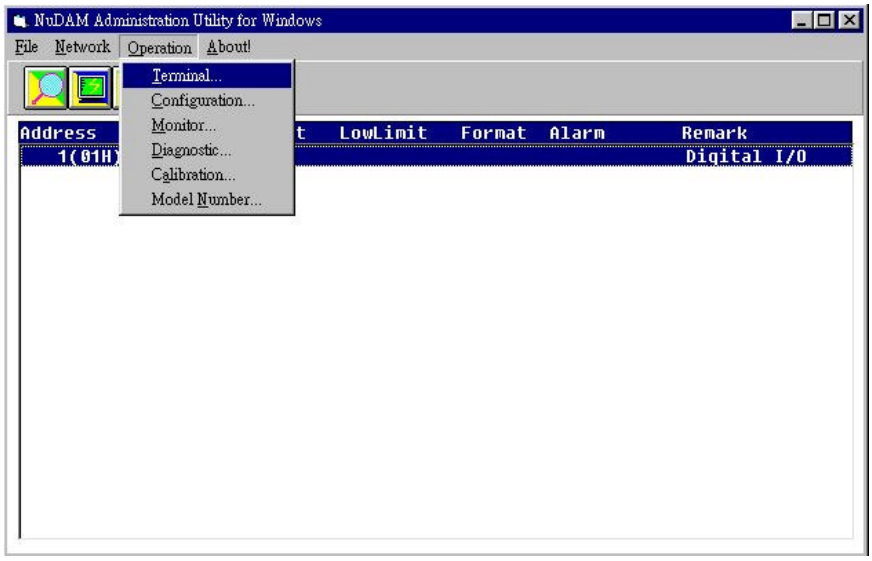
Choose “Network-Search” to search all exist OMR modules in the current RS-485 network.



You can change search addresses range from here.

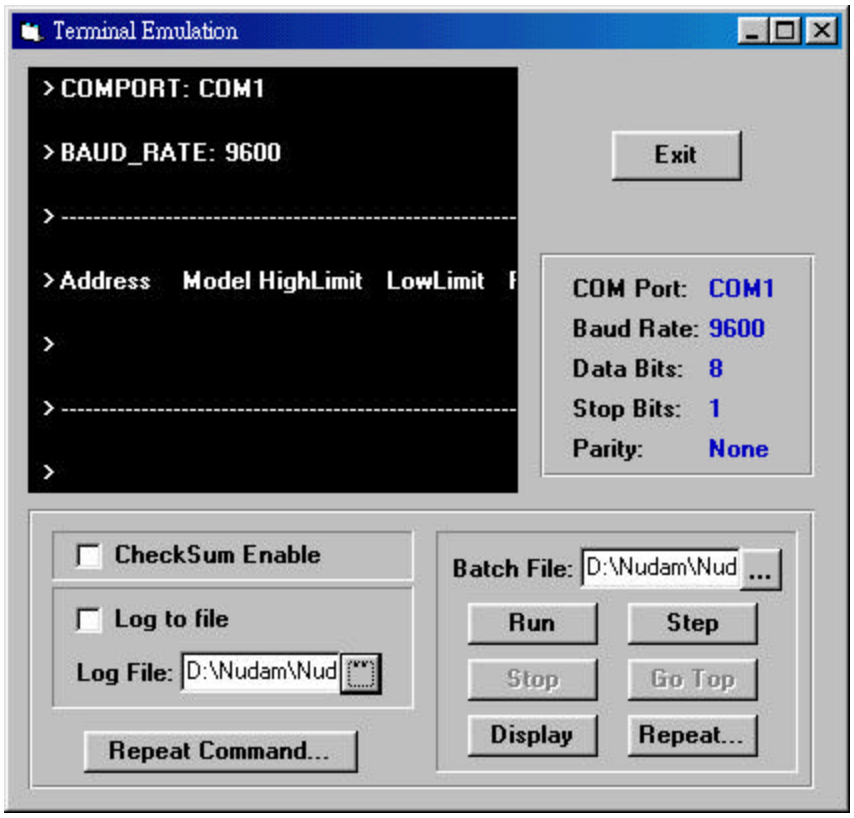
5.3.3 Using Operations

Operation-Terminal :	Terminal Emulation, user can input command and get response message.
Operation-Configuration :	Select one exist OMR module and select Configuration to do this module‘s common and private setting .
Operation-Monitor:	Monitor all the module’s function on the network.
Operation-Diagnostic:	Diagnostic module‘s function.
Operation-Calibration:	Some A/D modules need do calibration
Operation-Model Number:	Select Model Number



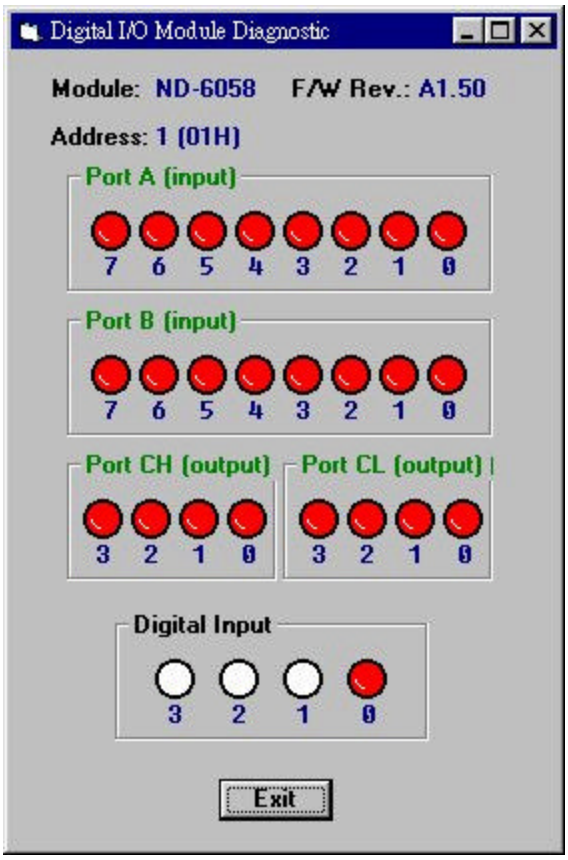
Term ICON for Operation-Terminal

You can remote control all moudles by directly using command mode, or testing your from this Terminal.

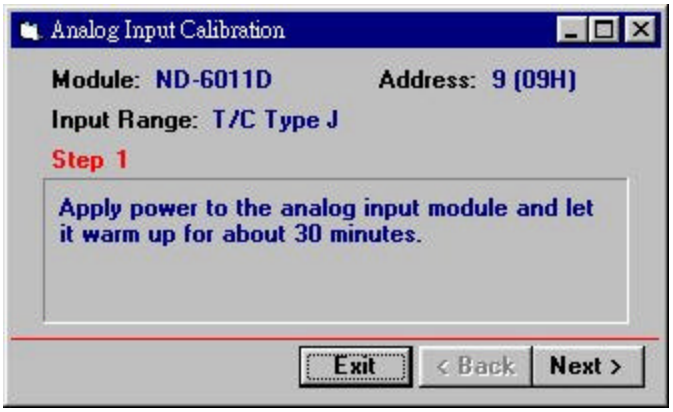


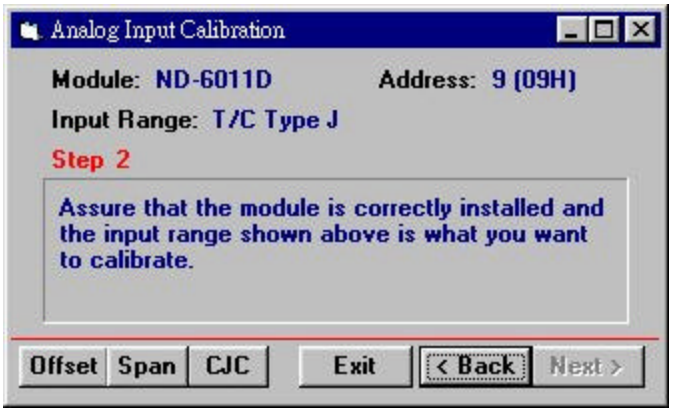
Operation-Run Batch	:	Run batch command file in BATCH.CMD user can edit this text file.
Operation-Step Batch	:	Run the batch command step by step.
Operation-Display Batch	:	Display content of BATCH.CMD
Operation-Repeat	:	Repeat one command n times

Diag ICON for Operation-Diagnostic
This dialog is different by different-fuction modules.


Digital I/O Module Diagnostic
Module: ND-6058 F/W Rev.: A1.50
Address: 1 (01H)
Port A (input)
7 6 5 4 3 2 1 0
Port B (input)
7 6 5 4 3 2 1 0
Port CH (output)
3 2 1 0
Port CL (output)
3 2 1 0
Digital Input
3 2 1 0
Exit

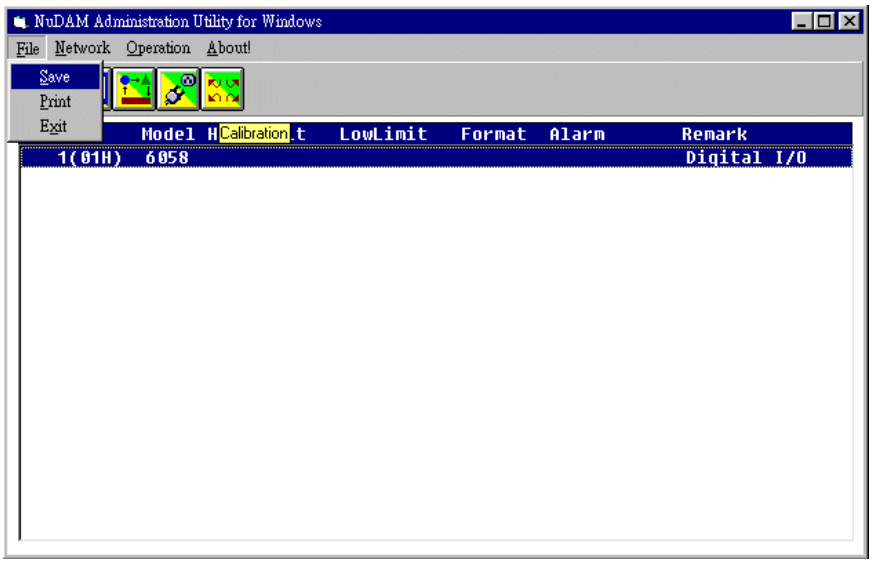
Cal ICON for Operation-Calibration
This dialog is different by different-fuction modules.





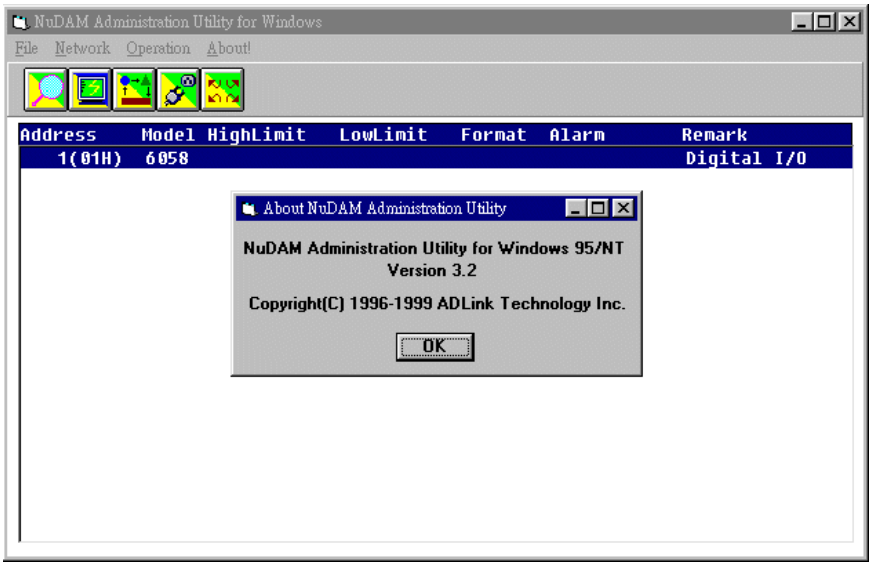
5.3.4 Save and Print OMR modules' information

File-Save	:	Save all exist OMR modules information as display as in the listbox in the current RS-485 network.
File-Print	:	Print the OMR module information in the listbox.
File-Exit	:	Quit the OMR Administration Utility.



5.3.5 Version Information

Help-About Version information



6. Troubleshooting and Maintenance

Preventive Maintain

- Periodic check for loose connection

ATTENTION: To avoid electircal shock or unintended operation of the module, remove incoming power before checking connections.

Using the LED Indication

The LED provides status information on Modules operation. The troubleshooting about shows LED indicator. It also shows how to use the LED to detect and correct common operating problems.

LED	What it Means:	What to do:
OFF	1. Module is not receiving input power by loosing wiring.	1.Check module wiring, cable connections, and cable connections on terminal block.
ON(RED)	1.Normal receiving state.	1.No action required.
Flashing	1.Normal transmitting state.	1. No action required.

Other Malfunctions

Problem	What it Means:	What to do:
Do not function	1.Loose wiring 2.Incorrect DIP switch setting	1. Check wiring and cable connection 2. Check Baudrate and data packet setting of the DIP switch.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP