OPERATIONS MANUAL

DATA BROADCAST UNIT

DBU-16

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FOR TECHNICAL SUPPORT CALL:

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PT # 158015-C

SAFETY WARNING

Always observe standard safety precautions during installation, operation and maintenance of this product. To avoid the possibility of electrical shock, be sure to disconnect the power cord from the power source before you remove the IEC power fuses or perform any repairs.

PROPRIETARY NOTICE

WARRANTY NOTICE

WARRANTIES: East Coast Datacom, Inc. (hereafter referred to as E.C.D.) warrants that its equipment is free from any defects in materials and workmanship. The warranty period shall be three (3) years from the date of shipment. E.C.D.'s sole obligation under its warranty is limited to the repair or replacement of defective equipment, provided it is returned to E.C.D., transportation prepaid, within a reasonable period. This warranty will not extend to equipment subjected to accident, misuse, alterations or repair not made by E.C.D. or authorized by E.C.D. in writing.

PUBLICATION NOTICE

This manual has been compiled and checked for accuracy. The information in this manual does not constitute a warranty of performance. E.C.D. reserves the right to revise this publication and make changes from time to time in the content thereof. E.C.D. assumes no liability for losses incurred as a result of out-of-date or incorrect information contained in this manual.

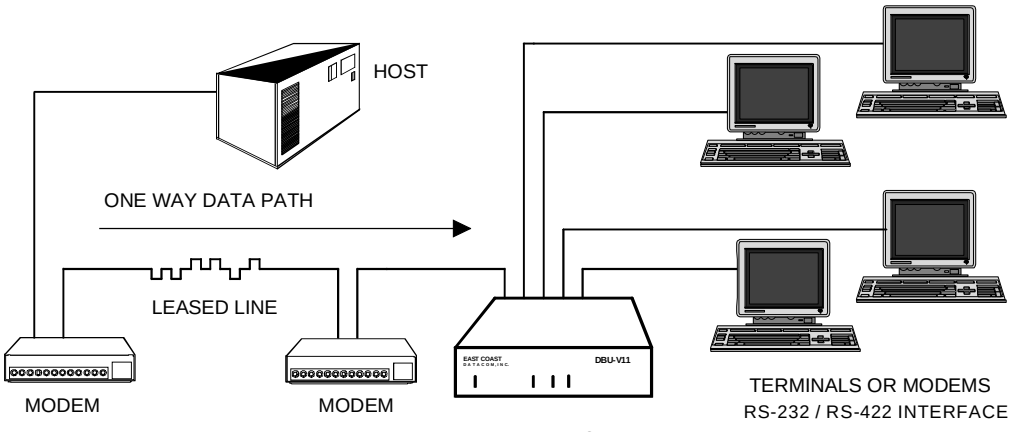
1.0 DESCRIPTION

The DBU-16 is designed for use in receive only async data broadcast applications. The unit has two separate input ports, capable of accepting RS-232 or RS-422(or any V.11 compliant interface) data. The user must select, via a slide switch the preferred input method. Additionally, the unit has a dedicated cascade port for chaining DBU-16 units together.

The DBU-16 continuously broadcasts receive data from the input port. The input signals are split with the internal circuitry and rebroadcast out on sixteen output ports. The output ports are divided into four sections. Each section has four output ports capable of RS-232 or RS-422(or any V.11 compliant interface). Front panel LED indicators illuminate in green or yellow depending on the data type(RS-232 or RS-422).

The user may also utilize the DBU-16 as a interface converter. This function allows RS-232 input data to be broadcast as RS-422 data or RS-422 data to be broadcast as RS-232 data. Utilizing RS-422(V.11) can support data transmissions at far greater cable distances than does RS-232. The DBU-16 can support an unlimited amount of receive only devices simultaneously.

The DBU-16 is housed in a sturdy aluminum 1U rackmount enclosure and is supplied with an internal linear power supply. The unit has a 110/220 VAC rotary select switch located on the rear of the housing.



TYPICAL APPLICATION

1-1

2.0 BASIC OPERATION

The DBU-16 is comprised of a 1U high rackmount ***Base Unit*** and sixteen output RJ-45 connectors. Operation of the DBU-16 is as simple as connecting a male DB-9 cable into the female DB-9 ***INPUT PORT*** on the rear panel and connecting up to sixteen male RJ-45 connectors into the front panel output ports(16 ports total). Async Data is received on the **Input Port** and is broadcast out simultaneously on the RJ-45 output ports.

2.1 BASE UNIT

2.1.1 REAR PANEL POWER CONNECTORS

Located on the rear panel of the DBU-16 base unit you will find an IEC power receptacle. The supplied power cord plugs into this receptacle. This receptacle also contains a fuse drawer. Two(2) fuses are located in this compartment.
A rotary 110/220 VAC power switch is located next to the IEC module. For 110 VAC +/- 10% operation the unit is equipped with 0.32ma slow blow fuses. For 220 VAC +/- 10% operation the unit is equipped with 0.16ma slow blow fuses.

2.1.2 SLIDE SWITCHES - BASE UNIT

Located on the rear panel of the DBU-16 base unit are two slide switches marked INPUT SELECT and OUTPUT SELECT. The *input select* switch must be set to ***RS-232*** or ***RS-422*** depending on the users configuration.
The *output select* must be set to ***ON*** if the user is cascading DBU-16 units or other devices together. It must be set to **OFF** is the port is not being used.

2.1.3 REAR PANEL LED INDICATORS

The *Power* indicator, marked **PWR** illuminates when AC voltage is applied to the box.
The *INPUT PORT* has two associated LED's that illuminate when the slide switch is set accordingly; **1)** *Green* for RS-232 input **2)** *Green* for RS-422(V.11) input
The *CASCADE PORT* has two associated LED's that illuminate when the slide switch is set accordingly; **1)** *Green* for ON **2)** *Yellow* for OFF

2.1.4 RS-232, DB-9 FEMALE INPUT

The RS-232 input port is configured as a DTE interface.

PIN 1	DCD	CONNECTED TO PIN 7 (RTS)
PIN 2	**RX DATA**	**INPUT TO BOX**
PIN 3	TX DATA	NO CONNECTION
PIN 4	DTR	CONNECTED TO PIN 8 (CTS)
PIN 5	GROUND	GROUND INTO BOX
PIN 6	DSR	NO CONNECTION
PIN 7	RTS	CONNECTED TO PIN 1 (DCD)
PIN 8	CTS	CONNECTED TO PIN 4 (DTR)
PIN 9	RI	NO CONNECTION

2.1.5 RS-422(V.11), DB-9 FEMALE INPUT

The RS-422(V.11) input port is configured as a DTE interface.

PIN 1	SIGNAL GROUND		
PIN 2	**RX DATA**	**RX DATA -**	**INTO BOX**(negative lead)
PIN 3	CHASSIS GROUND		
PIN 4	NO CONNECTION		
PIN 5	NO CONNECTION		
PIN 6	**RX DATA**	**RX DATA +**	**INTO BOX**(positive lead)
PIN 7	NO CONNECTION		
PIN 8	NO CONNECTION		
PIN 9	NO CONNECTION		

2.1.6 RS-422(V.11), DB-9 MALE OUTPUT CASCADE

The RS-422(V.11) output port is configured as a DCE interface.

PIN 1	SIGNAL GROUND		
PIN 2	**RX DATA**	**RX DATA -**	**INTO BOX**(negative lead)
PIN 3	CHASSIS GROUND		
PIN 4	NO CONNECTION		
PIN 5	NO CONNECTION		
PIN 6	**RX DATA**	**RX DATA +**	**INTO BOX**(positive lead)
PIN 7	NO CONNECTION		
PIN 8	NO CONNECTION		
PIN 9	NO CONNECTION		

2.2 OUTPUT RJ-45 PORTS

The output ports are designed to support RS-232 or RS-422 async signals.

2.2.1 RJ-45 OUTPUT CONNECTORS

The RJ-45 output ports are configured as a DCE interfaces. The output signal is selectable as either RS-232 or RS-422.

PIN 1 SIGNAL GROUND
PIN 2 SIGNAL GROUND
PIN 3 TX DATA OUT (RS-232)
PIN 4 SIGNAL GROUND
PIN 5 TX DATA OUT - (RS-422 negative lead)
PIN 6 SIGNAL GROUND
PIN 7 TX DATA OUT + (RS-422 positive lead)
PIN 8 SIGNAL GROUND

NOTE: Signal Ground must be used, you may choose any lead

2.2.2 SLIDE SWITCHES - OUTPUT PORTS

Located on the DBU-16 base unit PCB are 16 RJ-45 Ports. The output ports have an internal slide switch that must be set to either ***RS-232*** or ***RS-422*** depending on the users configuration. Each section of the output ports are divided into 4-Ports. The associated slide switch affects the 4-Ports they located next to. The base unit does not have to be powered down when moving the slide switches.

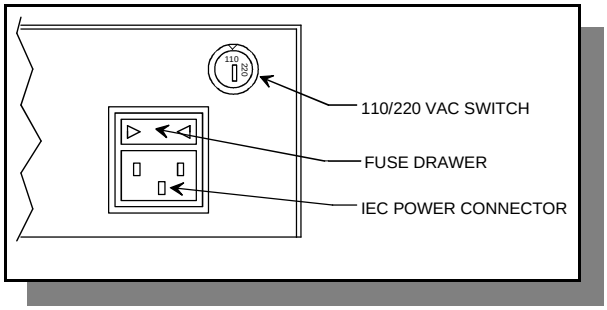
2.2.3 LED INDICATORS - OUTPUT RJ-45 PORTS

Located on the front of the DBU-16 are sixteen RJ-45 output ports. Each RJ-45 has an associated *Green* or *Yellow* LED that is illuminated with data activity. A *Green* LED indicates RS-232 data and a *Yellow* LED indicates RS-422(V.11) data. If the user does not see the proper color, remove the top cover and position the slide switch to RS-232 or RS-422 accordingly.

3.0 SETUP AND INSTALLATION

3.1 POWER CONNECTION

It is ***very*** important to check that the unit is set to the correct voltage setting for your application before applying AC power. Located on the rear of the unit you will find a rotary 110/220 VAC switch. Using a coin or small screwdriver, *gently* turn the switch to the appropriate power position as required for your installation (110 or 220 VAC).



3.2 INSTALLATION

Located on the base unit rear panel, set the slide switch to match your input data interface type of either RS-232 or RS-422. Connect the async input data feed source to the appropriate **INPUT** port DB-9 female connector. Connect your RJ-45 data cables to an output port. The LED should now be illuminated in either green for RS-232 or yellow for RS-422.

3.3 CASCADING

The user may connect multiple DBU-16 units together via the cascade port located on the rear panel. Set the slide switch to ON(green illuminated) and the output is RS-422 voltage levels. The cable must now be connected to the RS-422 INPUT port of another DBU-16 unit. The output ports may be set to RS-232 or RS-422 signal levels.
If the CASCADE port is not being utilized, set the slide switch to OFF(yellow illuminated).

** High quality shielded cables are recommended for box to box cascading. The cabling should be twisted pair with a foil or wire mesh shield. Keep the +/- signal pairs together for clean quality signals.

3.4 EQUIPMENT GROUNDING

Jumper **J5** provides for grounding interconnection in those systems requiring a connection between Pin #1 (*frame ground*) and Pin # 8 (*signal ground*). Move the header to positions 2&3 to connect the two grounds. The factory default is set to positions 1&2(no connection).

3.5 INTERFACE CONVERTER CAPABILITY

The DBU-16 has the capability of a interface converter. Input data may be RS-232 and output data may be RS-422 or input data may be RS-422 and output as RS-232.

4.0 TECHNICAL SPECIFICATIONS

Applications
Multiple async data broadcasting

Capacity
One to Input Data Source
Up to sixteen Output Ports

Data Format
Data transparent at all data rates

Data Rates
RS-232 up to 128Kbps
RS-422(V.11) up to 2.048Mbps

Input Electrical Interface
RS-232 or RS-422 signal levels

Input Connectors
DB-9 female connectors

Output Electrical Interface
RS-232 or RS-422(V.11) signal levels

Output Connectors
RJ-45 female

Enclosure
Aluminum

Regulatory Approvals
UL 60950-1:2003, CAN/CSA-C22.2 No. 60950-1:2003
FCC Part 15, EN55022:2006, ICES-003, Class A

Indicator Lights
Rear Panel: Power(PWR), Port Select, Cascade Select Front Panel: RS-232 Data(Green), RS-422 Data(Yellow) Indicate

Power Requirement
100-120/200-220 VAC @$\pm$10%, 47 to 63 Hz, 7 Watts
Switch selectable

ENVIRONMENTAL
Operating Temperature: 32° to 122 F (0° to 50° C)
Relative Humidity: 5 to 90% non-condensing
Altitude: 0 to 10,000 feet

Dimensions
Height: 1.75 inches (4.44 cm)
Width: 17.00 inches (43.18 cm)
Length: 9.00 inches (22.86 cm)

Weight
4.5 lbs (2.1 Kg)

Shock and Vibration
Withstands normal shipping

Altitude
9842 feet (3000 meters)

5.0 NOTES: