

Atrie
WireSpan 600/610
MODEM
User's Manual



WireSpan 600 / 610

Fractional E1 Access Unit

Installation and Operation manual

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CHAPTER 1

Introduction

1.1 Overview

WireSpan 600 is a cost-effective, single-port fractional E1 access unit. The fractional E1 service makes unused time slots on long-range E1 trunks available for other users.

WireSpan 600 provides a synchronous data channel that supports user-selectable transmission rates. The available data rates are integer multiples of 64 kbps; the multiples range is 1 through 32, corresponding to a maximum of 2048 kbps. The user's payload data is packed in the corresponding number of time slot of an E1 (CEPT 2.048 Mbps) data stream, for transmission over public or private E1 networks.

Versions

WireSpan 600 is available on two models:

- **WireSpan 600** – fractional E1 access unit, for applications that integer multiples of 64kbps range from 1 through 32, corresponding to a maximum of 2048 kbps.
- **WireSpan 610** – Unframed only, for applications that fix 2048M bps data rate.

Applications

Figure 1-1 shows a typical WireSpan 600 / 610 applications

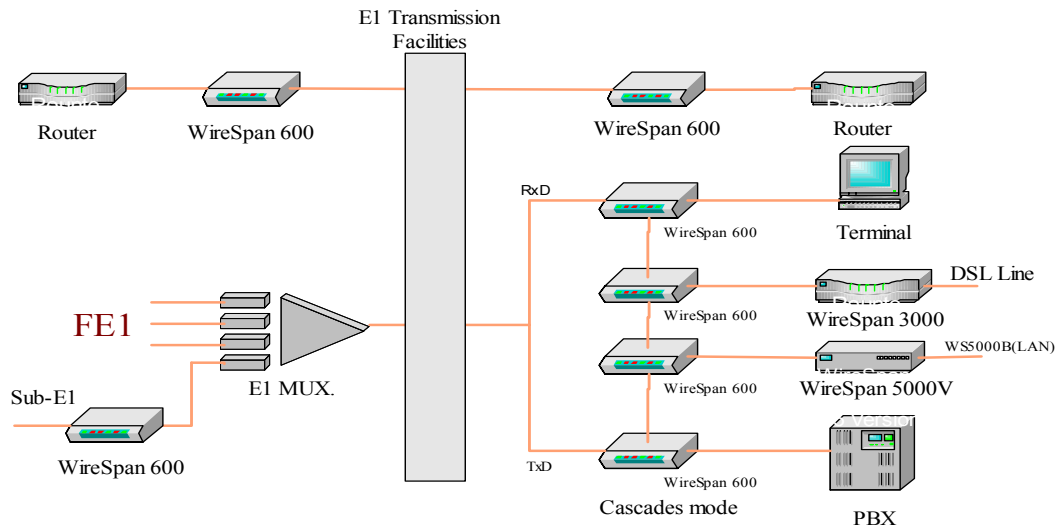


Figure 1-1. Typical WireSpan 600 Application

Features

- E1 or fractional E1 access unit
- Support one digital data port
- Selectable sync data rates of $n \times 64$ kbps, up to 2048 kbps
- V.35, RS-530, RS-449 or X.21 data interfaces
- Framing format : PCM31, PCM30 – with or without CRC-4
- Zero suppression : AMI, HDB3
- E1 interface complies with : ITU G.703, G.704, G.732, G.823, G.706
- Unframed over E1

Options

WireSpan 600 is available with the following option:

- 90 – 120 or 230V(10%),47-63 Hz Adapter
- DTE or DCE data port changeable cable
- WireSpan 610 is simple version with unframed mode

1.2 Physical Description

WireSpan 600 / 610 are designed for desktop installation. Installation procedures for the WireSpan 600 / 610 models and respective versions are provided in Chapter 2, *Installation and Setup*.

Top Panel

LED's

The LED indicators on the top panel (see *Figure 1-2*) indicate the operating status of WireSpan 600. Various indicators display status of E1 or data port, alert conditions, work mode.

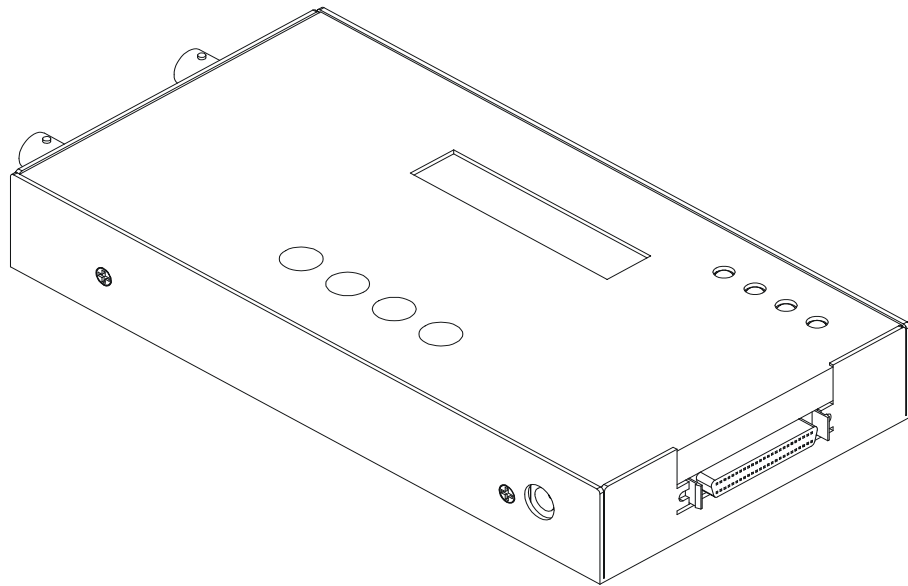


Figure 1-2. General View

Connectors

The power and interface connectors are located on the lateral panel of WireSpan 600 / 610. A description of the lateral panel can be found in *interfaces and connectors*.

1.3 Functional Description

WireSpan 600 / 610 has a synchronous user's data port interface. The electrical interface is user-selectable. The user's data port is terminated in a 50-pin SCSI-type female connector. ITU-T Rec. V.35, EIA RS-530, RS-449 and X.21 interfaces are supported by means of adapter cables.

The user's data port has two timing modes:

- **DCE** – WireSpan 600 provides transmit and receive clocks for the user's equipment connected to the data port. And accepts XTC clock from the equipment. *Figure 1-3* shows the flow of timing signals through the user's data port in the DCE mode.

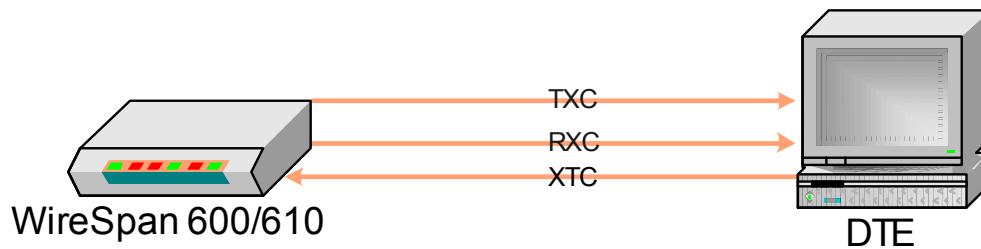


Figure 1-3 DCE Description

- **DTE** – WireSpan 600 sends the receive data accompanied by the receive clock to the user's equipment connected to the data port, and accepts data from the equipment according to the equipment transmit clock. *Figure 1-4* shows the flow of timing signals through the user's data port in the DTE mode.

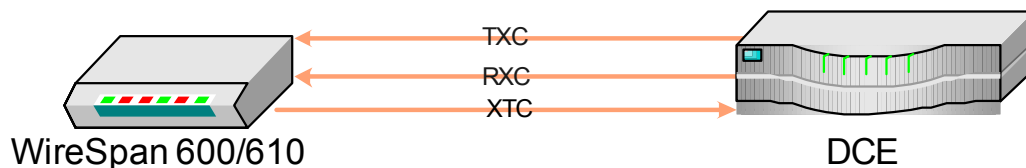


Figure 1- 4 DTE Description

E1 Interface Characteristics

The WireSpan 600 E1 link interface meets the requirements of ITU-T Rec. G.703, G.704, G.706, G .823.

The E1 link has two line interfaces: a 120-ohm balanced line interface terminated in a RJ-48 eight-pin female connector, and a 75-ohm unbalanced interface terminated in two BNC female coaxial connectors. Line coding is HDB-3 or AMI. The nominal balanced interface transmit level is $\pm 3V$, and the unbalanced interface transmit level is $\pm 2.37V$. Jitter performance complies with the requirements of ITU-T Rec. G.823.

The E1 link interface supports PCM 31 frames (time slot 16 available for user's data), and PCM 30 frames (time slot 16 not available for user's data). WireSpan 600 also supports the CRC-4 option specified in ITU-T Rec. G.704. The framing mode and the use of the CRC-4 option are independently selectable by the user.

In addition, WireSpan 600 can also operate in the unframed mode. In this mode, WireSpan 600 / 610 operates as an interface converter, enabling the transfer of unstructured 2.048 Mbps data streams (or data streams with proprietary framing generated by equipment with ITU-T Rec. V.35, EIA RS-530, EIA RS-449), and X.21 interfaces via the E1 network.

Note The WireSpan 610 always operates in unframed mode.

The user can select the number of main link time slots used to carry the payload data.

The timing of the receive path of the WireSpan 600 / 610 E1 link interface is always locked to the clock signal recovered from the received line signal. The timing of transmit path can be locked to one of the following three sources:

- Internal clock oscillator, having an accuracy of ± 30 ppm
- The recovered receive clock signal. The maximum track range is ± 130 ppm
- Lock data port clock signal. The maximum track range is ± 100 ppm

Control of WireSpan 600 Operation

WireSpan 600 is designed for fully automatic, unattended operation. Its configuration is determined by keypads and LCD-menu. Top panel LED indicators and LCD display show the operating status of WireSpan 600. Various indicators display the E1 link status and user's data port status, and alert when an alarm condition (major or minor) or test loops are present in the system.

WireSpan 600 / 610 has comprehensive diagnostic capabilities that

include LL and DL loopbacks, controlled by top panel keypads and LCD-menu. Maintenance is further enhanced by a power-up self-test.

Selection of System Timing Mode

This section explains the interaction between the user's port timing mode, and the E1 link transmit timing mode.

- **Internal timing mode:** The WireSpan 600 / 610 E1 link transmit signal is derived from the internal clock oscillator. This timing mode used is necessary in point-to-point application over leased lines, e.g., short-range applications, where one WireSpan 600 / 610 must provide the timing reference for the link. In this case, one WireSpan 600 / 610 must use the internal oscillator, and other must operate on the recovered clock signal. Note that when the internal oscillator is used, the DCE or DTE timing mode should be selected to synchronize the user data rate to the E1 link timing.

Figure 1-5 shows a typical system application using the internal timing mode on conjunction with DCE timing.

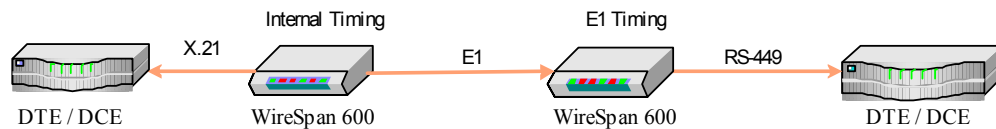


Figure 1-5 Internal timing mode

- **E1 timing mode:** With E1 timing, the WireSpan 600 / 610 link transmit signal is locked to the recovered E1 receive clock. This is usually the timing mode selected for network operation, as shown in *Figure 1-6*. In the application illustrated in *Figure 1-6*, the master clock of the network determines the timing of the two WireSpan 600 / 610 units. In case the E1 receive signal is lost, WireSpan 600 / 610 automatically switches to the internal oscillator.

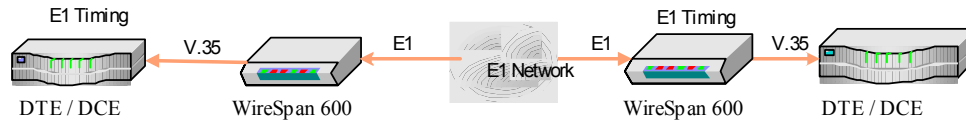


Figure 1-6 E1 timing mode

- DTE/DCE timing mode:** The E1 transmit signal is locked to the recovered DTE or DCE receive clock, as shown in *Figure 1-7*. And the other equipments must operate on the recovered E1 clock signal. This is usually the timing mode selected for E1-Mux. application.

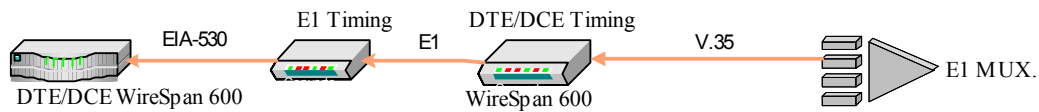


Figure 1-7 DTE/DCE timing mode

1.4 Technical Specifications

E1 Link Interface	<i>Framing</i>	Unframed mode PCM31 without CRC-4 PCM31 with CRC-4 PCM30 without CRC-4 PCM30 with CRC-4
	<i>Bit rate</i>	2.048 Mbps
	<i>Line code</i>	HDB3 AMI
	<i>Line impedance</i>	Balanced interface 120 ohms Unbalanced interface 75 ohms
	<i>Signal levels</i>	Transmit level: Balanced interface $\pm 3V \pm 10\%$ Unbalanced interface $\pm 2.37V \pm 10\%$ Receive level 0 to -36dB
	<i>Jitter performance</i>	As per ITU-T Rec. G.823

	<i>Connectors</i>	Balanced interface RJ-48 eight-pin connector Unbalanced interface Two BNC coaxial connectors
	<i>Transmit timing</i>	Internal- ± 30 ppm oscillator E1- Locked to the recovered E1 receive clock, tracking range ± 130 ppm DTE/DCE- Locked to the recovered DTE or DCE receive clock, tracking range ± 100 ppm
User's Data port	<i>Connector Interface</i>	50-pin, SCSI-type female V.35, RS-530, Rs-449, and X.21 supported by adapter cables
	<i>Bit rates</i>	Framed modes- $n \times 64$ kbps, where n equals 1, 2, 3, ..., 31 Unframed mode- 2048 kbps
	<i>Control signals</i>	CTS follows E1 sync or constantly ON, user-selectable DSR follows E1 sync or constantly ON, user-selectable DCD follows E1 sync or constantly ON, user-selectable.
	<i>Signals polarity</i>	Transmit data and receive clock operates normal or invert
TimeSlot allocation	<i>Framed modes</i>	User data inserted in user assert time slots Others can be bypassed User-selectable idle code in empty time slots (7F or FF)
	<i>Unframed mode</i>	Bit-by-bit transfer from data port to E1 link
Diagnostics	<i>Test loops</i>	Local loopback (LL), towards local DTE or DCE Digital loopback (DL), towards local E1 link

Indicators

power indicator SYNC E1 sync
loss indicator BPV alarm
indicator AIS alarm indicator

Mechanical Characteristics**Power Requirements**

Use external power adapter
Support voltage:
90-120 VAC±10%, 47 to 63 Hz
230 VAC±10%, 47 to 63 Hz
Power consumption 5Watt

Environmental*Temperature*

0 to 50°C

Characteristics*Humidity*

Up to 90%, non-condensing

CHAPTER 2

Installation and Setup

2.1 General

This chapter provides instructions for mechanical and electrical installation of the WireSpan 600 /610 model.

After installing the unit, refer to Chapter 3, *Operation* for operating instructions. In case a problem is encountered, refer to Chapter 4 *Troubleshooting & Diagnostics* for test and diagnostics instructions.

Warning: No internal setting, adjustment, maintenance, and repairs may be performed by either the operator or the user; such activities may be performed only by a skilled technician who is aware of the hazards involved. Always observe standard safety precautions during installation, operation, and maintenance of this product.

2.2 Site Requirements & Prerequisites

AC powered WireSpan 600 / 610 units should be installed within an easily accessible, grounded AC outlet capable of furnishing the nominal supply voltage (100-115 or 230 VAC, in accordance with your order).

The ambient operating temperature of WireSpan 600 / 610 is 0 to 50°C at a relative humidity of up to 90%, non-condensing

2.3 Package Contents

A preliminary inspection of the equipment container should be made before unpacking. Evidence of damage should be noted and reported immediately. The WireSpan 600 / 610 package includes the following items:

- WireSpan 600 unit or Wirespan 610 unit

- CD disk or Installation and Operation Manual
- External power adapter
- Data port connection cable depending on user order

2.4 Equipment Needed

The cables you need depend on the application. Cable terminated in appropriate connectors provides support for the following data port interfaces:

- **V.35 interface:** the interface adapter cable ends in a 34-pin connector
- **RS-530 interface:** the interface adapter cable ends in a 25-pin D-type connector
- **RS-449 interface:** the interface adapter cable ends in a 37-pin D-type connector
- **X.21 interface:** the interface adapter cable ends in a 15-pin D-type connector

The required cables are available from ATRIE, or can be prepared in accordance with the port connector wiring information given in Appendix A, *Interface Specifications*. The available cable and their respective uses are listed in *Table 2-1*

Table 2-1. Data Port Interface Cables

Cable	Purpose			
	Port Interface	Cable Connector End-Type	User Equipment	Length
V35T	V.35 DCE	M34 Female	V.35 DTE	1 meter
V35C	V.35 DTE	M34 Male	V.35 DCE	1 meter
530T	EIA-530 DTE	DB-25 Female	EIA-530 DTE	1 meter
530C	EIA-530 DCE	DB-25 Male	EIA-530 DCE	1 meter
449T	RS-449 DTE	DB-37 Female	RS-449 DTE	1 meter
449C	RS-449 DCE	DB-37 Male	RS-449 DCE	1 meter
X21T	X.21 DTE	DB-15 Female	X.21 DTE	1 meter
X21C	X.21 DCE	DB-15 Male	X.21 DCE	1 meter

2.5 Interfaces and Connections

Both the WireSpan 600 and WireSpan 610 versions use the same

printed circuit board, the procedure is the same.

Warning : **ELECTRICAL SHOCK HAZARD:** Access to the inside of the unit is permitted only to qualified and authorized service personnel. Any adjustment, maintenance, and repair of the opened instrument under voltage should be avoided as much as possible and, when inevitable, should be carried out only by a skilled technician who is aware of the hazard involved. Capacitors inside the instrument may still be charged even after the instrument has been disconnected from its source of supply.

Caution WireSpan 600 / 610 contains components sensitive to electrostatic discharge (ESD). To prevent ESD damage, avoid touching internal components and before moving jumpers, touch the WireSpan 600 / 610 frame.

E1 Link Connections

WireSpan 600 / 610 E1 link has an RJ-48C eight-pin connector for the balanced interface, and two BNC connectors for the unbalanced interface. Appendix A, *E1 Balanced Port Connector* provides the pin allocation for the RJ-48C connector.

Connector the E1 link cables to the connector(s) corresponding to the interface in use.

Warning **Do not connect to both the balanced and unbalanced connectors!**

- When using the balanced interface, connect to the RJ-48C connector
- When using the unbalanced interface, connect to the two BNC connectors designated TX and RX. Pay attention to the correct connection of the receive and transmit cables to the TX and RX connectors.

The maximum allowable line attenuation between the WireSpan 600 E1 link port and the network interface is

1000 Ft / 26AWG in general case.

Data Port Connections

The WireSpan 600 / 610 user data port has a 50-pin SCSI-type female connector.

Connect the DTE / DCE link cable to the SCSI connector after setting pin-out configuration corresponding to the interface in use.

Connecting the Power

WireSpan 600 / 610 is available in models that differ in the rated supply voltage: 120, 230 or 240 VAC.

Before first-time installation, check that the power-adaptor nominal supply voltage, marked on a label on its top panel, matches the nominal voltage available at your mains outlet.

2.6 Setup

After Installation, You must be to check below list:

- The Power LED indicator always lights when WireSpan 600 / 610 is powered.
- The LCD Display will warming-up after 10 seconds.

To configure setting the WireSpan 600 use keypads and LCD on top panel as shown in Figure 2-1. The settings are listed in Table 2-2. You can follow the rules below table to setup the WireSpan 600.

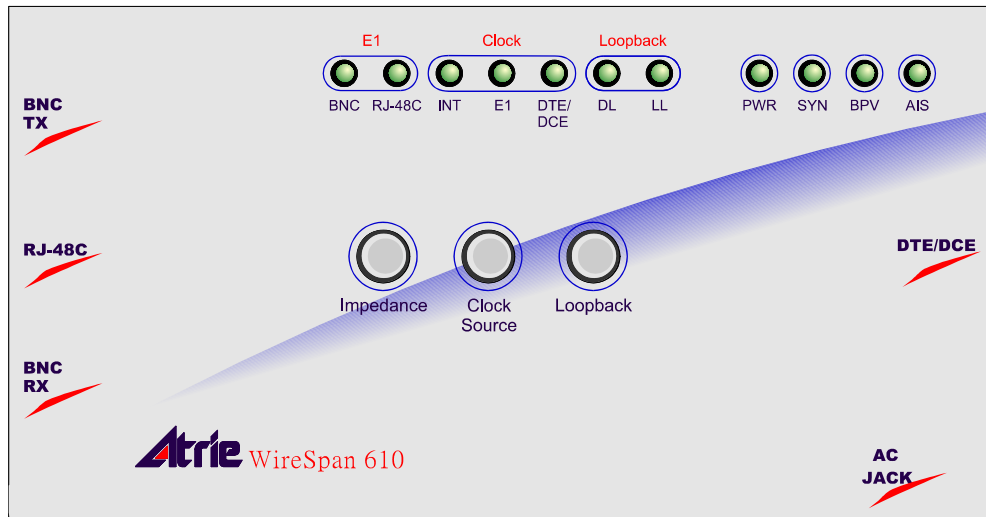
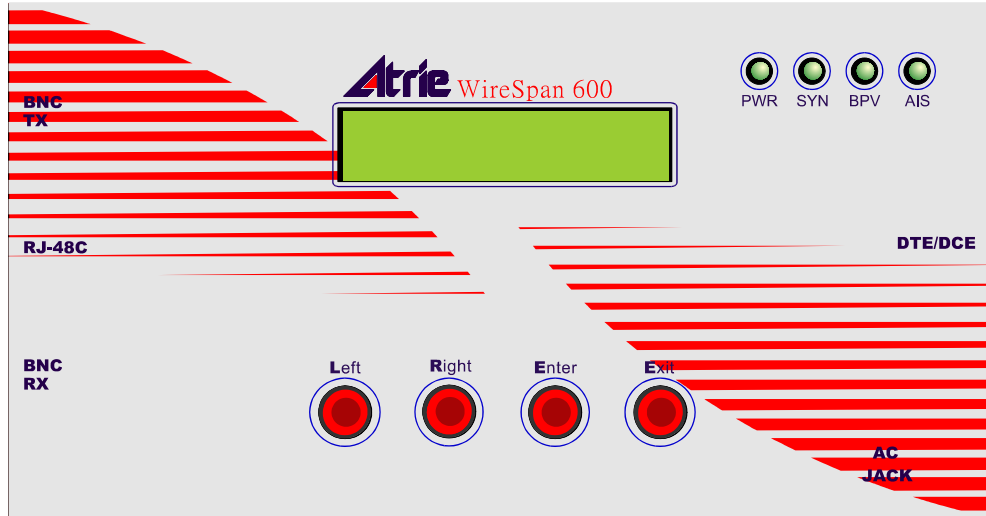


Figure 2-1. WireSpan 600 / 610 Top Panel View

Table 2-2 Settings

Identification of Setting	Function	Settings	Factory Setting
Main→ E1 SETUP → Framing	Select E1 Frame operating mode	PCM31 - CCS without CRC4 PCM31+CRC - CCS with CRC4 PCM30 - CAS without CRC4 PCM30+CRC - CAS with CRC4	PCM31

Main→ E1 SETUP → Idle Code	Selects the idle code transmission	7F – Symbol in HEX. FF – Symbol in HEX. Pass –Pass through E1 Rx timeslot data to Tx.	Pass
Main→ E1 SETUP → Line Coding	Select E1 port coding, frame structure	AMI HDB3	HDB3
Main→ E1 SETUP →Impedance	Selection of E1 link interface	BNC – unbalanced 75 ohms interface RJ48C – balanced 120 ohms interface	RJ48C
Main→ E1 SETUP →Clock source	Selects System reference clock	INTERNAL - follow internal oscillator E1 (G703) –locked to E1 recovered receive clock. In case the E1 receive signal is lost, switches to the internal oscillator automatically. DTE/DCE –follow user data port receive clock.	E1 (G703)
Main→ TS Mapping	Select use timeslot and operating data rate	ALL – Setting all timeslot to carry data or non-used. *- enable timeslot to carry data F – inhabited by Framing	Enable timeslot 1 for data port
Main→ DTE/DCE SETUP→DSR Option Main→ DTE/DCE SETUP→CTS Option	Select data port control signal operate mode	Follow SYNC – When E1 link synchronization, signals will be active ALWAYS ON – Enable always	Follow SYNC

Main→ DTE/DCE			
SETUP→DCD			
Option			
Main→ DTE/DCE	Select data port	NORM – normal	NORM
SETUP→ Clock	timing mode	operate mode	
Polarity		INV – Invert data port	
Main→ DTE/DCE		receive clock or	
SETUP→ Data		transmit data	
Polarity			

After setting any configuration with WireSpan 600 /610, the internal NVRAM will save setting immediately. When occur power down-to-up process, the Wirespan 600 / 610 will recover setting automatically.

CHAPTER 3

Operation

3.1 General

In this chapter you will find detailed operating instructions for the WireSpan 600 / 610 versions.

The information presented in this chapter includes:

- Description of indicators and LCD screens.
- Operating procedures

Refer to Chapter 4, *Troubleshooting & Diagnostic* and troubleshooting instructions.

3.2 Indicators

Figure 3-1 and *Figure 3-2* illustrates the top panel of WireSpan 600 / 610.

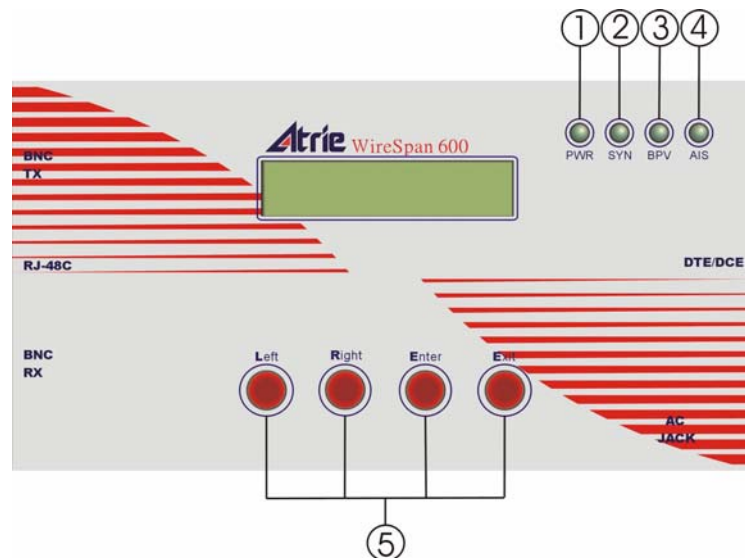


Figure 3-1 WireSpan 600 panel

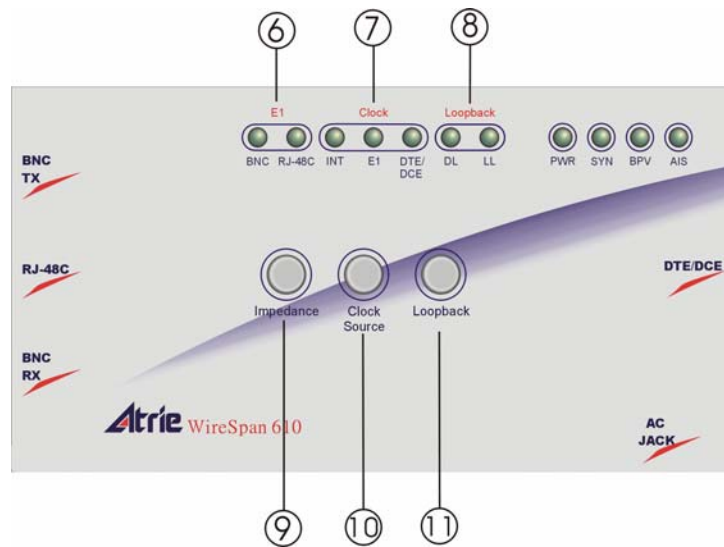


Figure 3-2 WireSpan 610 panel

Table 3-1 lists the functions of the controls and indicators located on the top panel of the WireSpan 600 / 610. The index number in *Table 3-1* correspond to the item numbers in *Figure 3-1* and *Figure 3-2*.

Table 3-1

N	Control or Indicator	Function
1	PWR indicator	Lights when WireSpan 600 / 610 is powered
2	SYN indicator	Lights when the E1 link port synchronization
3	BPV indicator	Lights when one or more bipolar violations detected on E1 link receiver.
4	AIS indicator	Lights when two consecutive double frames each contain two or fewer zeros out of 512 bits, and when framing alignment is lost.
5	Left, Right, Enter, Exit buttons	When depressed, activates the LCD screen to move to next by your choose.
6	BNC / RJ48C indicator	Lights to indicate E1 link port selected
7	INT / E1 / DTE(DCE)	Lights to indicate clock sources selected
8	DL / LL	Lights to indicate loopback selected, if clean to operate in normal case
9	Impedance button	When depressed, changes setting between BNC and RJ48C.
10	Clock Source button	When depressed, changes the Clock reference source. Keep to depress will to change into next mode.

11	Loopback button	When depressed, activates LL / DL / Normal cycle.
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3.3 Operating Instructions

WireSpan 600 / 610 are designed for unattended operation. After settings are completed, WireSpan 600 / 610 operates automatically.

Connect the AC power adapter to the mains outlet, the WireSpan 600 / 610 powered on automatically. Initially, WireSpan 600 / 610 performs a self-test. Observe the following top-panel indicator:

- During the self-test, all the WireSpan 600 / 610 indicators should illuminate: confirm that all are operating
- During the test second step, all the indicators except PWR must blink
- Following the test, all the indicators except PWR WireSpan 600 / 610 are now ready for operation.

Normal Indications

During normal operation, the PWR and SYN indicators must light. All the other indicators must be off.

Fault Indications

If a fault occurs, the BPV and/or AIS alarm indicators light, and data transfer may be interrupted. To obtain additional information, observe the state of the LCD screens and then refer to *Troubleshooting Instructions* for troubleshooting information.

3.4 LCD displays

The following sections describe the major options of the menu tree. Please refer to *Appendix B* for detail structure of the menu tree.

Not: The section provide with WireSpan 600 unit only

Main Menu

E1-E1 PCM31 RJ48C V35T 1984K

E1: First E1 indicates the operate mode. Other includes LL or DL
When operates loopback function.

E1: Second E1 indicates reference clock sources such as INT or DTE.

PCM31: To indicate the E1 link framing type

RJ48C: To indicate the E1 link interface type such as BNC.

V35T: To indicate the user data port cable type such as below list

- V35T: SCSI-V35 Female cable, to connect V.35 DTE equipment and default setting.
- V35C: SCSI-V35 Male cable, to connect V.35 DCE equipment.
- 530T: SCSI-EIA 530 Female cable, to connect EIS-530 DTE equipment.
- 530C: SCSI-EIA 530 Male cable, to connect EIS-530 DCE equipment.
- 449T: SCSI-RS 449 Female cable, to connect RS-449 DTE equipment.
- 449C: SCSI-RS 449 Male cable, to connect RS-449 DCE equipment.
- X21T: SCSI-X21 Female cable, to connect X.21 DTE equipment.
- X21C: SCSI-X21 Male cable, to connect X.21 DCE equipment.

1984K: To indicate data port data rate.

TimeSlots mapping menu

TS00-07 31:1984K ALL [F*****] 01

TS00-07: To indicate the screen timeslot range

31: total assigned timeslots

1984K: user data port data rate (equal = total timeslots x 64K bps)

ALL: all timeslots(by framing type) are assigned or dis-assigned.

Note When framing is PCM31, the timeslot 0 is inhibited. Its

means TS 0 cannot be assigned by user. When framing is PCM30, the timeslot 0 and 16 are inhibited. When unframed mode, all timeslot can assigned by user.

F: Inhibited timeslot (Framing Used)

∗: user assign carry data timeslots

01: To indicate the cursor position timeslot number

E1 Link port alarm status

E1 STATUS LOF:∗ YEL:∗ CRC:∗

LOF: Receive loss of frame alignment

YEL: Receive yellow alarm

CRC:When use frame mode with CRC, Receive error
CRC-4 code

∗: Error or loss occurs

Data port control signals status

Control Signals CTS:∗ RTS:∗ DCD:∗

Control Signals DSR:∗ DTR:∗

∗: activates

CHAPTER 4

Troubleshooting & Diagnostics

4.1 General

This chapter presents information related to the WireSpan 600 / 610 diagnostics functions. The information presented in this chapter include:

- User-controlled test functions
- Troubleshooting

4.2 User-Controlled Test Functions

Loopback Function

The user-controlled test functions are activated by means of the buttons and LCD screen.

Digital Loopback

Pressing Loopback button on top panel of WireSpan 610 or find the function in Menu-tree of WireSpan 600. The digital loopback returns the data sent by the remote E1 equipment towards the remote E1 equipment. In case, clock reference source will change to E1 automatically. Signal path shown in *Figure 4-1*. On Main menu screen you can find “DL” to confirm setting surely.

This test checks the connections between two E1 equipments, and the local E1 link port interface.

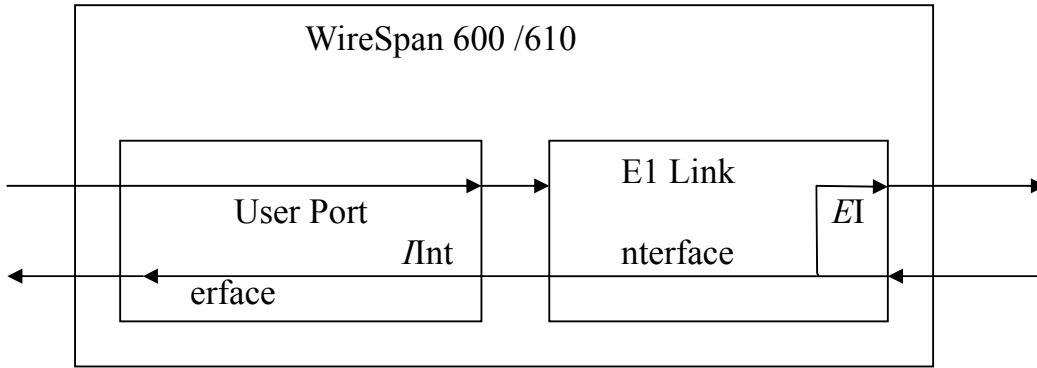


Figure 4-1 Digital Loopback

Local Loopback

Pressing Loopback button on top panel of WireSpan 610 or find the function in Menu-tree of WireSpan 600. The local loopback returns the data sent by the local user's equipment towards the local user's equipment. The loopback is performed by connecting the data port transmit signal to the input of the data port receive path, within the data port interface of the local WireSpan 600 / 610. Signal paths are shown in *Figure 4-2*.

This test checks the connections between the local WireSpan 600 / 610 and the local user's equipment, and the local data port interface.

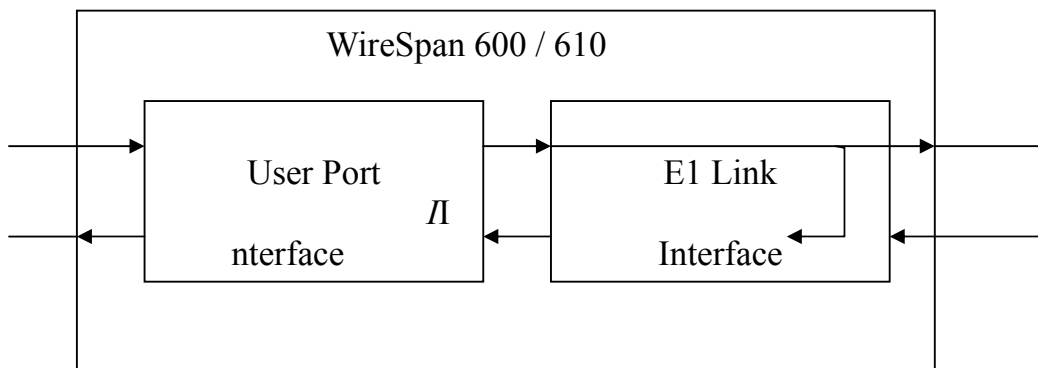


Figure 4-2. Local Loopback

4.3 Troubleshooting Instructions

Preliminary Checks

In case a problem occurs, perform the following preliminary checks:

- Check the configuration of the local and remote WireSpan 600 / 610 units against the prescribed configuration
- Check cable connections, and the equipment used on the E1 link connecting the local WireSpan 600 / 610 to the remote equipment
- Observe the top-panel indicators and analyze the indications. Refer to *Status Indications* for descriptions of indicator functions.

Troubleshooting

If the trouble cannot be corrected by performing the preliminary checks listed above, use the information in *Table 4-1* to identify the trouble symptoms and perform the actions listed under Corrective Measures in the order given until the problem is corrected.

If the problem cannot be corrected by carrying out the listed actions, have the Wirespan 600 / 610 check by the technical support personnel.

Table 4-1 Troubleshooting Chart

N	Trouble Symptoms	Probable Cause	Corrective Measures
1	WireSpan 600 / 610 are “dead” (all the indicators, including PWR, are off)	1. No power 2. Defective WireSpan 600 /610	Check that both ends of the WireSpan 600 / 610 power cable are properly connected, and that power is available at the outlet Replace the WireSpan 600 / 610
2	Local WireSpan 600 / 610 reports sync loss	1. External problem	Activate the local loopback. Check that local WireSpan 600 / 610 SYN indicator is ON. If the indicator is ON, the problem is external

3	BPV indicator on the local Wirespan 600 / 610 blinks	1. Defective Wirespan 600 / 610	<p>Activate the local loopback. Check that the local WireSpan 600 / 610 SYN indicator is On.</p> <p>If indicator off, turn the local Wirespan 600 / 610 on with the local loopback activated.</p> <p>Check that the BPV and AIS alarm indicator turns off. If not, replace the WireSpan 600 / 610</p>
		2. Problems on the E1 link	<p>Troubleshoot the E1 link between the local and the remote WireSpan 600 / 610</p>
4	Data port control signals are off	1. Local user's equipment is off, or is idle	<p>Check that the user's equipment is powered, and its control signal lines are asserted. Perform self-test on the equipment</p>
		2. Defective cable	<p>Activate the local loopback, and check that the local user;s equipment receives its own transmission. If not, replace the cable connecting it to the Wirespan 600 / 610</p>
5	Local equipment does not receive the data sent by the remote equipment	1. External problem	<p>Activate the digital loopback, and check remote E1 equipment receives its own transmission. If not, troubleshoot the remote Wirespan 600 /610 and thee E1 link</p>
		2. Problem at local end	<p>Perform the activities listed in No.4 above</p>
		3. Problem at remote end	<p>Perform the activities listed in No.4 above</p>
6	No transmission of data	Data port interface not inserted correctly	<p>Re-insert data port interface cable</p>

APPENDIX A

Interface Specifications

A.1 E1 Balanced Port connector

The E1 balanced port interface is terminated in an eight-pin RJ-48C connector, designated E1 LINK, and wired in accordance with *Table A-1*

Table A-1. E1 LINK Connector, Pin Allocation

Pin	Function
1	Transmit Data Out (tip)
2	Transmit Data Out (ring)
3	Not Connected
4	Receive Data In (tip)
5	Receive Data In (ring)
6	Not Connected
7,8	Not Connected

A.2 Data Port Connector

The data port interface is terminated in a 50-pin SCSI-type female connector, wired in accordance with *Table A-2*.

Table A-2. Data Port connector Wiring

Pin	Designation	Direction	Function
1	FGND	-	Frame ground
2	RxD (B)	OUT	RX data – B wire
3	RxD (A)	OUT	RX data – A wire
4	N / A	-	Not Connected
5	N / A	-	Not Connected
6	RxC (B)	OUT	RX CLK – B wire
7	RxC (A)	OUT	RX CLK – A wire
8	DCE_DCD (B)	IN	Carrier detect from DCE – B wire
9	DCE_DCD (A)	IN	Carrier detect from DCE – A wire
10	TxC (B)	OUT	TX CLK – B wire

11	TxC (A)	OUT	TX CLK – A wire
12	N / A	-	Not Connected
13	DCE_TxC (B)	IN	TX CLK from DCE – B wire
14	DCE_TxC (A)	IN	TX CLK from DCE – A wire
15	TM	OUT	Test mode
16	N / A	-	Not Connected
17	DTR	IN	Data transfer request
18	RTS	IN	Request to send
19	RLB	IN	Remote loopbak
20	LLB	IN	Local loopbak
21	N / A	-	Not Connected
22	ETC (B)	IN	External CLK – B wire
23	ETC (A)	IN	External CLK – A wire
24	ID (3)	IN	Cable ID code bit 3
25	ID (2)	IN	Cable ID code bit 2
26	DSR (B)	OUT	Data set ready – B wire
27	DSR (A)	OUT	Data set ready – A wire
28	CTS (B)	OUT	Clear to send – B wire
29	CTS (A)	OUT	Clear to send – A wire
30	DCD (B)	OUT	Carrier detect – B wire
31	DCD (A)	OUT	Carrier detect – A wire
32	ID (1)	IN	Cable ID code bit 1
33	ID (0)	IN	Cable ID code bit 0
34	SG	-	Signal ground
35	N / A	-	Not Connected
36	N / A	-	Not Connected
37	N / A	-	Not Connected
38	DSR	OUT	Data set ready
39	CTS	OUT	Clear to send
40	DCD	OUT	Carrier detect
41	DTR (B)	IN	Data transfer request – wire B
42	DTR (A)	IN	Data transfer request – wire A
43	N / A	-	Not Connected
44	N / A	-	Not Connected
45	RTS (B)	IN	Request to send – wire B
46	RTS (A)	IN	Request to send – wire A
47	N / A	-	Not Connected
48	TxD (B)	IN	TX data – wire B

49	TxD (A)	IN	TX data – wire A
50	SG	-	Signal ground

Adapter Cables for WireSpan 600 / 610 Data Port

ATRIE offers adapter cables data equipment to the 50-pin SCSI-type connector of WireSpan 600 / 610 wiring and the pin allocations in the user side connectors are given in *Table A-3* and *Table A-4*.

Table A-3. Wirespan 600 / 610 Channel Interface Adapter Cable – DCE Clock Mode

Pin	Direction	Designation	V.35	EIA-530	RS-449	X.21
1	-	FGND	A	1	1	1
2	OUT	RxD (B)	T	16	24	11
3	OUT	RxD (A)	R	3	6	4
4	-	N / A				
5	-	N / A				
6	OUT	RxC (B)	X	9	26	13
7	OUT	RxC (A)	V	17	8	6
8	-	N / A				
9	-	N / A				
10	OUT	TxC (B)	AA	12	23	-
11	OUT	TxC (A)	Y	15	5	-
12	-	N / A				
13	-	N / A				
14	-	N / A				
15	OUT	TM	K	25	18	-
16	-	N / A				
17	IN	DTR	H	-	-	-
18	IN	RTS	C	-	-	-
19	IN	RLB	BB	21	14	-
20	IN	LLB	J	18	10	
21	-	N / A				
22	IN	ETC (B)	W	11	35	
23	IN	ETC (A)	U	24	17	-
24	IN	ID (3)	-	-	-	-
25	IN	ID (2)	-	-	19	8
26	OUT	DSR (B)	-	22	29	-

27	OUT	DSR (A)	-	6	11	-
28	OUT	CTS (B)	-	13	27	-
29	OUT	CTS (A)	-	5	9	-
30	OUT	DCD (B)	-	10	31	12
31	OUT	DCD (A)	-	8	13	5
32	IN	ID (1)	-	7	-	8
33	IN	ID (0)	-	-	-	-
34	-	SG	B	7	19	8
35	-	N/A				
36	-	N/A				
37	-	N/A				
38	OUT	DSR	E	-	-	-
39	OUT	CTS	D	-	-	-
40	OUT	DCD	F	-	-	-
41	IN	DTR (B)	-	23	30	-
42	IN	DTR (A)	-	20	12	-
43	-	N/A				
44	-	N/A				
45	IN	RTS (B)	-	19	25	10
46	IN	RTS (A)	-	4	7	3
47	-	N/A				
48	IN	TxD (B)	S	14	23	9
49	IN	TxD (A)	P	2	5	2
50	-	SG	B	7	19	9

Tabel A-4. Wirespan 600 / 610 Channel Interface Adapter Cable – DTE Clock Mode

Pin	Direction	Designation	V.35	EIA-530	RS-449	X.21
1	-	FGND	A	1	1	1
2	OUT	TxD (B)	S	14	23	9
3	OUT	TxD (A)	P	2	5	2
4	-	N/A				
5	-	N/A				
6	OUT	ETC (B)	W	11	35	-
7	OUT	ETC (A)	U	24	17	-
8	-	N/A				
9	-	N/A				
10	-	N/A				

11	-	N / A				
12	-	N / A				
13	IN	TxC (B)	AA	12	23	-
14	IN	TxC (A)	Y	15	5	-
15	OUT	RL	BB	21	14	-
16	-	N / A				
17	IN	DSR	E	-	-	-
18	IN	CTS	D	-	-	-
19	IN	TM	K	25	18	-
20	IN	DCD	F	-	-	-
21	-	N / A				
22	IN	RxC (B)	X	9	26	13
23	IN	RxC (A)	V	17	8	6
24	IN	ID (3)	-	-	-	-
25	IN	ID (2)			19	8
26	OUT	DTR (B)	-	23	30	-
27	OUT	DTR (A)	-	20	12	-
28	OUT	RTS (B)	-	19	25	-
29	OUT	RTS (A)	-	4	7	-
30	-	N / A				
31	-	N / A				
32	IN	ID (1)	-	7	-	8
33	IN	ID (0)	B	7	19	8
34	-	SG	B	7	19	8
35	-	N / A				
36	-	N / A				
37	-	N / A				
38	OUT	DTR	H	-	-	-
39	OUT	RTS	C	-	-	-
40	OUT	LLB	J	-	-	-
41	IN	DSR (B)	-	22	29	-
42	IN	DSR (A)	-	6	11	-
43	-	N / A				
44	-	N / A				
45	IN	CTS (B)	-	13	27	-
46	IN	CTS (A)	-	5	9	-
47	-	N / A				

48	IN	RxD (B)	T	16	24	11
49	IN	RxD (A)	R	3	6	4
50	-	SG	B	7	19	8

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