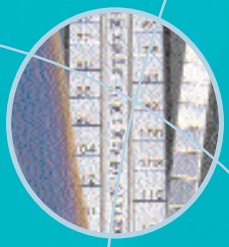
emutel™ | Symphony

BRI S/U, PRI E1/T1 ISDN and Analog Emulator

emutel™|Symphony is a convenient and flexible Basic Rate ISDN, Primary Rate ISDN and Analog network simulator that is ideal for product development, testing and demonstrations. With support for S, U, E1, T1 and analog interfaces you can use the **emutel™|Symphony** to test and develop a full range of ISDN and analog equipment.

emutel™|Symphony has an optional comprehensive protocol analyser that allows you to decode and analyse layers 1, 2 and 3 of the D channel to varying levels of detail. You can also develop for other countries' networks using the range of support cards - choose from either Euro-ISDN, North American, NTT, VN3, 1TR6 or BTNR191.

emutel™|Symphony can be managed/configured remotely using the optional internal modem for dial up management. Attach to the unit from any PC via the LAN or through the terminal connection locally to configure and monitor the system.



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emutel™ | Symphony

S, U, E1, T1 and analog interfaces

Simulate different country's networks - Euro-ISDN, North American, NTT, VN3, BTNR191 or 1TR6

Wide range of supplementary services

Simple configuration / management using Windows application or ANSI based terminal

Configuration and analysis over LAN or serial port

Remote configuration and control using optional modem or LAN

Helpful LEDs show the status of each interface at a glance

Semi-permanent/nailed-up connection for testing leased line operation

Dual mode operation - simulate both semi-permanent/nailed-up connection and NT simulation at the same time

X.25 for testing and demonstrating packet switching equipment

Power feeding supported on BRI interfaces

Flash memory for easy software upgrades

By simulating the operation of a Central Office Switch, **emutel™|Symphony** can provide a combination of Primary Rate ISDN, Basic Rate ISDN and/or Analog telephone connections which may be used just like regular ISDN lines or employed to carry out equipment testing. **emutel™|Symphony** is a modular 3 slot system comprising a system controller and up to 2 selectable plug-in expansion cards so you can build the network simulator to fit your needs (see options listed in the specification).

emutel™|Symphony can be managed/configured locally or remotely with an option of an internal modem for dial up management. Attach to the LAN and configuration and analysis can be done from a remote PC in the network. This allows you to operate **emutel™|Symphony** in another building but configure and monitor the unit from another location. Optional protocol analysis is also available on **emutel™|Symphony**.

Almost every feature of **emutel™|Symphony** can be customised, for example, the entire directory numbering structure can be changed. Special numbers activate network conditions such as User Busy or Call Rejected and line power can be switched on or off.

emutel™|Symphony is extremely easy to use with indicator LEDs showing at a glance what each terminal is doing and a windows application program displaying protocol analyser information and allowing extensive device configuration.

emutel™|Symphony is a truly international product. By plugging in personality cards the system can emulate ISDN variants in a whole range of different countries. Cards are available for Euro-ISDN (Europe), AT&T 5ESS, National-ISDN and Nortel DMS100 (North America), BTNR 191 (UK), VN3 (France), ITR6 Germany) and NTT (Japan).Network dependent supplementary services are also supported.

At just 5 Kg **emutel™|Symphony** is easily portable and, since terminals can be powered directly from the interfaces, it really is the ideal system for use at demonstrations, presentations and exhibitions. In addition, **emutel™|Symphony's** universal power supply, which automatically switches between 240V and 110V, ensures that the system is transferable between the US and Europe without any adaptations.

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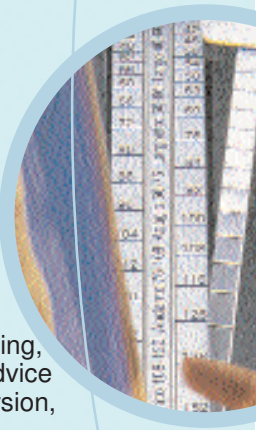
Specification:

Configuration (user defined)	**System controller** with optional 2xPRI (E1/T1 software selectable), 2xS module or 2xU module **Expansion card 1**: 8xPRI (E1/T1 software selectable), 8xBRI S, 8xBRI U [2B1Q] or 16xanalog telephone module **Optional expansion card 2**: 8xPRI (E1/T1 software selectable), 8xBRI S, 8xBRI U [2B1Q] or 16xanalog telephone module
BRI Interface Power	40V, 1W Normal and Restricted on S; 88V, 3W Normal and Sealing on U
Analog Telephone Interface	-36V line feed, REN4, RJ11
LAN	Ethernet 10BaseT, RJ45
Internal Modem	V.34 modem (optional), RJ11
Semi-Permanent Connection	Semi-permanent/nailed-up connection on BRI/PRI B channels
B Channels	2 per BRI, 6-30 per PRI E1 and 6-23 per PRI T1
Display Indicators	P (physical) and B (B channel) per interface
Protocol analyser (option)	Layer 1, 2, and 3 can be analysed for both ISDN and X.25: Configuration for all networks irrespective of networks simulated
Network Variants	ITU (supplied as standard), Euro-ISDN (Europe), NAT-1/DMS100/5ESS (North America), BTNR191 (UK), VN2/3 (France), 1TR6 (Germany) and NTT (Japan)
D Channel Packet	X.25 on BRI1/BRI2, 100 logical calls in DCE mode
User Interface	Windows application or VT100 Terminal (V.24 Interface DB9 connection)
Directory Numbering BRI	Two numbers per interface normal, ten numbers per interface if using DDI/MSN and one number per interface for auxiliary working
Directory Numbering PRI	Thirty numbers per interface normal, one hundred numbers per interface if using DDI/MSN and one number per interface for auxiliary working
Supplementary Service Support	Various depending on network simulated: **Euro-ISDN** - Caller Line Identification, Multi Sub Numbering, Subaddressing, User to User Signalling, Terminal portability, Connected Party Number, Advice of Charge/Billing, Call Waiting, Call Hold, Explicit Call Transfer, Call Diversion, Malicious Call Identification, Three Party Calling **Nat-1** - Caller Line Identification, Subaddressing, User to User Signalling, Flexible Calling, EKTS Call Appearance Call Handling, Hold Conference Drop Transfer **AT&T 5ESS** - Caller Line Identification, User to User Signalling, EKTS Call Appearance Call Handling, Hold Conference Drop Transfer **DMS 100** - Caller Line Identification, Subaddressing, User to User Signalling **NTT** - Caller Line Identification, Multi Sub Numbering, Subaddressing, User to User Signalling, Advice of Charge/Billing **1TR6** - Caller Line Identification, Multi Sub Numbering, Subaddressing, User to User Signalling **VN3** - Caller Line Identification, Multi Sub Numbering, Subaddressing, User to User Signalling, Terminal portability **BTNR191** - Caller Line Identification, Multi Sub Numbering, Subaddressing, User to User Signalling, Terminal portability
Test Tones	Dial, Busy, Error, Ringing and Selected Tones 300Hz-3400Hz, +3dBm to -26dBm
Power Requirements	90-260 Vac, 100W
Environmental	0-50°C, 10-80% Humidity (Non Condensing)
Weight	5 Kg
Size	12cm(h) x 48cm(w) x 38cm(d) (desktop) 9cm(h) x 48cm(w) x 39cm(d) (19" rack)
Warranty	**emutel|Symphony** is has with one year's product warranty and free technical support



Price and availability of **emutel™|Symphony** can be requested by contacting the **Wavetel** marketing team. The following configurations and options are available on **emutel™|Symphony**

1. Choose which system controller you require:

System controller (no active interfaces) in desktop case	PO36
System controller (no active interfaces) in rackmount case	PO36/RACK

2. Select the expansion cards you require (maximum 2 cards per unit):

BRI option (8xBRI U interface)	PO36/8U
BRI option (8xBRI S interface)	PO36/8S
Analog option (16xAnalog interface)	PO36/16A
PRI option (8xPRI E1/T1 software selectable)	PO36/8ET

3. Select if you require additional optional upgrades:

PRI Upgrade for system controller (2xPRI E1/T1)	PO36/2ET
BRI Upgrade for system controller (2xBRI - 2xS)	PO36/2S
BRI Upgrade for system controller (2xBRI - 2xU)	PO36/2U
Internal Modem option	PO36/MOD
Protocol Analyzer option	PO36/PA
Protocol support cards:	
Euro-ISDN	PO36/EURO
North American (Nat-1/AT&T5ESS/DMS100)	PO36/NA
1TR6	PO36/GER
VN3	PO36/VN3
BTNR191	PO36/BT
NTT	PO36/NTT

WAVETEL - is a company focusing on Telecommunications Test Solutions. WAVETEL designs, develops and sells ISDN, XDSL, SS7, V5 and PSTN protocol and traffic analysers for QOS measurement, troubleshooting and optimizing telecommunications systems.

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