BLACK BOX®
NETWORK SERVICES

Emutel Series
Emutel Solo and Emutel Duo

Emutel Solo

• Small, portable and lightweight battery powered basic rate ISDN network

• Different versions simulate Euro-ISDN, North American or NTT networks

• Two S/U software selectable Basic Rate ISDN Interfaces allow you to simulate all of the functionality of a regular ISDN line - and much more

• Simple configuration using Windows application or ANSI based terminal

• Helpful LEDs show the status of each interface at a glance

• Delays on B channels test effects of satellite delays on videoconferencing equipment

• Leased line operation for testing permanent connection equipment

• X.25 for testing and demonstrating packet switching equipment

• Power feeding supported on BRI interfaces

• Universal power supply allows you to use emutel|Solo in any country

• emutel|Solo's weight, size and battery power unit make it a convenient portable network for exhibitions and on site customer demonstrations

Emutel Duo

• Ideal for product development, testing and demonstrations

• A wide range of interface types allow you to simulate all of the functionality of regular ISDN lines - and much more

• 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

• Transparent mode allows you to connect a terminal to a regular ISDN line and monitor its operation using the protocol analyser

• Two external X.21 ports provide connections for external test equipment such as BERT testers

• Helpful LEDs show the status of each interface at a glance

• Test and develop products for another country's network. emutel|Duo can emulate different variants of ISDN by changing the network personality card

• Depending on network type a range of supplementary services are supported

• Universal power supply allows you to use **emutel|Duo** in any country

• Leased line operation for testing permanent connection equipment

• X.25 for testing and demonstrating packet switching equipment

• Power feeding supported on BRI interfaces

• emutel|Duo's weight, size and universal power supply make it a convenient portable network for exhibitions and on site customer demonstrations

Emutel Solo

By simulating the operation of a Central Office Switch, emutel|Solo provides two software selectable ISDN (S [4wire]) / U [2wire]) connections which may be used just like regular ISDN lines or employed to carry out equipment testing.

Almost every feature of emutel|Solo 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. Line power can be switched on or off and delays can even be introduced into the B channels to emulate satellite links.

emutel|Solo is also extremely easy to use with indicator LEDs showing at a glance what each terminal is doing and a windows application program allowing simple device configuration. emutel|Solo is powered from an external universal power unit or from an internal 0.8AH 12V rechargeable battery. At just 1.5 Kg emutel|Solo 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.

Emutel Duo

By simulating the operation of a Central Office Switch, emutel|Duo provides 3 Basic Rate ISDN (S [4 wire] or U [2 wire] selectable in software menu) and optional Primary Rate ISDN (E1/T1 software selectable) connections which may be used just like regular ISDN lines or employed to carry out equipment testing. There is a separate connector for S and U interface on each BRI.

emutel Duo is supplied with protocol analysis and Euro-ISDN network personality card as standard. emutel|Duo can be managed/configured locally or remotely with an option of an internal modem for dial up management. emutel|Duo can be attached to the LAN and configuration and analysis can be done from a remote PC in the network. This allows you to operate emutel|Duo in another building but configure and monitor the unit from another location.

Almost every feature of emutel|Duo 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|Duo is also 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|Duo 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 BTNR191 (UK), VN3 (France), Euro-ISDN (Europe), 1TR6 (Germany), NTT (Japan) and AT&T 5ESS, National-ISDN & Nortel DMS100 (North America). Network dependent supplementary services are also supported.

At just 2.5 Kg emutel|Duo 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|Duo '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.

Emutel Solo Specifications
Features & Capabilities

BRI Interface	2 S/U software selectable
BRI Interface Power	40V, 1W Normal and Restricted on S 55V, 1.5W Normal and Sealing on U
D Channel Packet	X.25 on BRI1/BRI2, 100 logical calls in DCE mode
Display Indicators	P (physical), D (datalink), S/U operation port power status and B1/B2 (B channel) per interface
Network Variants	Euro-ISDN (Europe), North American (NAT-1/DMS100/5ESS) and NTT (Japan)
Semi-Permanent Connection	Semi-permanent/nailed-up connection on BRI B channels
User Interface	Windows application or VT100 Terminal (V.24 Interface DB9 connection)
B Channel Delay	0-750 ms on Interface 1, B1 and B2 independently
Directory Numbering	Two numbers per Interface normal and ten numbers per Interface if using DDI/MSN
Test Tones	Dial, Busy, Reorder, Alerting, and Selected Tones 300 Hz-3400 Hz, +3dBm to -26dBm
Power Requirements	18V DC/ Internal Battery (Power Adapter Included)
Environmental	0-50oC, 10-80% Humidity (Non Condensing)
Weight	1.5 Kg
Size	5cm(h) x 16cm(w) x 19cm(d)
Warranty	emutel|Solo is supplied with one year's product warranty

Emutel Duo
Features & Capabilities

BRI Interfaces	3 (S and U [2BIQ] selectable in software menu)
PRI Interfaces	2 (E1/T1 software selectable)
BRI Interface Power	40V, 1W Normal and Restricted on S 88V, 5W Normal and Sealing on U
LAN	Ethernet 10BaseT, RJ45
Internal Modem	V.34 modem (optional), RJ11
Transparent Operation	Available on PRI and BRI Interfaces
X.21 Data Port	4 (1 per interface) 64K-1920K DCE for external equipment access to B channels
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
Clock Synchronisation	1 master emutel|Duo can drive up to 3 slave emutel|Duos to lock ISDN clocks
Display Indicators	P (physical), D (datalink), 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

Directory Numbering BRI	Two numbers per Interface normal and ten numbers per interface if using DDI/MSN
Directory Numbering PRI	Thirty numbers per Interface normal and one hundred numbers per interface if using DDI/MSN
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, Reorder, Alerting, and Selected Tones 300 Hz-3400 Hz, +3dBm to -26dBm
Power Requirements	80-260 Vac, 40W
Environmental	0-50oC, 10-80% Humidity (Non Condensing)
Weight	2.5 Kg
Size	8cm(h) x 36cm(w) x 32cm(d)
Warranty	emutel|Duo is supplied with one year's product warranty * Supplied as standard

Ordering Information for Emutel Duo

Emutel Solo Basic Rate ISDN Network Simulator   ISU9060

Emutel Duo Basic Rate Primary Rate ISDN Network Simulator
including protocol analyser and Euro-ISDN
        Basic System (3 x BRI Only)   ISU9070
        PRI Upgrade (2xPRI)   ISU9070-PRI
        Internal Modem Option   ISU9070-MOD

You may also need…
        Support Cards
            ITR6   ISU9070-GER
            VN3   ISU9070-FRA
            BTNR191   ISU9070-UK
            Euro-ISDN   ISU9070-EURO
            North American   ISU9070-USA
            NTT   ISU9070-JAP