GET CONNECTED WITH
BETTERBOX®

Interface converters are devices that match one type of physical and electrical circuit or circuits to another. Such converters do not process data or change the code, mode, protocol or speed of the data. BetterBox® is proud to offer you one of the widest ranges of interface converters available on the market. V.24 to X.21, RS-485 to V.24, V.35 to V.24, etc, powered and unpowered, we have them all.

Data Transparent Converters

These can be further subdivided into categories:

● **Low Speed Converters:** These are used where it is perhaps more convenient to convert data than to replace a system. For example, you may have a serial port on your PC but have a parallel printer, in such cases it may be cheaper to buy a converter than a new printer.

● **High Speed Converters:** As PTT's throughout the world developed, so they adopted particular standards. Quite often these standards were not the same as those used in the development of equipment. For example US manufacturers based their designs on the standards used by the US Telecommunications companies whereas UK manufacturers based their designs on those standards in use in the UK. Incompatibilities mean that as the world comes closer together through telecommunications so devices are needed to allow data to pass between the different standards.

● **Niche Converters:** Standards which are specific to an organisation or industry, create niche markets where only those standards exist. One such example is the Military with standards like MIL-STD 188. Converters exist specifically to convert from these niche protocols to standard protocols like ASCII, for use on PCs and other commercial products.

Interface Converters

The majority of converters you will encounter will be Data Transparent, where it is the electrical parameters only that are converted. For example an RS232 to parallel or X.21 to G.703 converter simply passes the user data through from one device to another unaltered. Protocol Converters are more rare and are used when you want to convert from one protocol, generally proprietary, to another more standard one like ASCII. With protocol converters the format of the data string is changed, a good example is with IBM services where they have a few proprietary standards such as the EBCDIC protocol.
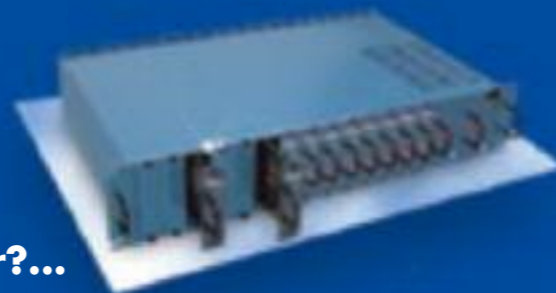
So, what has BetterBox® got to offer?...

BetterBox® provides you with a range of quality converters, some for common applications and others for the more unusual, all designed to meet your requirements. A popular choice for those needing an NTU is our SAT 3000, this is a high speed converter allowing commercial standards such as X.21 and V.35 to connect to G.703/G.704 interfaces. A low-cost unit it features SNMP and in-band remote management capability. This NTU/DSU provides regulatory approved access to private or carrier networks operating at speeds up to 2.048Mbits/s. Network managers can then access the full performance statistics of the line such as error counts and unavailable seconds. This product is just one of many, carefully selected to provide you with the best solutions at the right prices.

Converters
Interface & Protocol

E1V3524 Interface Converter

Description

The E1V3524 provides safe and seamless connection between different devices with different interfaces. Used widely in connecting WAN and LAN, video monitor. data interface is DCE, connect with DTE or DCE. The main E1 link may be clocked from the recovered receive clock (LBT), from the data port, or from an internal oscillator.

The G.703 port provides for either 75 Ohm unbalanced connection via BNC connectors or 120 Ohm balanced connection via RJ-45/48. The E1V3524 DIP and slide switches, located on the front panel, provide for easy setup and control of all functions.

FEATURES

● Provides both E1 interface options: 75 Ohm unbalance and 120 Ohm balance
● V.35 support hot plug-in technology
● V.35 interface have multi clock and timing for option.
● Provide 4 clock types: E1 master V.35/V.24 external or internal, E1 slave V.35/V.24 external or internal.
● V.35/V.24 interface can connected with other DCE equipment
● Provide 2 loop functions: E1 local loop, V.35 local loop.
● Power supply option: AC220V, DC-48V, +24V. The positive and negative terminal can be exchanged for DC-48V,+24V, easy for installation and maintenance.
● Active clocks can support inter-clock, external-clock, and line clock.

SPECIFICATIONS

● E1 interface parameters:
● Channel capacity: 1 Channels
● Bit Rate: 2.048 Mb/s ±50 ppt
● Line Code: HDB3
● Line Impedance: 120 Ohm / 75 Ohm
● Connector: RJ-45 or BNC
● Pulse Shape: ITU-T G.703
● Jitter Performance: ITU-T G.823
● Clocking options: inter-clock, line-clock
● V.35 interface:
● Interface Rate: 2.048Mbps+-50ppm.
● Interface character: match V.35/V.24.
● Connector: DB25 male/female (optional).
● Interface type: DCE.
● Clock: G.703 derived clock, internal / external clock

Power
● AC: 90 to 260 VAC ; 47 ~ 63Hz
● DC: -48V (-36 to -72V); +24 V (Optional)

Order Code	Description	Price
G-E1-V35/AC	AC powered E1-V35 converter	£215.00
G-E1-V35/DC	DC powered E1-V35 converter	£215.00
G-E1-V24/AC	AC powered E1-V24 converter	£195.00
G-E1-V24/DC	DC powered E1-V24 converter	£195.00

NEW

Free Unlimited Technical Support

FREE AND UNLIMITED PROFESSIONAL ADVICE

You can talk to our Support Team direct, 5 days a week between 0830hrs to 1800hrs. Your call will be answered by an engineer which means you talk directly to someone who can help, not an automated answering service. With over 100 years of combined experience in Datacomms, our Support Team is able to advise you on every aspect of your network.

Call us on 01908 561400 to ensure you get the best advice & service.

CONVERTERS (vertical, left margin)

E1 Serial Interface Converter

Description

Flexible G.703/4 (full or fractional) E1/T1 to V.35/X.21/V.11 interface converter. Very "soft", network-wide management & visibility via Ethernet of serial port with diagnostics. The E1SERIAL interface converter provides transparent conversion from unstructured G.703 and optionally structured G.704 to either V.11/X.21 or V.35 interfaces. In G.704 mode the unit supports speeds from a single 64kbps timeslot through to a full 2.048Mbps in steps of 64kbps. The unit also supports full/fractional T1 circuits.

S P E C I F I C A T I O N S

- Interfaces 1 x V11/X.21 DB15 (specify male DTE or female DCE) or
  1 x V.35 MRAC (specify male DTE or female DCE) 1 x RJ45
- E1 User switchable between 75 Ohm and 120 Ohm
  Auto-detect CRC4 or non- CRC4 framing (Multiframe or Doubleframe)
  CRC4 disabled if passing timeslot 0
  Support of E1 and Fractional E1 services
- T1 RJ45 100 Ohm balanced T1
  ESF or D4 Framing selectable
  B8ZS or AMI Line code selectable
- Clocking
- Software-selectable clock source
- High quality 0.15ppm internal clock
- From G.703/4 when V.35/X.21 is a DCE (female) connector
- Clocks from V.35/X.21 when a DTE (male) connector is specified
- Clocking hierarchy with auto-switchover between clocks with no user impact.
- Auto recovery to higher priority clocks when they become available.
- Control Ports RJ11 Marked "Cmd"
  Asynchronous 8 data, 1 stop bit no parity 19.2kbps to 115kbps
  Password protected
  Dry contact alarm relay
  Ethernet Configuration Port
  RJ45
  10baseT/100baseT/1GE
  Password protected
- LED's E1/T1 has 2 associated LEDs- Indicate Layer 1, Layer 2 and active interconnects.
  PWR x 1 Unlit=no power; Green=power on unit
  Run x 1 Slow flash=microprocessor OK and configured; fast flash=internal error or lost base configuration
  LAN ACT x 1 Activity on the LAN
  LAN 100 x 1 Off=LAN running at 10baseT; on=LAN running at 100baseT
- Power AC: Auto-sensing 96VAC - 240VAC; Max consumption 0.2A RMS @230VAC
- DC: 4mm terminal Block; -36VDC to -57VDC 0.55A max @-48vdc
- Environment
  Operating 0° - 55 °C
  Humidity 10-90% non-condensing
  Natural convection cooling
- Dimensions
  Width: 8.86" [225 mm]
  Depth: 15.75" [400 mm]
  Height: 1.73" [44 mm]

F E A T U R E S

- G703 to V.11 or V.35 Converter
- Optional support for G.704 (fractional) to V.11 or V.35
- 64kbps to 2048kbps in G.704 mode
- Support for T1 Interface
- E1 user switchable 75 Ohm / 120 Ohm
- Clocking hierarchy
- Fast, simple installation
- Remotely manageable via IP and serial connection
- No DIP switches - all via software GUI
- Easy to configure and manage
- Software upgradeable locally or remotely
- SNMP Trap/Alarm via North Bound Interface
- Local/Remote Loops on E1/T1 and V11/V35 interfaces.
- Managed via DbManager application
- SNMP Trap/Alarm via North Bound Interface
- RoHS Compliant

Order Code	Description	Price
G-E1SERIALX21F	E1 to X.21 DCE converter	**£735.00**
G-E1SERIALX21M	E1 to X.21 DTE converter	**£735.00**
G-E1SERIALV35F	E1 to V.35 DCE converter	**£795.00**
G-E1SERIALV35M	E1 to V.35 DTE converter	**£795.00**

Please call for 24vDC and 48vDC options.

CONVERTERS (vertical, right margin)

E1 Converter / X.21 Line Driver in one unit

Description

Connecting X.21 to framed or unframed E1 leased lines. The E1CONV G.703 FE1 is perfectly suited for connecting transparently X.21 or V.35 devices to a 2 Mbps link according to both ITU G.703/G.704 framed (e.g. D2MS) and ITU G.703 unframed (e.g. D2MU).

S P E C I F I C A T I O N S

- LED indicators: Link, DTE, remote loop status, power/system failure
- DIP switch for remote loop (loop function can be disabled)
- Clock: Internal, external or remote
- Protocol transparent
- Operating temperature: 5° to 40° C
- Humidity: 10 to 80% (non condensing)
- Dimensions (H x W x D): 21 x 131 x 219 mm
Power supply:
- AC: 100 to 240 V
- DC: 36 to 72 V (E1CONV RACKHOUSING)
Line port
- Coding: HDB3
- Interface: G.703/G.704 (RJ45)
- Line: 4-wire (120Ohm)
- Connector: RJ45
- Framed or unframed according to ITU G.704 (incl. CRC-4)
- Point-to-point operation using copper lines
- Distance: Up to 1.7 km
- Attenuation: 36 dB
- Line: 4-wire
Client port
- Interfaces:
- X.21/V.11 (DB15, DCE / DTE switchable)
- Configurable analysis of C-line signalling
- Synchronous bit rates: n x 64 kbps (n = 0-31) or 2.048 Mbps unframed
- DTE is also configurable for G.703 unframed
Housing types
- 1-slot stand-alone housing
- 4-slot SPEED-RACKHOUSING
Management
- Settings via DIP switches
- Integrated console port RS232
- Optional: Configuration and monitoring management provide by using a SNMP management module:
- Access via RS232 (VT100, PPP over RS232)
- Access via 10baseT/Telnet
- Remote Management via Remote CLI

- The product is the ideal solution to connect cost-effective network components (e.g. router) to an E1 leased line.
- The interface corresponds to the electrical specifications according to ITU X.21/V.11 and optionally V.35.
- The speed is adjustable from 64 kbps to 1.984 Mbps by using the G.704 mode.
- A synchronous speed of 2.048 Mbps is transparently supported by the E1CONV CONVERTER G.703 FE1 if set to the G.703 mode.
- The integrated loop function (remote loop) enables a fast and straight-forward status monitoring by LED indicators.
- The product can also be operated as a modem using 4-wire copper lines.
- Star-shaped X.21 extension using 4-wire copper lines
- The E1CONV G.703 FE1 integrated in an E1CONV RACKHOUSING supports the connection of up to four X.21 applications.
- The access to the remote sites can be realized by using 4-wire copper lines.
- The E1CONV G.703 FE1 can be installed in a 1-slot standalone housing or a 4-slot E1CONV RACKHOUSING (19").
- The E1CONV RACKHOUSING provides the ability to optionally monitor the E1CONV G.703 FE1 via SNMP using a management module.

Order Code	Description	Price
G-E1CONV	E1 converter card	**£785.00**
G-E1CHASSIS1	1 Slot Chassis	**£109.00**
G-E1CHASSIS4	4 Slot Chassis	**£435.00**
G-E1NMC	Management Card Option (4 slot chassis only)	**£1,325.00**
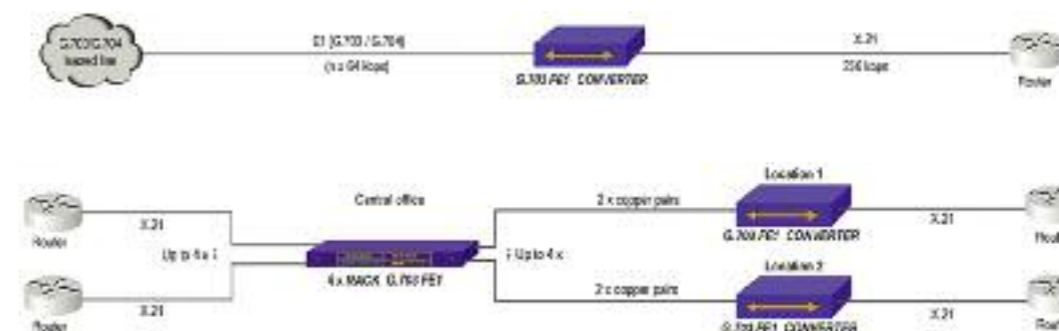
IFCONV Interface Converter

Description

The IFCONV Interface Converter allows the user to purchase a single product to convert interfaces between any combination of RS-232, RS-422/449, RS-530, V.35, X.21, HSSI, RS-485, TTL and Current Loop. The unit supports data rates up to 10Mbps. The IFCONV has two TTL level interfaces for connecting each data interface. Select the base unit and then at least two interfaces, one DTE and one DCE. Data interfaces are also sold separately to allow full flexibility. The individual data interfaces are available in DCE or DTE formats. Each data interface has the ability to force commonly used control signals such as RTS, CTS, DSR, DTR, Ring Indicate, Control and Indicate.

The data interfaces may be mixed and matched in any combination of 1 x DTE and 1 x DCE. Installation is fast and simple by plugging the DTE interface card into Port B and the DCE interface card into Port A. In all installations, Port B will always provide timing to Port A. The IFCONV has status LED's for each attached data interface which allows the user to visually confirm the presence of control signals. The unit has options for inverting data, clock and delays for RTS or CTS.

SPECIFICATIONS

- Application Allows interconnection of a DCE and a DTE device which have different data interfaces, converting signal levels and the physical data interface
- Capacity One DCE and one DTE
- Serial Data Interface Available in V.35, RS-530, RS-422/449, RS-232, X.21, HSSI, TTL, RS-485 and Current Loop * other interfaces available by special order
- Data Format Synchronous or Asynchronous Data Transparent at all

Data Rates
- Inversion Option Data Inversion or Clock Inversion
- Data Rates Up to 10Mbps (52Mbps version available - Call for details)
- Indicators POWER, TXD, RXD, TXC, RXC, RTS, CTS, DTR, DCD
- Surge Protection Main power supply
- Power Source AC Mains: 100-120 to 200-220VAC @10%, 50/60Hz, 0.16/0.08A, external 110/220 volt select switch, IEC
- Power Inlet, (2) 5mm Fuses DC Mains: DC Voltage, Input Range of -36 to -72vdc
- Current Draw at 48vdc: 75ma @ 3.6watts

Environmental
- Operating Temperature 32° to 122° F (0° to 50° C)
- Relative Humidity 5 to 95%

Non-Condensing
- Altitude 0 to 10,000 feet
- Dimensions Height: 1.75 inches (4.44 cm)
- Width: 9.00 inches (20.86 cm)
- Length: 9.00 inches (20.86 cm)
- Weight: 2 pounds (0.914Kg)

Order Code	Description	Price
G-IFCONV	Interface converter base unit	£89.00
G-232DCE	RS-232 DCE DB25F interface	£79.00
G-232DTE	RS-232 DTE DB25M interface	£79.00
G-V35DCE	V.35 DCE M34F interface	£89.00
G-V35DTE	V.35 DTE M34M interface	£98.45
G-530DCE	RS-530 DCE DB25F interface	£79.00
G-530DTE	RS-530 DTE DB25M interface	£79.00
G-422DCE	RS-422 DCE DB37F interface	£79.00
G-422DTE	RS-422 DTE DB37M interface	£79.00
G-X21DCE	X.21 DCE DB15F interface	£79.00
G-X21DTE	X.21 DTE DB15M interface	£79.00
G-TTLMOD	TTL BNC interface	£79.00
G-485DCE	RS-485 DCE DB9F interface	£79.00
G-HSSIDCE	HSSI DCE SCSI-1 50 pin F	£189.00
G-HSSIDTE	HSSI DTE SCSI-1 50 pin F	£189.00

For current price and availability on Current Loop interface and E1 DTE 75ohm BNC interface please call.

The above application would use the standard base unit plus 1 x RS-232 DCE module (232DCE) and 1 x V.35 DTE module (V35DTE).

RS-232 Terminal or DTE Device | Interface Converter Rates up to 10Mbps | V.35 Modem or DCE Device

BetterBox® Range of Economy Fibre Media Converters

Description

The BetterBox® range of Economy 10/100/1000 Fibre Media Converters are compact sized units with metal cases to fulfil the FCC emission standards. The units feature LED diagnostics for Power, Activity and Link. Singlemode and Multimode units are available and all units are externally powered from the power supply provided. Alternatively all units shown can be housed in the MC100BT-RACK12. Data sheets are available on every model. Please visit www.betterbox.co.uk or request one from Technical Support on 01908 561400.

The 12 Slot Media Converter 19-inch Rack Mount Chassis is 2U High and has Internal Back up Switching Power Supply (Dual Power model & no external PSU's are needed). The unit features a redundant power supply system with automatic power load sharing to ensure proper operation even in case of a power supply problem. The Rack features LED Indication for Primary and Back up Power Supply, Power Supply Load Sharing, Plug and Play Operation & Open tray design and ships with 19-inch brackets. (Dimensions are 437Wx280Dx88Hmm, Weight 5.00kg. FCC Class A, CE (Further reports available)
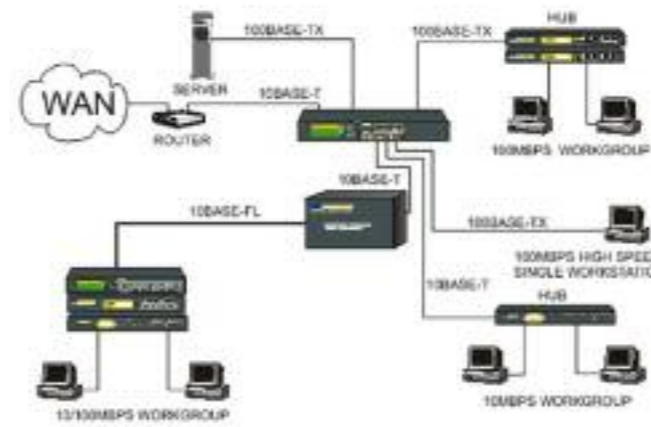
Order Code	Description	Price
G-MC100BT-RACK12	12 Slot Universal Media Converter Rack, Dual PSU	£185.00

FEATURES

- Multimode units extend Fibre Optic distances up to 2Km in Full Duplex operation (15Km for Singlemode units)
- Switch for Full Duplex / Half Duplex operation
- MT-RJ fibre connection unit available
- All converters comply to IEEE 802.3u Fast Ethernet Standards
- LED indication for Power, Activity, Link & FDX / HDX
- In Band Management units available

Order Code	Description	Price
G-MC10BTFT	10BaseT to 10Base FL Multimode ST/RJ45	£69.00
G-MC10BTFTSM25	10BaseT to 10Base FL Singlemode ST/RJ45	£199.00
G-MC100BTFC	10/100Tx to 100FX Autosensing Multimode SC	£59.00
G-MC100BTFT	10/100Tx to 100FX Autosensing Multimode ST	£59.00
G-MCBTMFR	10/100Tx to 100FX Autosensing Multimode MTRJ	£96.00
G-MC100BTSM	10/100Tx to 100FX Autosensing Singlemode SC 10km	£69.00
G-MC100BTSM25	10/100Tx to 100FX Autosensing Singlemode SC 25km	£79.00
G-MC10/100/1000BTFC	10/100/1000Tx to 1000Base FX Multimode SC	£199.00
G-MC10/100/1000BTFCSM	10/100/1000Tx to 1000Base FX Singlemode SC 10km	£325.00
G-MC1000BTFC	Gigabit 1000BaseT to 1000Base-SX/LX Multimode SC/RJ45	£99.00
G-MC1000BTFCSM10	Gigabit 1000BaseT to 1000Base-SX/LX Singlemode SC/RJ45 10km	£179.00
G-MC1000BTFCSM20	Gigabit 1000BaseT to 1000Base-SX/LX Singlemode SC/RJ45 20km	£259.00

Please call for Single Fibre versions of the MC1000 unit.

CTS Multimode to Singlemode Converters

Order Code	Description	Price
G-MC100FXM-SFX2KM	100Base Fx Multimode to Singlemode Converter SC	£129.00
G-MC100FXM-SFX25KM	100Base Fx Multimode to Singlemode Converter SC 25km	£139.00
G-MC1000SXM-SSX55M	1000Base SX Multimode to Singlemode Converter SC 550mtr	£249.00
G-MC1000SXM-SSX10KM	1000Base SX Multimode to Singlemode Converter SC 10km	£269.00

CTS Wavelength Single Fibre Media Converters

Order Code	Description	Price
G-MC100W2A20	10/100Btx to 100Bfx 2 Wavelength Single Fibre SM/SC/20KM/TX1310/RX1550	£99.00
G-MC100W2B20	10/100Btx to 100Bfx 2 Wavelength Single Fibre SM/SC/20KM/TX1550/RX1310	£109.00
G-MC100W2A40	10/100Btx to 100Bfx 2 Wavelength Single Fibre SM/SC/40KM/TX1310/RX1550	£209.00
G-MC100W2B40	10/100Btx to 100Bfx 2 Wavelength Single Fibre SM/SC/40KM/TX1550/RX1310	£369.00

The BB-MC series Transmit Video and other Protocols over Fibre

NEW

8V   2V

64V   4V   16V

FEATURES

- Units are available that transmit 1, 2, 4, 8, 16 or 64 channels of video.
- Video interface:
- Input/output impedance: BNC 75 ohm unbalance interface
- Input/output voltage: peak 1 vpp, max 1.5 Vpp
- Signal: PAL/NTSC/SECAM
- Video bandwidth: 8MHZ
- Video number wide: 8/10/12 bit
- Differential gain: <1%
- Differential phase: <0.6∞
- Slope: <0.5%
- Luminance delay inequality: 10ns
- Weighted noise ratio: 66db
- Along with the video channels, the units listed come with a single RS232/RS485/RS422 asynchronous data channel.
- Data Interface:
- Full duplex/half duplex
- Interface type: RS-232/485/422 Manchester
- RS232 rate 0-115.2Kbps
- RS-422/485 rate: 0-115.2Kbps
- Error rate: <10-9
- Up to 4 channels of asynchronous data channels can be optionally specified

SPECIFICATIONS

- Fibre interface
- Physical interface: SC or ST available
- Fibre type: single/multi mode
- Distance: multi mode up to 2 km, single mode up to 100 km, WDM available
- Optional Audio Interface: Up to 2 bidirectional audio channels can be specified
- Audio input/output: impedance 600 balance/unbalance interface industry standard terminal lead.
- Audio input/output level: 2Vp-p
- Frequency response: 10 Hz-20 KHz
- Audio channel width: 24 bit
- Weighted noise ratio: 80db
- Total Harmonic Distortion: 0.1%
- When required a single 10/100 Ethernet channel can be specified
- Ethernet interface
- Physical interface: shielding RJ-45
- Support IEEE 802.3/802.3u/802.1q VLAN
- IEEE 802.3x full duplex and Back-Pressure half duplex flow control
- Power supply: 110-220vAC standard, -48v, +24v, +12v optional
- Three installation types are available: Wall Mount, 19" Rackmount 1U, or Plug In Card3

Order Code	Description	Units	Price
G-BB-MC-VGA	VGA Fibre Extender, 4 x LC cores, Local Unit 1 x HD15F VGA input, 1 x HD15F VGA loopthrough. Remote Unit 1 x VGA output, 1 x DVI output	Pair	£495.00
G-BB-MC-HDMI-IR	HDMI and IR signal Fibre Extender, 1 x SC/ST core, 1 x HDMI 1.3, 1 x IR	Pair	£525.00
G-BB-MC-1V-1D-T(R)	1 single direction channel video digital optical converter & 1 RS-232/485 data channel (1V1D) 48 V/110-220 VAC, SC/ST connector types available, WDM or Dual Singlemode fibre, MM fibre options	Pair	£165.00
G-BB-MC-2V-1D-T(R)	2 single direction channel video digital optical converter & 1 RS-232/485 data channel (2V1D) 48 V/110-220 VAC, SC/ST connector types available, WDM or Dual Singlemode fibre, MM fibre options	Pair	£295.00
G-BB-MC-4V-1D-T(R)	4 single direction channel video digital optical converter & 1 RS-232/485 data channel (4V1D) 48 V/110-220 VAC, SC/ST connector types available, WDM or Dual Singlemode fibre, MM fibre options	Pair	£425.00
G-BB-MC-8V-1D-T(R)	8 single direction channel video digital optical converter & 1 RS-232/485 data channel (8V1D) 48 V/110-220 VAC, SC/ST connector types available, WDM or Dual Singlemode fibre, options	Pair	£775.00
G-BB-MC-16V-1D-T(R)	16 single direction channel video digital optical converter & 1 RS-232/485 data channel (16V1D) 48 V/110-220 VAC, SC/ST connector types available, WDM or Dual Singlemode fibre, MM fibre options	Pair	£1,775.00
G-BB-MC-32V-1D-T(R)	32 single direction channel video digital optical converter & 1 RS-232/485 data channel (32V1D) 48 V/110-220 VAC, SC/ST connector types available, WDM or Dual Singlemode fibre, MM fibre options	Pair	£5,995.00
G-BB-MC-64V-1D-T(R)	64 single direction channel video digital optical converter & 1 RS-232/485 data channel (64V1D) 48 V/110-220 VAC, SC/ST connector types available, WDM or Dual Singlemode fibre, MM fibre options	Pair	£12,450.00

Model 2085 Series RS-232 to RS-485 Interface Converter (W/Handshaking)

Description

The Model 2085 RS-232 to RS-485 converter lets a PC or similar asynchronous device communicate with one or more RS-485 devices. Passing data plus two hardware handshaking signals (one each direction), the Model 2085 is ideal for industrial numerical control and data acquisition applications. The Model 2085 draws all necessary operating power from the RS-232 data and control signals. Allowing data rates to 115.2 Kbps and distances to 14.5 km over one or two unconditioned twisted pair, the Model 2085 supports multiple RS-485 drivers and receivers.

BUILT-IN SURGE PROTECTION (OPTIONAL)

FEATURES

- Fully Conforms to the EIA RS-485 Standard
- 8 ms RTS-CTS Delay (RS-232 End)
- Variable High-Low Impedance
- Transmits and receives data plus one control signal each direction
- No AC Power or Batteries Required

SPECIFICATIONS

- Data Format: Asynchronous
- Data Rate: Up to 115,200bps
- Transmit Line: 2, 4 wire unconditioned twisted pair
- Transmit Mode: Full or half duplex
- Range: Up to 14.5 km
- Control Signals: DSR turns "ON" immediately after the terminal raises DTR; DCD turns "ON" after recognising the receive signal from the line; CTS turns on 8ms after the terminal raises RTS
- Dimensions: 67 x 53 x 19 mm

Order Code	Description	Price
G-2085M	(Male DB-25 with terminal block)	£79.00
G-2085F	(Female DB-25 with terminal block)	£79.00
G-2085FRJ11	(with RJ11 jack)	£89.00
G-2085MRJ45	(with RJ45 jack)	£89.00
G-2085M-25F	(with DB-25 male-female)	£89.00
G-2085F-25F	(with DB-25 female-female)	£89.00
G-2085F-25M	(with DB-25 female-male)	£89.00

Model 2089 Series DB-9 RS-232 to RS-485 Interface Converter

Description

The Model 2089 supports async data rates to 115.2Kbps over one or two unconditioned twisted pair, the Model 2089 passes one control signal in each direction. The Model 2089 can handle up to 50 terminal drops in a multipoint polling environment; yet it is small enough to plug directly into a DB-9 serial port...and requires no AC power or batteries for operation. The Model 2089 has five configuration parameters, allowing the unit to be "fine tuned" to a variety of point-to-point or multipoint applications. Silicon Avalanche Diode surge protection is standard as well.

FEATURES

- Fully conforms to the EIA RS-485 standard
- Range up to 14.5 Km
- No AC power or batteries required
- Up to 50 terminal drops in a multipoint polling environment
- No AC Power or batteries required
- 600 watts of silicon avalanche diode surge protection - standard

Order Code	Description	Price
G-2089M	Male DB-9 with terminal block	£79.00
G-2089F	Female DB-9 with terminal block	£79.00
G-2089FRJ11	Female DB-9 with RJ11 jack	£79.00
G-2089MRJ45	Male DB-9 with RJ45 jack)	£79.00

Model 2017A RS-232 to 20mA Interface Converter (Active TX, Active or Passive RX)

Description

The BetterBox® Model 2017A family of RS-232 to 20mA current loop converters lets an asynchronous RS-232 device communicate with a 20mA current loop device. The receiver within the Model 2017A can be set to either active or passive, while the transmitter is limited to an active setting. The Model 2017A derives all necessary power from a wall mount AC power supply. The model 2017P is a passive device only. Supporting distances to 6.5 km and data rates to 115.2 Kbps over two unconditioned twisted pair the 2017A has the speed you need. The Model 2017A also has LED indicators for transmit data, receive data and power, so you can see it working. The Model 2017A also features an externally accessible DCE/DTE switch, built-in optical isolation and surge protection on the line side.

◄ IC2017A

SPECIFICATIONS

- Range: 6.5 km on 24 AWG wire
- Interfaces: Asynchronous, EIA RS-232, CCITT V.24 full duplex, 20 or current loop (60mA optional)
- LEDs: TD (Transmit Data) and RD (Receive Data)
- Connectors: DB-25 male or female on RS-232 side RJ-11, RJ-45 or terminal posts with strain relief for current loop side
- Power Supply: 9V to 12V on pin 9 of RS-232 interface or external wall mount transformer

Order Code	Description	Price
G-IC2017A*	DB-25 Male to screw block (Active)	£59.00
G-IC2117A*	DB-25 Female to screw block (Active)	£59.00
G-IC2017P	DB-25 Male to screw block (Passive)	£49.00
G-IC2117P	DB-25 Female to screw block (Passive)	£49.00
G-IC2018M-F	DB-25 RS-232 Male to 20mA DB25 Female (Active/Passive)	£49.00
G-IC2018F-M	DB-25 RS-232 Female to 20mA DB25 Male (Active/Passive)	£49.00

Price includes power supply.

FEATURES

- Converts asynchronous RS-232 to 20mA current loop
- Receiver can be active or passive
- LED indicators monitor transmit (TD) and receive (RD) signals
- Optically isolated

Model 222N Series RS-232 to RS-422/530 Converter (TX & RX Data only)

Why bother with a cumbersome box. The Model 222N is no bigger than a backshell.

Description

The BetterBox® Model 222N asynchronous interface converter allows an RS-232 device to communicate with an RS-422 device located up to 1.2 km away over two twisted pairs. Passing TXD and RXD signals only (RS-232 handshaking signals are looped back), the Model 222N supports data rates to 19.2 Kbps and requires no AC power to operate. The Model 222N plugs directly into a DB-25 serial port; a DCE/DTE switch eliminates the need for RS-232 crossover cables. Options for RS-422 connection include terminal block with strain relief, RJ11, RJ45 and DB-25 (RS-530). Using two Model 222Ns as "line drivers" you can extend RS-232 distances up to 5.6 km over two twisted pair.

222NF   *222N9M*

FEATURES

- Conforms to the EIA RS-422/530 interface standard
- Bi-directional data conversion
- No AC power required
- Handshake lines are looped back
- Reliable surface mount construction
- Extremely small

SPECIFICATIONS

- Data Rate: 0 to 19,200bps (no strapping)
- Transmission Format: Asynchronous
- Transmit Mode: Full duplex, 4-wire
- Transmit Level: 0 dBm
- Connectors: Male or female DB-25 (RS-232 side); DB-25, RJ11 jack, RJ45 jack or terminal posts (RS-422 side)
- Power Supply: None required; uses ultra low power from EIA data and control signals
- Dimensions: 56 x 44 x 19mm

Order Code	Description	Price
G-222NM	Male DB-25 with terminal block	£52.00
G-222NF	Female DB-25 with terminal block	£52.00
G-222NFRJ11	with RJ11 jack	£53.50
G-222NMRJ45	with RJ45 jack	£53.50
G-222NM-25F	with DB-25 male-female	£53.50
G-222NF-25F	with DB-25 female-female	£53.50

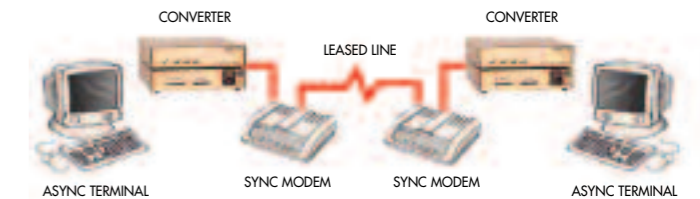| Order Code	Description	Price
G-222N9M	Male DB-9 with terminal block	£52.00
G-222N9F	Female DB-9 with terminal block	£52.00
G-LDRJ1	For RJ11 Jack option	add £2.00
G-LDRJ5	For RJ45 Jack option	add £2.00

ASTOSY Async to Sync Converter

Description

The ASTOSY Async to Sync Converter is designed to allow RS-232 async terminal equipment to transmit over higher speed V.11 compliant sync modems. The devices are used in pairs, one at each end of the communication link or in multiples as when used in a multi-drop communication link. It supports async data of 8, 9, 10 and 11 bits, including the start and stop bit. Standard data rates from 1200 to 38.4bps and 3/4 rates of 900 to 28.8bps are supported for synchronous transmission. The unit automatically adjusts the sync data rate to match the DTE's output rate, no data rate strapping is required. Stop bit reduction is provided when the async data rate is faster than the sync data rate, ensuring reliable data communications. It has convenient front panel LED's for control signal status. AC mains power supply allows the data interface signals to drive longer distances than interface powered devices. The ASTOSY is housed in a sturdy metal enclosure and will provide in excess of 100,000 hours of reliable service.

SPECIFICATIONS

- The unit is AC mains powered and is switch selectable for 110 / 220 VAC.
- Application RS-232 async terminal to sync RS-422/RS-530 modem
- Conversion, full or half duplex
- Capacity One sync RS-422/530 modem
- One async RS-232 terminal
- Interface: RS-232 to DTE / V.11 or RS-422, RS-530 to DCE
- Data Rates: 1200 to 38.4bps / 900 to 28.8bps
- Data Format Data transparent at all data rates Conforms to CCITT V.14 and V.22, (Async to Sync conversion))
- Switches Provided for async data set-up, stop bit reduction and signal to frame ground
- Physical Interface
- Female: DB-25 Connector to Modem
- Female: DB-25 Connector for Terminal
- Power: Source AC mains powered

The above shows a typical installation

Order Code	Description	Price
G-ASTOSY-232	RS-232 Async to Sync Converter, Autobaud to 38.4Kbps (Data Interface Powered)	£195.00
G-ASTOSY-422	RS-232 Async to V.11 Sync Converter, Autobaud to 38.4Kbps (Data Interface Powered)	£275.00
G-ASTOSY-AV24	Simplex 8 bit, 1.2k to 9.6k Sync to Async 2.4k to 19.2k Converter (Data Interface Powered)	£189.00

SERTOPAR Serial to Parallel Converter

Description

The SERTOPAR allows uni-directional communication of data from your parallel port to a serial format. Or you can convert data from your serial port to a parallel communication format. The SERTOPAR can be connected directly between your computer and your printer without making any software modifications. A built-in 96-byte buffer prevents data loss. The Serial Port is connected using a female DB-25 connector and supports X-ON/X-OFF control as well as hardware handshaking. The SERTOPAR supports standard baud rates from 1200 to 115.2k with a variety of data formats.

The SERTOPAR supports Acknowledge, Busy, and Strobe on the parallel port through a female DB-25 connector. An easy to access 8-position dipswitch allows you to configure the unit to match your system requirements.The unit may be port powered using DTR and RTS on the serial port. If the SERTOPAR cannot be powered using the handshake lines, it may be powered externally using +7 to +18 volts DC at 2 milliamps. Power supplies are available.

Order Code	Description	Price
G-SERTOPAR	Serial to Parallel Converter	£89.00
G-SERPWR	Power Supply	£15.00

E1 Intelligent Channel Bank

Description

Our intelligent E1 Channel Bank, VCL-CB-INT provides Voice Activity Detection (VAD) activated "answer supervision" and "disconnect supervision" to connect VoIP, VoFR and VoATM networks to analog PSTN (POTS) lines that do not provide any type of answer supervision / battery reversal functions. The interface to the analog PSTN (POTS) lines have been ruggedized to provide complete protection against line card failures which occur from induced voltages from AC power lines and lightening strikes and difficult field conditions. The unit can be used for VoIP, VoFR and VoATM network communications that will terminate traffic directly to the analog PSTN lines. The channel bank solution provides a cost-effective platform to convert up to 30 dial-up, analog (PSTN) voice circuits to a digital E1 interface to connect to VoIP, VoFR and VoATM Gateways

The VCL-CB E1 Channel bank offers all types of analog interfaces including FXO, FXS and 2W/4W E&M interfaces, that may be required to connect to an E1 digital interface of a VoIP, VoFR and VoATM Gateway.

The E1 Channel Bank shall interface to the E1 port of any Server / Switch / VoIP Gateway / PBX using R2 CAS (R2 Digital) Signalling (R2 Channel Associated Signalling) as per ITU-T Q.421 / Q.422 recommendations, to connect up to 30 analog interfaces to an E1 port. The E1 Channel Bank VCL-CB-INT is an intelligent E1 Channel Bank that provides the metering function using Voice Activity Detection (VAD) to provide voice activated "answer supervision" and "disconnect supervision". The VCL-CB-INT™ intelligent E1 Channel Bank uses a sophisticated DSP algorithm to "listen" to the PSTN line for "voice activity" and will provide "answer supervision" information to initiate the metering process.

The E1 Channel Bank is available with FXO interfaces which connect to the analog PSTN (POTS) lines from the local Exchange / Telco / Switch.

Core System Composition:

Order Code	Description
G-VCL-CB-000/005	19-Inch Chassis
G-VCL-CB-010	-48VDC Power Supply Card
G-VCL-CB-015-INT	Control Card, E1 Interface Card
G-VCL-CB-015-BR	Control Card, E1 Interface Card
G-VCL-CB-040	Ring Generator - Optional*

* Required only with FXS Interface Card

User Interface Cards:

Order Code	Description
G-VCL-CB-030-INT FXO	(Central Office Interface Card)
G-VCL-CB-030-BR FXO	(Central Office Interface Card)
G-VCL-CB-025 FXS	(Remote / Subscriber Interface Card)
G-VCL-CB-035 E&M	(2 Wire / 4 Wire Interface Card)

Notes:
FXO interface cards - connect to the analog PSTN (telco) lines.
FXS interface cards - connect to analog telephone sets.
E&M interface cards - connect to E&M switches / interfaces

Example System:

Order Code	Description	Price
G-VCL-CB-INT-SYS1,	INTELLIGENT E1 Channel Bank	**£2,250.00**

Includes :
- 1 x E1 Control Card
- 1 x (-) 48VDC Input Power Supply Card
- 1 x 19" Shelf 3U High (Sub-Rack) with Connectorised 120 RJ45 (F) Backplane
- 15 x 2 Port VF, FXO (CO) Line Ifc Card
- 30 x VF 1 Port Connectorized Cable [RJ11M-RJ11M]
- 1 x System Core Cables, Installation accessories, Documentation, System User Manual / Disk etc (Set).

FEATURES

- Used for terminating long distance traffic on PSTN lines that "Support" or "Do Not Support" "Battery Reversal / Polarity Reversal" (Answer Supervision).
- Uses sophisticated DSP algorithms to provide Voice Activity Detection (VAD) to provide "Answer Supervision" to initiate metering and "Disconnect Supervision" feature to "Disconnect hung / stuck PSTN lines".
- Ruggedized equipment design.
- Provide complete protection against the line card failures occurring from induced voltages from AC power lines and lightening strikes and other difficult field conditions.
- VF (Voice Frequency) specifications are in accordance with G.712, ITU-T recommendations to provide clear voice.
- Ideal for traffic termination for corporate and ISP customers, who wish to connect their fully digital networks to the PSTN, through the available analog dial-up PTT lines.

Highlights
- Ideal for connecting to PSTN.
- Also used in conventional applications to deliver voice over an end-to-end E1 (radio / fibre / HDSL) links.
- Available with FXO, FXS and 2W/4W E&M customer interfaces.
- Compliance to all the relevant ITU-T recommendations.
- Modular, 3U high, compact construction provides easy maintenance.
- Plug & Play - easy to install equipment.
- Extensive set of alarms
- Available with easy to use Windows based Graphical User Interface.
- Synchronization to different user selectable clock sources.
- Remote Access through TCP/IP (for remote configuration and monitoring - available as an optional extra).
- Available with an E1, 2Mbps interface or a fractional E1 interface (to even start service with less than 10 lines).
- Core System Composition

ISDN Converter, ISDN Splitter, Switch and Concentrator

Description

Liberator models support up to 4 PRI interfaces and 0, 4, 8 or 16 BRI "S" interfaces. A standard Liberator "S" can be user configured with all PRI interfaces the same.

- Interfaces PRI - 1, 2, 3 or 4 PRI ports.
  Marked as "PRI21" "PRI22" "PRI23" and "PRI24"
  By default PRI21 and PRI23 are configured for TE ISDN stack (user-side); PRI22 and PRI24 for NT (network-side)
  The default configurations can be changed by the user but crossed cables are necessary
  Interfaces PRI21 - PRI22 and PRI22 „Àì PRI24 are protected against power failure by relays which provide a metallic path in the event of failure.
- E1 RJ45 120Ohm balanced (E1)
  G.704 HDB3 encoded
  Auto-detect CRC4 or non- CRC4 framing (Multiframe or Doubleframe)
  Support of non-switched E1 and Fractional E1 services
  ISDN PRI ETSI Q.931/921, ETSI-DSS1, ETSI 300-011, ETSI300-125, ETSI 300-102, approved to TBR4
- T1 RJ45 100Ohm balanced T1
  ESF or D4 Framing selectable
  B8ZS or AMI Line code selectable
  NI-2, DMS-100, AT&T 5ESS Switch selectable
  AT&T TR-62411 and ANSI T1.403 Compliant
  Hong Kong variant available
- BRI 0, 4, 8 or 16 Ports Marked as "BRI1" through to "BRI16" (depending upon Model) RJ45
  4-wire S0 compatible
  Configured as NT but user-switchable in blocks of 4 ports to TE mode (requires crossed cables)
  Blocks of 4 NT and 4 TE ports can be optionally Power Failure Relay Protected which means the two ports are linked via metallic path in the event of power loss so the attached device(s) still have network access.
  BRIs can be user configured for US and ETSI on a per port basis
  Can be configured for Point-to-Point or Multipoint
  SPID settings for US-based applications.
  Support for NI-1, DMS100, AT&T 5ESS and Auto Single an
- Dual SPID configurations
  Driving distance on UTP CAT5 cable typically up to 750m depending upon DTE and environment
- Control Ports RJ11 Marked "Cmd" Asynchronous 8 data, 1 stop bit no parity 19.2kbps to 115kbps
  Password protected
  Dry contact alarm relay

- LED's PRI x 4
  Each PRI has 2 associated LEDs
  Upper LED - synchronising to Layer 1;
  solid=Layer 2 established
  Lower LED - call establishing;
  solid=at least 1 call in place
  BRI
  Each BRI has 2 associated LEDs, 1 for each channel
  Fl=call establishing/dialling; solid=call in place
  PWR x 1
  Unlit=no power; Green=power on unit
  Run x 1
  Slow flash=microprocessor OK and configured; fast flash=internal error or lost base configuration
  LAN ACT x 1
  Activity on the LAN
  LAN 100 x 1
  Off=LAN running at 10baseT; on=LAN running at 100baseT
- Relays Interfaces pairs PRI21 and PRI22 and PRI23 and PRI 24 are Power Failure Relay protected as standard.
- Interfaces will be connected together using relays in the event of power failure. This forms a metallic path between the two ports.
- Power
  1. Mains - AC
     Internal switch-mode supply IEC connector
     Voltage range 95-240 VAC autosensing
     Input frequency 47-63Hz
     Max current consumption 200mA @ 230VAC
  2. DC -48VDC nominal
     4mm terminal block
     33VDC to -75VDC
     0.35A max
     MTBF 179,000 hrs
  3. DC -24VDC
     4mm terminal block
     -18VDC to -75VDC
     0.55A max
     MTBF 800,000 hrs
- Environment Operating 0° - 55 °C
  Humidity 10-90% non-condensing
  Natural convection cooling
- Dimensions
  Width: 11.5" [292 mm]
  Depth: 7.86" [200 mm]
  Height: 1.73" [44 mm]
  Weight 1.1Kgs

Order Code	Description	Price
G-LIB-2P16B-AC	Liberator "S" Chassis with 2 PRIs, user selectable NT/TE. 16 BRI ports, user selectable NT/TE.	**£3,910.00**
G-LIB-2P4B-AC	Liberator "S" Chassis with 2 PRIs, user selectable NT/TE. 4 BRI ports, user selectable NT/TE.	**£2,445.00**
G-LIB-2P8B-AC	Liberator "S" Chassis with 2 PRIs, user selectable NT/TE. 8 BRI ports, user selectable NT/TE.	**£2,935.00**
G-LIB-4P0B-AC	Liberator with 4 PRI and 0 BRI. AC Power.	**£2,588.00**
G-LIB-4P16B-AC	Liberator "S" Chassis with 4 PRIs, user selectable NT/TE. 16 BRI ports, user selectable NT/TE.	**£4,999.00**
G-LIB-4P8B-AC	Liberator "S" Chassis with 4 PRIs, user selectable NT/TE. 8 BRI ports, user selectable NT/TE.	**£4,025.00**
G-LIB/CPACK/12	Cable pack for Liberators with 12 NT BRIs	**£54.50**
G-LIB/CPACK/12X	Cable pack for Liberators with 12 TE BRIs (crossed)	**£64.95**
G-LIB/CPACK/16	Cable pack for Liberators with 16 NT BRIs	**£64.50**
G-LIB/CPACK/16X	Cable pack for Liberators with 16 TE BRIs (crossed)	**£79.00**

All Liberator models come with serial control cable and DbManager Lite.
**Liberator "S" models have an internal AC power supply.*