

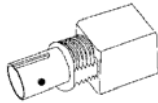
Miniature Link Fiber-Optic Components

Interface directly with industry-standard ST and SMA connectors. Designed for auto insertion and wave soldering. No mounting hardware required. These components provide cost effective, high performance fiber-optic communication links for computers, central office switch, PBX, local area network and industrial-control applications.



Type HFBR-0410 Miniature Link ST Evaluation Kit

HFBR-0410 ST evaluation kit is used with ST type HFBR-1400 transmitters and type HFBR-241X-T receivers, both of which are listed separately on this page. Kit contains one each of the following: HFBR-1412 transmitter; HFBR-2412 5 MBd TTL receiver; three meters of ST connected 62.5/125 μ m fiber-optic cable with plastic ferrules; HFBR-0400 series data sheets; HP Application Bulletin 73; ST connector and cable data sheets.



The Miniature Link Package

The Miniature Link family is available with 650-nm, 820-nm and 1300-nm technology. Signal rates range from dc to 175 MBd with distances up to 3 km. This family consists of separate transmitter and receiver ports with standard connectors such as ST[†], SMA, SC or FC. **LAN Standards:** Ethernet — 20 MBd; Token ring — 32 MBd using HFBR-1414/2416.

HFBR-0400 Transmitters with Threaded ST[†] Connectors (820 nm)

Mr.'s Type	Description	Min. Output Power*
HFBR-1402	Low current transmitter	-19 dB
HFBR-1412T	Low current transmitter	-19 dB
HFBR-1404	High power transmitter	-15 dB
HFBR-1414T	High power transmitter	-15 dB

*Minimum output power @ 25°C with 62.5 micrometer cable.

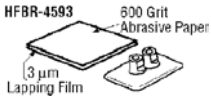
HFBR-0400 Receivers with Threaded ST[†] Connectors

Mr.'s Type	Description	Input Power
HFBR-2412T	5 MBd TTL	120 μ W
HFBR-2416T	125 MHz, analog	175 μ W

Versatile Link Plastic Fiber-Optic Component

Versatile Link 1 MBd Standard Evaluation Kit

Kit contains one each of the following — Type HFBR-1524 transmitter, HFBR-2524 receiver, HFBR-4506 duplex connector with crimp ring, HFBR-4501 gray simplex connector with crimp ring, HFBR-4513 blue simplex latching connector with crimp ring, HFBR-4505 gray adapter. Kit also contains 5 meters of connected simplex cable with blue and gray latching connectors, polishing tool, 600 grit paper and data sheet with a brochure. HFBR-0501



Versatile Link Polishing Kit

Type HFBR-4593 kit contains plastic polishing tool, 600-grit abrasive paper and two pieces 3 μ m pink lapping film. Designed for use on all connectors. Polishes two simplex connectors simultaneously or one duplex connector. HFBR-4593

Versatile Link Transmitters and Receivers



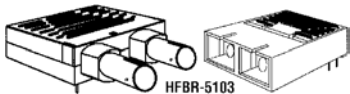
Transmitters

Mr.'s Type	Data Rate (MBd)	Distance (m) (25 C)	Wavelength (nm)	Fiber Type
HFBR-1521	5	30	660	Plastic
HFBR-1522	1	55	660	Plastic
HFBR-1523	40	120	660	Plastic
HFBR-1524	1	20	660	Plastic
HFBR-1527	125	50	650	Plastic
HFBR-1528	10	50	650	Plastic
HFBR-1531	5	30	660	Plastic

Receivers

HFBR-2521	5	30	660	Plastic
HFBR-2522	1	55	660	Plastic
HFBR-2523	40	120	660	Plastic
HFBR-2524	1	20	660	Plastic
HFBR-2526	125	50	650	Plastic
	32	1000	650	HCS*
HFBR-2531	5	30	660	Plastic

Transceivers and Fiber-Optic Evaluation Kit



The 1 $\times$ 9 Transceiver Package (HFBR-5100 Series)

The 1 $\times$ 9 transceiver is a highly integrated device for duplex links from 10 MBd and distances up to 4,000 meters. The "1 $\times$ 9" means that it has a footprint of one row of 9 pins. The transceiver is available with duplex-SC or ST[†] connectors.

Mr.'s Type	Data Rate (MBd)	Wavelength (nm)	Distance (m) (0-70 C)
HFBR-5103	125	1300	3400

Infrared Products

IrDA Infrared Transceiver Modules

Mr.'s Type	Description	Volts
HSDL-1001-001*	IrDA transceiver module for 115.2 Kbps applications	3 to 5
HSDL-1001-004†	IrDA transceiver module for 115.2 Kbps applications	3 to 5
HSDL-1100-007†	IrDA transceiver module for 4 Mbps applications	5

*Top mounting option. †Right angle mounting option.

Infrared Emitters

Mr.'s Type	Description	On-Axis Intensity
HSDL-4220	T1 $\frac{1}{4}$ LED lamp with 30° viewing angle	38 mW/sr
HSDL-4230	T1 $\frac{1}{4}$ LED lamp with 17° viewing angle	75 mW/sr

Infrared Endec ICs

Mr.'s Type	Description	Package
HSDL-7001	IrDA $\frac{3}{16}$ modulation IC for 115 Kbps with clock circuit	16 pin SMT

Single-Mode Fiber Laser Transceivers

Designed for safety as well as compatibility and interoperability in LAN and WAN applications such as hubs, routers, switches, concentrators, and network interface cards. They complement the type HFBR-5205/5103 multimode fiber (MMF) transceiver, and are completely compatible as drop-in replacements. 15 km intermediate reach transmission is suitable for WANs and ATM, Fast Ethernet and LANs, where maximum link distance is most important; 14.4 km transmission is suitable for FDDI, Fast Ethernet and LANs, where multivendor interoperability is needed.

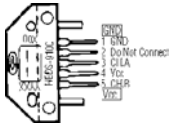
15 km Intermediate Reach Transmission

Mr.'s Type	Description	Standards	Data Rate (MBd)	Wavelength (nm)	Distance (km)
HFCT-5205B	1 $\times$ 9 SMF, Black 0/70°C	ATM, SONET, SDH	155	1300	15.0
HFCT-5205D	1 $\times$ 9 SMF, Blue 0/70°C	ATM, SONET, SDH	155	1300	15.0

14.4 km Category 1 Transmission

HFCT-5103B	1 $\times$ 9 SMF, Black 0/70°C	FDDI SMF-PMD1	125	1300	14.4
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Two-Channel Encoder Module



HEDS9100 is a high performance, optical-incremental encoder module. When operated in conjunction with a codewheel, the module detects rotary position. **Supply Input:** 5 V. Five 0.025" square pins located on 0.1" centers. **Operating Temperature Range:** -40°C to +100°C. TTL compatible HEDS-5120 are precision metal codewheels for use with the HEDS9100 encoder module.

Mr.'s Type	Optical Radius (mm)	Resolution (cpr)
HEDS-9100-A00	11	500

General Purpose Motion Control ICs

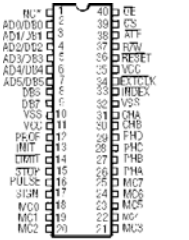


Fig. 1 *Should be left floating.

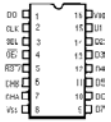


Fig. 2

HCTL-1100 is a general purpose motion control CMOS IC that provides closed loop control of DC, DC brushless, and step motors, using a digital incremental encoder for feedback. 5 V operation. TTL compatible. 24 bit position counter. 4 control modes. Programmable digital filter and brushless motor commutator. 40 pin plastic DIP package. **Row Spacing:** 0.600". **Operating Temperature Range:** -20°C to +85°C. HCTL-2000/2016 are CMOS ICs that interface digital incremental encoders to microprocessor systems. The ICs include a 4X quadrature decoder, binary up/down counter, and tristate bus interface. 5 V operation. TTL compatible. Operates at clock frequencies up to 14 MHz. 16 pin plastic DIP package. **Row Spacing:** 0.300". **Operating Temperature Range:** -40°C to +85°C. HCTL-2000 has a 12 bit binary counter, HCTL-2016 has a 16 bit binary counter.

Mr.'s Type	Fig.	Description
HCTL-1100	1	CMOS motion controller 100 KHz to 2 MHz clock
HCTL-2000	2	CMOS 12 bit quadrature decoder/counter
HCTL-2016	2	CMOS 16 bit quadrature decoder/counter