IE-MultiWay

10/100/1000 Mbps Ethernet Media/Mode Converter

The Most Compact, Versatile, SNMP Managed Gigabit Ethernet Device on the Market. Providing Solutions For:

- **4-Port Gigabit Switch**
- **Managed Fiber Termination**
- **Fiber Repeater**
- **Mode Conversion**
- **Dual Independent Media Conversion**

Features and Benefits

Flexible Solution
- Four devices in one unit
- Supports 3R's (Re-amplify, Re-shape, Re-time) optical signal regeneration
- 1+1 uplink protection (< 50 mSec)
- Supports per port service VLAN
- Features RMON1 MIB-II Statistics
- Jumbo Frames support (up to 10240 bytes)
- -48V DC terminal for Telco applications
- Support for daisy chain expansion
- Powering options can be combined for AC/DC redundancy

Advanced Remote Monitoring/Management
- Supports IEEE 802.3ah OAM (active/passive), 802.1ag CFM (Connectivity Fault Management) and Y.1731 on all ports
- Discovery, Link Monitoring, Performance Monitoring and Remote Loopback
- Features Bandwidth Management including Limiting & Traffic Shaping with burst capability and priority queuing
- Rate limiting can be done at Layer 1, 2 or 3
- Via UMA, can act as a Remote when connected to a Host iMcV-Giga-FiberLinX-II
- Generates SNMP TRAPs based on events
- Last Gasp alarm via 802.3ah and/or SNMP TRAP
- RS-232 CLI (Command Line Interface) console port

SFP Support
- Auto negotiate speed and flow control for 10/100/1000 copper SFPs with SGMII
- Supports fixed speed 1 Gbps full-duplex copper SFPs
- Auto detect for 100 or 1000 optical SFPs

"Industrial Ethernet" (IE) Features For Operation in Extended Temperatures
- Extended temperature functionality, up to -40° to +85° C
- Flexible power options: AC, DC and USB

* SFPs sold separately

The IE-MultiWay is a value-based, Carrier-class managed Gigabit Ethernet solution that is ideal for use as a CPE device at the customer's network edge as well as in a fiber infrastructure. The IE-MultiWay comes standard with two SFP uplink ports for the providers' network connection and two 10/100/1000Base-T copper ports.

There are four distinct DIP Switch selectable configurations that the IE-MultiWay supports. Among them are a 1+1 Uplink Protection Switch, a 4-port Gigabit Switch, and a Dual Copper to Fiber SFP Media/Mode Converter (two gigabit fiber media converters in one).

As a 4-port device, it can be deployed with fiber redundancy (with or without 1+1 uplink protection) and status monitoring with management on all ports via SNMP, which features OAM for mission-critical applications. It can also be installed as a dual 10/100/1000 Mbps copper to fiber media converter and be utilized as two separate converters.

The IE-MultiWay supports 10/100/1000 Mbps and 1 Gbps copper and 100 Mbps and 1 Gbps optical SFP modules, to provide greater flexibility in the network environment. The hot-swappable nature of SFPs and the numerous fiber modes and types that are available allow for easy configuration and future upgrading as network demands evolve.

The IE-MultiWay was designed with a simple upgrade path that is available through the company's Free Software Download page. Easily view the GUI and a Configuration program for VLANs and other port configurations with IMC Networks' iView[2], IMC Networks' standalone management software for Windows NT/XP/2000/Vista/7.

The IE-MultiWay is an ideal solution for service providers' fiber networks because it supports port based VLAN and VLAN trunks, IEEE 802.1ad (Q-in-Q) and a user definable EtherType. Information such as interface statistics, RMON1 statistics, and OAM status and control are a few of the many accessible features from the Serial CLI, Telnet CLI and SNMP Management Software.

Application Examples

1) Redundant 1+1 Protection (Revertive or Non-Revertive) Media Converter

IMC Networks' IE-MultiWay converts an Internet Service Providers' network interface to match the various 10/100/1000 Mbps copper interfaces found on the Customer Premise Equipment. It provides 1+1 uplink protection and monitors the network status using IEEE 802.3ah OAM.
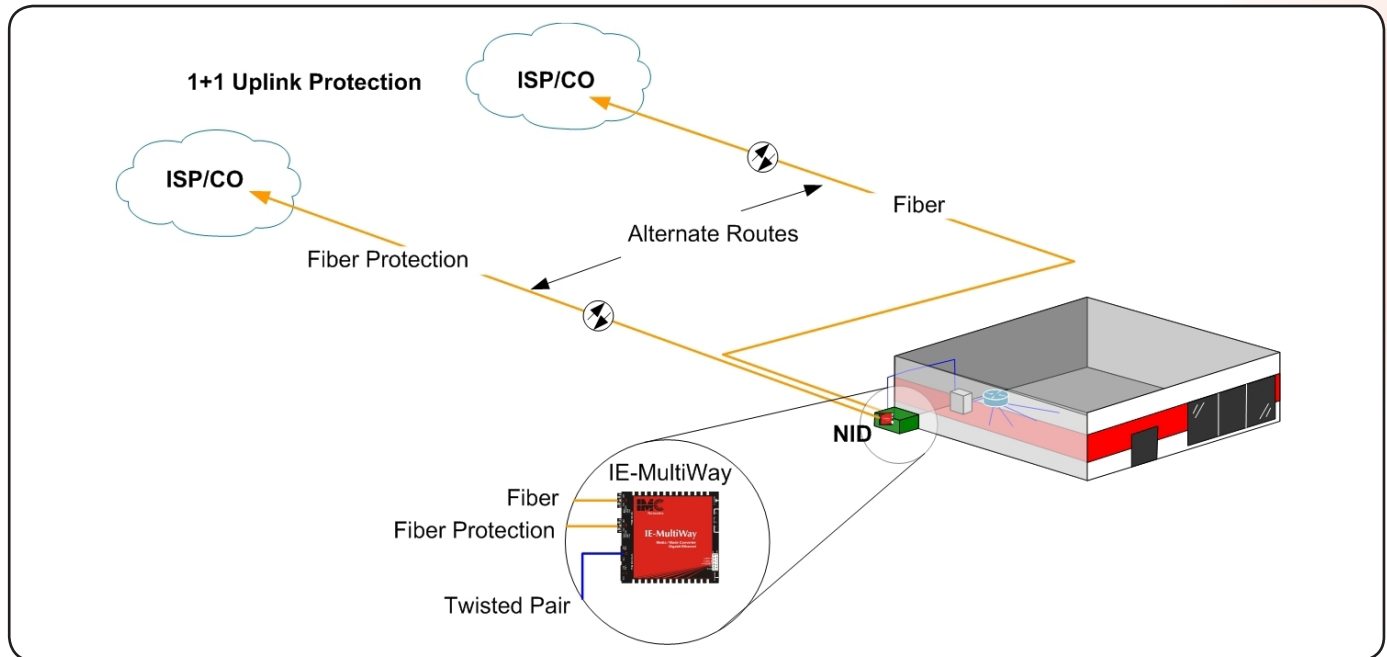
Ethernet Internet Service Provider's (ISP) Network Provides 1+1 Redundant Protection for Critical Business Application

2) Fiber Repeater Fiber Daisy Chain Extensions

Today's Central Control Office (CCO), Toll Roads and Toll Booths control modern-day highway traffic flow. Using IMC Networks' IE-MultiWay media converter efficiently reduces the number of fiber cabling runs, thus saving cost. In this application, the IE-MultiWay is used to daisy-chain the Gigabit fiber line by dropping copper lines at each Toll Booth and inserting a single fiber line back to the CCO. Traps can be configured to report events at each unit. Extended temperatures of -40 to +85C make the IE-MultiWay ideal for this type of Industrial Ethernet application.
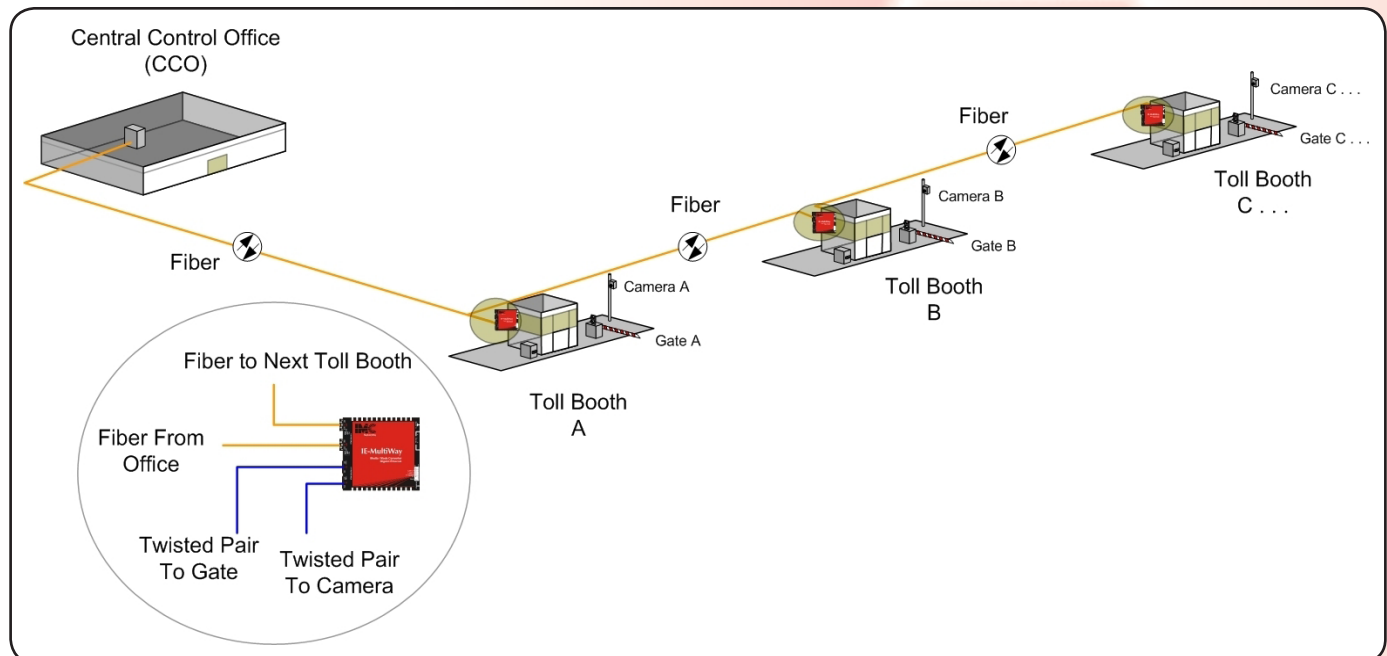

Better Use of Fiber Cabling Saves Cost for Intelligent Highways That Provide Public Services and Increased Road Safety

Application Examples (cont.)

3) Dual Media Converter

Conversion of copper to fiber optic cabling for distance extension from the multi-tenant's dwelling to the ISP's central office is commonly used today. Data services are then distributed through fiber optic cabling via copper to Clients living in the building so Clients are able to gain access to the internet at greater speeds. Using IMC Networks' IE-MultiWay dual media converter option, ISP's can support two independent fiber-to-copper lines using a single device, saving equipment cost while providing the Clients with independent higher speed data services.
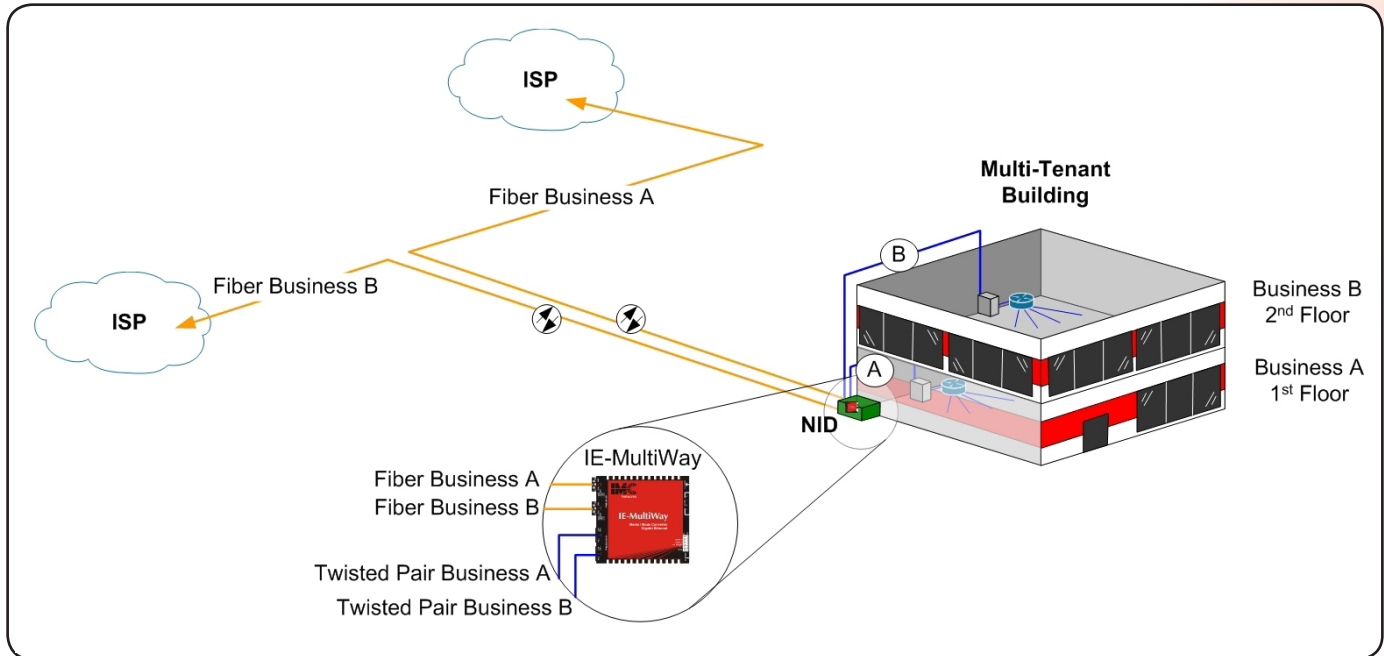
Ethernet ISPs Offer Multi-Tenant Clients High Speed Data Services (FTTH) Using IMC Networks' IE-MultiWay Module

4) Fiber Extension and Mode Conversion Supporting Re-amplify, Re-shape and Re-time

A typical demarcation point for phone lines reside in the basement of a building while the data center can be located anywhere. IMC Networks' IE-MultiWay module supports the extension of data throughout the building using fiber. Two 10/100/1000BaseT ports are provided at the POP location to support additional services such as a VoIP server or Management Console.
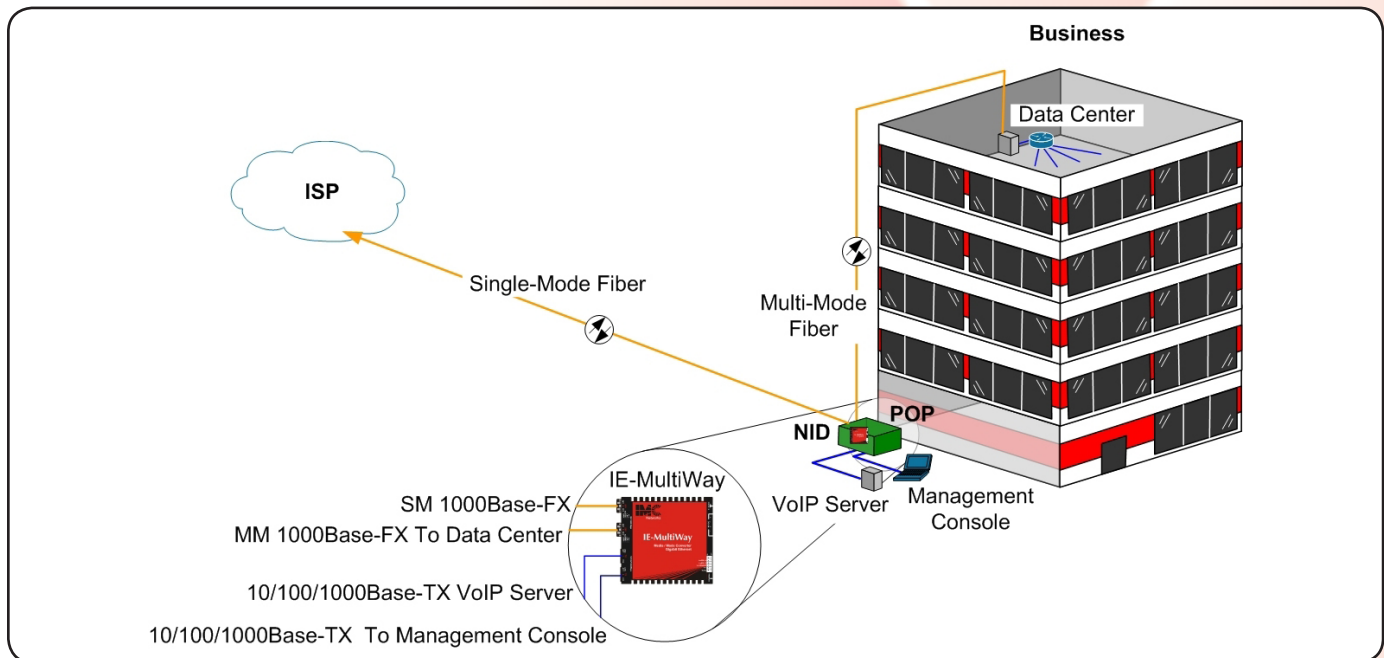
Business Data Center Remains Secure with Longer Multi-Mode Fiber Extensions

Technical Specifications

- Plug-and-play operation
- 2 x RJ-45 and 2 x SFP ports (SFPs sold separately)
- IEEE 802.3i 10Base-T over twisted pair
- IEEE 802.3u 100Base-TX over twisted pair
- IEEE 802.3u 1000Base-T over twisted pair
- IEEE 802.3u 100Base-FX
- IEEE 802.3u 1000Base-X
- Jumbo Frames support (up to 10240 bytes)
- Auto Negotiation, Auto-Cross for MDI/MDIX
- Includes diagnostic LEDs
- 1+1 uplink protection (< 50 mSecs)
- Extended temperature range from -40° to +85° C
- -48 VDC terminal for Telco applications
- Compatible with all standard MSA compliant SFP transceivers

Regulatory Approvals:
- FCC Class A (Using 48V Telco-type power)
- FCC Class B (Using all other power options)
- UL/cUL, CE

Standards Compliance
IEEE 802.3ah
IEEE 802.1ag
Y.1731
SFP-MSA SFP standard (September 14, 2000)
SFF-8472 DDMI standard (Revision 1.0)

Dimensions:
0.86"H x 3.66"W x 3.88"D
(2.2 x 9.38 x 9.94 cm)

Shipping Weight:
1.0 lbs (0.45 kg)

Supply Voltage:
5 to 24 VDC (Barrel)
48 VDC Telco (Terminal)

Power Information:*
Min: 3.15W (1 optic SFP [1 Gbps], 1 Tx [100 Mbps])
Max: 7.0W (2 Cu SFP [1 Gbps], 2 Tx [1 Gbps])
* Power consumption is based on SFP types

Operating Temperature
+14° to +122° F (-10° to +50° C)
w/ Franmar AC Wall Adapter;
-40° to +185° F (-40° to +85° C)
w/ DC Configuration;
5% to 95% (non-condensing)

Storage Temperature:
-49° to +185° F (-45° to +85° C);
5% to 95% (non-condensing)

IE-Power/5V*

- Universal AC Input/Full Range
- Short circuit/Overload/Over voltage protection
- DIN Rail mountable
- Built-in DC OK active signal
- Includes 12" Barrel-Connector Power Cable
- Includes diagnostic LEDs
- Comprehensive 3-year warranty

Regulatory Approvals:
- FCC Class B
- UL

Dimensions
3.54"H x 0.89"W x 3.94"D
(9 x 2.25 x 10 cm)

Shipping Weight
0.42 lbs (0.19 kg)

Power Information
5V @ 2.0A

Sold separately

Operating Temperature
-4° to +158° F
(-20° to +70° C)
5% to 95% (non-condensing),
0 - 10,000 ft. altitude

Storage Temperature
-40° to +185°F
(-40° to +85°C)
5% to 95% (non-condensing)

Fiber Optics Specifications

For each product listed below in the Ordering Information section, the DISTANCE represents an approximate fiber distance based on industry-standard fiber attenuation specifications. Actual distances will vary for each installation. For complete power budgets and information on calculating specific distances, visit www.imcnetworks.com/go/fcs or contact IMC Networks Fiber Consulting Services at 949-465-3000 for a free consultation.

Ordering Information

PART NUMBER	DESCRIPTION	DISTANCE
IE-MultiWay*		
858-11121	IE-MultiWay, 2TX/2SFP w/ AC to DC Power Adapter	Varies
854-11121	IE-MultiWay, 2TX/2SFP w/o AC to DC Power Adapter	Varies

* SFP modules are sold separately. Two (2) SFP transceivers are needed for full device functionality.

IE-SFP Modules: 100 to 155 Mbps

PART NUMBER W/ DDMI	PART NUMBER W/O DDMI	PORT DESCRIPTION	FIBER	DISTANCE	POWER BUDGET (db)
808-38101	808-38111	MM850	LC	2 km	14.5
808-38102	808-38112	MM1300	LC	2 km	15
808-38103	808-38113	SM1310	LC	15 km	13
808-38104	808-38114	SM1310/PLUS	LC	40 km	31
808-38105	808-38115	SM1550/LONG	LC	80 km	31
808-38525	808-38535	SSFX-SM1310/1550/LONG	LC	60 km	31
808-38526	808-38536	SSFX-SM1550/1310/LONG	LC	60 km	31

IE-SFP Modules: 1 Gbps Gigabit Ethernet

PART NUMBER W/ DDMI	PART NUMBER W/O DDMI	PORT DESCRIPTION	FIBER	DISTANCE	POWER BUDGET (db)
808-38201	808-38211	MM850	LC	550 m	7.5
808-38202	808-38212	SM1310	LC	10 km	13
808-38203	808-38213	SM1310/PLUS	LC	30 km	17
808-38204	808-38214	SM1550/LONG	LC	40 km	17
808-38205	808-38215	SM1550/XLONG	LC	70 km	23
808-38225	808-38235	SSLX-SM1490/1550/LONG	SC	70 km	23
808-38226	808-38236	SSLX-SM1550/1490/LONG	SC	70 km	23

Single-Strand fiber SFPs are also available.
Visit www.imcnetworks.com/Products/product.cfm?family=32
or contact IMC Networks for the complete line of MSA Compliant SFPs.

PART NUMBER	DESCRIPTION
IE-MultiWay Accessories	
806-39753	IE-Power/5V, AC to DC (DIN Rail) Power Adapter (-20° to +70° C)
806-39105	DIN Rail Clip
806-39638	Double-USB Power Cable, 36"
825-39951	Serial Cable, MiniJack to DB9 (female)

IE-SFP Modules: CWDM (155 Mbps/1 Gbps)

PART NUMBER 155 Mbps	PART NUMBER 1 Gbps	DESCRIPTION	FIBER	DISTANCE 155 Mbps	DISTANCE 1 Gbps	POWER BUDGET (db) 155 Mbps	POWER BUDGET (db) 1 Gbps
808-38141	808-38241	CWDM-SM1270	LC	80 km	70 km	33	22
808-38142	808-38242	CWDM-SM1290	LC	80 km	70 km	33	22
808-38143	808-38243	CWDM-SM1310	LC	80 km	70 km	33	22
808-38144	808-38244	CWDM-SM1330	LC	80 km	70 km	33	22
808-38145	808-38245	CWDM-SM1350	LC	80 km	70 km	33	22
808-38146	808-38246	CWDM-SM1370	LC	80 km	70 km	33	22
808-38147	808-38247	CWDM-SM1390	LC	80 km	70 km	33	22
808-38148	808-38248	CWDM-SM1410	LC	80 km	70 km	33	22
808-38149	808-38249	CWDM-SM1430	LC	80 km	70 km	33	22
808-38150	808-38250	CWDM-SM1450	LC	80 km	70 km	33	22
808-38151	808-38251	CWDM-SM1470	LC	80 km	70 km	33	22
808-38152	808-38252	CWDM-SM1490	LC	80 km	70 km	33	22
808-38153	808-38253	CWDM-SM1510	LC	80 km	70 km	33	22
808-38154	808-38254	CWDM-SM1530	LC	80 km	70 km	33	22
808-38155	808-38255	CWDM-SM1550	LC	80 km	70 km	33	22
808-38156	808-38256	CWDM-SM1570	LC	80 km	70 km	33	22
808-38157	808-38257	CWDM-SM1590	LC	80 km	70 km	33	22
808-38158	808-38258	CWDM-SM1610	LC	80 km	70 km	33	22

FCS FREE Fiber Consulting Services

RoHS

Made in USA

6-YEAR Comprehensive Warranty

ISO 9001:2008 REGISTERED

DS-IE-Multiway-1202