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Hiperion series Digital Microwave Links

Licensed Products

Microwave
Transmission

International Product
Catalogue

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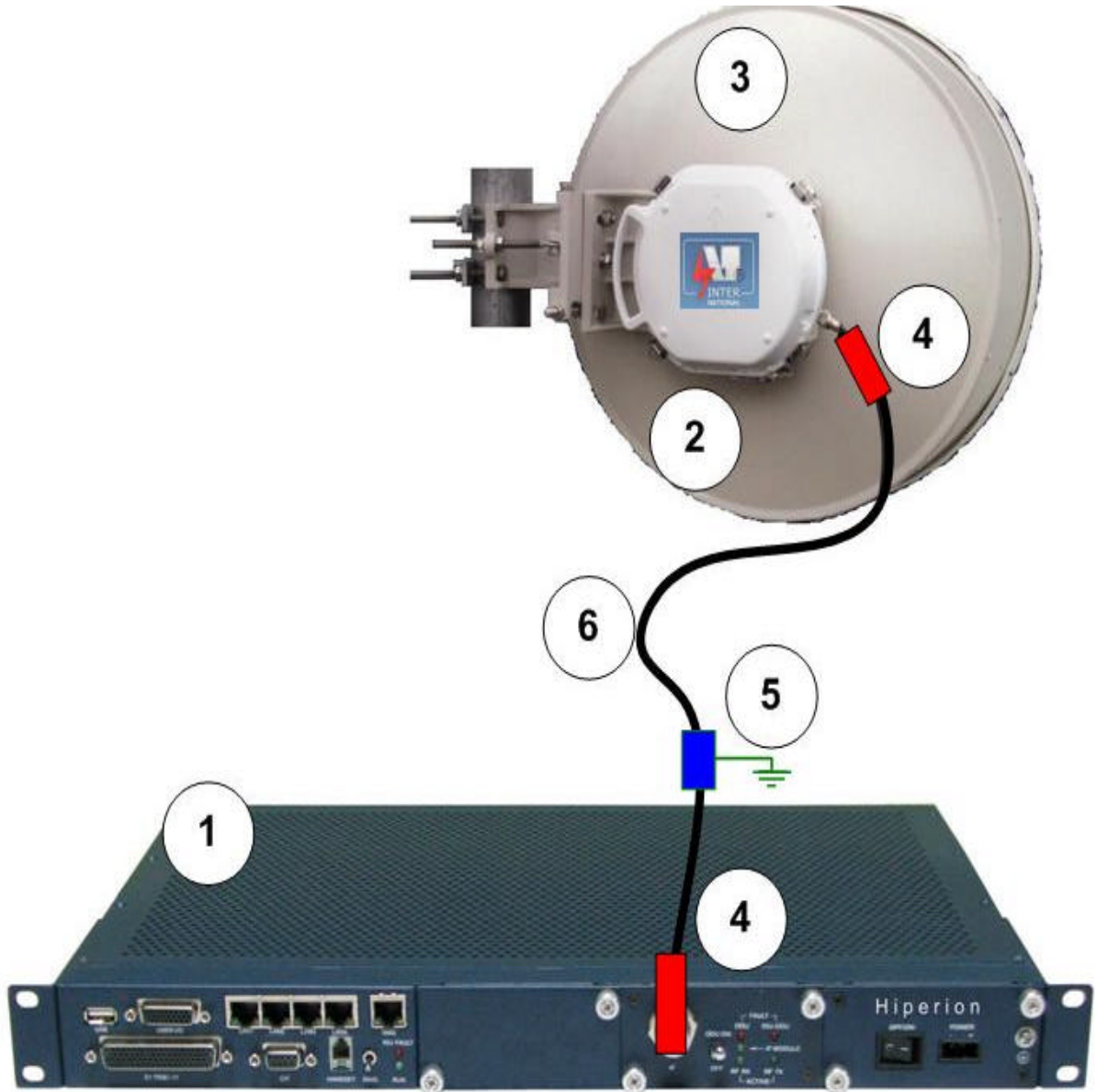
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Terminal Configurations 1 + 0, Split System

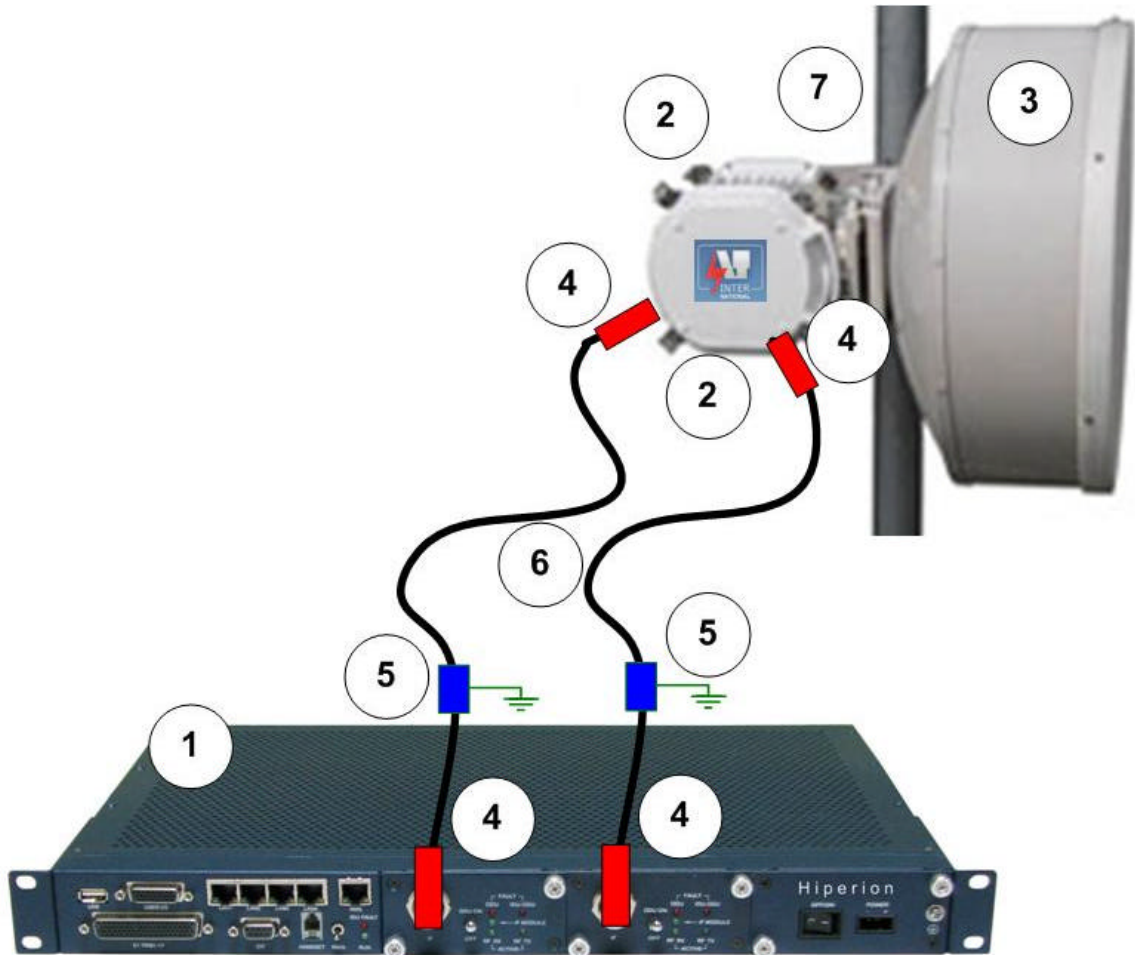
Direct Mount Antenna, 17E1 PDH, 32E1 Super PDH, IP-34 Mbps



1 + 0, IDU, Direct Mount Antenna (Antenna up to 1800 mm Diameter).

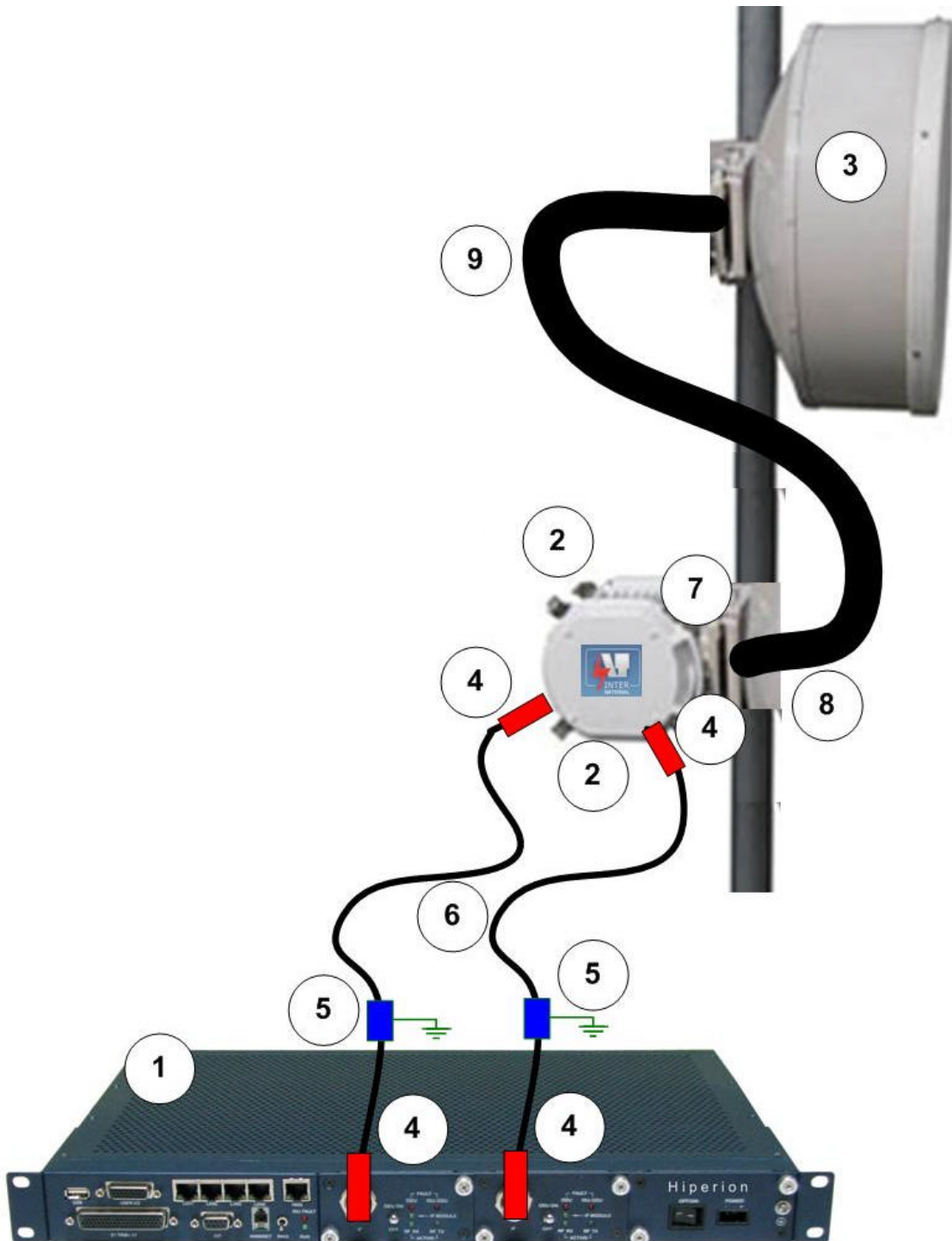
Terminal Configuration 1 + 1, Split System

Hot Standby - Direct Mount Antenna, 17E1 PDH



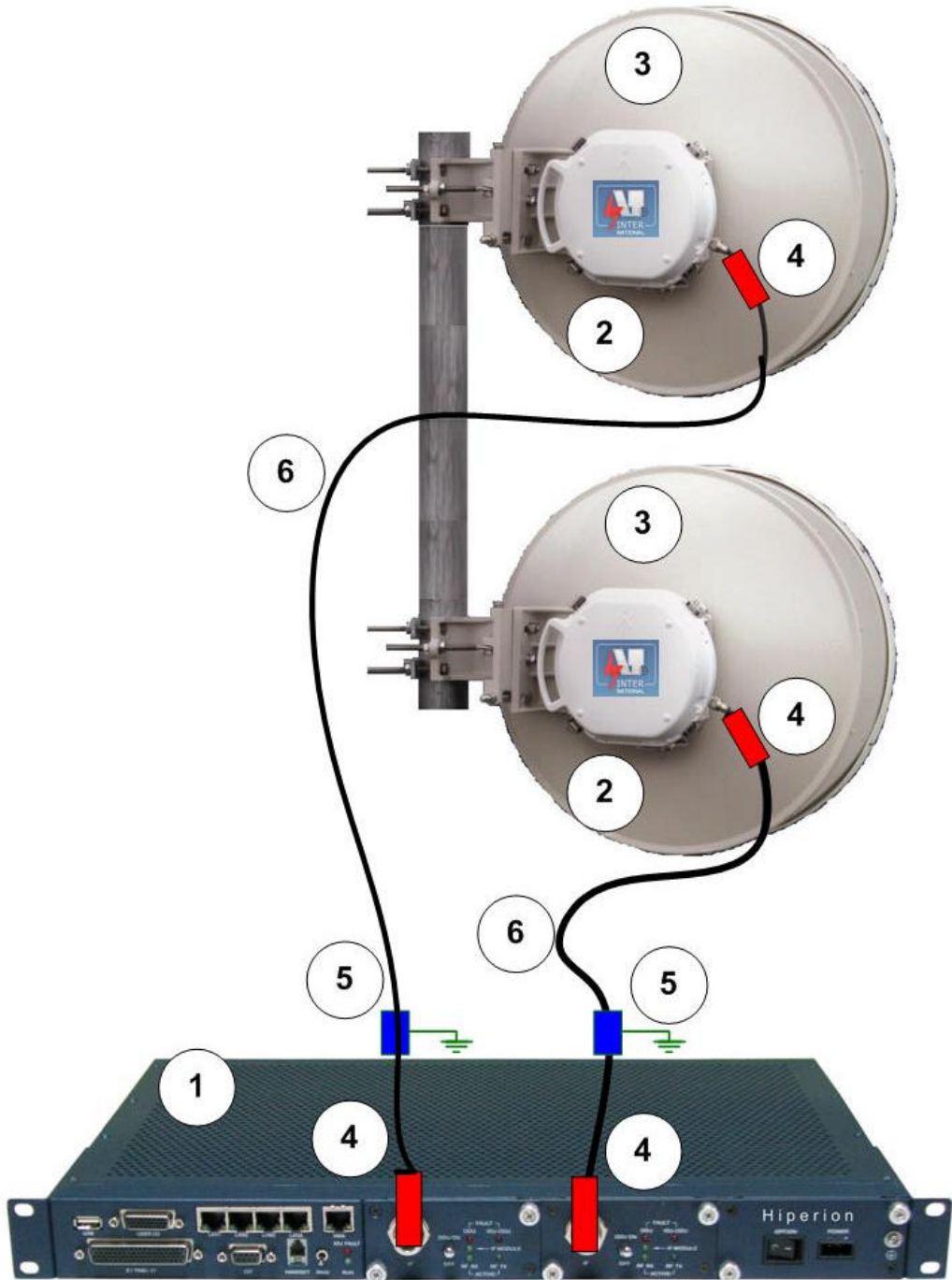
1 + 1, 17E1 IDU, Hot Standby Direct Mount Antenna (up to 1800mm Antenna)

Hot Standby - Remote Mount Antenna, 17E1 PDH



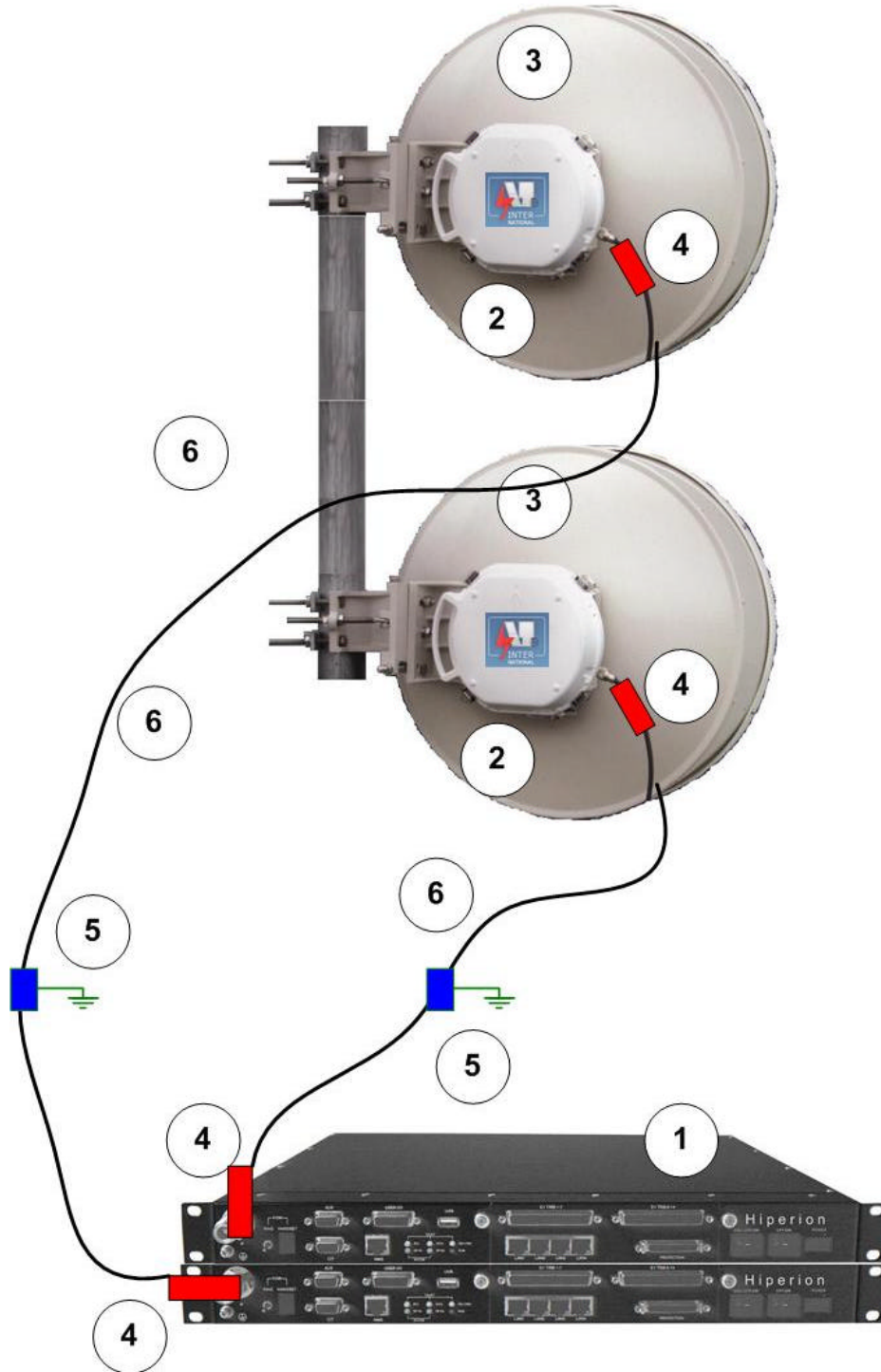
1 + 1, 17E1 IDU, Hot Standby Remote Mount Antenna

Space Diversity - Direct Mount Antenna, 17E1 PDH



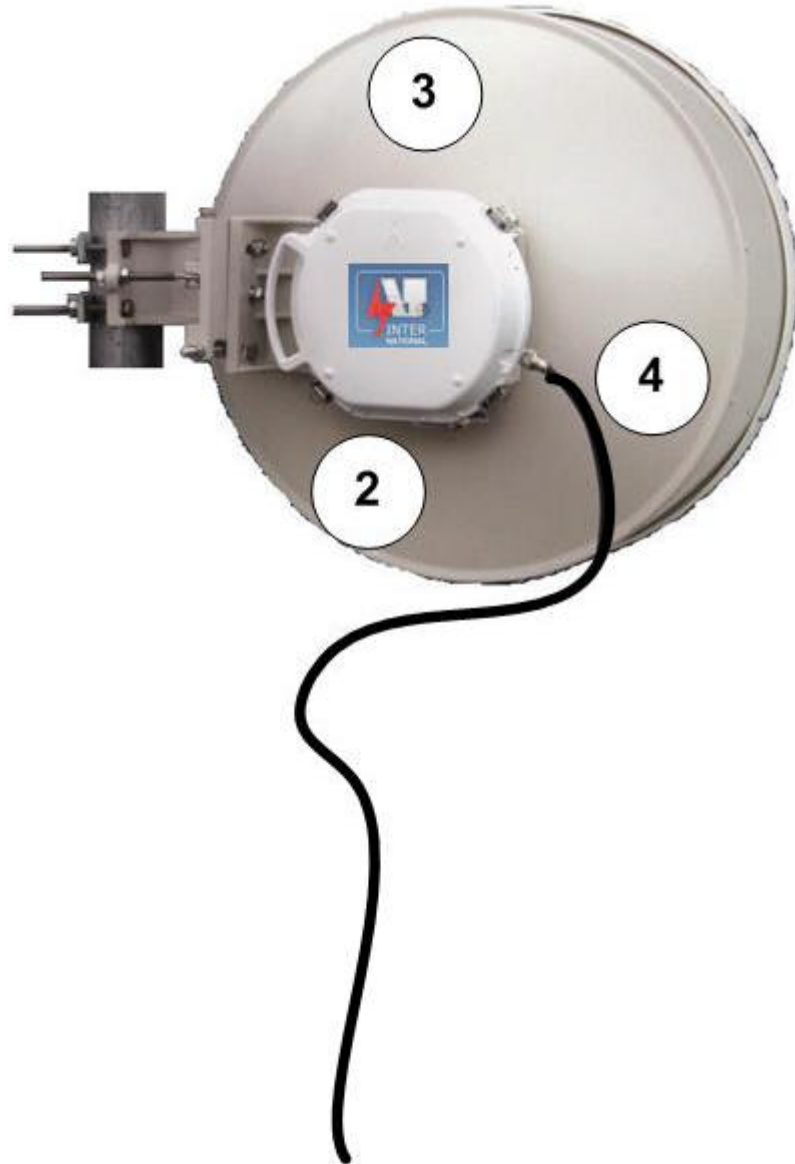
1 + 1, 17E1 IDU, Space Diversity, Direct Mount Antenna

Space Diversity - Direct Mount Antenna, 32E1, Super PDH



Terminal Configurations 1 + 0, IP All Outdoor System

Direct Mount Antenna





Link Configurations

System components 1 + 0, Split System

Direct and Indirect Mount Antenna

Models: 17E1 PDH, 17E1 PDH + Ethernet, Super PDH, Super PDH + Ethernet, 34Mbps IP

Item (See Note 2).

Configuration and minimum quantity required per link

	a.	b.
	Direct Mount Antenna (See note 1)	Indirect Mount Antenna
1. Indoor unit	2	2
1a. Installation Kit, IDU	2	2
2. Outdoor Unit (Terminal A + Terminal B)	2	2
2a. Installation Kit, ODU	2	2
3. Antenna	2	2
4. Surge Protector	4	4
5. Grounding Kit	2	2
6. IF Cable	2	2
7. RF Splitter	N/A	N/A
8. ODU Indirect Mount adaptor kit	N/A	2
9. Flexible waveguide	N/A	2

Note 1: Antennas greater than 1800 mm in diameter are remote mount and will require indirect mount adaptor kits and waveguide.

Note 2: Does not include End User Interface Cables, or Link Install Accessories Kit.



System components 1 + 1 Hot Standby, Split System

Direct and Indirect Mount Antenna

Models: 17E1 PDH, 17E1 + Ethernet

Item (See Note 2).

Configuration and minimum quantity required per link

	a.	b.
	Direct Mount Antenna (See note 1)	Indirect Mount Antenna
1. Indoor unit	2	2
1a. Installation Kit, IDU	2	2
2. Outdoor Unit (Terminal A + Terminal B)	4	4
2a. Installation Kit, ODU	4	4
3. Antenna	2	2
4. Surge Protector	8	8
5. Grounding Kit	4	4
6. IF Cable	4	4
7. RF Splitter	2	2
8. ODU Indirect Mount adaptor kit	N/A	2
9. Flexible waveguide	N/A	2

Note 1: Antennas greater than 1800 mm in diameter are remote mount and will require indirect mount adaptor kits and waveguide.

Note 2: Does not include End User Interface Cables, or Link Install Accessories Kit.



System components 1 + 1 Space Diversity, Split System

Direct and Indirect Mount Antenna

Models: 17E1 PDH, 17E1 PDH + Ethernet

Item (See Note 2).

Configuration and minimum quantity required per link

	a.	b.
	Direct Mount Antenna (See note 1)	Indirect Mount Antenna
1. Indoor unit	2	2
1a. Installation Kit, IDU	2	2
2. Outdoor Unit (Terminal A + Terminal B)	4	4
2a. Installation Kit, ODU	4	4
3. Antenna	4	4
4. Surge Protector	8	8
5. Grounding Kit	4	4
6. IF Cable	4	4
7. RF Splitter	N/A	N/A
8. ODU Indirect Mount adaptor kit	N/A	4
9. Flexible waveguide	N/A	4

Note 1: Antennas greater than 1800 mm in diameter are remote mount and will require indirect mount adaptor kits and waveguide.

Note 2: Does not include End User Interface Cables, or Link Install Accessories Kit.



System components 1 + 1 Hot Standby, Split System

Direct and Indirect Mount Antenna

Models: Super PDH, Super PDH + Ethernet

Item (See Note 2).

Configuration and minimum quantity required per link

	a.	b.
	Direct Mount Antenna (See note 1)	Indirect Mount Antenna
1. Indoor unit	4	4
1a. Installation Kit, IDU	4	4
2. Outdoor Unit (Terminal A + Terminal B)	4	4
2a. Installation Kit, ODU	4	4
3. Antenna	2	2
4. Surge Protector	8	8
5. Grounding Kit	4	4
6. IF Cable	4	4
7. RF Splitter	2	2
8. ODU Indirect Mount adaptor kit	N/A	2
9. Flexible waveguide	N/A	2

Note 1: Antennas greater than 1800 mm in diameter are remote mount and will require indirect mount adaptor kits and waveguide.

Note 2: Does not include End User Interface Cables, or Link Install Accessories Kit.



System components 1 + 1 Space Diversity, Split System

Direct and Indirect Mount Antenna

Models: Super PDH, Super PDH + Ethernet

Item (See Note 2).

Configuration and minimum quantity required per link

	a.	b.
	Direct Mount Antenna (See note 1)	Indirect Mount Antenna
1. Indoor unit	4	4
1a. Installation Kit, IDU	4	4
2. Outdoor Unit (Terminal A + Terminal B)	4	4
2a. Installation Kit, ODU	4	4
3. Antenna	4	4
4. Surge Protector	8	8
5. Grounding Kit	4	4
6. IF Cable	4	4
7. RF Splitter	N/A	N/A
8. ODU Indirect Mount adaptor kit	N/A	4
9. Flexible waveguide	N/A	4

Note 1: Antennas greater than 1800 mm in diameter are remote mount and will require indirect mount adaptor kits and waveguide.

Note 2: Does not include End User Interface Cables, or Link Install Accessories Kit.



System components 1 + 0, IP All Outdoor System

Direct and Indirect Mount Antenna

Models: IP300

Item (See Note 2).

Configuration and minimum quantity required per link

	a.	b.
	Direct Mount Antenna (See note 1)	Indirect Mount Antenna
1. Indoor unit	N/A	N/A
1a. Installation Kit, IDU	N/A	N/A
2. Outdoor Unit (Terminal A + Terminal B)	2	2
2a. Installation Kit, ODU	2	2
3. Antenna	2	2
4. Surge Protector	N/A	N/A
5. Grounding Kit	N/A	N/A
6. Outdoor Cat 5 Cable	2	2
7. RF Splitter	N/A	N/A
8. ODU Indirect Mount adaptor kit	N/A	2
9. Flexible waveguide	N/A	2

Note 1: Antennas greater than 1800 mm in diameter are remote mount and will require indirect mount adaptor kits and waveguide.

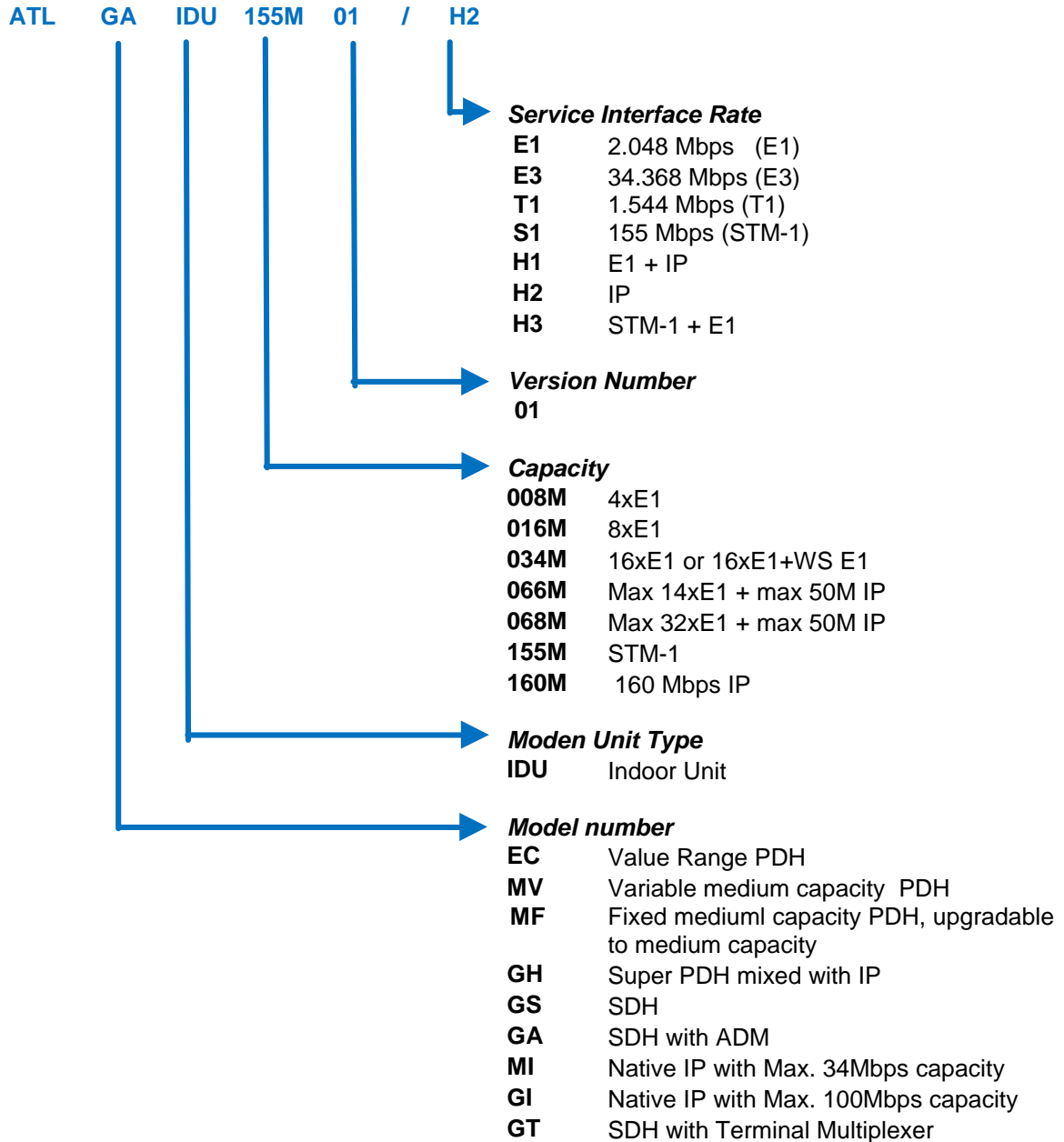
Note 2: Does not include End User Interface Cables, or Link Install Accessories Kit.



Indoor Units

Part Number Structure

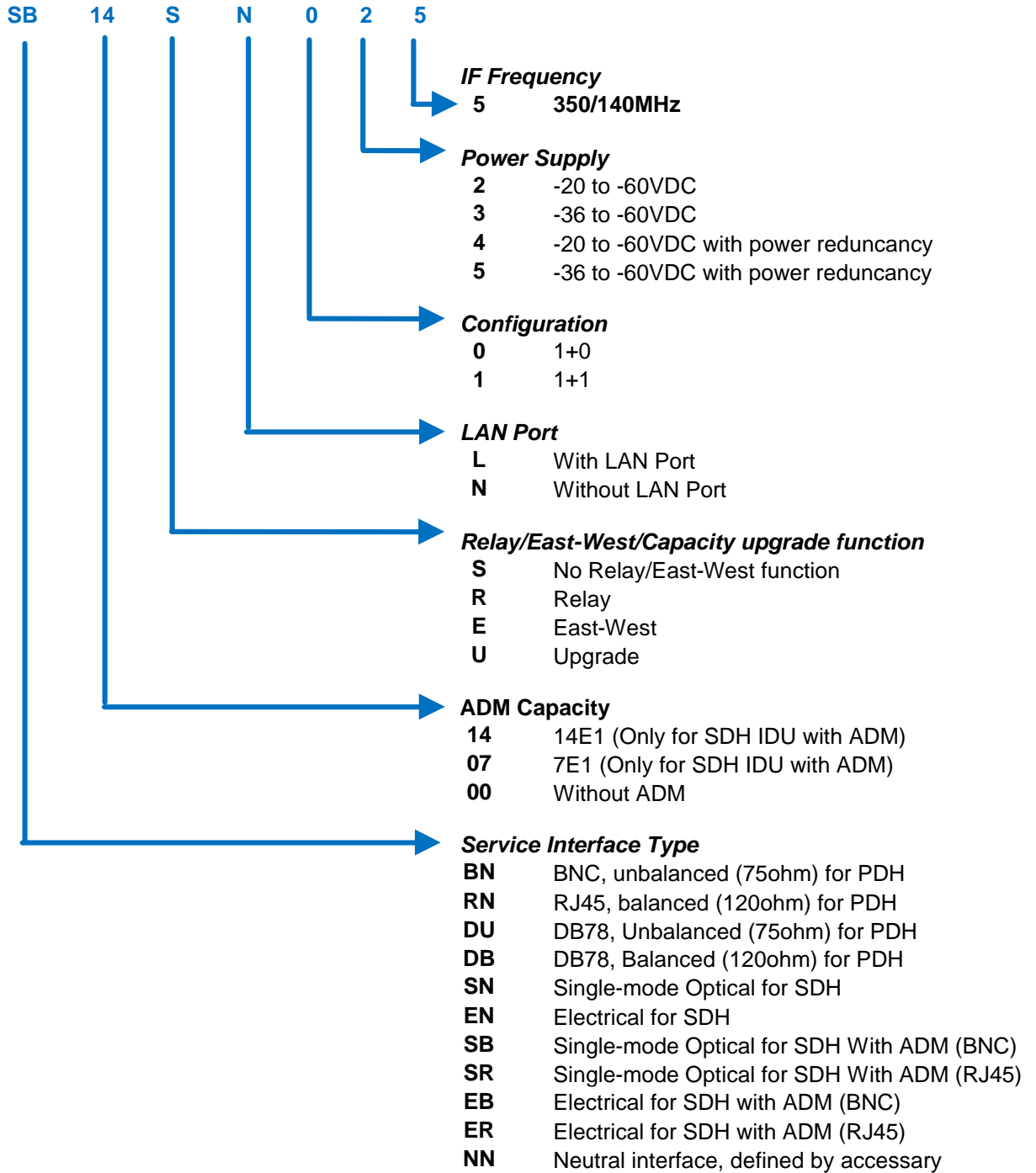
Example – STM/1 IDU: **ATL GA IDU 155M 01 / H2 SB 14 S N 0 2 5**





Part Number Structure

Example – STM/1 IDU: **ATL GA IDU 155M 01 / H2 SB 14 S N 0 2 5**



IDU Configurations

Value Range

4E1



User Interface Requirements: 8 x BNC cables, or 4 x RJ45 cables

8E1



User Interface Requirements: 16 x BNC cables, or 8 x RJ45 cables

16E1



User Interface Requirements: 16 x RJ45 cables

Please enquire for further options.

IDU Configurations

Variable Range

16E1 + 1E1 + LAN



User Interface Requirements: 1 x DB78-DB78 Cable (P/No ATL DB78-DB78), and
1 x DB78-to-RJ45 Access Panel (P/No ATL-PA173401) and,
17 x RJ45 cables



or

1 x 17E1/DB78-BNC Payload Cable (P/No ATL17E1/DB78-BNC), and
1 x DB78-to-17E1 BNC Blank Panel (P/No ATL-PANEL-5802) and,
34 x BNC cables



Please enquire for further options.

IDU Configurations

Premier Range

Super PDH 1 + 1

32E1



User Interface Requirements: 2 x DB78-DB78 Cable (P/No ATL DB78-DB78), and 1 x 1+1, Protection Cable with Power Redundancy (P/No ATL-HPDB-50P/1+1) and 1 x DB78-to-RJ45 Access Panel (P/No ATL-PA326601) and, 32 x RJ45 cables



Please enquire for further options.

IDU Configurations

Premier Range

SDH 1 + 0

STM/1 – Optical



User Interface Requirements: 2 x F 2-3m, Single-mode Fibre Cable (P/No ATL SC/UPC-LC/UPC/SM)



SDH 1 + 1

STM/1 – Optical



User Interface Requirements: 2 x F 2-3m, Single-mode Fibre Cable (P/No ATL SC/UPC-LC/UPC/SM)
1 x SDH 1+1, Protection Cable (P/No ATL-3101A/SDH/1+1)



Please enquire for further options.

Indoor Units

Value Range

The “Value Range” is for those customers who need an economical solution, without the need for further expansion or upgrade, or who wish to upgrade or expand in the future by substituting only the IDU.

Available as 1 + 0 only, up to 34 Mbps capacity.



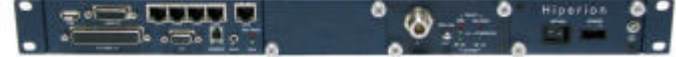





Model/Capacity	Part Number	Graphic
4E1, PDH only, RJ45, 8 Mbps	ATL-EC-IDU008M-02/E1RN00SN025	
4E1, PDH only, BNC, 8 Mbps	ATL-EC-IDU008M-02/E1BN00SN025	
8E1, PDH only, RJ45, 16 Mbps	ATL-EC-IDU016M-02/E1RN00SN025	
8E1, PDH only, BNC, 16 Mbps	ATL-EC-IDU016M-02/E1BN00SN025	
16E1, PDH only, RJ45, 34 Mbps	ATL-EC-IDU034M-02/E1RN00SN025	
16E1, PDH, RJ45 + LAN, 34 Mbps	ATL-EC-IDU034M-02/H1RN00SL025	
16E1, PDH only, BNC, 34 Mbps	ATL-EC-IDU034M-02/E1BN00SN025	
16E1, PDH, BNC + LAN, 34 Mbps	ATL-EC-IDU034M-02/H1BN00SL025	

Indoor Units

Variable Range


The “Variable Range” is for those customers who need an economical solution with 1 + 1 redundancy, with limited further expansion or upgrade, or who wish to upgrade or expand in the future by substituting only the IDU.

Available as 1 + 0 and 1 + 1 to 34 Mbps capacity.

Model/Capacity	Part Number	Graphic
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH only, 34 Mbps, 120 ? Balanced, 1 + 0	ATL-MV-IDU034M-01/E1DB00SN025	 
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH + LAN, 34 Mbps, 120 ? Balanced, 1 + 0	ATL-MV-IDU034M-01/H1DB00SL025	
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH only, 34 Mbps, 75 ? Unbalanced, 1 + 0	ATL-MV-IDU034M-01/E1DU00SN025	 
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH + LAN, 34 Mbps, 75 ? Unbalanced, 1 + 0	ATL-MV-IDU034M-01/H1DU00SL025	
2T1, 4T1, 8T1 and 16T1, PDH + LAN, 34 Mbps, 120 ? Balanced, 1 + 0	ATL-MV-IDU034M-01/T1DB00SL025	 
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH only, 34 Mbps, 120 ? Balanced, 1 + 1	ATL-MV-IDU034M-01/E1DB00SN125	
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH + LAN, 34 Mbps, 120 ? Balanced, 1 + 1	ATL-MV-IDU034M-01/H1DB00SL125	 
2T1, 4T1, 8T1 and 16T1, PDH + LAN, 34 Mbps, 120 ? Balanced, 1 + 1	ATL-MV-IDU034M-01/T1DB00SL125	

Indoor Units

Variable Range - continued

Model/Capacity	Part Number	Graphic
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH, 34 Mbps, 75 ? Unbalanced, 1 + 1	ATL-MV-IDU034M- 01/E1DU00SN125	
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH, 34 Mbps, 75 ? Unbalanced, 1 + 1	ATL-MV-IDU034M- 01/E1DU00SN155	
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH + LAN, 34 Mbps, 75 ? Unbalanced, 1 + 1	ATL-MV-IDU034M- 01/H1DU00SL125	
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH + LAN, 34 Mbps, 75 ? Unbalanced, 1 + 1	ATL-MV-IDU034M- 01/H1DU00SL155	
2E1, 4E1, 8E1 and 16E1 + 1E1, PDH + LAN, 34 Mbps, 75 ? Unbalanced, 1 + 1	ATL-MV-IDU034M- 01/E1DU00SN125	

Indoor Units

Premier Range - TDM

The “Premier Range” is for those customers who need a high performance, higher capacity solution, and need full capacity immediately, or who wish to upgrade or expand in the future by the selection via software of the necessary parameters in the IDU.

Various models support 1 + 0, 1 + 1 and 2 + 0 with throughput upto 600 Mbps with Adaptive Modulation.




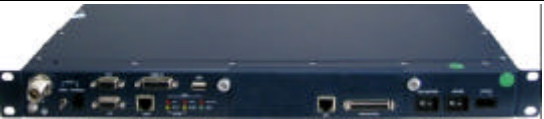
Model/Capacity	Part Number	Graphic
2E1, 4E1, 8E1, 16E1 and 32E1, Super PDH, 120 ? Balanced, 66 Mbps	ATL-GH-IDU066M-01/E1DB00SN025	
2E1, 4E1, 8E1, 16E1 and 32E1, Super PDH, 75 ? Unbalanced, 66 Mbps	ATL-GH-IDU066M-01/E1DU00SN025	
2E1, 4E1, 8E1, 16E1 and 32E1, Super PDH, 120 ? Balanced, + 4 x LAN, 66 Mbps	ATL-GH-IDU066M-01/H1DB00SL025	
2E1, 4E1, 8E1, 16E1 and 32E1, Super PDH, 75 ? Unbalanced, + 4 x LAN, 66 Mbps	ATL-GH-IDU066M-01/H1DU00SL025	
2E1, 4E1, 8E1, 16E1 and 32E1, Super PDH, 120 ? Balanced, + 4 x LAN + 1 x GbE, 160 Mbps	ATL-GH-IDU160M-01/H1DB00SL025	
2E1, 4E1, 8E1, 16E1 and 32E1, Super PDH, 75 ? Unbalanced + 4 x LAN + 1 GbE, 160 Mbps	ATL-GH-IDU160M-01/H1DU00SL025	
STM/1, 155 Mbps, Electrical or Optical	ATL-GS-IDU155M-01/S1NN00SN025	
STM/1, 155 Mbps with 7E1 ADM, Electrical or Optical	ATL-GA-IDU155M-01/H3NB07SN025	

Indoor Units

Premier Range – IP Only

The “Premier Range” is for those customers who need a high performance, higher capacity solution, and need full capacity immediately, or who wish to upgrade or expand in the future by the selection via software of the necessary parameters in the IDU.

Various models support 1 + 0, 1 + 1 and 2 + 0 with throughput upto 600 Mbps with Adaptive Modulation.

Model/Capacity	Part Number	Graphic
LAN Only, 34 Mbps, RJ45, 1 + 0	ATL-MI-IDU034M-01/H2RN00SL025	
LAN Only, 34 Mbps, RJ45, 1 + 1	ATL-MI-IDU034M-01/H2RN00SL125	
LAN Only, 100 Mbps, RJ45, 1 + 0	ATL-GI-IDU100M-01/H2RN00SL025	
LAN Only, 160 Mbps, RJ45, 1 + 0	ATL-GI-IDU160M-01	

Hiperion Split System ODU's

6 GHz



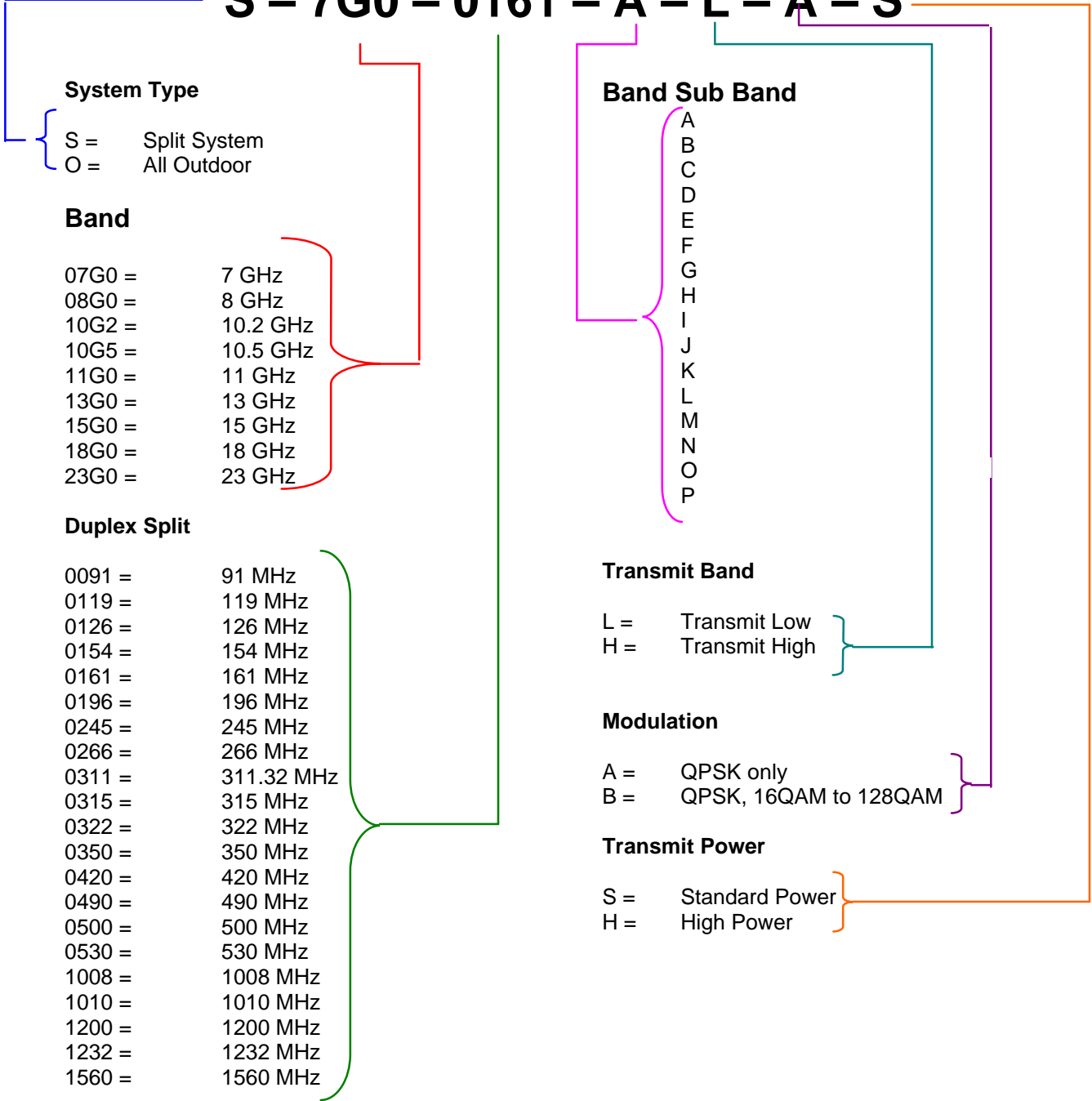
7 GHz to 38 GHz



ODU Part Numbering

Example

S – 7G0 – 0161 – A – L – A – S



***Note** **Standard Specification Temperature Range -33° C to + 55° C**

Cold Start Specification Temperature Range -55° C to + 55° C

ODU's - OPSK Only

7 GHz, 161 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7114 ~ 7177	S-07G0-0161-A-L-A-S	7275 ~ 7338	S-07G0-0161-A-H-A-S
B	7149 ~ 7212	S-07G0-0161-B-L-A-S	7310 ~ 7373	S-07G0-0161-B-H-A-S
C	7184 ~ 7247	S-07G0-0161-C-L-A-S	7345 ~ 7408	S-07G0-0161-C-H-A-S
D	7219 ~ 7282	S-07G0-0161-D-L-A-S	7380 ~ 7443	S-07G0-0161-D-H-A-S
E	7239 ~ 7302	S-07G0-0161-E-L-A-S	7400 ~ 7463	S-07G0-0161-E-H-A-S
F	7274 ~ 7337	S-07G0-0161-F-L-A-S	7435 ~ 7498	S-07G0-0161-F-H-A-S
G	7309 ~ 7372	S-07G0-0161-G-L-A-S	7470 ~ 7533	S-07G0-0161-G-H-A-S
H	7344 ~ 7407	S-07G0-0161-H-L-A-S	7505 ~ 7568	S-07G0-0161-H-H-A-S
I	7414 ~ 7477	S-07G0-0161-I-L-A-S	7575 ~ 7638	S-07G0-0161-I-H-A-S
J	7449 ~ 7512	S-07G0-0161-J-L-A-S	7610 ~ 7673	S-07G0-0161-J-H-A-S
K	7484 ~ 7547	S-07G0-0161-K-L-A-S	7645 ~ 7708	S-07G0-0161-K-H-A-S
L	7519 ~ 7582	S-07G0-0161-L-L-A-S	7680 ~ 7743	S-07G0-0161-L-H-A-S
M	7539 ~ 7602	S-07G0-0161-M-L-A-S	7700 ~ 7763	S-07G0-0161-M-H-A-S
N	7574 ~ 7637	S-07G0-0161-N-L-A-S	7735 ~ 7798	S-07G0-0161-N-H-A-S
O	7609 ~ 7672	S-07G0-0161-O-L-A-S	7770 ~ 7833	S-07G0-0161-O-H-A-S
P	7644 ~ 7707	S-07G0-0161-P-L-A-S	7805 ~ 7868	S-07G0-0161-P-H-A-S

7 GHz, 154 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7428 ~ 7484	S-07G-0154--A-L-A-S	7582 ~ 7638	S-07G-0154--A-H-A-S
B	7470 ~ 7526	S-07G-0154--B-L-A-S	7624 ~ 7680	S-07G-0154--B-H-A-S
C	7512 ~ 7568	S-07G-0154--C-L-A-S	7666 ~ 7722	S-07G-0154--C-H-A-S

7 GHz, 196 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7093 ~ 7149	S-07G-0196--A-L-A-S	7289 ~ 7345	S-07G-0196--A-H-A-S
B	7121 ~ 7177	S-07G-0196--B-L-A-S	7317 ~ 7373	S-07G-0196--B-H-A-S
C	7149 ~ 7205	S-07G-0196--C-L-A-S	7345 ~ 7401	S-07G-0196--C-H-A-S
D	7177 ~ 7233	S-07G-0196--D-L-A-S	7373 ~ 7429	S-07G-0196--D-H-A-S
E	7205 ~ 7261	S-07G-0196--E-L-A-S	7401 ~ 7457	S-07G-0196--E-H-A-S

7 GHz, 245 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7400 ~ 7484	S-07G-0245--A-L-A-S	7645 ~ 7729	S-07G-0245--A-H-A-S
B	7484 ~ 7568	S-07G-0245--B-L-A-S	7729 ~ 7813	S-07G-0245--B-H-A-S
C	7568 ~ 7652	S-07G-0245--C-L-A-S	7813 ~ 7897	S-07G-0245--C-H-A-S

8 GHz, 119 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	8279 ~ 8307	S-08G-0119--A-L-A-S	8398 ~ 8426	S-08G-0119--A-H-A-S
B	8293 ~ 8321	S-08G-0119--B-L-A-S	8412 ~ 8440	S-08G-0119--B-H-A-S
C	8307 ~ 8335	S-08G-0119--C-L-A-S	8426 ~ 8454	S-08G-0119--C-H-A-S
D	8321 ~ 8349	S-08G-0119--D-L-A-S	8440 ~ 8468	S-08G-0119--D-H-A-S
E	8335 ~ 8363	S-08G-0119--E-L-A-S	8454 ~ 8482	S-08G-0119--E-H-A-S
F	8349 ~ 8377	S-08G-0119--F-L-A-S	8468 ~ 8496	S-08G-0119--F-H-A-S

8 GHz, 126 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	8279 ~ 8307	S-08G-0126-A-L-A-S	8398 ~ 8426	S-08G-0126-A-H-A-S
B	8293 ~ 8321	S-08G-0126-B-L-A-S	8412 ~ 8440	S-08G-0126-B-H-A-S
C	8307 ~ 8335	S-08G-0126-C-L-A-S	8426 ~ 8454	S-08G-0126-C-H-A-S
D	8321 ~ 8349	S-08G-0126-D-L-A-S	8440 ~ 8468	S-08G-0126-D-H-A-S
E	8335 ~ 8363	S-08G-0126-E-L-A-S	8454 ~ 8482	S-08G-0126-E-H-A-S
F	8349 ~ 8377	S-08G-0126-F-L-A-S	8468 ~ 8496	S-08G-0126-F-H-A-S

8 GHz, 311.32 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7731 ~ 7867	S-08G-0311-A-L-A-S	8042 ~ 8178	S-08G-0311-A-H-A-S
B	7835 ~ 7971	S-08G-0311-B-L-A-S	8146 ~ 8282	S-08G-0311-B-H-A-S

13 GHz, 266 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	12751 ~ 12870	S-13G-0266-A-L-A-S	13017 ~ 13136	S-13G-0266-A-H-A-S
B	12863 ~ 12982	S-13G-0266-B-L-A-S	13129 ~ 13248	S-13G-0266-B-H-A-S
C	12863 ~ 12926	S-13G-0266-C-L-A-S	13129 ~ 13192	S-13G-0266-C-H-A-S
D	12919 ~ 12982	S-13G-0266-D-L-A-S	13185 ~ 13248	S-13G-0266-D-H-A-S

15 GHz, 420 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14501 ~ 14613	S-15G-0420-A-L-A-S	14921 ~ 15033	S-15G-0420-A-H-A-S
B	14606 ~ 14725	S-15G-0420-B-L-A-S	15026 ~ 15145	S-15G-0420-B-H-A-S
C	14718 ~ 14837	S-15G-0420-C-L-A-S	15138 ~ 15257	S-15G-0420-C-H-A-S
D	14816 ~ 14928	S-15G-0420-D-L-A-S	15236 ~ 15348	S-15G-0420-D-H-A-S

15 GHz, 490 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14403 ~ 14522	S-15G-0490-A-L-A-S	14893 ~ 15012	S-15G-0490-A-H-A-S
B	14515 ~ 14634	S-15G-0490-B-L-A-S	15005 ~ 15124	S-15G-0490-B-H-A-S
C	14627 ~ 14746	S-15G-0490-C-L-A-S	15117 ~ 15236	S-15G-0490-C-H-A-S
D	14739 ~ 14858	S-15G-0490-D-L-A-S	15229 ~ 15348	S-15G-0490-D-H-A-S

15 GHz, 315/322 MHz Duplex Split

Suits ID Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14627 ~ 14746	S-15G-0315-A-L-A-S	14942 ~ 15061	S-15G-0315-A-H-A-S
B	14725 ~ 14844	S-15G-0315-B-L-A-S	15040 ~ 15159	S-15G-0315-B-H-A-S
C	14823 ~ 14942	S-15G-0315-C-L-A-S	15138 ~ 15257	S-15G-0315-C-H-A-S



18 GHz, 1010 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	17685 ~ 17985	S-18G-1010-A-L-A-S	18695 ~ 18995	S-18G-1010-A-H-A-S
B	17930 ~ 18230	S-18G-1010-B-L-A-S	18940 ~ 19240	S-18G-1010-B-H-A-S
C	18180 ~ 18480	S-18G-1010-C-L-A-S	19190 ~ 19490	S-18G-1010-C-H-A-S
D	18400 ~ 18700	S-18G-1010-D-L-A-S	19410 ~ 19710	S-18G-1010-D-H-A-S

18 GHz, 1008 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	17685 ~ 17985	S-18G-1008-A-L-A-S	18695 ~ 18995	S-18G-1008-A-H-A-S
B	17930 ~ 18230	S-18G-1008-B-L-A-S	18940 ~ 19240	S-18G-1008-B-H-A-S
C	18180 ~ 18480	S-18G-1008-C-L-A-S	19190 ~ 19490	S-18G-1008-C-H-A-S
D	18400 ~ 18700	S-18G-1008-D-L-A-S	19410 ~ 19710	S-18G-1008-D-H-A-S

18 GHz, 1560 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
C	17700 ~ 18140	S-18G-1560-C-L-A-S	19260 ~ 19700	S-18G-1560-C-H-A-S

23 GHz, 1008 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21994 ~ 22330	S-23G-1008-A-L-A-S	23002 ~ 23338	S-23G-1008-A-H-A-S
B	22274 ~ 22610	S-23G-1008-B-L-A-S	23282 ~ 23618	S-23G-1008-B-H-A-S

23 GHz, 1232 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21200 ~ 21500	S-23G-1232-A-L-A-S	22432 ~ 22732	S-23G-1232-A-H-A-S
B	21472 ~ 21786	S-23G-1232-B-L-A-S	22704 ~ 23018	S-23G-1232-B-H-A-S
C	21779 ~ 22093	S-23G-1232-C-L-A-S	23011 ~ 23325	S-23G-1232-C-H-A-S
D	22086 ~ 22386	S-23G-1232-D-L-A-S	23318 ~ 23618	S-23G-1232-D-H-A-S

23 GHz, 1200 MHz Duplex Split

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21200 ~ 21600	S-23G-1200-A-L-A-S	22400 ~ 22800	S-23G-1200-A-H-A-S
B	21600 ~ 22000	S-23G-1200-B-L-A-S	22800 ~ 23200	S-23G-1200-B-H-A-S
C	22000 ~ 22400	S-23G-1200-C-L-A-S	23200 ~ 23600	S-23G-1200-C-H-A-S

ODU's – OPSK/QAM Standard Power

7 GHz, 161 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7114 ~ 7177	S-07G-0161-A-L-B-S	7275 ~ 7338	S-07G-0161-A-H-B-S
B	7149 ~ 7212	S-07G-0161-B-L-B-S	7310 ~ 7373	S-07G-0161-B-H-B-S
C	7184 ~ 7247	S-07G-0161-C-L-B-S	7345 ~ 7408	S-07G-0161-C-H-B-S
D	7219 ~ 7282	S-07G-0161-D-L-B-S	7380 ~ 7443	S-07G-0161-D-H-B-S
E	7239 ~ 7302	S-07G-0161-E-L-B-S	7400 ~ 7463	S-07G-0161-E-H-B-S
F	7274 ~ 7337	S-07G-0161-F-L-B-S	7435 ~ 7498	S-07G-0161-F-H-B-S
G	7309 ~ 7372	S-07G-0161-G-L-B-S	7470 ~ 7533	S-07G-0161-G-H-B-S
H	7344 ~ 7407	S-07G-0161-H-L-B-S	7505 ~ 7568	S-07G-0161-H-H-B-S
I	7414 ~ 7477	S-07G-0161-I-L-B-S	7575 ~ 7638	S-07G-0161-I-H-B-S
J	7449 ~ 7512	S-07G-0161-J-L-B-S	7610 ~ 7673	S-07G-0161-J-H-B-S
K	7484 ~ 7547	S-07G-0161-K-L-B-S	7645 ~ 7708	S-07G-0161-K-H-B-S
L	7519 ~ 7582	S-07G-0161-L-L-B-S	7680 ~ 7743	S-07G-0161-L-H-B-S
M	7539 ~ 7602	S-07G-0161-M-L-B-S	7700 ~ 7763	S-07G-0161-M-H-B-S
N	7574 ~ 7637	S-07G-0161-N-L-B-S	7735 ~ 7798	S-07G-0161-N-H-B-S
O	7609 ~ 7672	S-07G-0161-O-L-B-S	7770 ~ 7833	S-07G-0161-O-H-B-S
P	7644 ~ 7707	S-07G-0161-P-L-B-S	7805 ~ 7868	S-07G-0161-P-H-B-S

7 GHz, 154 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7428 ~ 7484	S-07G-0154-A-L-B-S	7582 ~ 7638	S-07G-0154-A-H-B-S
B	7470 ~ 7526	S-07G-0154-B-L-B-S	7624 ~ 7680	S-07G-0154-B-H-B-S
C	7512 ~ 7568	S-07G-0154-C-L-B-S	7666 ~ 7722	S-07G-0154-C-H-B-S

7 GHz, 196 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7093 ~ 7149	S-07G-0196-A-L-B-S	7289 ~ 7345	S-07G-0196-A-H-B-S
B	7121 ~ 7177	S-07G-0196-B-L-B-S	7317 ~ 7373	S-07G-0196-B-H-B-S
C	7149 ~ 7205	S-07G-0196-C-L-B-S	7345 ~ 7401	S-07G-0196-C-H-B-S
D	7177 ~ 7233	S-07G-0196-D-L-B-S	7373 ~ 7429	S-07G-0196-D-H-B-S
E	7205 ~ 7261	S-07G-0196-E-L-B-S	7401 ~ 7457	S-07G-0196-E-H-B-S

7 GHz, 245 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7400 ~ 7484	S-07G-0245-A-L-B-S	7645 ~ 7729	S-07G-0245-A-H-B-S
B	7484 ~ 7568	S-07G-0245-B-L-B-S	7729 ~ 7813	S-07G-0245-B-H-B-S
C	7568 ~ 7652	S-07G-0245-C-L-B-S	7813 ~ 7897	S-07G-0245-C-H-B-S

8 GHz, 119 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	8279 ~ 8307	S-08G-0119-A-L-B-S	8398 ~ 8426	S-08G-0119-A-H-B-S
B	8293 ~ 8321	S-08G-0119-B-L-B-S	8412 ~ 8440	S-08G-0119-B-H-B-S
C	8307 ~ 8335	S-08G-0119-C-L-B-S	8426 ~ 8454	S-08G-0119-C-H-B-S
D	8321 ~ 8349	S-08G-0119-D-L-B-S	8440 ~ 8468	S-08G-0119-D-H-B-S
E	8335 ~ 8363	S-08G-0119-E-L-B-S	8454 ~ 8482	S-08G-0119-E-H-B-S
F	8349 ~ 8377	S-08G-0119-F-L-B-S	8468 ~ 8496	S-08G-0119-F-H-B-S



8 GHz, 126 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	8279 ~ 8307	S-08G-0126-A-L-B-S	8398 ~ 8426	S-08G-0126-A-H-B-S
B	8293 ~ 8321	S-08G-0126-B-L-B-S	8412 ~ 8440	S-08G-0126-B-H-B-S
C	8307 ~ 8335	S-08G-0126-C-L-B-S	8426 ~ 8454	S-08G-0126-C-H-B-S
D	8321 ~ 8349	S-08G-0126-D-L-B-S	8440 ~ 8468	S-08G-0126-D-H-B-S
E	8335 ~ 8363	S-08G-0126-E-L-B-S	8454 ~ 8482	S-08G-0126-E-H-B-S
F	8349 ~ 8377	S-08G-0126-F-L-B-S	8468 ~ 8496	S-08G-0126-F-H-B-S

8 GHz, 311.32 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7731 ~ 7867	S-08G-0311-A-L-B-S	8042 ~ 8178	S-08G-0311-A-H-B-S
B	7835 ~ 7971	S-08G-0311-B-L-B-S	8146 ~ 8282	S-08G-0311-B-H-B-S

13 GHz, 266 MHz Duplex Split

QPSK = 24 dBm, 16QAM = 20 dBm, 64QAM/128QAM = 18 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	12751 ~ 12870	S-13G-0266-A-L-B-S	13017 ~ 13136	S-13G-0266-A-H-B-S
B	12863 ~ 12982	S-13G-0266-B-L-B-S	13129 ~ 13248	S-13G-0266-B-H-B-S
C	12863 ~ 12926	S-13G-0266-C-L-B-S	13129 ~ 13192	S-13G-0266-C-H-B-S
D	12919 ~ 12982	S-13G-0266-D-L-B-S	13185 ~ 13248	S-13G-0266-D-H-B-S

15 GHz, 420 MHz Duplex Split

QPSK = 24 dBm, 16QAM = 20 dBm, 64QAM/128QAM = 18 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14501 ~ 14613	S-15G-0420-A-L-B-S	14921 ~ 15033	S-15G-0420-A-L-B-S
B	14606 ~ 14725	S-15G-0420-B-L-B-S	15026 ~ 15145	S-15G-0420-B-L-B-S
C	14718 ~ 14837	S-15G-0420-C-L-B-S	15138 ~ 15257	S-15G-0420-C-L-B-S
D	14816 ~ 14928	S-15G-0420-D-L-B-S	15236 ~ 15348	S-15G-0420-D-L-B-S



15 GHz, 490 MHz Duplex Split

QPSK = 24 dBm, 16QAM = 20 dBm, 64QAM/128QAM = 18 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14403 ~ 14522	S-15G-0490-A-L-B-S	14893 ~ 15012	S-15G-0490-A-H-B-S
B	14515 ~ 14634	S-15G-0490-B-L-B-S	15005 ~ 15124	S-15G-0490-B-H-B-S
C	14627 ~ 14746	S-15G-0490-C-L-B-S	15117 ~ 15236	S-15G-0490-C-H-B-S
D	14739 ~ 14858	S-15G-0490-D-L-B-S	15229 ~ 15348	S-15G-0490-D-H-B-S

15 GHz, 315/322 MHz Duplex Split

QPSK = 24 dBm, 16QAM = 20 dBm, 64QAM/128QAM = 18 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14627 ~ 14746	S-15G-0315-A-L-B-S	14942 ~ 15061	S-15G-0315-A-H-B-S
B	14725 ~ 14844	S-15G-0315-B-L-B-S	15040 ~ 15159	S-15G-0315-B-H-B-S
C	14823 ~ 14942	S-15G-0315-C-L-B-S	15138 ~ 15257	S-15G-0315-C-H-B-S



18 GHz, 1010 MHz Duplex Split

QPSK = 22.5 dBm, 16QAM = 19 dBm, 64QAM/128QAM = 17 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	17685 ~ 17985	S-18G-1010-A-L-B-S	18695 ~ 18995	S-18G-1010-A-H-B-S
B	17930 ~ 18230	S-18G-1010-B-L-B-S	18940 ~ 19240	S-18G-1010-B-H-B-S
C	18180 ~ 18480	S-18G-1010-C-L-B-S	19190 ~ 19490	S-18G-1010-C-H-B-S
D	18400 ~ 18700	S-18G-1010-D-L-B-S	19410 ~ 19710	S-18G-1010-D-H-B-S

18 GHz, 1008 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 19 dBm, 64QAM/128QAM = 17 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	17685 ~ 17985	S-18G-1008-A-L-B-S	18695 ~ 18995	S-18G-1008-A-H-B-S
B	17930 ~ 18230	S-18G-1008-B-L-B-S	18940 ~ 19240	S-18G-1008-B-H-B-S
C	18180 ~ 18480	S-18G-1008-C-L-B-S	19190 ~ 19490	S-18G-1008-C-H-B-S
D	18400 ~ 18700	S-18G-1008-D-L-B-S	19410 ~ 19710	S-18G-1008-D-H-B-S



18 GHz, 1560 MHz Duplex Split

QPSK = 22.5 dBm, 16QAM = 19 dBm, 64QAM/128QAM = 17 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
C	17700 ~ 18140	S-18G-1560C-L-B-S	19260 ~ 19700	S-18G-1560C-H-B-S

23 GHz, 1008 MHz Duplex Split

QPSK = 22 dBm, 16QAM = 19 dBm, 64QAM/128QAM = 17 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21994 ~ 22330	S-23G-1008-A-L-B-S	23002 ~ 23338	S-23G-1008-A-H-B-S
B	22274 ~ 22610	S-23G-1008-B-L-B-S	23282 ~ 23618	S-23G-1008-B-H-B-S



23 GHz, 1232 MHz Duplex Split

QPSK = 22 dBm, 16QAM = 19 dBm, 64QAM/128QAM = 17 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21200 ~ 21500	S-23G-1232-A-L-B-S	22432 ~ 22732	S-23G-1232-A-H-B-S
B	21472 ~ 21786	S-23G-1232-B-L-B-S	22704 ~ 23018	S-23G-1232-B-H-B-S
C	21779 ~ 22093	S-23G-1232-C-L-B-S	23011 ~ 23325	S-23G-1232-C-H-B-S
D	22086 ~ 22386	S-23G-1232-D-L-B-S	23318 ~ 23618	S-23G-1232-D-H-B-S

23 GHz, 1200 MHz Duplex Split

QPSK = 22 dBm, 16QAM = 19 dBm, 64QAM/128QAM = 17 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21200 ~ 21600	S-23G-1200-A-L-B-S	22400 ~ 22800	S-23G-1200-A-H-B-S
B	21600 ~ 22000	S-23G-1200-B-L-B-S	22800 ~ 23200	S-23G-1200-B-H-B-S
C	22000 ~ 22400	S-23G-1200-C-L-B-S	23200 ~ 23600	S-23G-1200-C-H-B-S

ODU's – OPSK/QAM High Power

6 GHz, 252.04 MHz Duplex Split – “N-Type” Interface

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	5915 ~ 5990	S-06G-0252-A-L-B-H	6167 ~ 6242	S-06G-0252-A-H-B-H
B	5974 ~ 6049	S-06G-0252-B-L-B-H	6226 ~ 6301	S-06G-0252-B-H-B-H
C	6034 ~ 6109	S-06G-0252-C-L-B-H	6286 ~ 6361	S-06G-0252-C-H-B-H
D	6093 ~ 6173	S-06G-0252-D-L-B-H	6345 ~ 6425	S-06G-0252-D-H-B-H

6 GHz, 300 MHz Duplex Split – “N-Type” Interface

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	5850 ~ 5946	S-06G-0300-A-L-B-H	6150.00 ~ 6246.00	S-06G-0300-A-H-B-H
B	5918 ~ 6014	S-06G-0300-B-L-B-H	6218 ~ 6314	S-06G-0300-B-H-B-H
C	5986 ~ 6082	S-06G-0300-C-L-B-H	6286 ~ 6382	S-06G-0300-C-H-B-H
D	6054 ~ 6150	S-06G-0300-D-L-B-H	6354 ~ 6450	S-06G-0300-D-H-B-H

6 GHz, 340 MHz Duplex Split – “N-Type” Interface

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	6425 ~ 6509	S-06G-0340-A-L-B-H	6765 ~ 6849	S-06G-0340-A-H-B-H
B	6481 ~ 6564	S-06G-0340-B-L-B-H	6821 ~ 6904	S-06G-0340-B-H-B-H
C	6536 ~ 6619	S-06G-0340-C-L-B-H	6876 ~ 6959	S-06G-0340-C-H-B-H
D	6591 ~ 6674	S-06G-0340-D-L-B-H	6931 ~ 7014	S-06G-0340-D-H-B-H
E	6646 ~ 6729	S-06G-0340-E-L-B-H	6986 ~ 7069	S-06G-0340-E-H-B-H
F	6701 ~ 6785	S-06G-0340-F-L-B-H	7041 ~ 7125	S-06G-0340-F-H-B-H

6 GHz, 350 MHz Duplex Split – “N-Type” Interface

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	6425 ~ 6499	S-06G-0350-A-L-B-H	6775 ~ 6849	S-06G-0350-A-H-B-H
B	6481 ~ 6554	S-06G-0350-B-L-B-H	6831 ~ 6904	S-06G-0350-B-H-B-H
C	6536 ~ 6609	S-06G-0350-C-L-B-H	6886 ~ 6959	S-06G-0350-C-H-B-H
D	6591 ~ 6664	S-06G-0350-D-L-B-H	6941 ~ 7014	S-06G-0350-D-H-B-H
E	6646 ~ 6719	S-06G-0350-E-L-B-H	6996 ~ 7069	S-06G-0350-E-H-B-H
F	6701 ~ 6775	S-06G-0350-F-L-B-H	7051 ~ 7125	S-06G-0350-F-H-B-H

7 GHz, 161 MHz Duplex Split

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7114 ~ 7177	S-07G-0161-A-L-B-H	7275 ~ 7338	S-07G-0161-A-H-B-H
B	7149 ~ 7212	S-07G-0161-B-L-B-H	7310 ~ 7373	S-07G-0161-B-H-B-H
C	7184 ~ 7247	S-07G-0161-C-L-B-H	7345 ~ 7408	S-07G-0161-C-H-B-H
D	7219 ~ 7282	S-07G-0161-D-L-B-H	7380 ~ 7443	S-07G-0161-D-H-B-H
E	7239 ~ 7302	S-07G-0161-E-L-B-H	7400 ~ 7463	S-07G-0161-E-H-B-H
F	7274 ~ 7337	S-07G-0161-F-L-B-H	7435 ~ 7498	S-07G-0161-F-H-B-H
G	7309 ~ 7372	S-07G-0161-G-L-B-H	7470 ~ 7533	S-07G-0161-G-H-B-H
H	7344 ~ 7407	S-07G-0161-H-L-B-H	7505 ~ 7568	S-07G-0161-H-H-B-H
I	7414 ~ 7477	S-07G-0161-I-L-B-H	7575 ~ 7638	S-07G-0161-I-H-B-H
J	7449 ~ 7512	S-07G-0161-J-L-B-H	7610 ~ 7673	S-07G-0161-J-H-B-H
K	7484 ~ 7547	S-07G-0161-K-L-B-H	7645 ~ 7708	S-07G-0161-K-H-B-H
L	7519 ~ 7582	S-07G-0161-L-L-B-H	7680 ~ 7743	S-07G-0161-L-H-B-H
M	7539 ~ 7602	S-07G-0161-M-L-B-H	7700 ~ 7763	S-07G-0161-M-H-B-H
N	7574 ~ 7637	S-07G-0161-N-L-B-H	7735 ~ 7798	S-07G-0161-N-H-B-H
O	7609 ~ 7672	S-07G-0161-O-L-B-H	7770 ~ 7833	S-07G-0161-O-H-B-H
P	7644 ~ 7707	S-07G-0161-P-L-B-H	7805 ~ 7868	S-07G-0161-P-H-B-H



7 GHz, 154 MHz Duplex Split

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7428 ~ 7484	S-07G-0154-A-L-B-H	7582 ~ 7638	S-07G-0154-A-H-B-H
B	7470 ~ 7526	S-07G-0154-B-L-B-H	7624 ~ 7680	S-07G-0154-B-H-B-H
C	7512 ~ 7568	S-07G-0154-C-L-B-H	7666 ~ 7722	S-07G-0154-C-H-B-H

7 GHz, 196 MHz Duplex Split

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7093 ~ 7149	S-07G-0196-A-L-B-H	7289 ~ 7345	S-07G-0196-A-H-B-H
B	7121 ~ 7177	S-07G-0196-B-L-B-H	7317 ~ 7373	S-07G-0196-B-H-B-H
C	7149 ~ 7205	S-07G-0196-C-L-B-H	7345 ~ 7401	S-07G-0196-C-H-B-H
D	7177 ~ 7233	S-07G-0196-D-L-B-H	7373 ~ 7429	S-07G-0196-D-H-B-H
E	7205 ~ 7261	S-07G-0196-E-L-B-H	7401 ~ 7457	S-07G-0196-E-H-B-H



7 GHz, 245 MHz Duplex Split

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7400 ~ 7484	S-07G-0245-A-L-B-H	7645 ~ 7729	S-07G-0245-A-H-B-H
B	7484 ~ 7568	S-07G-0245-B-L-B-H	7729 ~ 7813	S-07G-0245-B-H-B-H
C	7568 ~ 7652	S-07G-0245-C-L-B-H	7813 ~ 7897	S-07G-0245-C-H-B-H

8 GHz, 119 MHz Duplex Split

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	8279 ~ 8307	S-08G-0119-A-L-B-H	8398 ~ 8426	S-08G-0119-A-H-B-H
B	8293 ~ 8321	S-08G-0119-B-L-B-H	8412 ~ 8440	S-08G-0119-B-H-B-H
C	8307 ~ 8335	S-08G-0119-C-L-B-H	8426 ~ 8454	S-08G-0119-C-H-B-H
D	8321 ~ 8349	S-08G-0119-D-L-B-H	8440 ~ 8468	S-08G-0119-D-H-B-H
E	8335 ~ 8363	S-08G-0119-E-L-B-H	8454 ~ 8482	S-08G-0119-E-H-B-H
F	8349 ~ 8377	S-08G-0119-F-L-B-H	8468 ~ 8496	S-08G-0119-F-H-B-H



8 GHz, 126 MHz Duplex Split

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	8279 ~ 8307	S-08G-0126--A-L-B-H	8398 ~ 8426	S-08G-0126--A-H-B-H
B	8293 ~ 8321	S-08G-0126--B-L-B-H	8412 ~ 8440	S-08G-0126--B-H-B-H
C	8307 ~ 8335	S-08G-0126--C-L-B-H	8426 ~ 8454	S-08G-0126--C-H-B-H
D	8321 ~ 8349	S-08G-0126--D-L-B-H	8440 ~ 8468	S-08G-0126--D-H-B-H
E	8335 ~ 8363	S-08G-0126--E-L-B-H	8454 ~ 8482	S-08G-0126--E-H-B-H
F	8349 ~ 8377	S-08G-0126--F-L-B-H	8468 ~ 8496	S-08G-0126--F-H-B-H

8 GHz, 311.32 MHz Duplex Split

QPSK = 30 dBm, 16QAM = 26 dBm, 64QAM/128QAM = 25 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7731 ~ 7867	S-08G-0311-A-L-B-H	8042 ~ 8178	S-08G-0311-A-H-B-H
B	7835 ~ 7971	S-08G-0311-B-L-B-H	8146 ~ 8282	S-08G-0311-B-H-B-H



11 GHz, 490 MHz Duplex Split

QPSK = 28 dBm, 16QAM = 24 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	10700 ~ 10890	S-11G-0490-A-L-B-H	11200 ~ 11390	S-11G-0490-A-H-B-H
B	10855 ~ 11045	S-11G-0490-B-L-B-H	11355 ~ 11545	S-11G-0490-B-H-B-H
C	11010 ~ 11200	S-11G-0490-C-L-B-H	11510 ~ 11700	S-11G-0490-C-H-B-H

11 GHz, 500 MHz Duplex Split

QPSK = 28 dBm, 16QAM = 24 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	10700 ~ 10890	S-11G-0500-A-L-B-H	11200 ~ 11390	S-11G-0500-A-H-B-H
B	10855 ~ 11045	S-11G-0500-B-L-B-H	11355 ~ 11545	S-11G-0500-B-H-B-H
C	11010 ~ 11200	S-11G-0500-C-L-B-H	11510 ~ 11700	S-11G-0500-C-H-B-H



11 GHz, 530 MHz Duplex Split

QPSK = 28 dBm, 16QAM = 24 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	10675 ~ 10855	S-11G-0530-A-L-B-H	11205 ~ 11385	S-11G-0530-A-H-B-H
B	10795 ~ 10975	S-11G-0530-B-L-B-H	11325 ~ 11505	S-11G-0530-B-H-B-H
C	10915 ~ 11135	S-11G-0530-C-L-B-H	11445 ~ 11665	S-11G-0530-C-H-B-H
D	11035 ~ 11215	S-11G-0530-D-L-B-H	11565 ~ 11745	S-11G-0530-D-H-B-H

10.2 GHz, 350 MHz Duplex Split

QPSK = 28 dBm, 16QAM = 24 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	10150 ~ 10300	S-11G-0350-A-L-B-H	10500 ~ 10650	S-11G-0350-A-H-B-H



10.5 GHz, 91 MHz Duplex Split

QPSK = 28 dBm, 16QAM = 24 dBm, 64QAM/128QAM = 22 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	10500 ~ 10531	S-11G-0091-A-L-B-H	10591 ~ 10622	S-11G-0091-A-H-B-H
B	10528 ~ 10559	S-11G-0091-B-L-B-H	10619 ~ 10650	S-11G-0091-B-H-B-H
C	10556 ~ 10587	S-11G-0091-C-L-B-H	10647 ~ 10678	S-11G-0091-C-H-B-H

13 GHz, 266 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 21 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	12751 ~ 12870	S-13G-0266-A-L-B-H	13017 ~ 13136	S-13G-0266-A-H-B-H
B	12863 ~ 12982	S-13G-0266-B-L-B-H	13129 ~ 13248	S-13G-0266-B-H-B-H
C	12863 ~ 12926	S-13G-0266-C-L-B-H	13129 ~ 13192	S-13G-0266-C-H-B-H
D	12919 ~ 12982	S-13G-0266-D-L-B-H	13185 ~ 13248	S-13G-0266-D-H-B-H



15 GHz, 420 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 21 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14501 ~ 14613	S-15G-0420-A-L-B-H	14921 ~ 15033	S-15G-0420-A-H-B-H
B	14606 ~ 14725	S-15G-0420-B-L-B-H	15026 ~ 15145	S-15G-0420-B-H-B-H
C	14718 ~ 14837	S-15G-0420-C-L-B-H	15138 ~ 15257	S-15G-0420-C-H-B-H
D	14816 ~ 14928	S-15G-0420-D-L-B-H	15236 ~ 15348	S-15G-0420-D-H-B-H

15 GHz, 490 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 21 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14403 ~ 14522	S-15G-0490-A-L-B-H	14893 ~ 15012	S-15G-0490-A-H-B-H
B	14515 ~ 14634	S-15G-0490-B-L-B-H	15005 ~ 15124	S-15G-0490-B-H-B-H
C	14627 ~ 14746	S-15G-0490-C-L-B-H	15117 ~ 15236	S-15G-0490-C-H-B-H
D	14739 ~ 14858	S-15G-0490-D-L-B-H	15229 ~ 15348	S-15G-0490-D-H-B-H

15 GHz, 315/322 MHz Duplex Split

QPSK = 27 dBm, 16QAM = 23 dBm, 64QAM/128QAM = 21 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14627 ~ 14746	S-15G-0315-A-L-B-H	14942 ~ 15061	S-15G-0315-A-H-B-H
B	14725 ~ 14844	S-15G-0315-B-L-B-H	15040 ~ 15159	S-15G-0315-B-H-B-H
C	14823 ~ 14942	S-15G-0315-C-L-B-H	15138 ~ 15257	S-15G-0315-C-H-B-H

18 GHz, 1010 MHz Duplex Split

QPSK = 22.5 dBm, 16QAM = 22 dBm, 64QAM/128QAM = 20 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	17685 ~ 17985	S-18G-1010-A-L-B-H	18695 ~ 18995	S-18G-1010-A-H-B-H
B	17930 ~ 18230	S-18G-1010-B-L-B-H	18940 ~ 19240	S-18G-1010-B-H-B-H
C	18180 ~ 18480	S-18G-1010-C-L-B-H	19190 ~ 19490	S-18G-1010-C-H-B-H
D	18400 ~ 18700	S-18G-1010-D-L-B-H	19410 ~ 19710	S-18G-1010-D-H-B-H



18 GHz, 1008 MHz Duplex Split

QPSK = 22.5 dBm, 16QAM = 22 dBm, 64QAM/128QAM = 20 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	17685 ~ 17985	S-18G-1008-A-L-B-H	18695 ~ 18995	S-18G-1008-A-H-B-H
B	17930 ~ 18230	S-18G-1008-B-L-B-H	18940 ~ 19240	S-18G-1008-B-H-B-H
C	18180 ~ 18480	S-18G-1008-C-L-B-H	19190 ~ 19490	S-18G-1008-C-H-B-H
D	18400 ~ 18700	S-18G-1008-D-L-B-H	19410 ~ 19710	S-18G-1008-D-H-B-H

18 GHz, 1560 MHz Duplex Split

QPSK = 22.5 dBm, 16QAM = 22 dBm, 64QAM/128QAM = 20 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
C	17700 ~ 18140	S-18G-1560C-L-B-H	19260 ~ 19700	S-18G-1560C-H-B-H

23 GHz, 1008 MHz Duplex Split

QPSK = 25 dBm, 16QAM = 22 dBm, 64QAM/128QAM = 20 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21994 ~ 22330	S-23G-1008-A-L-B-H	23002 ~ 23338	S-23G-1008-A-H-B-H
B	22274 ~ 22610	S-23G-1008-B-L-B-H	23282 ~ 23618	S-23G-1008-B-H-B-H



23 GHz, 1232 MHz Duplex Split

QPSK = 25 dBm, 16QAM = 22 dBm, 64QAM/128QAM = 20 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21200 ~ 21500	S-23G-1232-A-L-B-H	22432 ~ 22732	S-23G-1232-A-H-B-H
B	21472 ~ 21786	S-23G-1232-B-L-B-H	22704 ~ 23018	S-23G-1232-B-H-B-H
C	21779 ~ 22093	S-23G-1232-C-L-B-H	23011 ~ 23325	S-23G-1232-C-H-B-H
D	22086 ~ 22386	S-23G-1232-D-L-B-H	23318 ~ 23618	S-23G-1232-D-H-B-H

23 GHz, 1200 MHz Duplex Split

QPSK = 25 dBm, 16QAM = 22 dBm, 64QAM/128QAM = 20 dBm.

Suits IDU Models 17E1, 17E1 + Ethernet, IP34 Mbps, 32E1 Super PDH, STM/1, All IP

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21200 ~ 21600	S-23G-1200-A-L-B-H	22400 ~ 22800	S-23G-1200-A-H-B-H
B	21600 ~ 22000	S-23G-1200-B-L-B-H	22800 ~ 23200	S-23G-1200-B-H-B-H
C	22000 ~ 22400	S-23G-1200-C-L-B-H	23200 ~ 23600	S-23G-1200-C-H-B-H

Redundancy Splitters



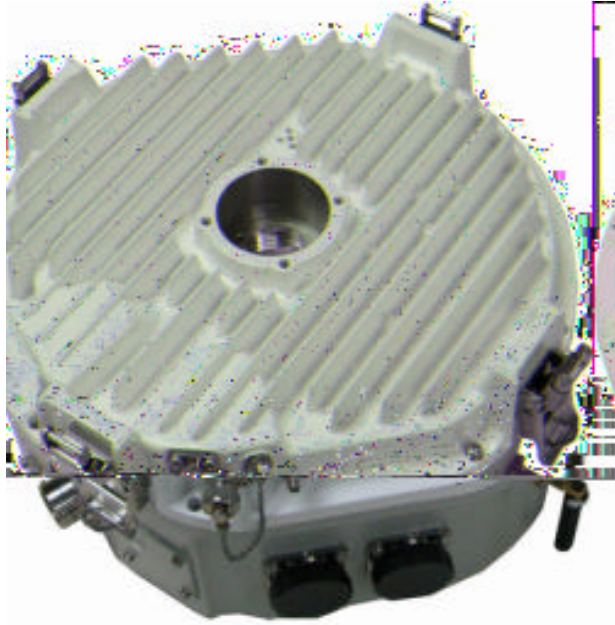
Equal Split: Loss – Port A = 3.5 dB. Loss – Port B = 3.5 dB

Frequency Band	Frequency Range	Part Number
7 GHz and 8 GHz	7.125 GHz ~ 8.500 GHz	ATL-CB071CC303
10.5 GHz	10.100 GHz ~ 10.700 GHz	ATL-CB105CC303
11 GHz	10.700 GHz ~ 11.700 GHz	ATL-CB107CC303
13 GHz	12.700 GHz ~ 13.300 GHz	ATL-CB127CC303
15 GHz	14.400 GHz ~ 15.400 GHz	ATL-CB144CC303
18 GHz	17.700 GHz ~ 19.700 GHz	ATL-CB177CC303
23 GHz	21.200 GHz ~ 23.600 GHz	ATL-CB212CC303
26 GHz	24.200 GHz ~ 26.500 GHz	ATL-CB242CC303

Unequal Split: Loss – Port A = 1.5 dB. Loss – Port B = 6.5 dB

Frequency Band	Frequency Range	Part Number
7 GHz and 8 GHz	7.125 GHz ~ 8.500 GHz	ATL-CB071CC306
10.5 GHz	10.100 GHz ~ 10.700 GHz	ATL-CB105CC306
11 GHz	10.700 GHz ~ 11.700 GHz	ATL-CB107CC306
13 GHz	12.700 GHz ~ 13.300 GHz	ATL-CB127CC306
15 GHz	14.400 GHz ~ 15.400 GHz	ATL-CB144CC306
18 GHz	17.700 GHz ~ 19.700 GHz	ATL-CB177CC306
23 GHz	21.200 GHz ~ 23.600 GHz	ATL-CB212CC306
26 GHz	24.200 GHz ~ 26.500 GHz	ATL-CB242CC306

Hiperion All Outdoor Units



***Note** **Standard Specification** **Temperature Range -33° C to + 55° C**
Cold Start Specification **Temperature Range -55° C to + 55° C**

All Out Door – IP 300 Mbps

7 GHz, 161 MHz Duplex Split

128QAM = 21 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7114 ~ 7177	O-07G-0161-A-L-B-H	7275 ~ 7338	O-07G-0161-A-H-B-H
B	7149 ~ 7212	O-07G-0161-B-L-B-H	7310 ~ 7373	O-07G-0161-B-H-B-H
C	7184 ~ 7247	O-07G-0161-C-L-B-H	7345 ~ 7408	O-07G-0161-C-H-B-H
D	7219 ~ 7282	O-07G-0161-D-L-B-H	7380 ~ 7443	O-07G-0161-D-H-B-H
E	7239 ~ 7302	O-07G-0161-E-L-B-H	7400 ~ 7463	O-07G-0161-E-H-B-H
F	7274 ~ 7337	O-07G-0161-F-L-B-H	7435 ~ 7498	O-07G-0161-F-H-B-H
G	7309 ~ 7372	O-07G-0161-G-L-B-H	7470 ~ 7533	O-07G-0161-G-H-B-H
H	7344 ~ 7407	O-07G-0161-H-L-B-H	7505 ~ 7568	O-07G-0161-H-H-B-H
I	7414 ~ 7477	O-07G-0161-I-L-B-H	7575 ~ 7638	O-07G-0161-I-H-B-H
J	7449 ~ 7512	O-07G-0161-J-L-B-H	7610 ~ 7673	O-07G-0161-J-H-B-H
K	7484 ~ 7547	O-07G-0161-K-L-B-H	7645 ~ 7708	O-07G-0161-K-H-B-H
L	7519 ~ 7582	O-07G-0161-L-L-B-H	7680 ~ 7743	O-07G-0161-L-H-B-H
M	7539 ~ 7602	O-07G-0161-M-L-B-H	7700 ~ 7763	O-07G-0161-M-H-B-H
N	7574 ~ 7637	O-07G-0161-N-L-B-H	7735 ~ 7798	O-07G-0161-N-H-B-H
O	7609 ~ 7672	O-07G-0161-O-L-B-H	7770 ~ 7833	O-07G-0161-O-H-B-H
P	7644 ~ 7707	O-07G-0161-P-L-B-H	7805 ~ 7868	O-07G-0161-P-H-B-H

7 GHz, 154 MHz Duplex Split

128QAM = 21 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7428 ~ 7484	O-07G-0154-A-L-B-H	7582 ~ 7638	O-07G-0154-A-H-B-H
B	7470 ~ 7526	O-07G-0154-B-L-B-H	7624 ~ 7680	O-07G-0154-B-H-B-H
C	7512 ~ 7568	O-07G-0154-C-L-B-H	7666 ~ 7722	O-07G-0154-C-H-B-H

7 GHz, 196 MHz Duplex Split

128QAM = 21 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7093 ~ 7149	O-07G-0196-A-L-B-H	7289 ~ 7345	O-07G-0196-A-H-B-H
B	7121 ~ 7177	O-07G-0196-B-L-B-H	7317 ~ 7373	O-07G-0196-B-H-B-H
C	7149 ~ 7205	O-07G-0196-C-L-B-H	7345 ~ 7401	O-07G-0196-C-H-B-H
D	7177 ~ 7233	O-07G-0196-D-L-B-H	7373 ~ 7429	O-07G-0196-D-H-B-H
E	7205 ~ 7261	O-07G-0196-E-L-B-H	7401 ~ 7457	O-07G-0196-E-H-B-H

8 GHz, 119 MHz Duplex Split

128QAM = 21 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	8279 ~ 8307	O-08G-0119-A-L-B-H	8398 ~ 8426	O-08G-0119-A-H-B-H
B	8293 ~ 8321	O-08G-0119-B-L-B-H	8412 ~ 8440	O-08G-0119-B-H-B-H
C	8307 ~ 8335	O-08G-0119-C-L-B-H	8426 ~ 8454	O-08G-0119-C-H-B-H
D	8321 ~ 8349	O-08G-0119-D-L-B-H	8440 ~ 8468	O-08G-0119-D-H-B-H
E	8335 ~ 8363	O-08G-0119-E-L-B-H	8454 ~ 8482	O-08G-0119-E-H-B-H
F	8349 ~ 8377	O-08G-0119-F-L-B-H	8468 ~ 8496	O-08G-0119-F-H-B-H

8 GHz, 126 MHz Duplex Split

128QAM = 21 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	8279 ~ 8307	O-08G-0126--A-L-B-H	8398 ~ 8426	O-08G-0126--A-H-B-H
B	8293 ~ 8321	O-08G-0126--B-L-B-H	8412 ~ 8440	O-08G-0126--B-H-B-H
C	8307 ~ 8335	O-08G-0126--C-L-B-H	8426 ~ 8454	O-08G-0126--C-H-B-H
D	8321 ~ 8349	O-08G-0126--D-L-B-H	8440 ~ 8468	O-08G-0126--D-H-B-H
E	8335 ~ 8363	O-08G-0126--E-L-B-H	8454 ~ 8482	O-08G-0126--E-H-B-H
F	8349 ~ 8377	O-08G-0126--F-L-B-H	8468 ~ 8496	O-08G-0126--F-H-B-H

8 GHz, 311.32 MHz Duplex Split

128QAM = 21 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	7731 ~ 7867	O-08G-0311-A-L-B-H	8042 ~ 8178	O-08G-0311-A-H-B-H
B	7835 ~ 7971	O-08G-0311-B-L-B-H	8146 ~ 8282	O-08G-0311-B-H-B-H

11 GHz, 490 MHz Duplex Split

128QAM = 19 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	10700 ~ 10890	O-11G-0490-A-L-B-H	11200 ~ 11390	O-11G-0490-A-H-B-H
B	10855 ~ 11045	O-11G-0490-B-L-B-H	11355 ~ 11545	O-11G-0490-B-H-B-H
C	11010 ~ 11200	O-11G-0490-C-L-B-H	11510 ~ 11700	O-11G-0490-C-H-B-H

11 GHz, 500 MHz Duplex Split

128QAM = 19 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	10700 ~ 10890	O-11G-0500-A-L-B-H	11200 ~ 11390	O-11G-0500-A-H-B-H
B	10855 ~ 11045	O-11G-0500-B-L-B-H	11355 ~ 11545	O-11G-0500-B-H-B-H
C	11010 ~ 11200	O-11G-0500-C-L-B-H	11510 ~ 11700	O-11G-0500-C-H-B-H



11 GHz, 530 MHz Duplex Split

128QAM = 19 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	10675 ~ 10855	O-11G-0530-A-L-B-H	11205 ~ 11385	O-11G-0530-A-H-B-H
B	10795 ~ 10975	O-11G-0530-B-L-B-H	11325 ~ 11505	O-11G-0530-B-H-B-H
C	10915 ~ 11135	O-11G-0530-C-L-B-H	11445 ~ 11665	O-11G-0530-C-H-B-H
D	11035 ~ 11215	O-11G-0530-D-L-B-H	11565 ~ 11745	O-11G-0530-D-H-B-H

13 GHz, 266 MHz Duplex Split

128QAM = 19 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	12751 ~ 12870	O-13G-0266-A-L-B-H	13017 ~ 13136	O-13G-0266-A-H-B-H
B	12863 ~ 12982	O-13G-0266-B-L-B-H	13129 ~ 13248	O-13G-0266-B-H-B-H
C	12863 ~ 12926	O-13G-0266-C-L-B-H	13129 ~ 13192	O-13G-0266-C-H-B-H
D	12919 ~ 12982	O-13G-0266-D-L-B-H	13185 ~ 13248	O-13G-0266-D-H-B-H



15 GHz, 420 MHz Duplex Split

128QAM = 19 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14501 ~ 14613	O-15G-0420-A-L-B-H	14921 ~ 15033	O-15G-0420-A-H-B-H
B	14606 ~ 14725	O-15G-0420-B-L-B-H	15026 ~ 15145	O-15G-0420-B-H-B-H
C	14718 ~ 14837	O-15G-0420-C-L-B-H	15138 ~ 15257	O-15G-0420-C-H-B-H
D	14816 ~ 14928	O-15G-0420-D-L-B-H	15236 ~ 15348	O-15G-0420-D-H-B-H

15 GHz, 490 MHz Duplex Split

128QAM = 19 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	14403 ~ 14522	O-15G-0490-A-L-B-H	14893 ~ 15012	O-15G-0490-A-H-B-H
B	14515 ~ 14634	O-15G-0490-B-L-B-H	15005 ~ 15124	O-15G-0490-B-H-B-H
C	14627 ~ 14746	O-15G-0490-C-L-B-H	15117 ~ 15236	O-15G-0490-C-H-B-H
D	14739 ~ 14858	O-15G-0490-D-L-B-H	15229 ~ 15348	O-15G-0490-D-H-B-H



18 GHz, 1010 MHz Duplex Split

128QAM = 18 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	17685 ~ 17985	O-18G-1010-A-L-B-H	18695 ~ 18995	O-18G-1010-A-H-B-H
B	17930 ~ 18230	O-18G-1010-B-L-B-H	18940 ~ 19240	O-18G-1010-B-H-B-H
C	18180 ~ 18480	O-18G-1010-C-L-B-H	19190 ~ 19490	O-18G-1010-C-H-B-H
D	18400 ~ 18700	O-18G-1010-D-L-B-H	19410 ~ 19710	O-18G-1010-D-H-B-H

18 GHz, 1008 MHz Duplex Split

128QAM = 18 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	17685 ~ 17985	O-18G-1008-A-L-B-H	18695 ~ 18995	O-18G-1008-A-H-B-H
B	17930 ~ 18230	O-18G-1008-B-L-B-H	18940 ~ 19240	O-18G-1008-B-H-B-H
C	18180 ~ 18480	O-18G-1008-C-L-B-H	19190 ~ 19490	O-18G-1008-C-H-B-H
D	18400 ~ 18700	O-18G-1008-D-L-B-H	19410 ~ 19710	O-18G-1008-D-H-B-H

18 GHz, 1560 MHz Duplex Split

128QAM = 18 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
C	17700 ~ 18140	O-18G-1560C-L-B-H	19260 ~ 19700	O-18G-1560C-H-B-H

23 GHz, 1008 MHz Duplex Split

128QAM = 17 dBm.



Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21994 ~ 22330	O-23G-1008-A-L-B-H	23002 ~ 23338	O-23G-1008-A-H-B-H
B	22274 ~ 22610	O-23G-1008-B-L-B-H	23282 ~ 23618	O-23G-1008-B-H-B-H

23 GHz, 1232 MHz Duplex Split

128QAM = 17 dBm.

Sub-Band Pair	Terminal A - Transmit Low		Terminal B - Transmit High	
	Frequency Range (MHz)	ODU Part Number	Frequency Range (MHz)	ODU Part Number
A	21200 ~ 21500	O-23G-1232-A-L-B-H	22432 ~ 22732	O-23G-1232-A-H-B-H
B	21472 ~ 21786	O-23G-1232-B-L-B-H	22704 ~ 23018	O-23G-1232-B-H-B-H
C	21779 ~ 22093	O-23G-1232-C-L-B-H	23011 ~ 23325	O-23G-1232-C-H-B-H
D	22086 ~ 22386	O-23G-1232-D-L-B-H	23318 ~ 23618	O-23G-1232-D-H-B-H

Hiperion All Outdoor Accessories

Part Number	Description
AT--TR-SO13I-V00	SFP Optical Interface for GbE
AT--GE-GB-P1RC	SFP Electrical Interface for GbE, 10/100/1000Mbps
AT--GE-GB-P3RC	SFP Electrical Interface for GbE, 1000Mbps only
AT--PDLC06-DLC-C5x2-2S20	Fibre with waterproof cover (20m)
AT--PDLC06-DLC-C5x2-2S50	Fibre with waterproof cover (50m)
AT--PDLC06-DLC-C5x2-2S100	Fibre with waterproof cover (100m)
AT--PDLC06-PDLC06-C5x2-2S20	Fibre with waterproof cover for both end (20m)
AT--L-FO-ACC/O0N	All Out Door System (AC) System Accessories
AT--L-FO-ACC/O0ND	All Out Door System (DC) System Accessories



AT Electronics & Communications International Limited

Antennas

Andrew ValueLine series



Warranty: Three (3) years from the date of original shipment.



7.125 ~ 8.5 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
VHLP2-77W-RC1	7.125 ~ 8.5	0.6	4.7	29.5	30.7	31.9	30	57		17.7
VHLP2.5-77W-RC1	7.125 ~ 8.5	0.8	3.3	33.2	33.9	34.4	30	60		17.7
VHLP4-77W-RC1	7.125 ~ 8.5	1.2	2.2	36.8	37.3	37.3	30	63		17.7
VHLP6-77W-RC1	7.125 ~ 8.5	1.8	1.5	40.1	40.8	41.1	30	67		17.7

10.5 ~ 10.7 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
VHLP2-10W-RC1	10.5 ~ 10.7	0.6	3.7	33.7	33.8	34.3	30	56		17.7
VHLP2.5-10W-RC1	10.5 ~ 10.7	0.8	2.7	36.3	36.7	37.0	30	63		17.7
VHLP4-10W-RC1	10.5 ~ 10.7	1.2	1.6	39.6	40.0	40.4	30	66		17.7
VHLP6-10W-RC1	10.5 ~ 10.7	1.2	43.0	43.1	43.3	43.6	30	69		17.7

10.5 ~ 11.7 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
VHLP2-11-RC1	10.5 ~ 11.7	0.6	3.3	34.0	34.4	35.0	30	60		17.7
VHLP2.5-11-RC1	10.5 ~ 11.7	0.8	2.1	36.8	37.5	38.1	30	63		17.7
VHLP4-11-RC1	10.5 ~ 11.7	1.2	1.5	40.0	40.4	40.8	30	67		17.7
VHLP6-11-RC1	10.5 ~ 11.7	1.8	1.1	43.3	43.8	44.4	30	72		17.7



12.70 ~ 13.25 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
VHLP1-13-RC1	12.70 ~ 13.25	0.3	4.7	30.8	30.9	31.0	30	56		17.7
VHLP2-13-RC1	12.70 ~ 13.25	0.6	2.5	35.6	36.8	37.2	30	65		17.7
VHLP2.5-13-RC1	12.70 ~ 13.25	0.8	2.1	38.2	38.4	38.6	30	65		17.7
VHLP4-13-RC1	12.70 ~ 13.25	1.2	1.3	41.9	42.0	42.1	30	68		17.7
VHLP6-13-RC1	12.70 ~ 13.25	1.8	0.9	44.8	45.2	45.5	30	72		17.7

14.25 ~ 15.35 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
VHLP1-15-RC1	14.25 ~ 15.35	0.3	4.3	31.6	32.1	32.6	30	54		17.7
VHLP2-15-RC1	14.25 ~ 15.35	0.6	2.5	36.5	36.8	39.1	30	65		17.7
VHLP2.5-15-RC1	14.25 ~ 15.35	0.8	2.1	39.3	39.7	40.1	30	68		17.7
VHLP4-15-RC1	14.25 ~ 15.35	1.2	1.2	42.7	42.9	43.1	30	72		17.7
VHLP6-15-RC1	14.25 ~ 15.35	1.8	0.8	45.9	46.2	46.5	30	74		17.7

17.7 ~ 19.7 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
VHLP1-18-RC1	17.7 ~ 19.7	0.3	3.3	33.6	34.2	34.5	30	57		17.7
VHLP2-18-RC1	17.7 ~ 19.7	0.6	2.1	38.3	38.7	39.1	30	67		17.7
VHLP2.5-18-RC1	17.7 ~ 19.7	0.8	1.5	40.5	41.0	41.4	30	69		17.7
VHLP4-18-RC1	17.7 ~ 19.7	1.2	0.9	42.7	42.9	43.1	30	71		17.7
VHLP6-18-RC1	17.7 ~ 19.7	1.8	0.7	47.0	47.8	48.8	30	76		17.7



21.2 ~ 23.6

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
VHLP1-23-RC1	21.2 ~ 23.6	0.3	3.0	34.7	35.3	35.9	30	62		17.7
VHLP2-23-RC1	21.2 ~ 23.6	0.6	1.7	39.8	40.4	41.0	30	66		17.7
VHLP2.5-23-RC1	21.2 ~ 23.6	0.8	1.2	42.5	43.0	43.4	30	69		17.7
VHLP4-23-RC1	21.2 ~ 23.6	1.2	0.8	46.0	46.7	47.0	30	74		17.7
VHLP6-23-RC1	21.2 ~ 23.6	1.8	0.5	48.9	49.4	49.9	30	79		17.7

Comba High Performance series



Warranty: One (1) year from the date of original shipment.



7.125 ~ 8.5 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
ATL-PG0607WSC3	7.125 ~ 8.5	0.6	4.2	30.4	31.1	31.9	30	52	1.3:1	
ATL-PG0907WSC3	7.125 ~ 8.5	0.9	3.0	33.9	34.6	35.4	30	56	1.3:1	
ATL-PG1207WSC3	7.125 ~ 8.5	1.2	2.3	36.4	37.1	37.9	30	58	1.3:1	
ATL-PG1807WSC3	7.125 ~ 8.5	1.8	1.6	39.9	40.6	41.4	30	62	1.3:1	

10.7 ~ 11.7 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
ATL-PG06107SC3	10.5 ~ 11.7	0.6	3.1	33.9	34.3	34.7	30	55	1.3:1	
ATL-PG09107SC3	10.5 ~ 11.7	0.9	2.1	37.4	37.8	38.2	30	59	1.3:1	
ATL-PG12107SC3	10.5 ~ 11.7	1.2	1.6	39.9	40.3	40.7	30	61	1.3:1	
ATL-PG18107SC3	10.5 ~ 11.7	1.8	1.1	43.4	43.8	44.2	30	65	1.3:1	

12.70 ~ 13.25 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
ATL-PG03127SC3	12.70 ~ 13.25	0.3	5.4	29.5	29.6	29.8	30	50	1.3:1	
ATL-PG06127SC3	12.70 ~ 13.25	0.6	2.7	36.5	36.8	37.1	30	58	1.3:1	
ATL-PG09127SC3	12.70 ~ 13.25	0.9	1.8	40.1	40.3	40.6	30	61	1.3:1	
ATL-PG12127SC3	12.70 ~ 13.25	1.2	1.3	42.5	42.8	43.1	30	66	1.3:1	
ATL-PG18127SC3	12.70 ~ 13.25	1.8	0.9	46.1	46.3	46.6	30	67	1.3:1	



14.25 ~ 15.35 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
ATL-PG03144SC3	14.25 ~ 15.35	0.3	4.7	30.5	30.8	31.1	30	52	1.3:1	
ATL-PG06144SC3	14.25 ~ 15.35	0.6	2.4	36.5	36.8	37.1	30	58	1.3:1	
ATL-PG09144SC3	14.25 ~ 15.35	0.9	1.6	40.1	40.3	40.6	30	61	1.3:1	
ATL-PG12144SC3	14.25 ~ 15.35	1.2	1.2	42.5	42.8	43.1	30	64	1.3:1	
ATL-PG18144SC3	14.25 ~ 15.35	1.8	0.8	46.1	46.3	46.6	30	67	1.3:1	

17.7 ~ 19.7 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
ATL-PG03177SC3	17.7 ~ 19.7	0.3	3.7	32.3	32.8	33.2	30	54	1.3:1	
ATL-PG06177SC3	17.7 ~ 19.7	0.6	1.9	38.3	38.8	39.2	30	60	1.3:1	
ATL-PG09177SC3	17.7 ~ 19.7	0.9	1.2	41.6	42.1	42.6	30	63	1.3:1	
ATL-PG12177SC3	17.7 ~ 19.7	1.2	0.9	44.3	44.8	45.2	30	66	1.3:1	
ATL-PG18177SC3	17.7 ~ 19.7	1.8	0.7	47.5	48.0	48.5	30	69	1.3:1	

21.2 ~ 23.6 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
ATL-PG03212SC3	21.2 ~ 23.6	0.3	3.2	33.9	34.4	34.8	30	55	1.3:1	
ATL-PG06212SC3	21.2 ~ 23.6	0.6	1.6	39.9	40.4	40.8	30	61	1.3:1	
ATL-PG09212SC3	21.2 ~ 23.6	0.9	1.0	43.1	43.6	44.1	30	65	1.3:1	
ATL-PG12212SC3	21.2 ~ 23.6	1.2	0.8	45.9	46.4	46.8	30	67	1.3:1	
ATL-PG18212SC3	21.2 ~ 23.6	1.8	0.5	49.0	49.5	50.0	30	70	1.3:1	

Radio Waves High Performance series



Standard Finish.

Warranty: Five (5) years from the date of original shipment.

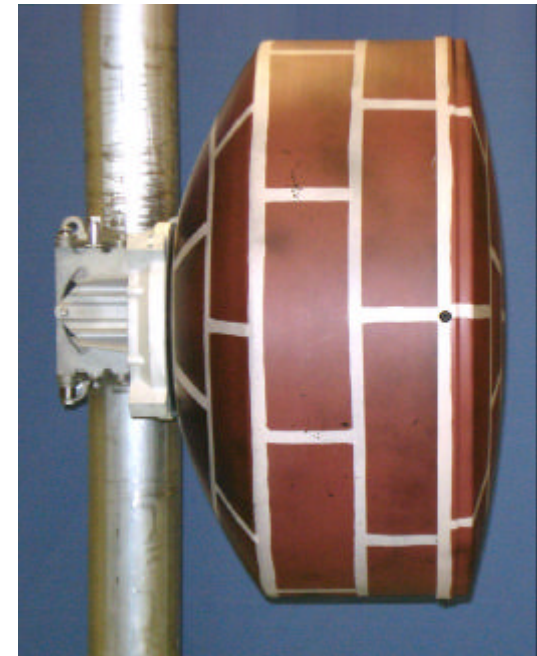
Radio Waves High Performance Camouflage series



Green Camouflage



Sand Camouflage



Brick Camouflage

The antennas can be painted any solid color, "green camo", "sand camo," or brick. For the solid color, a color code has to be supplied so that the requested colour can be accurately matched. The painting adds a week to the lead-time. The part numbers would have a -GC, -SC or -BC suffix. Example: 7 GHz, 0.6 m Green Camouflage Order HP2-77R-GC

Warranty: Five (5) years from the date of original shipment.



7.125 ~ 8.5 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
HP2-77R	7.125 ~ 8.5	0.6	4.2	30	30.8	31.6	30	54	1.37:1	16.1
HP3-77R	7.125 ~ 8.5	0.9	3.3	33.7	34.4	35.1	30	60	1.37:1	16.1
HP4-77R	7.125 ~ 8.5	1.2	2.4	36.4	36.8	37.2	30	64	1.37:1	16.1
HP6-77R	7.125 ~ 8.5	1.8	1.5	39.5	40.3	40.7	30	67	1.37:1	16.1
HP8-77R	7.125 ~ 8.5	2.4	1.1	42.7	43.2	43.6	30	68	1.37:1	16.1

10.5 ~ 10.7 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
HPLP1-10R	10.5 ~ 10.7	0.3	7.1	27	27.1	27.2	25	43	1.37:1	16.1
HP2-10R	10.5 ~ 10.7	0.6	3.6	33.8	33.9	34	30	54	1.37:1	16.1
HP3-10R	10.5 ~ 10.7	0.9	2.8	36.6	36.7	36.8	30	56	1.37:1	16.1
HP4-10R	10.5 ~ 10.7	1.2	1.9	40	40.1	40.2	30	60	1.37:1	16.1
HP6-10R	10.5 ~ 10.7	1.8	1.3	43.4	43.5	43.6	30	67	1.37:1	16.1

10.5 ~ 11.7 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
HPLP1-1011R	10.5 ~ 11.7	0.3	6.9	27	27.5	28	25	43	1.37:1	16.1
HP2-1011R	10.5 ~ 11.7	0.6	3.4	33.8	34.3	34.8	30	54	1.37:1	16.1
HP3 ~ 1011R	10.5 ~ 11.7	0.9	2.6	36.6	37.1	37.8	30	56	1.37:1	16.1
HP4-1011R	10.5 ~ 11.7	1.2	1.7	40	40.4	40.8	30	60	1.37:1	16.1
HP6-1011R	10.5 ~ 11.7	1.8	1.1	43.4	43.8	44.2	30	67	1.37:1	16.1
HP8-1011R	10.5 ~ 11.7	2.4	0.8	45.7	46.2	46.7	30	70	1.37:1	16.1



12.70 ~ 13.25 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
HPLP1-13R	12.70 ~ 13.25	0.3	4.9	29.5	29.6	29.7	30	52	1.37:1	16.1
HP2-13R	12.70 ~ 13.25	0.6	2.8	35.8	35.9	36.1	30	62	1.37:1	16.1
HP3-13R	12.70 ~ 13.25	0.9	2.1	38.6	38.7	38.9	30	66	1.37:1	16.1
HP4-13R	12.70 ~ 13.25	1.2	1.4	41.8	41.9	42	30	70	1.37:1	16.1
HP6-13R	12.70 ~ 13.25	1.8	0.9	44.3	44.4	44.6	30	70	1.37:1	16.1
HP8-13R	12.70 ~ 13.25	2.4	0.7	47.2	47.3	47.5	30	71	1.37:1	16.1

14.25 ~ 15.35 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
HPLP1-15R	14.25 ~ 15.35	0.3	4.5	30.8	31.1	31.3	30	53	1.37:1	16.1
HP2-15R	14.25 ~ 15.35	0.6	2.4	36.8	37	37.3	30	64	1.37:1	16.1
HP3-15R	14.25 ~ 15.35	0.9	1.6	39.7	40	40.2	30	67	1.37:1	16.1
HP4-15R	14.25 ~ 15.35	1.2	1.2	42.2	42.5	42.7	30	70	1.37:1	16.1
HP6-15R	14.25 ~ 15.35	1.8	0.8	45.7	45.9	46.2	30	72	1.37:1	16.1

17.7 ~ 19.7 GHZ

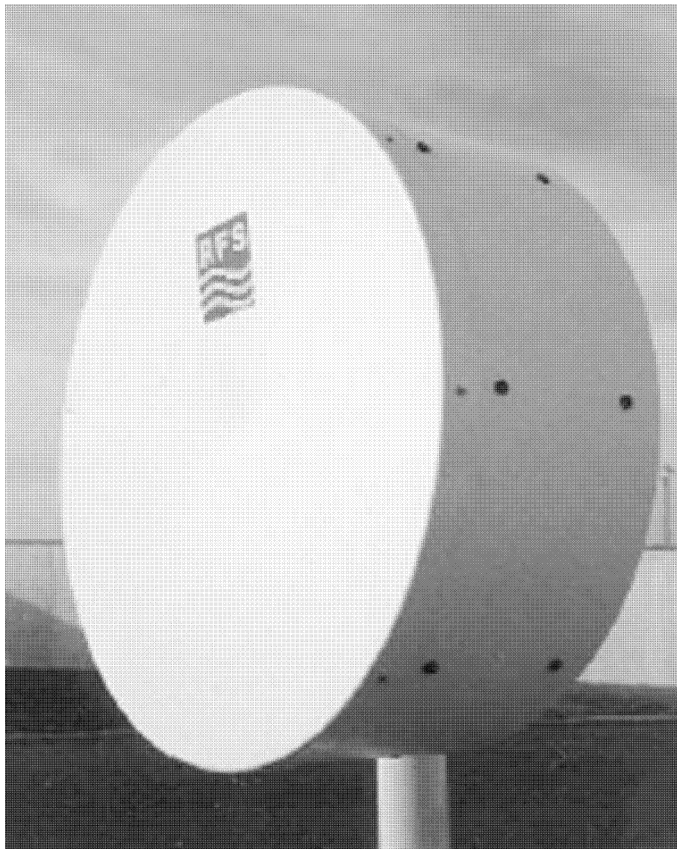
Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
HPCPE-18R	17.7 ~ 19.7	0.3	3.1	33.1	33.6	34	28	58	1.37:1	16.1
HPLP1-18R	17.7 ~ 19.7	0.3	3	33.5	34	34.4	30	55	1.37:1	16.1
HP2-18R	17.7 ~ 19.7	0.6	2	38.2	38.6	39	30	67	1.37:1	16.1
HP3-18R	17.7 ~ 19.7	0.9	1.3	41.6	42	42.4	30	69	1.37:1	16.1
HP4-18R	17.7 ~ 19.7	1.2	1	44.1	44.5	44.9	30	72	1.37:1	16.1
HP6-18R	17.7 ~ 19.7	1.8	0.7	47.5	48	48.5	30	74	1.37:1	16.1



21.2 ~ 23.6 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
HPLP1-23R	21.2 ~ 23.6	0.3	2.7	34.7	35.1	35.5	30	60	1.37:1	16.1
HP2-23R	21.2 ~ 23.6	0.6	1.7	39.7	40.2	40.7	30	68	1.37:1	16.1
HP3-23R	21.2 ~ 23.6	0.9	1.1	43.2	43.7	44.2	30	68	1.37:1	16.1
HP4-23R	21.2 ~ 23.6	1.2	0.8	45.7	46.2	46.6	30	72	1.37:1	16.1
HP6-23R	21.2 ~ 23.6	1.8	0.5	48.5	49.2	49.4	30	72	1.37:1	16.1

RFS CompactLine SB series and SliATLine SU series



Warranty: Three (3) years from the date of original shipment.



7.125 ~ 8.5 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
SU2-77REC	7.125 ~ 8.5	0.6	4.3	30.8	31.3	31.9	30	55	1.2:1	20.8
SU4-77REC	7.125 ~ 8.5	1.2	2.2	36.2	36.9	37.6	30	63	1.15:1	23.1
SU6-77REC	7.125 ~ 8.5	1.8	1.5	40	40.8	41.6	30	67	1.15:1	23.1

12.70 ~ 13.25 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
SB2-127REC	12.70 ~ 13.25	0.6	2.7	36.4	36.7	37	30	62	1.3:1	17.7
SB4-127REC	12.70 ~ 13.25	1.2	1.4	41.2	41.5	41.8	30	67	1.3:1	17.7
SU6B-127REC	12.70 ~ 13.25	1.8	0.9	44.9	45.1	45.3	30	72	1.3:1	17.7

14.25 ~ 15.35 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
SB2-142REC	14.25 ~ 15.35	0.6	2.1	37.1	37.3	37.5	30	66	1.3:1	17.7
SB4-142REC	14.25 ~ 15.35	1.2	1.2	42.2	42.5	42.8	30	72	1.3:1	17.7
SU6B-142REC	14.25 ~ 15.35	1.8	0.8	45.7	46	46.3	30	73	1.3:1	17.7



17.7 ~ 19.7 GHZ

Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
SB1-19REC	17.7 ~ 19.7	0.3	3.5	33.5	34	34.4	30	55	1.3:1	17.7
SB2-19REC	17.7 ~ 19.7	0.6	1.8	38.5	39	39.5	30	70	1.3:1	17.7
SB4-19REC	17.7 ~ 19.7	1.2	0.9	43.5	44.5	45.2	30	72	1.3:1	17.7
SB6-19REC	17.7 ~ 19.7	1.8	0.7	47.5	48	48.5	30	74	1.3:1	17.7

21.2 ~ 23.6 GHZ


Model	Frequency Range (GHz)	Diameter (m)	3dB BW (degrees)	Gain (dBi)			XPD (dB)	F/B Ratio (dB)	VSWR	
				Low	Mid	High			Return Loss	dB
SB1-220REC	21.2 ~ 23.6	0.3	2.7	35.3	35.6	35.9	30	61	1.3:1	17.7
SB2-220REC	21.2 ~ 23.6	0.6	1.5	40.5	41	41.5	30	66	1.3:1	17.7
SB4-220REC	21.2 ~ 23.6	1.2	0.8	45.5	46.1	46.6	30	73	1.3:1	17.7

Accessories and Support

Interface Cables and Access Panels

Item	Comments	Part Number	Graphic
E1 Cable, RJ45 connectors	Price per meter (nn=length)	ATL-RJ45-RJ45/nn	
17E1 Tributary Cable, IDU to Access Panel, RJ45	DB78 to DB78 Cable	ATL- DB78-DB78	
DB78-to-RJ45 Access Panel		ATL-PA173402	
17E1 Tributary Cable, IDU to Access Panel, BNC	17E1 - DB78-BNC Payload Cable	ATL-17E1/DB78-BNC	
DB78-to-BNC Access Panel	17E1 BNC Blank Panel	ATL-PANEL-5802	
17E1 Trib Cable - Open End	Price per meter (nn=length)	ATL- DB78-Open/nn	
32E1 Access Panel		ATL-PA326601	
Craft Terminal Cable	DB9 to DB9	ATL-DB9-DB9	
NMS Cable	RJ45 to RJ45 Crossover Cable	ATL-RJ45-RJ45XO	
ATL-3101A SDH 1+1, Protection Cable		ATL-3101A/SDH/1+1	
1+1, Protection Cable with power redundancy	Suits Variable and Premier Ranges	ATL- HPDB-50P/1+1	

IF cables and cable accessories

Item	Comments	Part Number	Graphic
<p>Cable, Coaxial, un-terminated</p> <p>Centre Conductor: 2.80mm Solid Copper</p> <p>Dielectric: 7.80 + 0.02mm Foam PE.</p> <p>Shield: Bonded Al Foil</p> <p>Braid Coverage: 85%: 16 x 5 x 0.16mm Tinned Copper</p> <p>Jacket: 8.80+0.10mm PVC</p>	Price per metre	CL-8D/nn-	
Connector, "N" type (m) In Line CL-8D Coax	In Line	CN-NM-8D	
Connector, "N" type (m) Right Angle CL-8D Coax	Right Angle		
Grounding kit, CL-8D	1 per IF Cable	AT-CN-8-Ground	
Surge protector, coax, N(m)-N(f)	2 per IF Cable	ATL-AN10MF70	
Cable tie, S/S, 360 x 7.9 x 0.29 mm	One per metre of IF cable	ATL- Metal Strip(304SS Cable Tie)	



Technical Support

Item	Comments	Part Number
Extended Warranty	Per Additional Year	ATL-EXW
Path Profiles and Path Analysis - 1 to 3 Links	Price per Link	ATL-PPA
Path Profiles and Path Analysis - 3 to 10 Links	Price per Link	ATL-PPB
Path Profiles and Path Analysis - 11 to 50 Links	Price per Link	ATL-PPC
Path Profiles and Path Analysis - 51 to 100 Links	Price per Link	ATL-PPD
Path Profiles and Path Analysis > 100 Links	Price per Link	ATL-PPE
Site Visit	Price per Day	ATL-Links SV
Engineering Support	Price per Day	ATL-Links Eng

Shipping weights and dimensions

Links

1 + 0 configuration

Description	Notes	One Carton (dimensions)	Volume	Weight
		l x w x h (cm)	(m ³)	(kg)
Single Carton per 1+ 0 Link				
Hiperion Link	Includes 2 x IDU, 2 x ODU, and 1 x Links Accessories Kit	66.5 x 41.5 x 61.5	0.17	26.2

1 + 1 configuration

Description	Notes	Two Cartons (dimensions)	Volume	Weight
		l x w x h (cm)	(m ³)	(kg)
Two Cartons per 1+1 Link				
Hiperion Link (2 Cartons)	Includes 2 x IDU, 2 x ODU, and 1 x Links Accessories Kit	66.5 x 41.5 x 61.5	0.17	26.2

Description	Notes	One Carton (dimensions)	Volume	Weight
		l x w x h (cm)	(m ³)	(kg)
Two Redundancy Splitters per carton				
Redundancy Splitter	Two Redundancy Splitters per carton	60 x 40 x 35	0.084	15

Accessories

Description	Notes	Carton size	Volume	Weight
		l x w x h (cm)	(m ³)	(kg)
IF Cable	2 x 50 metre lengths	55 x 55 x 22	0.07	26
IF Cable	2 x 100 metre lengths	55 x 55 x 42	0.13	50

Antennas

Comba

Diameter	Notes	Type	Carton size	Volume	Weight
			l x w x h (cm)	(m ³)	(kg)
300 mm	Antenna, High Performance	Carton	45 x 45 x 48	0.1	11
600 mm	Antenna, High Performance	Carton	74 x 74 x 65.4	0.36	34
900 mm	Antenna, High Performance	Crate	119 x 69 x 119	0.8	40
1200 mm	Antenna, High Performance	Crate	140 x 135 x 60	1.13	105
1800 mm	Antenna, High Performance	Crate	232 x 217 x 0.7	3.49	280
2400 mm	Antenna, High Performance	Crate	282 x 232 x 232	15.18	450
3000 mm	Antenna, High Performance	Crate	310 x 200 x 260	16.12	300
	Antenna, 3000mm accessories	Crate	120 x 90 x 50	0.54	200

Radio Waves

Diameter	Notes	Type	Carton size	Volume	Weight
			l x w x h (cm)	(m ³)	(kg)
300 mm	Direct Mount, High Performance	Carton	45 x 45 x 48	0.1	11
600 mm	Direct Mount, High Performance	Carton	71 x 71 x 61	0.3	22
900 mm	Direct Mount, High Performance	Crate	119 x 69 x 119	0.8	36
1200 mm	Direct Mount, High Performance	Crate	150 x 71 x 152	1.6	92
1800 mm	Direct Mount, High Performance	Crate	196 x 86 x 203	2.9	144

International Product Warranty

AT Electronic & Communication International Limited (ATECIL) warrants, that all Digital Microwave Equipment manufactured/supplied by ATECIL, will be free of faults arising from defects in design, workmanship or materials in accordance with this express warranty.

Should any fault due to bad design, workmanship or materials be proven at any time within the prescribed warranty period, ATECIL will, subject to the terms of this warranty as set out below, remedy such fault free of charge provided the equipment is returned, carriage paid, to ATECIL or to a service centre authorised by ATECIL.

The prescribed warranty period for equipment manufactured by ATECIL is three (3) years after shipment from the factory. In addition, where ATECIL (or a service centre authorized by ATECIL) repairs equipment or supplies spare parts, the prescribed warranty period for the repaired equipment or spare parts is three (3) months after shipment to the customer.

This express warranty shall not extend to any abuse, accident or improper installation, connection, adjustment or use of goods otherwise than in accordance with instructions issued by ATECIL.

Subject to the matters set out in this express warranty, no liability expressed or implied, is accepted for any consequential loss, damage or injury arising as a result of any fault in the goods.

This express warranty does not extend to goods supplied by ATECIL, which are not branded by it. ATECIL will, however, make reasonable endeavours to ensure that the purchaser receives the full benefit of any warranty given by the manufacturer.

This express warranty is valid for goods purchased from ATECIL anywhere in the world. Warranty service will be provided in accordance with this express warranty in any country of the world where there is a service centre authorized by ATECIL.

The benefits conferred by this express warranty are in addition to all other non-excludable rights and remedies which the consumer may have under the relevant *Trade Practices Act* and any similar laws in the country of destination. To the extent permitted by law, ATECIL's liability for any non-excludable condition or warranty is limited to (at ATECIL's option):

- In the case of goods - repairing, replacing or supplying equivalent goods, or paying the cost of any of those remedies; or
- In the case of services - supplying the services again or paying the cost of having the services supplied again.

Some goods or components of goods supplied by ATECIL have specific warranty conditions in addition to those stated above. Such conditions are supplied with the goods or components of goods.

Appendix A

Standards and Compliance.

All Hiperion Digital Microwave Radio products comply fully or exceed the requirements of the following International Standards and Recommendations.

ITU-R Recommendation F.746-4: "Radio-frequency channel arrangements for radio-relay systems".

ITU-R Recommendation F.1092-1: "Error performance objectives for constant bit rate digital path at or above the primary rate carried by digital radio-relay systems which may form part of the international portion of a 27 500 km hypothetical reference path".

ITU-R Recommendation F.1189-1: "Error performance objectives for constant bit rate digital paths at or above the primary rate carried by digital radio-relay systems which may form part or all of the national portion of a 27 500 km hypothetical reference path".

ITU-R Recommendation F.557-4: "Availability objective for radio-relay systems over a hypothetical reference circuit and a hypothetical reference digital path".

ITU-T Recommendation G.826: "Error performance parameters and objectives for international, constant bit rate digital paths at or above the primary rate".

ITU-T Recommendation G.827: "Availability parameters and objectives for path elements of international constant bit-rate digital paths at or above the primary rate".

ITU-R Recommendation F.752-1: "Diversity techniques for radio-relay systems".

ITU-R Recommendation F.1093-1: "Effects of multi-path propagation on the design and operation of line-of-sight digital radio-relay systems".

ITU-R Recommendation F.385-6: "Radio Frequency Channel Arrangements for Radio Relay Systems operating in the 7 GHz Band".

ITU-R Recommendation F.386-4: "Radio Frequency Channel Arrangements for Radio Relay Systems operating in the 8 GHz Band".

ETSI EN 301 216: "Fixed Radio Systems; Point-to-point equipment; Pleisiochronous Digital Hierarchy (PDH); Low and medium capacity digital radio systems operating in the frequency bands between 3 GHz and 11 GHz.

ETSI EN 301 128: "Fixed Radio Systems; Point-to-point equipment; Pleisiochronous Digital Hierarchy (PDH); Low and medium capacity digital radio systems operating in the 13 GHz, 15 GHz and 18 GHz frequency bands"

ETSI EN 300 198: "Fixed Radio Systems; Point-to-point equipment; Parameters for radio systems for the transmission digital signals operating at 23 GHz"

ITU-R Recommendation F.1101: "Characteristics of digital radio-relay systems below about 17 GHz".

ETSI ETS 300 019 (Parts 1 and 2): "Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1: Classification of environmental conditions; Part 2: Specification of environmental tests".

ETSI ETS 300 132 (Part 2): "Equipment Engineering (EE); Power supply interface at the input to telecommunications equipment; Part 2: Operated by direct current (dc)".

ETSI EN 300 385: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Electro-Magnetic Compatibility (EMC) standard for fixed radio links and ancillary equipment".



ITU-T Recommendation G.773: "Protocol suites for Q-interfaces for management of transmission systems".

IEC 60154: "Flanges for waveguides".

ITU-T Recommendation G.703: "Physical/electrical characteristics of hierarchical digital interfaces".

ITU-T Recommendation G.704: "Synchronous frame structures used at 1544, 6312, 2048, 8488 and 44736 Kbit/s hierarchical levels".

ITU-R Recommendation F.1191-1: "Bandwidth and unwanted emissions of digital radio-relay systems"

ETSI ETS 300 119: "Equipment Engineering (EE); European telecommunication standard for equipment practice".

ETSI TR 101 036-1: "Fixed Radio Systems; Point-to-point equipment; Generic wordings for standards on digital radio systems characteristics; Part 1: General aspects and point-to-point equipment parameters".

CEPT/ERC Recommendation 74-01: "Spurious emissions".

ETSI EN 301 489-4: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Electro-Magnetic Compatibility (EMC) standard for radio equipment and services; Part 4: Specific conditions for fixed radio links and ancillary equipment and services".

EEU R&TTE Directive 1999

EN60950: "ETSI CE".

NTRL ANSI/UL 1950: FCC

FCC Part 15