

# Specifications

## Series – TE100/TE1000, ME100/ME1000

### MMW Wireless Links Summary

ComoTech's AirLight™ Series wireless systems provide the ultimate Gigabit backbone links for most demanding applications for carriers and enterprises. The products will operate either in 70 GHz licensed bands or 60 GHz unlicensed bands and have different antenna options for various link distance requirements.

The AirLight™ Series represents a breakthrough in long range gigabit links by extending the maximum link distance to 12 km.

### Features & Advantages

- Frequency band  
57~64GHz(59~66GHz for JAPAN)  
71~76/81~86GHz  
(74~76/84~86GHz for Czech Republic)
- Full-duplex Gigabit Ethernet - 1.25 Gbps
- Long Link Distance - up to 12 km(7.4 miles)
- Highly secure, "pencil-beam" antennas - less than 1 deg.
- Interference free operation.
- High density deployment without co-location problems
- Extremely low latency -measured in nanoseconds
- All-in-one outdoor, compact design - no IDU required.
- Extreme reliability - up to 99.999%
- IP66 Outdoor Rate Enclosure
- Easy antenna alignment using voltmeter RSSI test points.

### Applications

- Enterprise LAN Extension between sites
- Last mile access to buildings - extend high speed services to commercial buildings without fiber.
- Carrier Backhaul from mobile base station
- ISP Backbone Ring Formation
- Primary/redundant link for mission critical link.
- Metro fiber extension
- Temporary, disaster recovery links.



Short range version with 1ft. Antenna



Long range version with 2ft. Antenna

### Specifications

#### 71~76GHz E-Band AirLight™ Series

Parameters	TE1000C-12	TE1000C-24	TE100C-12	TE100C-24
Data Rate	1.25 Gbps, Full-Duplex		125 Mbps, Full-Duplex	
Output Power	17 dBm (50mW) max		17 dBm (50mW) max	
Frequency Range	71-76 GHz		71-76 GHz	
Bandwidth	2200 MHz		400 MHz	
Center Frequency	72.1 GHz (type A) / 74.9 GHz (type B)		73.9 GHz (type A) / 74.9 GHz (type B)	
Modulation	ASK		ASK	
Latency	23 nanoseconds		23 nanoseconds	
Management	RS-485, PC application program		RS-485, PC application program	
Interface	1000Base-SX with LC connectors		100Base-FX with LC connectors	
Antenna Gain	43 dBi (1ft diameter)	48 dBi (2 ft diameter)	43 dBi (1 ft diameter)	48 dBi (2 ft diameter)
Antenna Beamwidth	0.9 deg	0.5 deg	0.9 deg	0.5 deg
Link Distance*(clear max)	4.10km	12.00km	6.30km	16.10km
• drizzle(99.9%)	1.55 ~ 1.95km	2.60 ~ 3.45km	1.90 ~ 2.45km	3.00 ~ 4.05km
• heavy rain(99.99%)	0.90 ~ 1.20km	1.40 ~ 1.95km	1.05 ~ 1.45km	1.60 ~ 2.25km
• torrential(99.999%)	0.60 ~ 0.70km	0.90 ~ 1.05km	0.70 ~ 0.85km	1.00 ~ 1.20km
Minimum Link Distance	150m	700m	300m	700m
Operating Temperature	-40 to 70 °C		-40 to 70 °C	
Size: Radio Only	18 × 18 × 10 (cm)		18 × 18 × 10 (cm)	
Size with Antenna	34 × 34 × 22 (cm)	62 × 62 × 49 (cm)	34 × 34 × 22 (cm)	62 × 62 × 49 (cm)
Weight	13.2 lbs	37.5 lbs	13.2 lbs	37.5 lbs

\*Refer to ITU-R Rain Region K

#### 57~64GHz V-Band AirLight™ Series

Parameters	ME1000C-12	ME1000C-24	ME100C-12	ME100C-24
Data Rate	1.25 Gbps, Full-Duplex		125 Mbps, Full-Duplex	
Output Power	10 dBm (10mW) max		10 dBm (10mW) max	
Frequency Range	57-64 GHz		57-64 GHz	
Bandwidth	2200 MHz		400 MHz	
Center Frequency	58.75 GHz (type A) / 62.25 GHz (type B)		58.00 GHz (type A) / 63.00 GHz (type B)	
Modulation	ASK		ASK	
Latency	23 nanoseconds		23 nanoseconds	
Management	RS-485, PC application program		RS-485, PC application program	
Interface	1000Base-SX with LC connectors		100Base-FX with LC connectors	
Antenna Gain	42 dBi (1ft diameter)	48 dBi (2 ft diameter)	42 dBi (1 ft diameter)	48 dBi (2 ft diameter)
Antenna Beamwidth	1.2 deg	0.6 deg	1.2 deg	0.6 deg
Link Distance*(clear max)	1.08km	1.67km	1.44km	2.08km
• drizzle(99.9%)	0.85 ~ 0.93km	1.23 ~ 1.37km	1.910 ~ 1.20km	1.54 ~ 1.68km
• heavy rain(99.99%)	0.64 ~ 0.75km	0.89 ~ 1.08km	0.81 ~ 0.95km	1.10 ~ 1.30km
• torrential(99.999%)	0.47 ~ 0.54km	0.64 ~ 0.74km	0.58 ~ 0.66km	0.78 ~ 0.89km
Minimum Link Distance	130m	350m	150m	400m
Operating Temperature	-40 to 70 °C		-40 to 70 °C	
Size: Radio Only	18 × 18 × 10 (cm)		18 × 18 × 10 (cm)	
Size with Antenna	34 × 34 × 22 (cm)	62 × 62 × 49 (cm)	34 × 34 × 22 (cm)	62 × 62 × 49 (cm)
Weight	13.2 lbs	37.5 lbs	13.2 lbs	37.5 lbs

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# Series – NTE/XTE, NME/XME

# User Interface



### Features

- Frequency band  
57~64GHz(59~66GHz for JAPAN)  
71~76/81~86GHz(74~76/84~86GHz for Czech Republic)
- Full-duplex Gigabit Ethernet - 1.25 Gbps
- Highly secure, "Pencil-beam" antennas - less than 1 deg.
- Interference free operation.
- High density deployment without co-location problems
- Extremely low latency -measured in nanoseconds
- All-in-one outdoor, compact design - no IDU required.
- Extreme reliability - up to 99.999%
- Easy antenna alignment using voltmeter RSSI test points.
- Web-based(HTML) embedded management
- ASK Modulated with Forward Error Correction RS(204,188)
- Management 10/100base-TX with RJ-45 connector
- SNMP V2.0 Support
- Auto Gain Control – Dynamic range(60dB)
- AdaptRate, Advanced Security Function(TBD)

### Applications

- Enterprise LAN Extension between sites
- Last mile access to buildings - extend high speed services to commercial buildings without fiber.
- Carrier Backhaul from mobile base station
- ISP Backbone Ring Formation
- Primary/redundant link for mission critical link.
- Metro fiber extension
- Temporary, disaster recovery links.

### Specifications

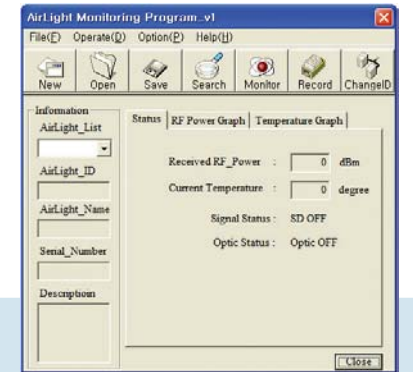
Parameters	NTE1000C-12/24	XTE1000C-12/24	NME1000C-12/24	XME1000C-12/24
Data Rate	1.25 Gbps, Full-Duplex		1.25 Gbps, Full-Duplex	
Output Power	16 dBm (50mW) max		10 dBm (10mW) max	
Frequency Range	71~76 / 81~86 GHz		57~64 GHz	
Bandwidth	2200 MHz		2200 MHz	
Center Frequency	72.3 GHz (type A) / 82.3 GHz (type B)		58.75 GHz (type A) /62.25 GHz (type B)	
Modulation	ASK		ASK	
Management	Common : Web-based(HTML) embedded management SNMP V2.0 Support and Voltmeter RSSI test points X_series : Auto Gain Control – Dynamic range(60dB) AdaptRate, Advanced Security Function(TBD)			
Interface	RF : FDD, ASK Modulated with Forward Error Correction RS(204,188) Ethernet : 1000Base-TX and SX with LC connectors 10/100base-TX with RJ-45 connector			
Antenna Gain	43 dBi / 48dBi (1ft / 2ft diameter)		42 dBi / 48dBi (1ft / 2 ft diameter)	
Antenna Beamwidth	0.9(1ft) / 0.5 deg		1.2(1ft) / 0.6(2ft) deg	
Link Distance (clear max)	3.8km(1ft) 11.0km(2ft)	5.7km(1ft) 14.5km(2ft)	1.1km(1ft) 1.7km(2ft)	1.3km(1ft) 2.1km(2ft)
Minimum Link Distance	150m(1ft) 700m(2ft)	50m(1ft) 100m(2ft)	130m(1ft) 350m(2ft)	10m(1ft) 20m(2ft)
Operating Temperature	-40 to 70 °C		-40 to 70 °C	
Size: Radio Only	18 × 18 × 10 (cm)		18 × 18 × 10 (cm)	
Size with Antenna	34 × 34 × 22 (cm)	62 × 62 × 49 (cm)	34 × 34 × 22 (cm)	62 × 62 × 49 (cm)
Weight	13.2 lbs	37.5 lbs	13.2 lbs	37.5 lbs

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### AirLight™ Monitoring Program\_v1(ALMP) : USART

The general user interface is provided in an application program that the user can install on any PC running Windows XP. Available information include the status of RF signals, connection to networks and internal temperature.

The user interface program provides management and monitoring of important system parameters via serial connection to the outdoor radio unit. The list of such parameters is as follows :



#### Monitoring of major parameters

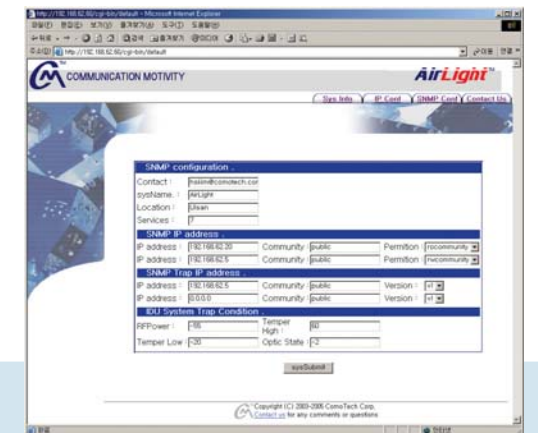
- RF received power level
- Internal temperature of the radio unit
- Optical cable connection status

#### Additional Functions

- Alarm and warning functions
- Management of multiple units (up to 9)
- Function to output status parameters
- Function to record status parameters

### AirLight™ SNMP Program\_v2

The user interface is the management equipment to check the AirLight™ system information and operation status. This System indicates the received RF power, in-system temperature, optic cable status and serial number information about the AirLight™ system. Also, this system provides remote connection function to check the AirLight™ system information and operation status.



#### SNMP Configuration

- SNMP Contact Information
- SNMP System Name
- SNMP Location Information
- SNMP Service Information

#### SNMP IP address

- Host IP address
- Community
- Permission

#### SNMP Trap IP address

- SNMP Trap IP address
- Trap Community
- SNMP Version

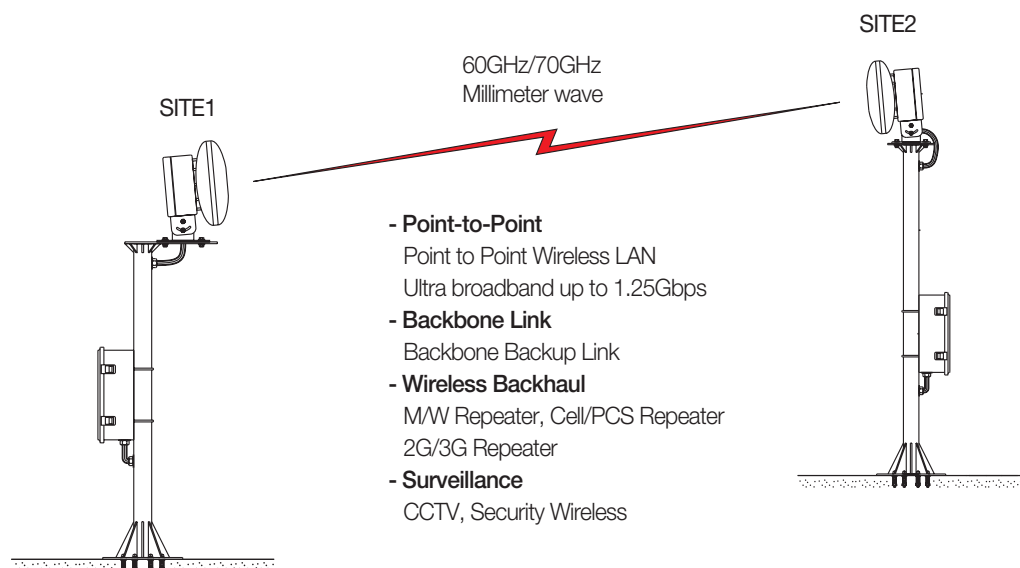
#### IDU System Trap conditions

- Minimum RF Power value
- Maximum Temperature Value
- Minimum Temperature Value
- Optic Cable Status

# Applications

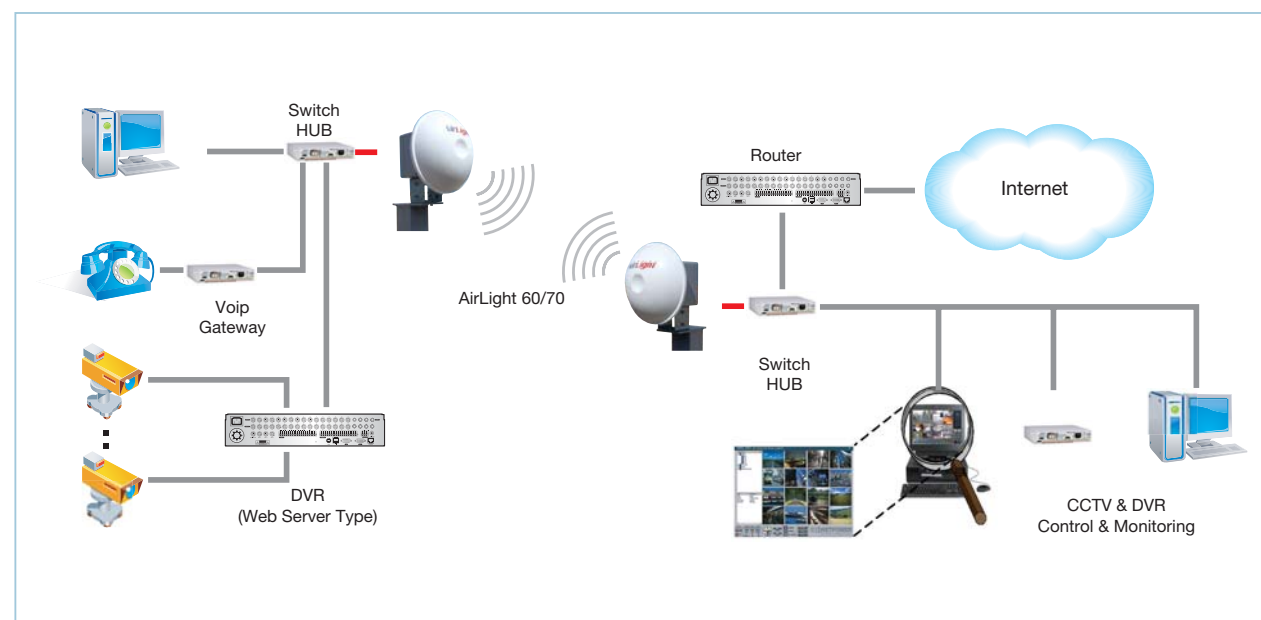
# Applications

AirLight™ can be used as Point-to-Point link, and establishing high-speed backbone networks, such as backbone link or wireless backhaul. AirLight™ is also used for satellite, broadcasting and observation purposes.



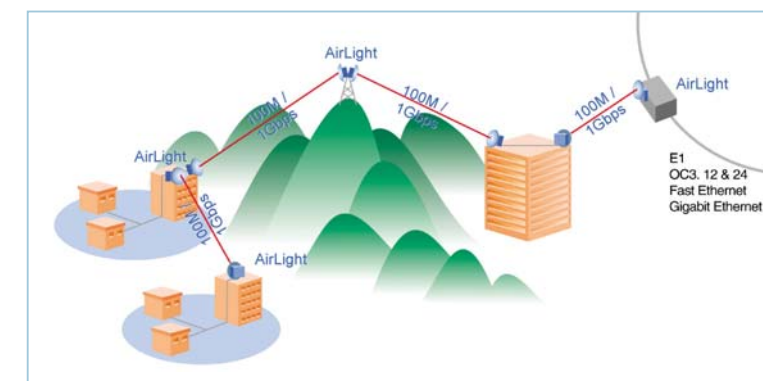
## Integration of networks

Sharing various communication systems, which are separated from each network, through AirLight™ is available. A network which consists of telephones, cameras, PC's can be connected to another network through AirLight™. Therefore, the two networks can construct a separate private network.



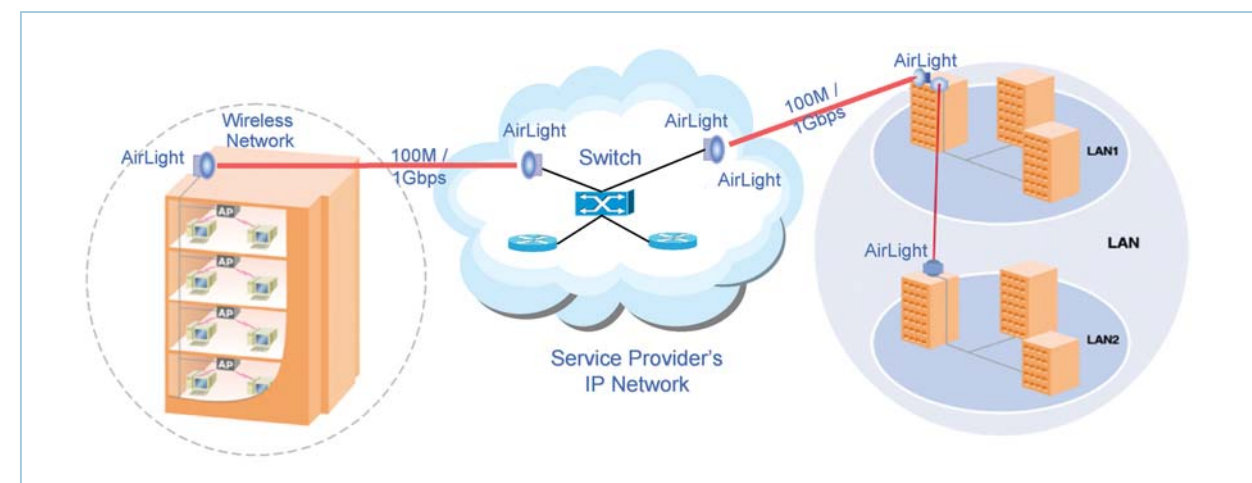
## Point-to-Point

The AirLight™ series are suitable for these applications, which can serve high capacity point-to-point up to 1.25Gbps Gigabit Ethernet. Thus the outdoor units are optimized for Ethernet radio links or mobile communication backhauls.



## LAN-to-LAN

If you want to install connections between various LANs, you can use AirLight™ instead of a fiber-optic cable because it is cheaper and possible to install promptly. It has good features that are convenient installation and management. Also it can transmit tremendous data as much as fiber-optic communication. When the network removal is required, unit's reuse is possible. Also, In case of extension of the line when customer increase, it is more convenient to install or upgrade.



## Wireless-LAN Network

For wireless LAN in downtown, AirLight™ can transmit the data to adjacent networks between several wireless LAN access points of buildings. AirLight™ guarantees the data transmission with high compatibility and high-capacity. Thus it provides optimal solutions by means of minimizing installation and reducing the additional cost due to data usage in downtown.

