Atmospheric laser communication system

GEM LASER LIMITED
A Legend Laser Machine Manufacture & Solutions
Add.: No.442, Wuluo Road, Wuhan, 430061, P.R.China
Tel.: +86-27-84793136
Fax: +86-27-84793136
E-mail: sales@gem-lasers.com
Web: www.gem-lasers.com

2016 Version We reserve the right of final interpretation of the data, subject to change without notice
Wireless laser communication refers to the laser wave as the carrier, the atmosphere as the transmission medium optical communication. Compared with microwave communication, laser communication with information capacity, frequency bandwidth, anti-electromagnetic interference ability, good confidentiality and so on. Compared with wired and optical fiber communication, it has the advantages of flexibility, less impact on municipal construction, low running cost and easy promotion. Laser communication does not take up radio spectrum resources, do not need to apply for frequency license, there is no laying the road to dig the road, set up a flexible, you can complete the ground, ground to air, air to air and other optical fiber communication can not complete the communication task.

FEATURES

- **Full-duplex**: This product uses visible light, infrared light dual-band transmission, while visible light can also be used as a beacon light, greatly improving the transmission speed and stability.
- **High bandwidth**: ≥ 300Mbps.
- **High rate**: the same rate of transmission with the same speed.
- **External optical interface or USB interface**.
- **Bit error rate**: better than 10E-6;
- **Confidential communication**: the working wavelength of the product are in the order of microns, and divergence angle than microwave communication at least three to four orders of magnitude, to capture such a narrow beam is very difficult, and it has good electromagnetic compatibility, Electromagnetic interference ability, greatly improving the confidentiality of military communications.
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Project</th>
<th>Atmospheric laser communication system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>+12V DC</td>
</tr>
<tr>
<td>Communication distance</td>
<td>0.2~3km</td>
</tr>
<tr>
<td>Source light</td>
<td>Fiber laser</td>
</tr>
<tr>
<td>Wavelength</td>
<td>1.54μm</td>
</tr>
<tr>
<td>Output laser power</td>
<td>800mW</td>
</tr>
<tr>
<td>Laser power adjustment range</td>
<td>100~800mW</td>
</tr>
<tr>
<td>Beam divergence angle</td>
<td>1mrad</td>
</tr>
<tr>
<td>Spot diameter</td>
<td>3m (at 3km)</td>
</tr>
</tbody>
</table>

### Applications

- Military facilities or other vital departments need to strictly confidential occasions, such as nuclear power plants, prisons, finance, law, public security, armed police, border, government and other confidential departments. Should not be used or restricted the use of radio communications, such as around the airport.
- Technically or economically unfit to lay the cable area, such as the oil field between the wells, rivers, rivers, lakes, straits, ravines and other complex landscape, the city buildings and other buildings.
- The emergency situation when the emergency communications needs, such as earthquakes, fires, floods and other post-disaster communications contingency plans, emergency communications and other anti-terrorism attacks.
- The temporary communication needs of specific users, such as large-scale rally activities, exhibitions, live events and high-definition image signal transmission and other needs of the fast opening business occasions.
- Wireless laser communication for telecom operators to provide a wide range of communications services, such as metropolitan area network construction and the last mile access business, mobile communication base station interconnection business, wireless base station data backhaul business, optical fiber communication and microwave Communication redundancy link backup services.