ST9633NF

Drone UAV IP Mesh Radio

ST9633NF micro airborne mesh networking equipment, the appearance adopts CNC machining design, the equipment is small and exquisitely designed, it is specially designed for the needs of lightweight networking such as unmanned aerial vehicles, unmanned vehicles, unmanned boats, robots, etc. Mobile networking equipment. This model has the function of self-organizing network communication. In the process of actual use, ST9633NF can quickly form an interconnected three-dimensional network with handheld individual soldier systems, vehicle-mounted systems, and peripheral base station networking equipment. It adopts a ring network design without worrying about the ring. The problem of network congestion. The advanced MESH design concept does not require a central gateway, and any one can realize the self-organizing network function. Any device in the group is disconnected, and the corresponding device will continue to communicate within the effective antenna coverage. The network does not drop. As a wireless extension and extension of fixed radio stations or vehicle-mounted radio stations in multi-hop ad hoc networks, it is convenient to go deep into emergency scenes, dense crowds or buildings, and greatly enhance the network's in-depth communication capabilities. It can provide wireless broadband digital communications for emergency response, anti-terrorism, riot prevention, covert reconnaissance, special operations, rescue and disaster relief, and daily patrols. The transmission distance can reach more than 10km in an open environment on the ground, and an air-to-ground transmission can reach more than 20km, and 300~1000m in a blocking environment (depending on the blocking environment).

The equipment supports network data transmission, voice intercom, Beidou and GPS positioning, and local wifi signal coverage. The system adopts same-frequency networking, multi-hop relay, and supports any network topology, such as point-to-point, point-to-multipoint, chain-like Relay, mesh network and hybrid network topology, etc. Equipment working frequency: 512~582MHz, 570~590 (U section), 1240~1300MHz,

1428~1448MHz (L section).

Features:

1. There is no central co-frequency networking, and all nodes have the same status, that is, they can be used as terminal nodes, relay nodes or central nodes, without relying on wired communication lines, and can quickly establish a wireless communication network.
2. Multi-node fast and flexible networking. Same-frequency networking can support more than 32 nodes. The system itself can automatically calculate link routing based on indicators such as channel quality, service rate, and error codes, without affecting the original data and voice. , Video and other services
3. Any network topology, MESH wireless ad hoc network system supports any network topology, such as point-to-multipoint, chain relay, mesh network and hybrid network.
4. Fast moving with high data bandwidth, the peak data bandwidth of MESH wireless ad hoc network system is 70Mbps (based on 20MHz carrier bandwidth). Nodes have non-fixed mobile transmission capabilities, and fast movement does not affect high data bandwidth services. Services such as voice, data, and video will not be affected by rapid changes in system topology and high-speed movement of terminals.
5. Anti-interference, can effectively suppress out-of-band harmonic interference through an external filter, and improve the signal's anti-interference and signal-to-noise ratio. At the same time, the ARQ (Automatic Repeat Request) transmission mechanism is adopted to reduce the data transmission loss rate and improve the reliability of data transmission. In addition, the built-in frequency sweep function can manually configure and select the frequency that is less affected by interference to set the center frequency point according to the result of the frequency sweep of the allocated center frequency point to achieve interference frequency avoidance.
6. Anti-multipath capability. The MESH wireless ad hoc network system has strong anti-multipath capability and supports automatic wireless relay transmission. All nodes in the system support multi-hop relay (relay) communication, which can adapt to a variety of terrain and application scenarios. Especially in mountainous landforms, dense urban areas or vegetation coverage, high-rise or deep buildings, basements, subways, tunnels and other scene areas that are difficult to cover or weakly covered by traditional radio equipment, the above-mentioned obstacles cover non-line of sight (NLOS), surface and underground communication Relying on the excellent diffraction and reflection multipath transmission and penetration capabilities, and then relying on the relay station for effective coverage extension, it can well realize the anti-multipath relay transmission.
7. Disaster resistance, MESH wireless ad hoc network system will not affect the use of the entire network when a single node equipment fails.
8. Security and confidentiality. The system can effectively prevent illegal users from invading the network by setting the working frequency, carrier bandwidth, scrambling code (ie MESHID), communication distance and networking mode and other "multi-locks" marshalling encryption, which can effectively prevent illegal users from invading the network. The system also supports AES128/AES256 (source encryption)
9. All-IP networking and interconnection. The MESH wireless ad hoc network system adopts the all-IP design concept. It currently supports the undifferentiated transparent transmission of various data and is easy to communicate with other heterogeneous communication systems (such as public networks, private networks, and satellites). Communication, microwave, etc.) interconnection to realize real-time interaction of multimedia services.
10. Support multiple services. The MESH wireless ad hoc network system supports the real-time transmission

of voice, image, data and positioning information (GPS/Beidou). All nodes can be used in conjunction with the control terminal, and various management and scheduling functions can be realized through the configured MESH ad hoc network terminal system software. The mobile interactive platform configured with MESH ad hoc network terminal system software can also be used to transmit real-time services to mobile terminals.

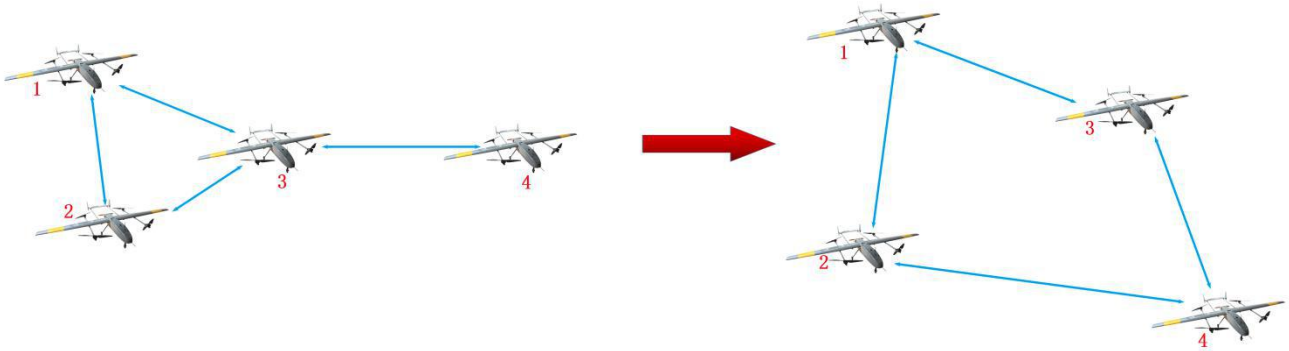
Product Dimension and weight

Technical Parameters:

Model	ST9633NF
Frequency	512~582MHz 、 570~590 （ U band ） 、 1240~1300MHz 、 1428~1448MHz（L band）
Carrier bandwidth	5.0/10.0/20.0MHz
Modulation	COFDM
Mode	BPSK/QPSK/16QAM/64QAM（自适应）
Rate	70Mbps for ptp
Power	2W、1W
Receive sensitivity	-93dBm@5MHz

Video		Support IP network video input and wifi video access (HDMI/AV needs to be customized)
Networking	node	≥32
	hops	＞8
	Start-up	8s
	Network topology	No central network, star network, chain network, mesh network, etc.
	Network transparent transmission	support
Encryption		AES128/AES256
Power		DC14~20V
Power		≤24W
Device		
Antenna		SMA*2（50cm）
GPS		Built-in motherboard IPEX
WIFI		Built-in motherboard IPEX
Ethernet		BM20B-SRDS-G-TF （ Equipped with dedicated RG45 adapter cable）
Dimension（L × W × H）		71mm*70mm*25mm
Weight		170g
Temp.		-40℃～+75℃

Transmitting mode: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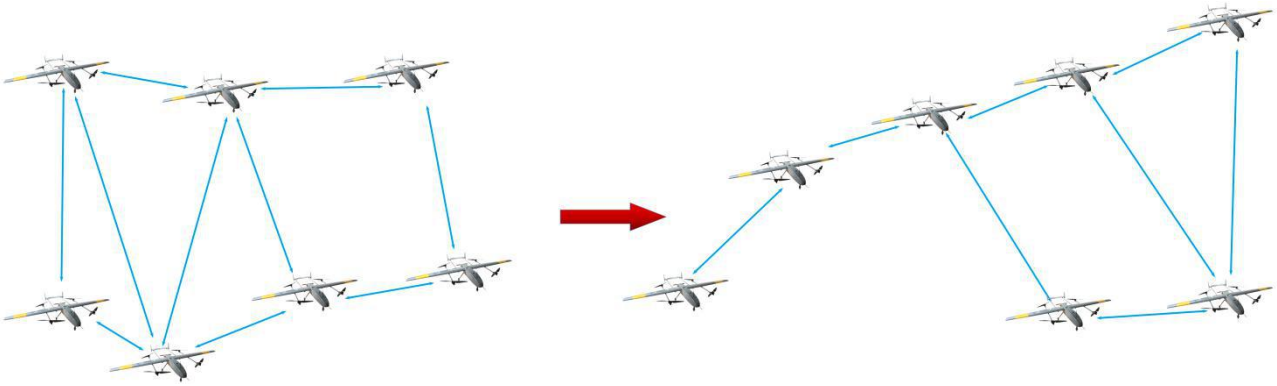

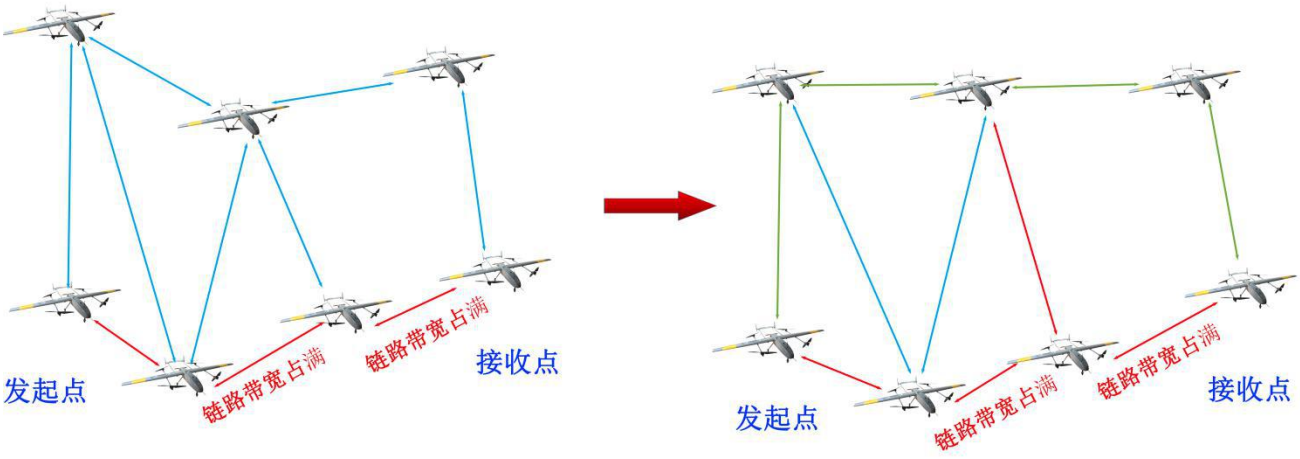
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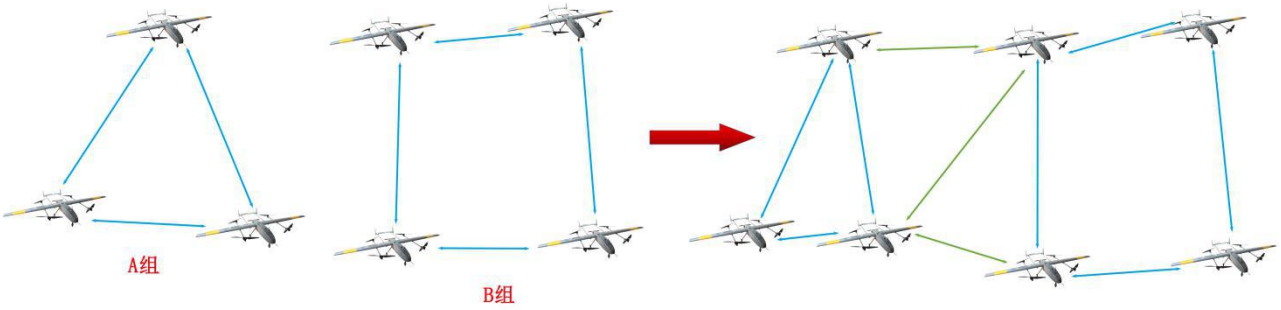
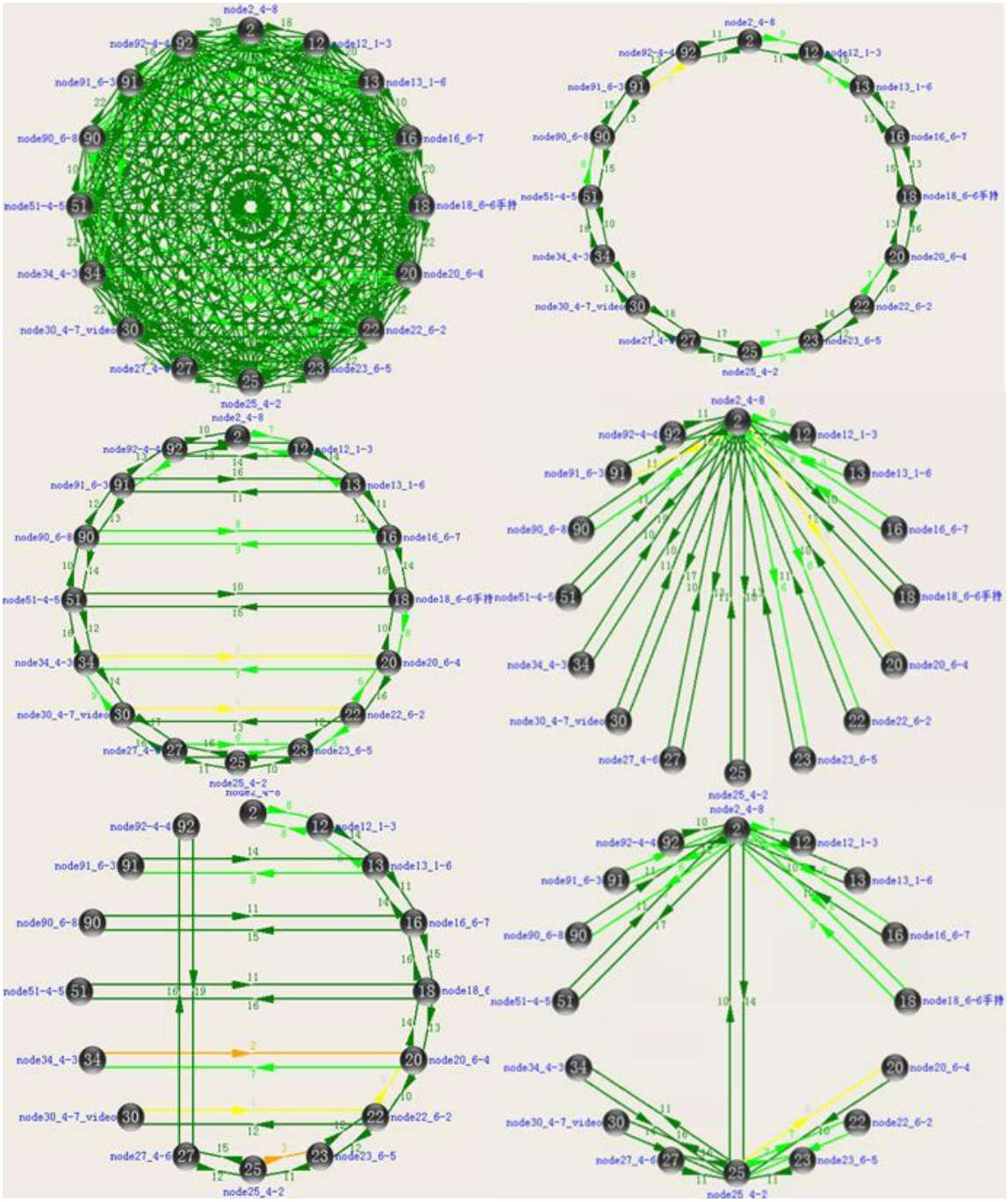
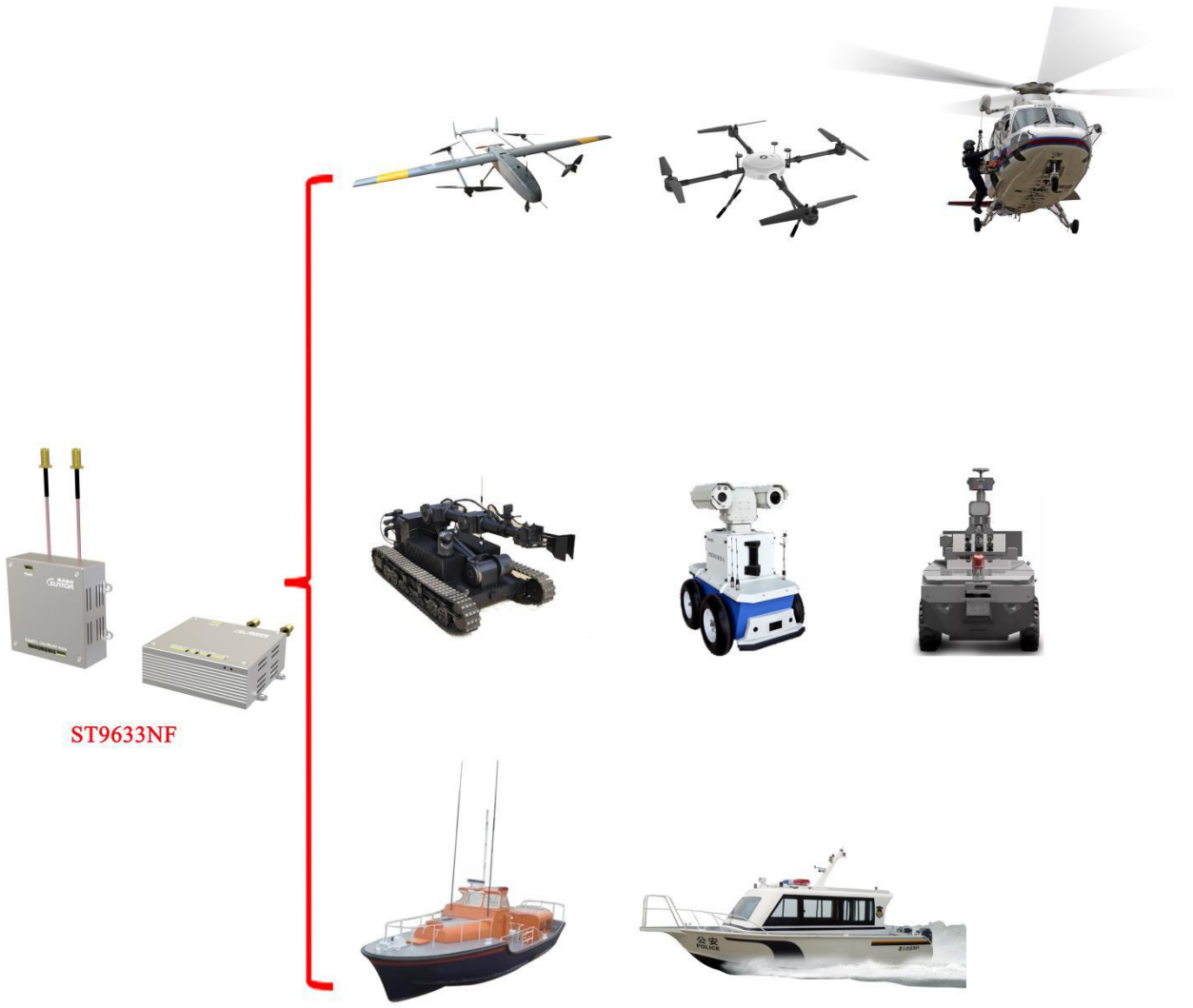

A组
B组

Multiple network topology structure diagrams:



Application: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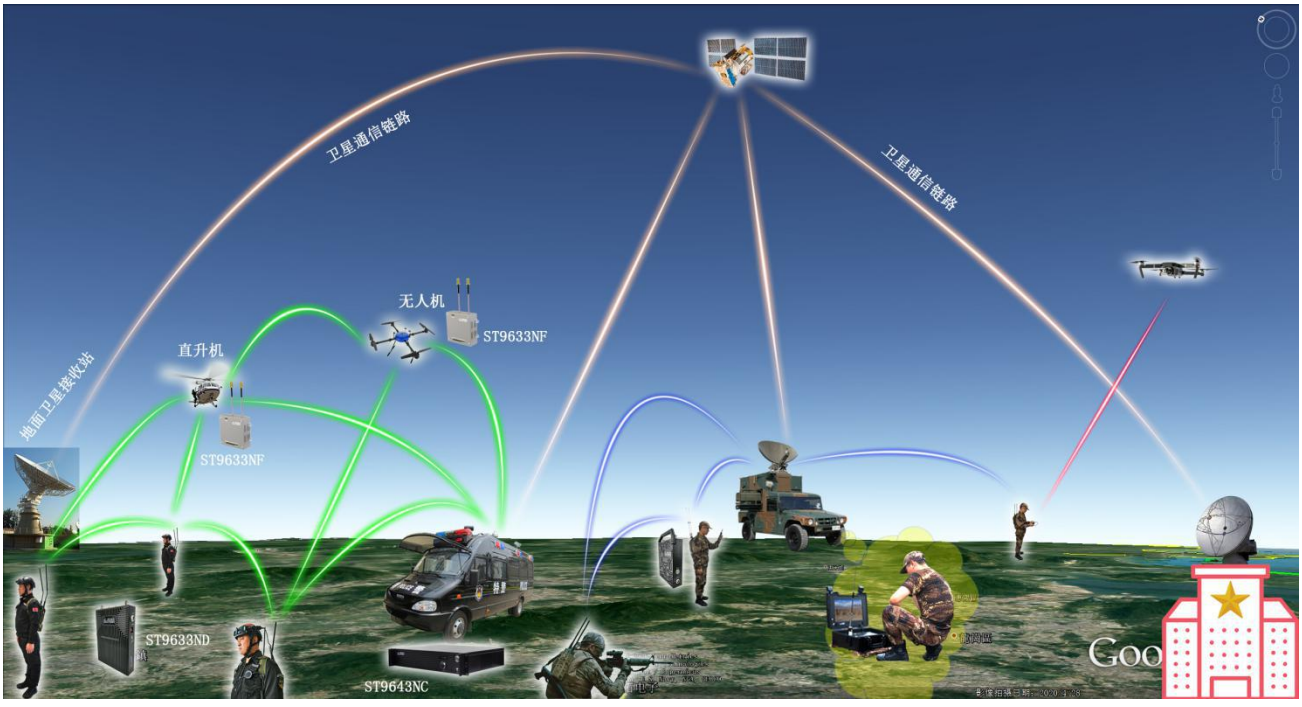
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无人机
ST9633NF
直升机
ST9633NF
地面卫星接收站
ST9633ND
ST9643NC