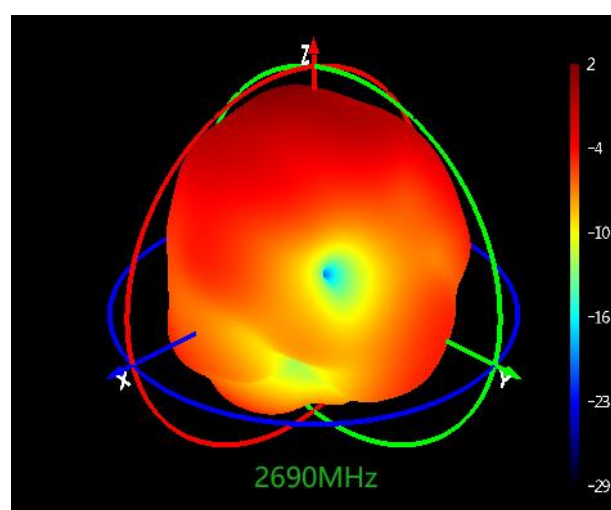
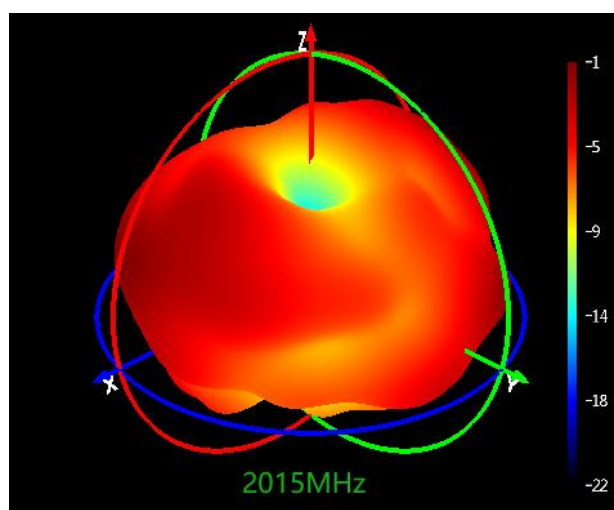
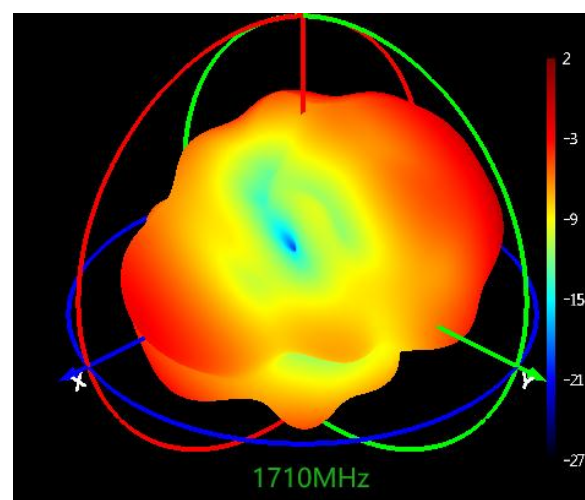
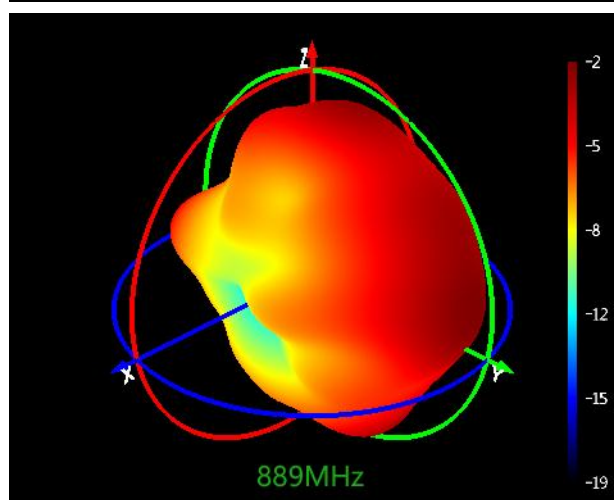
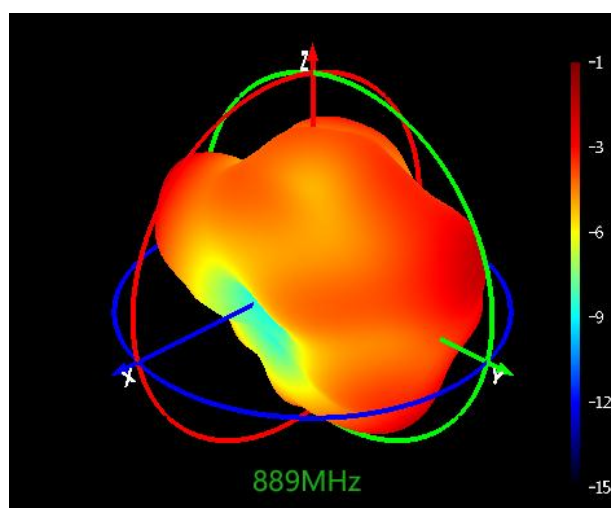
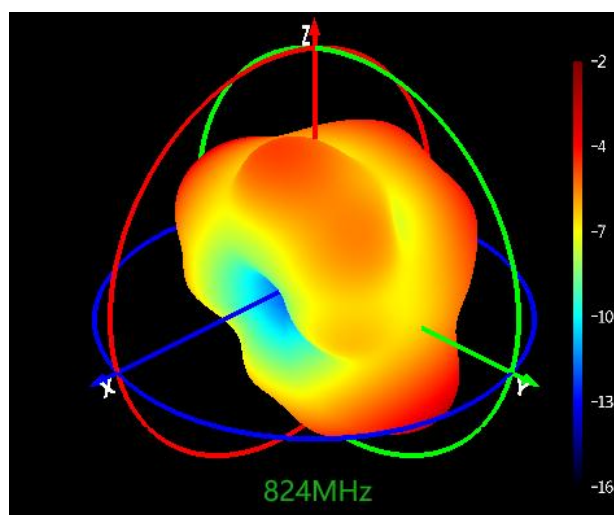


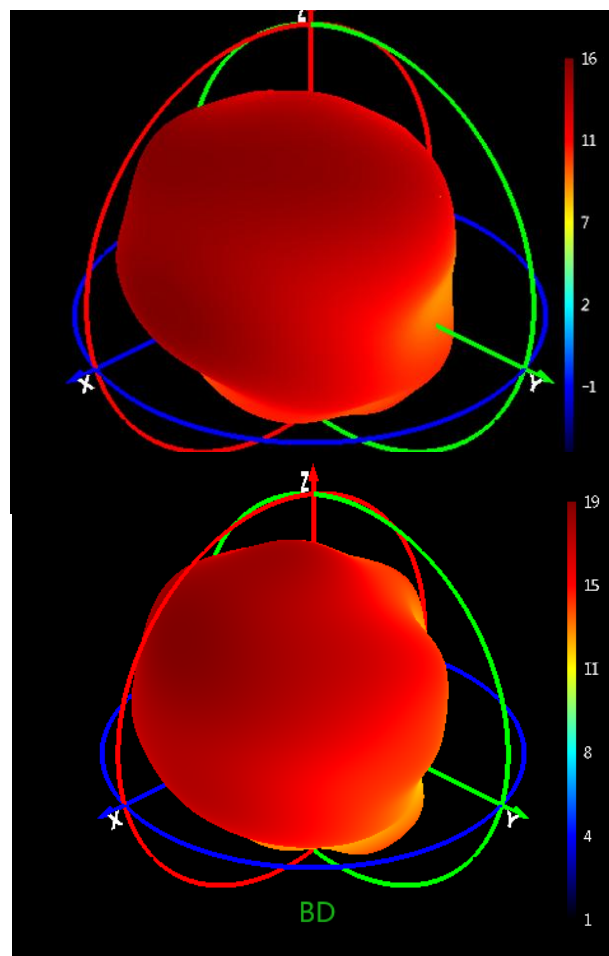
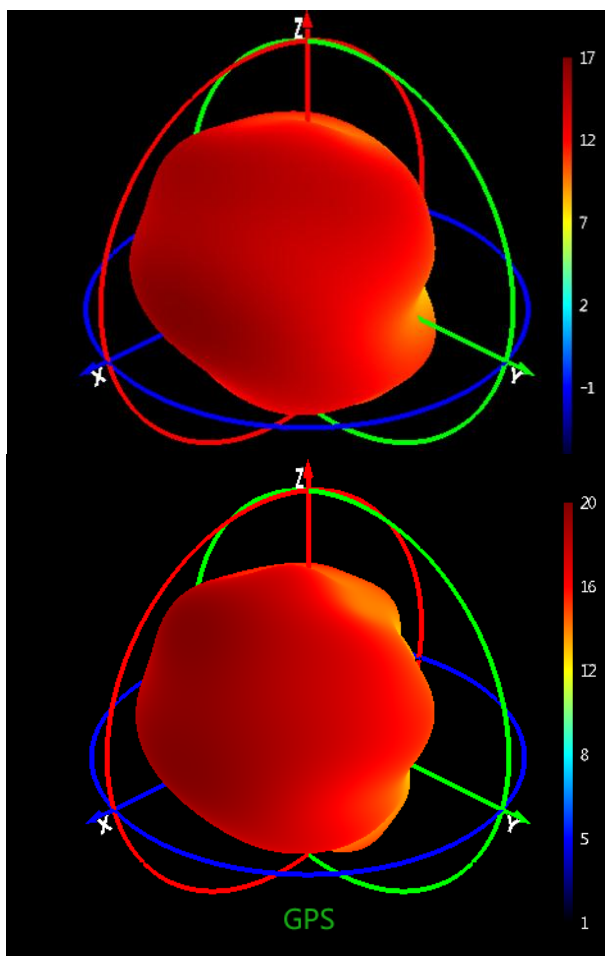
Q/20240527	Technical specifications for built-in composite antennas	Protocol	Audit	Approve																												
泰州苏中天线集团公司 Taizhou, Jiangsu Province, China		Page 1	2 pages in total																													
1. Overview: This technical specification specifies the technical requirements and layout requirements of the built-in combination antenna. 2. General requirements: 2.1、Mechanical requirement: 2.1.1 Appearance: Smooth plastic surface, no spots, cracks, bubbles, shrinkage and other bad, metal parts surface bright, no rust, cracks and other defects 2.1.2 Dimensions: 76*76*28mm (excluding mounting part) 2.1.3 Product quality: < 250g 2.1.4 Product protection level: IP67, according to customer installation location 2.1.5 Connector: FAKRA defines protection levels according to customer installation location requirements 2.2、Performance parameter GNSS <table><tr><td>Item</td><td>Index</td></tr><tr><td>Operating temperature</td><td>-40~85℃</td></tr><tr><td>Storage temperature</td><td>-40~90℃</td></tr><tr><td>Operating voltage range</td><td>GNSS:5±1v</td></tr><tr><td>Operating current</td><td>10≤I≤40mA</td></tr><tr><td>Impedance</td><td>50 ± 5 ohms</td></tr><tr><td>Constellation</td><td>GPS BD</td></tr><tr><td>Frequency band</td><td>1575.42±1.023MHz 1561.098±1.023MHz</td></tr><tr><td>Active performance</td><td>Gain Vehicle terminal: 20±2dB、TBOX: 17±2dB Standing-wave ratio (SWR)≤2 Noise coefficient≤2.6dB</td></tr></table> 4G <table><tr><td>Item</td><td>Index</td></tr><tr><td>Operating temperature</td><td>-40~85℃</td></tr><tr><td>Storage temperature</td><td>-40~90℃</td></tr><tr><td>Frequency band</td><td>824-960MHz 1710-2690MHz</td></tr><tr><td>Active performance</td><td>Gain ≥-4dBi Standing-wave ratio (SWR) (F≤1000MHz)≤3.5、(F≥1000MHz)≤3</td></tr></table>					Item	Index	Operating temperature	-40~85℃	Storage temperature	-40~90℃	Operating voltage range	GNSS:5±1v	Operating current	10≤I≤40mA	Impedance	50 ± 5 ohms	Constellation	GPS BD	Frequency band	1575.42±1.023MHz 1561.098±1.023MHz	Active performance	Gain Vehicle terminal: 20±2dB、TBOX: 17±2dB Standing-wave ratio (SWR)≤2 Noise coefficient≤2.6dB	Item	Index	Operating temperature	-40~85℃	Storage temperature	-40~90℃	Frequency band	824-960MHz 1710-2690MHz	Active performance	Gain ≥-4dBi Standing-wave ratio (SWR) (F≤1000MHz)≤3.5、(F≥1000MHz)≤3
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		Page 2																														

4G directional map:



Frequen cy (MHz)	Gain (dBi)	Frequenc y (MHz)	Gain (dBi)	Frequenc y (MHz)	Gain (dBi)	Frequenc y (MHz)	Gain (dBi)	Frequenc y (MHz)	Gain (dBi)	Frequenc y (MHz)	Gain (dBi)
683	-7.22	824	-2.73	889	-1.26	1710	0.03	1890	0.31	2496	0.8
688	-6.89	830	-2.57	894	-1.22	1730	0.49	1900	0.31	2544	1.32
693	-5.96	836	-2.45	897	-1.15	1750	1.02	1910	-0.06	2570	1.72
698	-5.57	842	-2.39	906	-1.18	1770	0.71	1920	-0.42	2580	1.49
723	-4.82	849	-2.24	915	-1.24	1785	0.55	2010	-0.78	2593	1.31
748	-4.24	869	-2.03	925	-1.33	1805	0.52	2015	-1.08	2595	1.23
773	-3.99	875	-1.81	934	-1.39	1825	0.47	2020	-1.39	2610	1.15
798	-3.54	880	-1.63	942	-1.58	1845	0.38	2025	-0.64	2620	1.36
		881	-1.44	951	-1	1865	0.45	2030	0.13	2642	1.24
		887	-1.34	960	-0.46	1880	0.4	2380	0.63	2690	0.9

GNSS directional map:



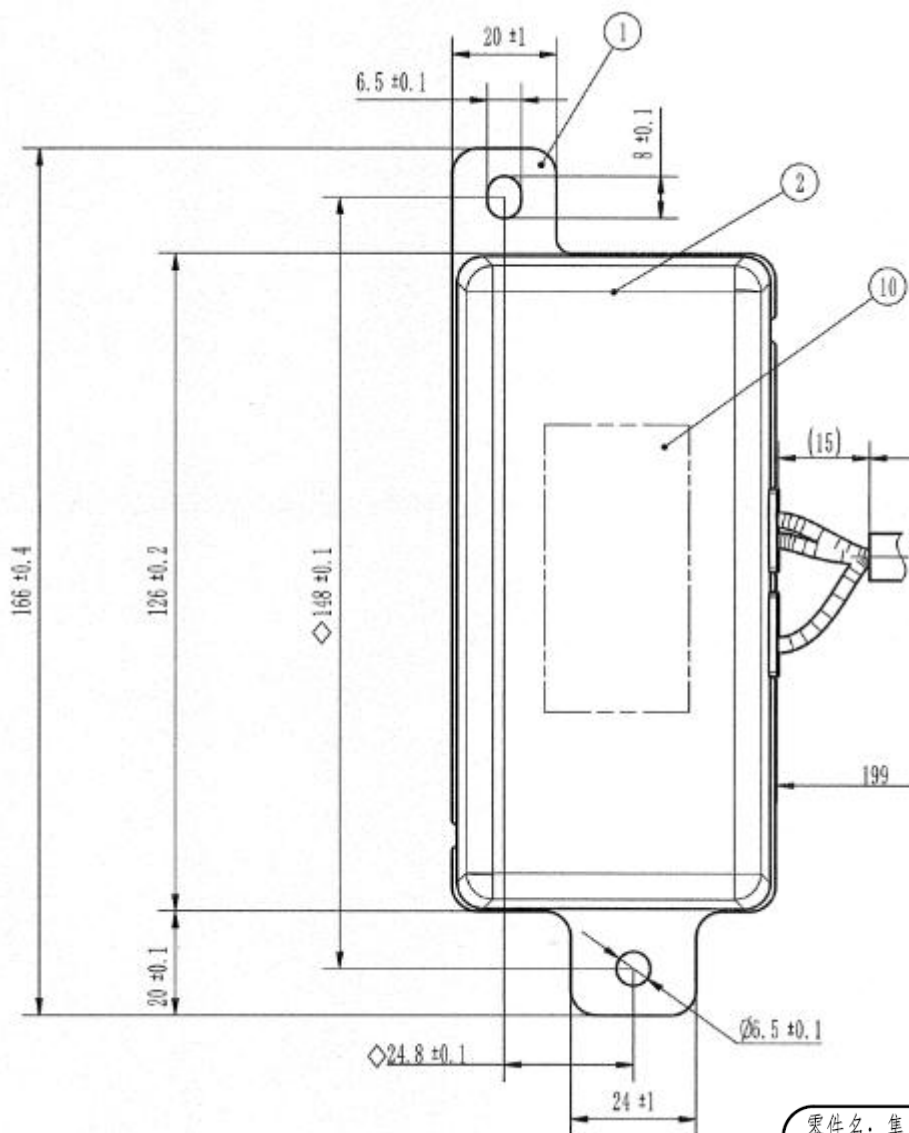
	Frequency (MHz)	Gain (dBi)
Host port	1561.098	18.65
	1575.42	19.2
Tbox port	1561.098	15.76
	1575.42	16.82

2.3、Antenna installation layout requirements:

- (1) The antenna body should be placed horizontally as far as possible, and the Angle between the mounting surface and the horizontal plane should be $<20^{\circ}$;
- (2) The recommended environmental component below the antenna is a sheet metal component;
- (3) The conical surface above the antenna body is unfolded at 120° without any metal obstruction;
- (4) The antenna should be arranged away from LiDAR electromagnetic radiation, and it is recommended to be at least 0.8m away;
- (5) Arrange the location away from vibration and electromagnetic radiation sources such as engines and motors (5G/radio station 15cm or more, motor 1 meter or more);
- (6) Avoid parallel routing of antenna cables with high current harnesses of 3A and above;
- (7) Antenna fixation method: Use M6 bolts or screws to fix the antenna to the body accessories through the four through holes, and ensure that the fixation is firm and free of looseness;
- (8) Stay away from high-speed digital cables, such as the signal line on the backplane and the signal transmission line on the camera, and it is recommended to have a distance of 0.2m or more;

2.4、Identification and traceability requirements

Management regulations that meet the traceability requirements of various host manufacturers, as well as regulations for permanent identification of automotive parts, barcode and QR code management of automotive parts.



零件名: 集成天线
零件号: 26147978
零件型号: IANT-01-02
供应商代码: XXXXXXX
生产日期: XXXXXXX