



GTJ2 Low-altitude Rocketsonde

The Low-altitude rocketsonde, actually a rocket-deployed dropsonde, floats to the surface by means of a parachute from an average altitude of 1 km. The GTJ2 transmits meteorological data via a 400MHz meteorological band telemetry link to the receiving system onboard the shipboard.

ROCKETSONDE SOUNDING COMPONENT REQUIREMENTS

- GTJ2 Low-altitude Rocketsonde
- Ignition Control Unit
- Launcher
- 400MHz omni antenna
- Antenna amplifier
- 403MHz Receiver and Processor

INTRODUCTION TO LOW-ALTITUDE ROCKETSONDE

Meteorological sounding data from a ship-launched radiosonde is usually contaminated by the microenvironment surrounding the ship, and sounding over mountain range is exactly the same case. The Rocketsonde ejects its sensor payload outside of the ship's microenvironment and thus provides an uncontaminated profile down to the surface of the sea, and the sounding data acquired could be very near the water's surface.

The GTJ2 can be prepared and checked easily before launch. It reaches apogee in less than 15 seconds; provides a detailed meteorological data with 1-sec resolution. After ejection of the sonde payload, the sonde floats to the surface from an average altitude of 1 km in less than 6 minutes.

The sensor outputs of the GTJ2 are transmitted over the 400.15-406MHz meteorological band to the receiving ground station and processed by the special software automatically.

GTJ2 低空火箭探空仪

低空火箭探空仪，实际上就是由火箭运载的下投式探空仪，通过降落伞从平均高度为 1km 的空中飘落到地面。GTJ2 运用 400MHz 的气象频段，将气象数据传送到船舶或地面上的接收系统。

火箭探空仪探测系统组成

- GTJ2 低空探空火箭
- 点火控制单元
- 火箭发射架
- 400MHz 全向天线
- 天线放大器
- 403MHz 接收处理器

低空火箭探空仪

通常，在船舶上施放的探空仪，其气象探测数据将受到船上周围环境的干扰影响，同样的情况也发生在陆地上对于山脉气象进行探测的时候。火箭探空仪的引入使得传感器的有效部分弹射出船舶的小环境，从而提供了一个一直到海洋表面的无干扰影响的探测环境，同时所获得的探测数据也可以无限接近水面。

GTJ2 在施放前的准备工作和地面检测工作都非常方便，它将在少于 15 秒的时间内到达预设高度，同时以每秒的间隔提供整个探空范围内详细的气象数据。当探空仪的有效探测部分从火箭体内弹射出后，探空仪从平均高度为 1km 的空中飘落到地面，整个过程用时在 6 分钟之内。

GTJ2 测得的数据是通过 400.15~406MHz 的气象频段传送到地面接收系统的，并通过专用的软件进行相关的处理。

METEOROLOGICAL SENSORS

气象传感器

Temperature	Rod thermistor
温度	杆状热敏电阻
Range	+60℃ ~ -50℃
Accuracy (k=1)	0.3℃
Response time (+25℃, 0m/s flow)	< 3sec
Resolution	0.1℃
Humidity	Thin film capacitance
湿度	薄膜湿敏电容
Range	0%RH ~ 100%RH
Accuracy (k=1)	5%RH
Response time	
+25℃	< 3sec
-20℃	< 15sec
Resolution	1%RH
Pressure	Silicon electric-bridge pressure sensor
气压	硅电桥压力传感器
Range	1060hPa ~ 500hPa
Accuracy	0.5hPa
Resolution	0.1hPa
Measurement cycle for PTU sensors	0.8sec

DIMENSIONS AND WEIGHT

尺寸和重量

Dimensions(L×D)	130×32mm
Weight (with battery)	≤92g

BATTERY

电池

Dry-cell battery	
干电池	+9V
Operation time	45min

TELEMETRY

发射机

Transmitter type	Analog
Carrier center frequency (f_0)	403MHz ± 3MHz
Frequency stability	2×10 ⁻⁵ MHz
Output power	40mW ~ 100mW
Modulation	ASK
Transmission rate	1200Baud
Transmission cycle	≤1sec
Sounding rang	20km
Sounding altitude	> 1km

ENVIRONMENTAL CONDITIONS

环境条件

Indoor equipment

Temperature	-10℃ ~ +45℃
Humidity	0%RH ~ 90%RH

Outdoor equipment

Temperature	-40℃ ~ +50℃
Humidity	0%RH ~ 100%RH

CALIBRATION

校准

Factory calibration	Stored in floppy disk
Ground check	Prior launch



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