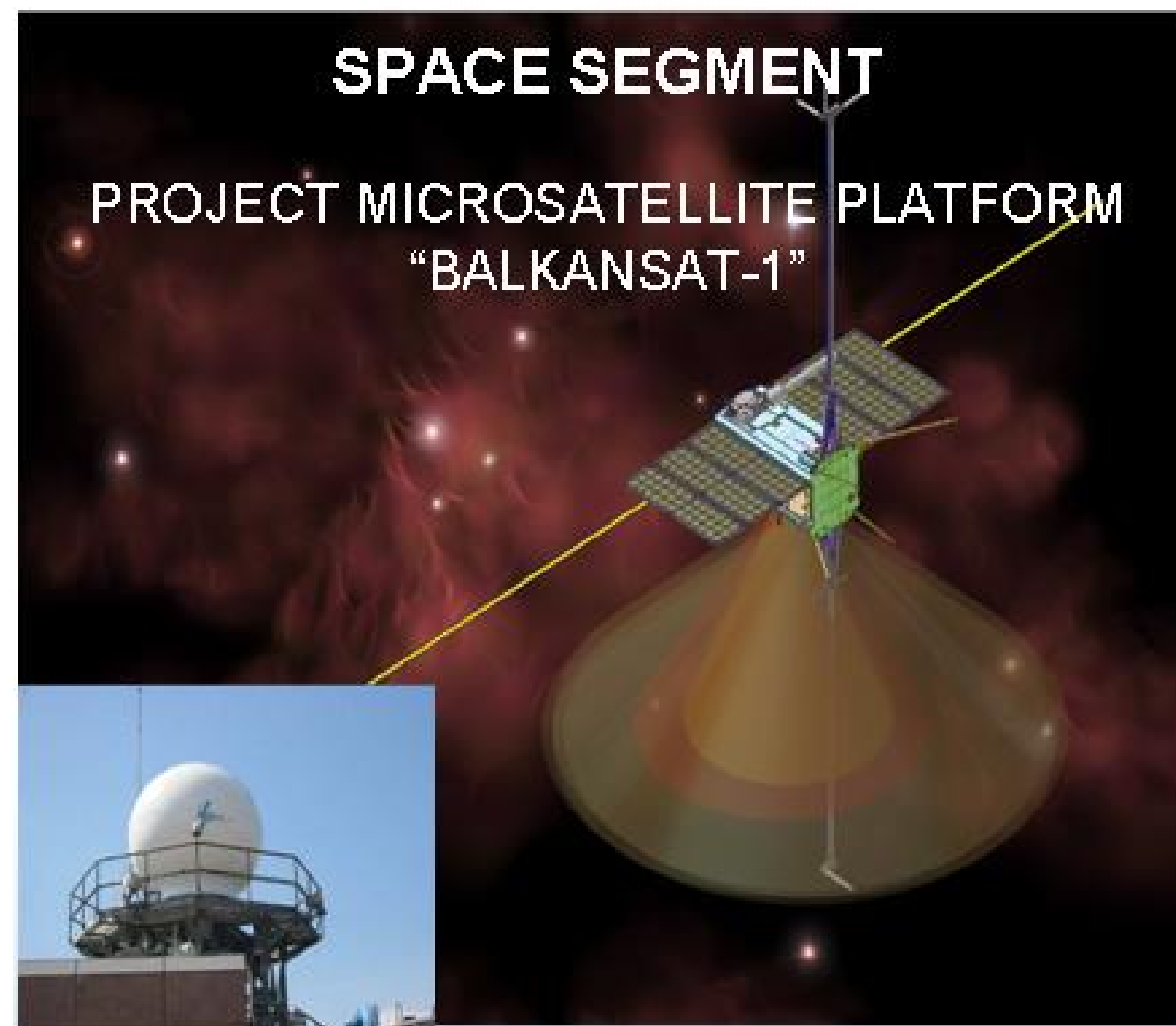
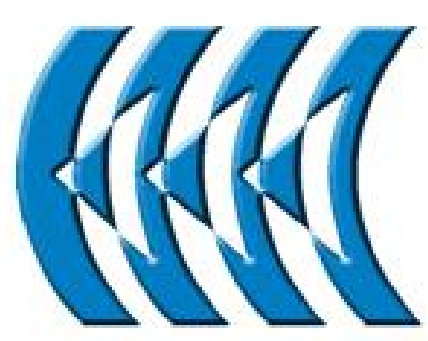




The microsatellite platform "BALKANSAT-1" is a highly technological instrument for environment monitoring and security, related to anthropogenic processes that create risks for environment – fires, floods; dust and gas air pollution; electromagnetic smog. The scientific investigation program stipulates advanced researches on phenomena critical for urban infrastructure sustainability in solar-terrestrial interactions – spontaneous discharge of high level quasioelectrostatic charged volume.



SPACE SEGMENT MICROSATELLITE PLATFORM "BALKANSAT-1"

SYSTEM FOR ORIENTATION AND STABILIZATION

PARAMETERS

CONSTRUCTION

TECHNOLOGICAL CHARACTERISTICS AND TECHNICAL PARAMETERS OF MICROSATELLITE PLATFORM "BALKANSAT-1"

TOTAL PLATFORM WEIGHT - 50 kg

- Payload weight -19.4 kg
- Orientation systems, stabilization systems, navigation systems, solar batteries systems – 20.2 kg
- Weight construction and thermo- defense system - 10.4 kg

ORBIT

- Circle sun-synchronous quasipolar – height 800 – 900 km

PLATFORM LIFETIME - 3-5 years

ORIENTATION AND STABILIZATION SYSTEMS

- Electromechanical, magnetodynamical, gravitational, star sensor

ON-BOARD POWERSUPPLY

- Solar batteries – 0.54 m²/ 50W / 12V- ±3 V
- Chemical batteries - 12V/ 5-8 Ah

ON-BOARD SYSTEM FOR ACQUISITION, PRIMARY DATA PROCESSING AND TRANSMISSION

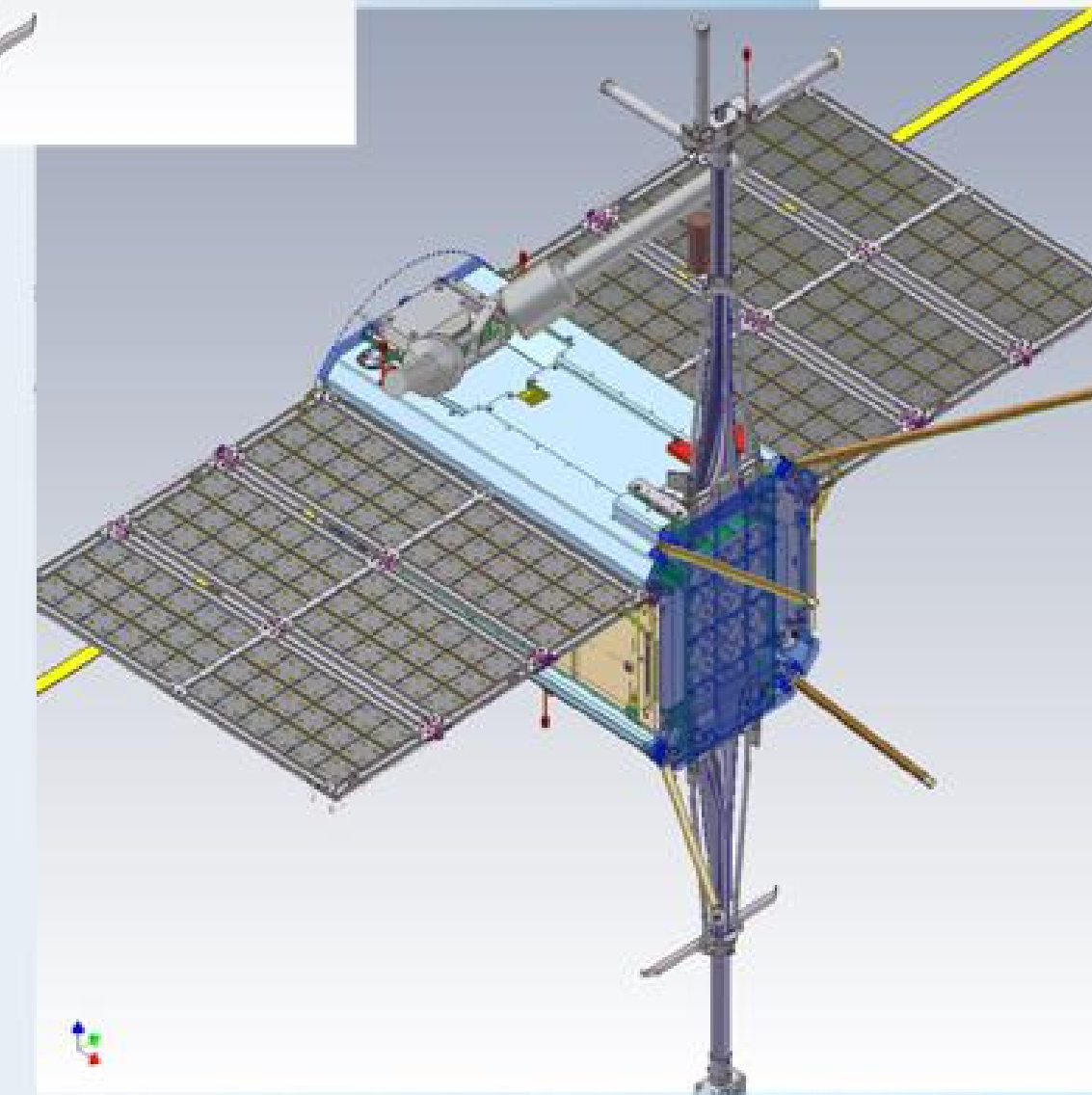
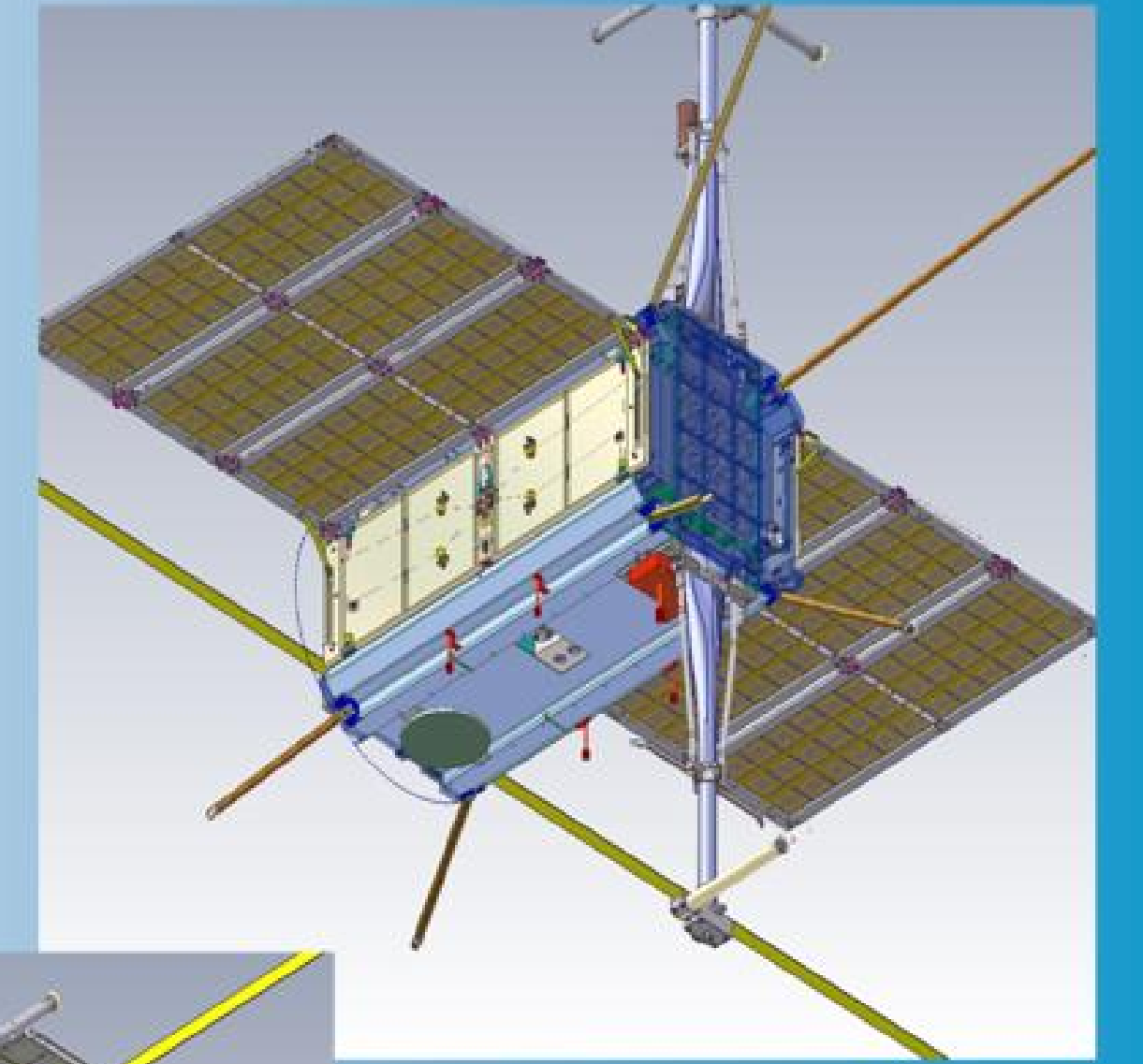
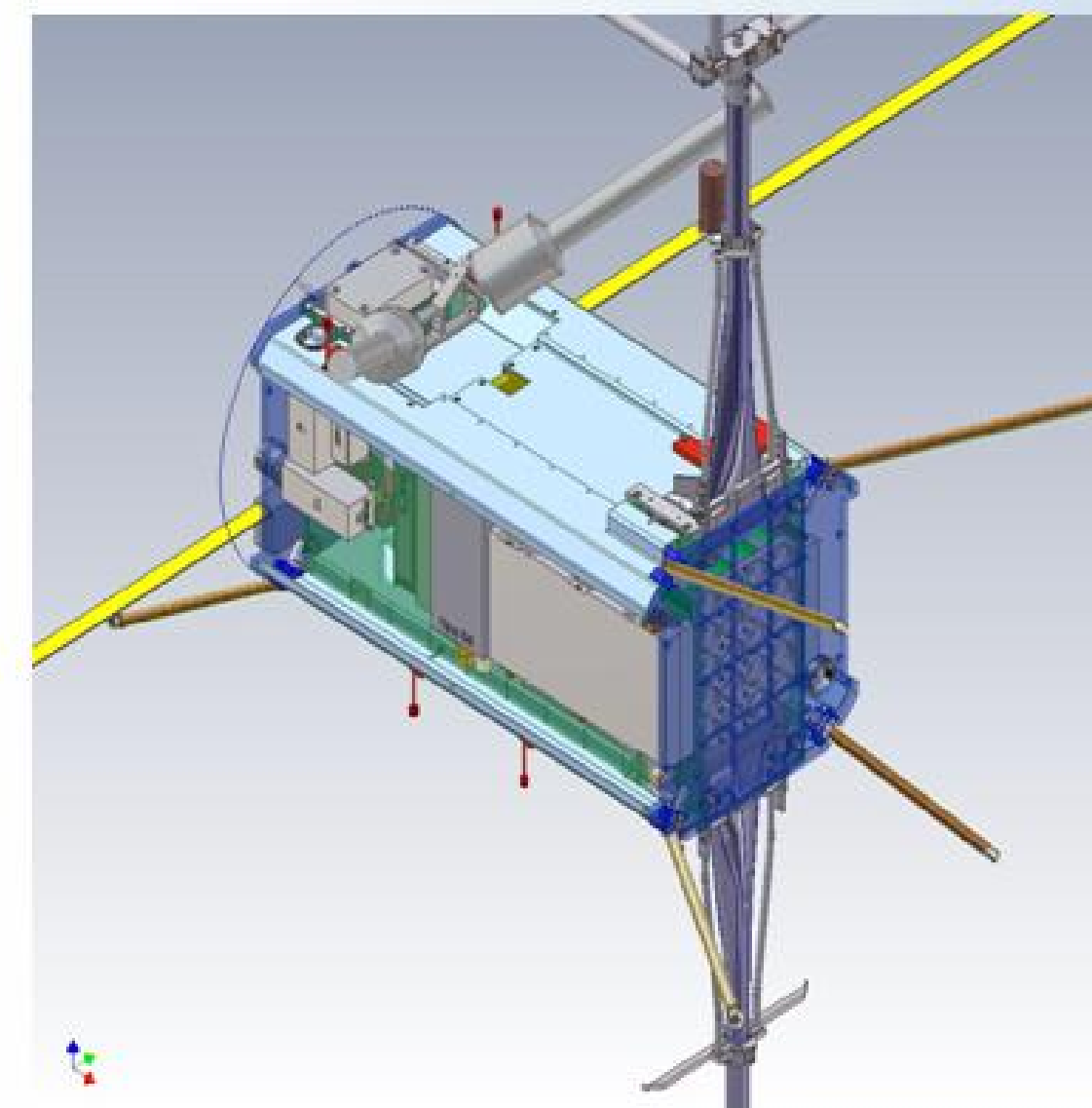
- Telemetry – 3-5 Mbps (8.4 GHz)
- On-board memory - 16 GB

GROUND CONTROL STATION

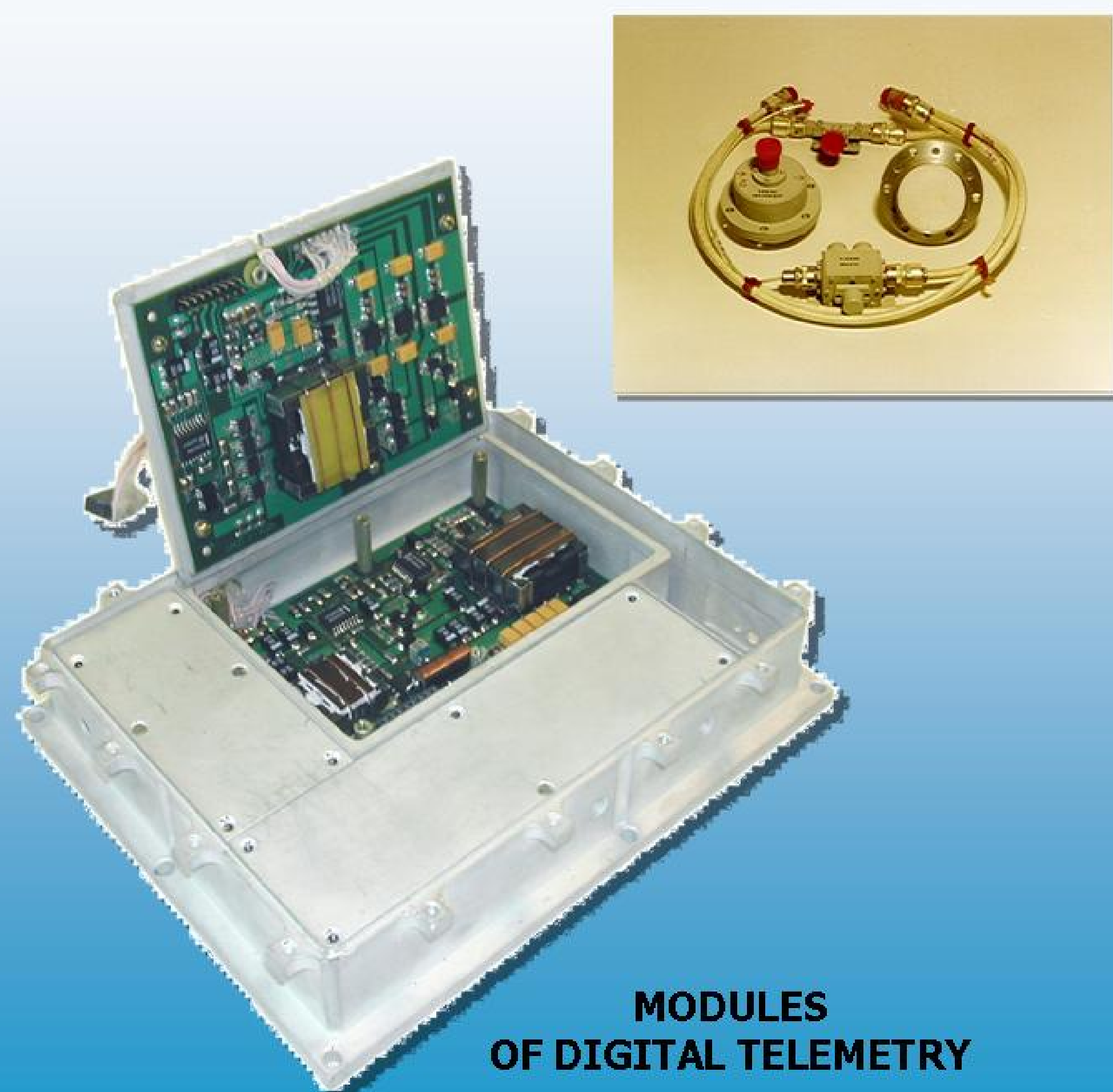
- Control Telecommunication Channel - 435 MHz (2.2GHz or 8.4 GHz)

CONTROL SYSTEM

- Total number of commands – up to 2 048
- Variants of Control programs - up to 10 000

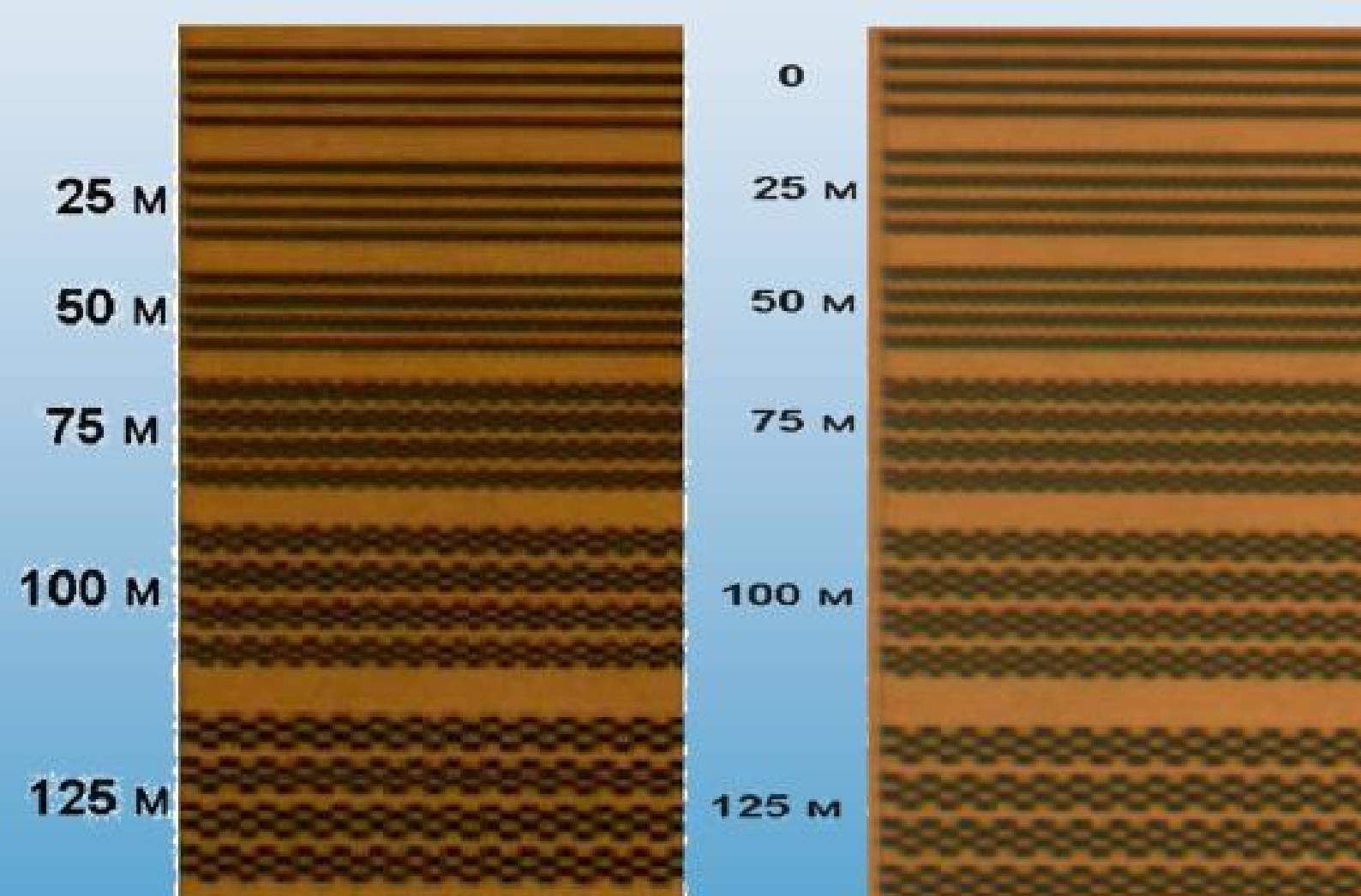


№	MODULES	PARAMETERS
1.	DIGITAL CAMERA RESOLUTION	20 - 25 m at the center, 45 m at the end
2.	CO ₂ and CH ₄ SPECTROMETER	
2.1.	Spectrum	(1.0 – 1.71)μm
2.2.	Resolution, λ/Δλ	20 000

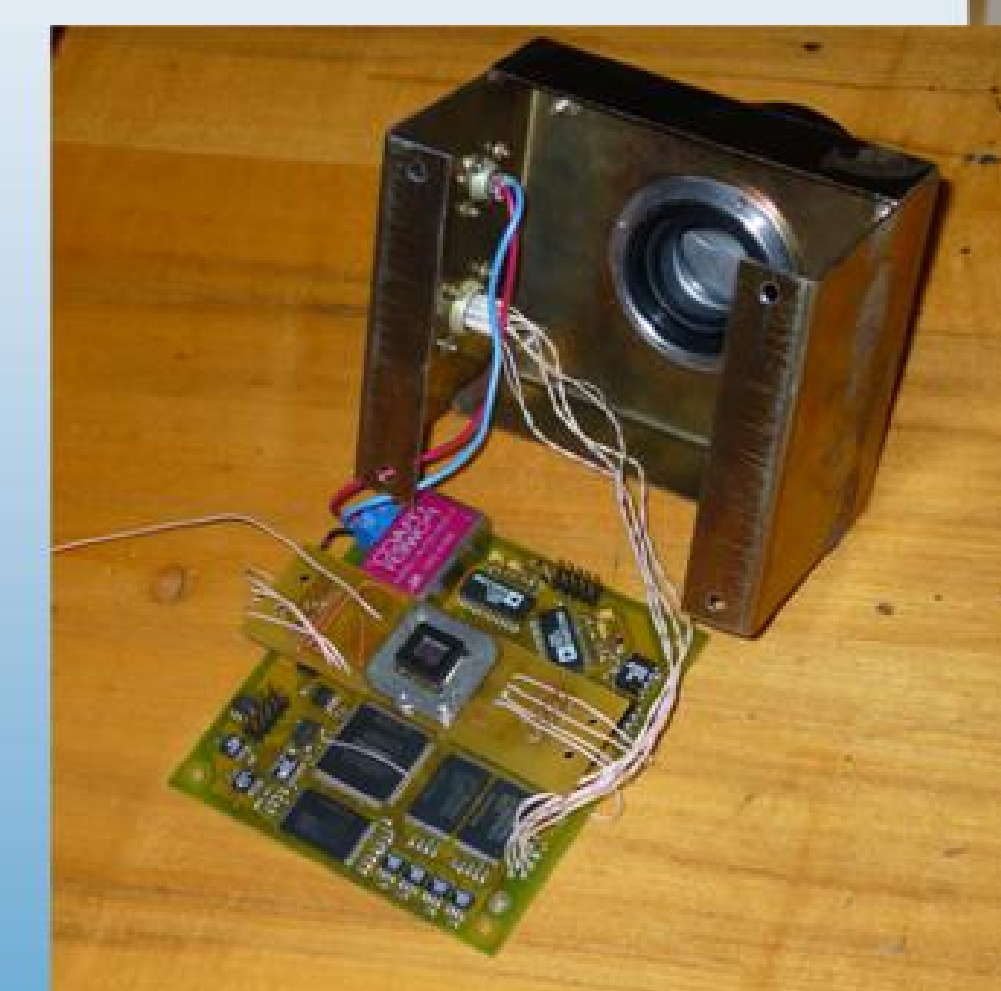


MODULES
OF DIGITAL TELEMETRY

TEST FRAMES



Parameters of digital camera
Pixel size of CCD line 8x8 μm
Focal length 58 mm
Resolution-75m in the center of image and 80m at the end
Emulation height of orbit 600 km



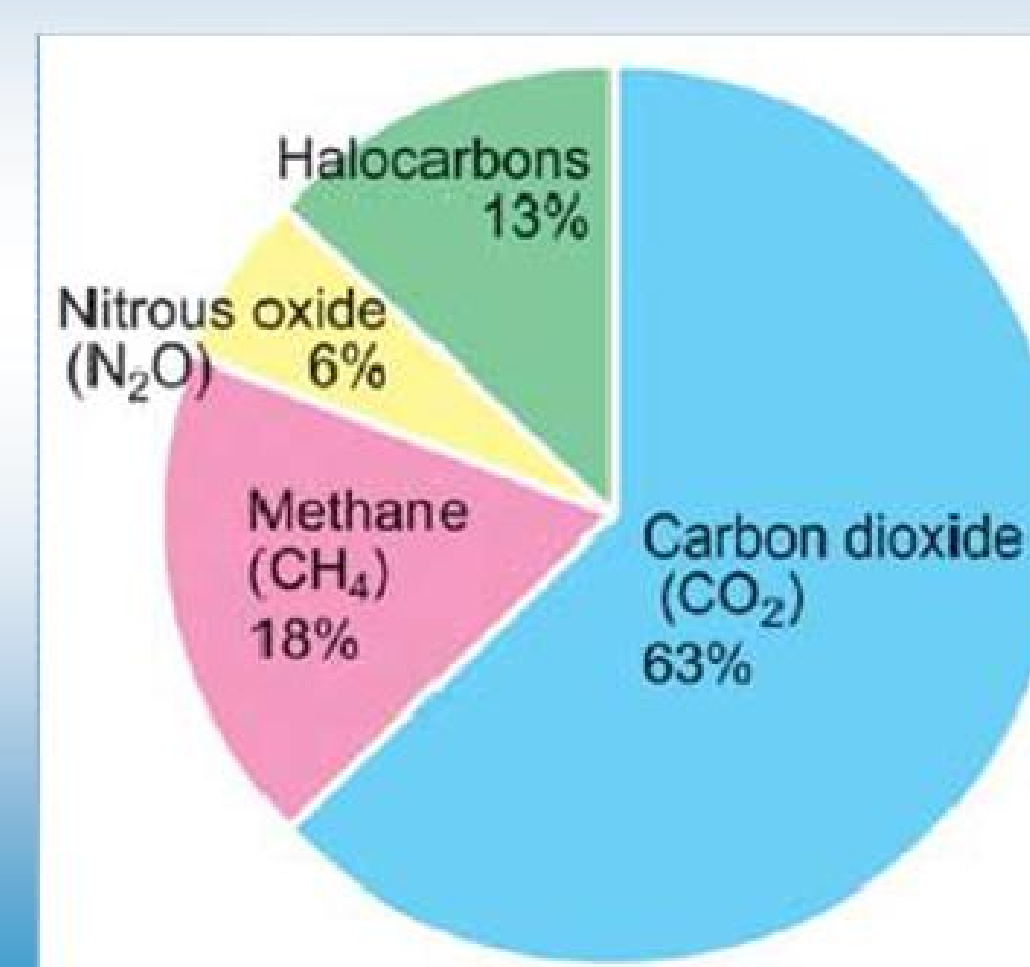
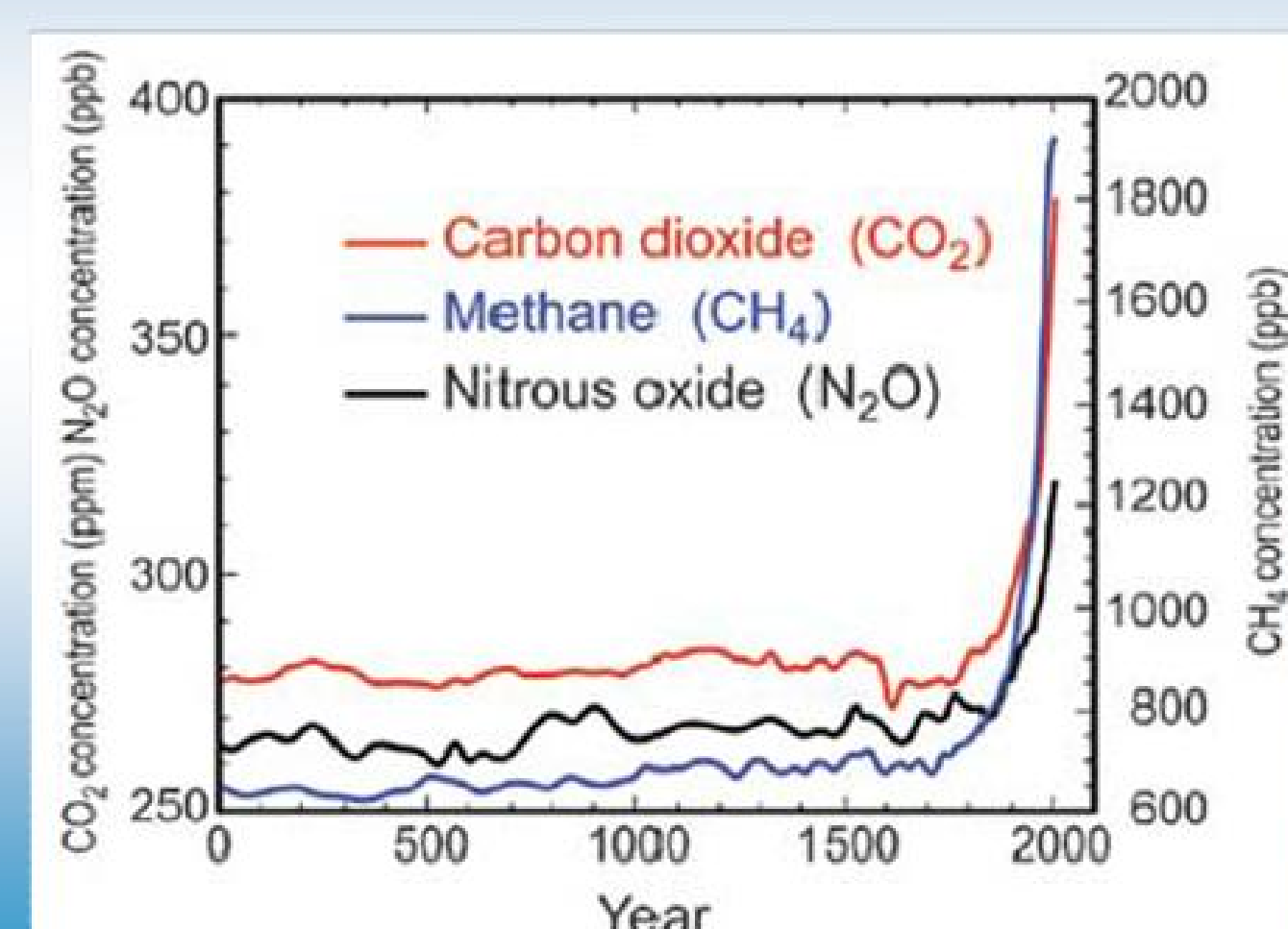
TECHNOLOGICAL MODEL
OF DIGITAL CAMERA



CO₂ and CH₄ SPECTROMETER



CONCENTRATION OF CO₂ and CH₄ IN ATMOSPHERE



DATA VALIDATION OF SPECTROMETER

