

File name:	Satellite Electrical Power System Engineer
Version:	1.1
Date:	01/09/2018
Author:	Nicolas ROCHE



SATELLITE ELECTRICAL POWER SYSTEM ENGINEER

1 CONTEXT

The University Space Center is the French leader in the development and operation of nanosatellites developed by students. It has acquired in-depth competences in the field of design, manufacturing, testing and operation of nanosatellites and their subsystems, as well as in the area of space project management and product assurance in the framework of university space projects. The CSU has an AIT (Assembly Integration and Test) Facility, a CDF (Concurrent Design Facility) and both UHF and S-band Ground Stations. The CSU develops its own 1U and 3U CubeSat nanosatellite platforms with the support of the Van Allen Foundation and the French and European space agencies. The CSU is looking for an Electric Power SubSystem Engineer that will be in charge of the definition, the development, the design, the integration and the test of its EPS dedicated to its 1U and 3U product lines.

2 DESCRIPTION

Develop Nanosatellite Electrical Power Subsystem, provide analysis support for electrical power generation, storage, regulation, distribution systems, along with environmental, mass properties, deployment, reliability, and product assurance, to verify the satellite design will comply the system requirements.

3 ROLES AND RESPONSIBILITIES

Work in an interactive team environment with customer leads, spacecraft developers, and other subject matter experts

Work on project teams (attend meetings, complete deliverables, contribute to staff discussions and activities)

Interface with project team members to develop product designs

Develop and analyze electrical design requirements

Develop electronic circuits to perform functions per requirements

Model and simulate circuits and analyze fit to requirements

Generate electrical documentation (schematics, BOMs, DCL, test plans, etc...)

Develop prototype circuit boards for verification of design and software development

Verify functionality of prototype boards, address issues as found

Support software development (provide working prototypes)

Support mechanical development (jointly develop designs)

Support systems development (provide requirements analysis results, test plans, etc.)

File name:	Satellite Electrical Power System Engineer
Version:	1.1
Date:	01/09/2018
Author:	Nicolas ROCHE



Support product validation (provide test support items, verify test setups, evaluate unexpected test findings, identify problems found with the product design and implement solutions, update test tracking documentation, close product design issues in the validation tracking system).

Resolve test integration issues that may occur during the test program set development cycle

Comply with University and CSU policies

4 QUALIFICATIONS

Computer skills (MS Office).

Excellent written and oral communication skills in English language.

Strong Experience with Hardware/Software Development, Circuit Design, Electronics parts.

Strong experience in circuit analysis.

Digital and analog circuits knowledge and design comprehension.

Digital circuit functions (gates, Flip-flops, shift registers, etc.) and applications.

Digital processors (microprocessors, Digital signal processors, floating point gate arrays).

Semiconductors (transistors, FETs, diodes, op-amps, comparators).

Signal concepts (time and frequency domain, transient, continuous, pulse width modulation).

Circuit block concepts (Linear and switching power supplies, filters, transistor switches, ESD protection).

Circuit board design (substrates, layouts, floor plans).

Strong Experience with model-based development using MATLAB, Spice.

Laboratory equipment (scopes, meters, analyzers).

Self-starter – ability to function with little direct oversight.

Team skills – ability to work effectively in teams.

Logical problem solving capacity.

5 JOB CONSTRAINTS

Work on a computer, require work out-of-business hours during satellite commissioning and long-term testing

6 JOB LOCATION

Montpellier, FRANCE

File name: Satellite Electrical Power System Engineer
Version: 1.1
Date: 01/09/2018
Author: Nicolas ROCHE



7 POINT OF CONTACT

Dr. Nicolas J-H. Roche

Chief Technology Officer

University space Center Montpellier - Nîmes

Université de Montpellier - Campus St Priest

CC 06-001 - 34 095 Montpellier cedex 5

Tel: +33 4 67144050

Mob: +33 6 10100476

email: nicolas.roche@umontpellier.fr