# Where SOFTWARE Meets the Spectrum



## SuperPico™ GSM Base Station

The Vanu® SuperPico is a weatherproof, power-efficient GSM Base Station Subsystem (BSS) that is specifically designed for outdoor deployments. It has a superior transmit power and range than most traditional Pico Base Stations and a much smaller footprint than most Micro Base Stations. It is the ideal solution for total cost reduction, easy integration, and fast deployment.

There are two main components of the SuperPico GSM BSS – the SuperPico Cellular Radio and the SuperPico BSS Controller. Each Cellular Radio is a tower mountable RF front end unit that provides support for a single GSM transceiver (TRX). The BSS Controller is a baseband processing unit with the capability to support up to three SuperPico Cellular Radios. It can also be configured to host a Base Station Controller (BSC) function and a PCU (Packet Control Unit) function. Together the SuperPico Cellular Radio and BSS Controller constitute a GSM BSS offering that can efficiently deliver voice and data services in a compact and portable package.

The SuperPico offers a rich set of 2.75G user services and features including AMR based GSM Voice, MO/MT SMS and GPRS/EDGE Data. It allows for incremental capacity and feature upgrades to be administered remotely as the demands of the networks grow. With such a "pay as you grow" model, unnecessary upfront capital expenditures can be avoided.

The SuperPico is optimized for remote deployments and is a a quickly set-up voice communication solution for local calling. It can also be used for other applications such as quality of life calls.

Vanu's software RAN solutions can help operators address a diverse set of challenging market requirements by providing a reference architecture for building flexible BSS solutions.

## **Key Features**

- **Power Efficient:** The SuperPico's industry leading low power consumption permits deployment using solar power in remote areas where electricity is not readily available. The remote radio head architecture ensures that the full transmit power reaches the antenna, and is not wasted on long cable runs.
- **Customizable Capacity:** The SuperPico supports the option to deploy in a single TRX omni configuration, or with two or three sectors.
- **Flexible Backhaul:** SuperPico's IP backhaul ensures that it can be deployed with any of today's transport technologies, allowing operators to choose the most cost effective option for a region.
- **Easy Deployment:** SuperPico is designed to be installed by unskilled personnel in under 2 hours. The SuperPico's on-board crystal reference oscillator ensures frequency stability of 0.1 ppm, so there is no need to install a GPS antenna or wait for an oven controlled oscillator to settle.
- **Durable:** Enclosed in a rugged aluminum housing that doubles as a heat sink, the SuperPico is completely sealed with an IP66 rating to withstand dust and high powered water jets. With no moving parts or fans, the SuperPico is rated with a 15 year MTBF and supports operating temperatures from -20° C to 55° C.



### **Logical Architecture of BSS**

### **Technical Specifications**

General	
Input power	24V DC +/- 15% (external or solar) 4 pin circular 16AWG External AC power supply available
Power Consumption	1 TRX: 40W peak 3 TRX: 100W peak
Antenna	Туре N
Terrestrial Backhaul	100/1000 Mbps Ethernet RJ-45 connector (max distance of 100m)
Integrated Backhaul Element	STM SatLink modem (optional)
Reliability	MTBF > 15 years
Certifications	CE Mark Country specific certifications as required
Radio Standards	
Frequency bands	850 MHz, 900 MHz, 1800 MHz, 1900 MHz
System services	GSM / GPRS / EDGE Remote update of firmware/software
User services	GSM FR/EFR, AMR FR GPRS / EDGE Multi-slot classes 1-12
Capacity	1 TRX per cellular radio, up to 3 cellular radios
Power	33 dBm (850/900 bands) 30.5 dBm (1800/1900 bands)
Tx attenuation	20 steps of 1 db each
Frequency Stability	0.1 ppm over 10 years
Rx Sensitivity	-104 dBm
Management & Alarms Configuration Management	Web GUI, FTP, SSH
Remote Mangement	Activate TRXs, Modify transmit power, Enable GSM/ EDGE features, Change frequency plans,
Performance Monitoring	Key Performance Indicators (KPIs)
Alarms	SNMP-based
Environmental	
Operating temperature	-20 to +55 degrees C
Storage temperature	-35 to +80 degrees C
Operating relative humidity	100% (IP66 sealed)
Dust/Water Protection	IP66 sealed

#### **Form Factor**

Dimensions

Housing material

Weight

Brackets

BSS	Controller
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285 mm (H) x 340 mm (W) x 120 mm (D) 5.8 kg Cast aluminum, powder coated Wall and pole mounts Cellular Radio 283 mm (H) x 255 mm (W) x 87 mm (D) 3.0 kg Cast aluminum, powder coated Wall and pole mounts



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Product specifications and descriptions in this document subject to change without notice.