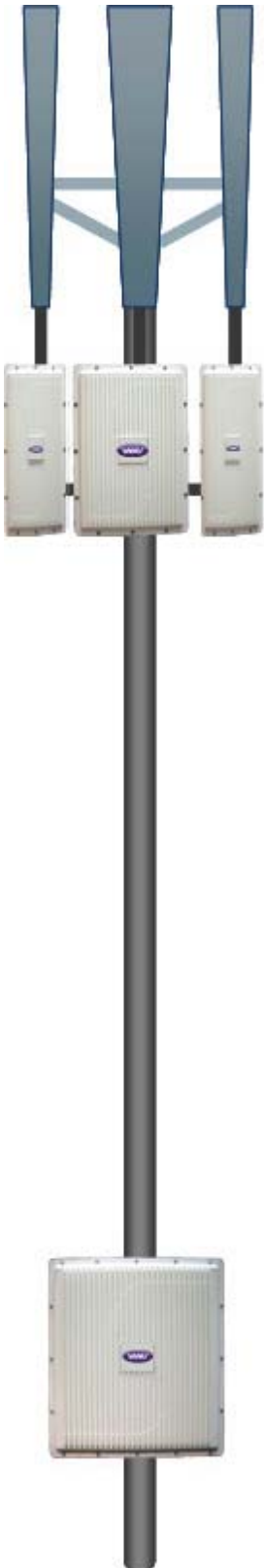


# Private GSM Network



The Vanu® Private GSM Network is capable of operating as a standalone GSM network or as a GSM extension to a VoIP wireline network. The system is comprised of the Vanu SuperPico and a small laptop based GSM MSC.

The SuperPico is a weatherproof, power-efficient GSM Base Station Subsystem (BSS) that is specifically designed for outdoor deployments. It has a superior transmit 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.

Coupled with a laptop based MSC, the SuperPico is ideally suited for rapid deployment or mobile GSM infrastructure. The system can operate in disconnected mode when a backhaul network is not available, and can utilize an IP network for backhaul when available. The system has been qualified with satellite, microwave, DSL, and WiFi backhaul networks.

The system is optimized for rapid setup with minimal configuration before being able to make voice calls. The system automatically recovers from power outages within one minute and can be completely software configured and upgraded remotely when a backhaul network is available.

The system can utilize alternative power such as solar or vehicle, the SuperPico consumes a maximum of 40 Watts of power in the single TRX configuration, and 100 Watts in the tri-sectored configuration shown to the left.



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## SuperPico

### 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 Type 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

### Radio Standards

Frequency bands 850 MHz, 900 MHz, 1800 MHz, 1900 MHz  
System services GSM / GPRS / EDGE  
Remote update of firmware/software  
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 Management Activate TRXs, Modify transmit power, Enable GSM/ EDGE features,  
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

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

### MSC

Platform: Windows XP laptop  
Supports: GSM switching, SMS, VLR/HLR functionality