



Parani-MSP1000 Bluetooth Access Point Overview

SENA Technologies

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Parani 

SENA Device that Networks



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Product Overview

- Connects Bluetooth devices to 10/100 base-T Ethernet
 - ▶ Dual Ethernet Interface support for fail-over operation
- Bluetooth 2.0+EDR, up to 3Mbps throughput
- 7/14/28 Bluetooth Connections support
- Supports Bluetooth profiles for Serial Port, LAN Access, PAN, File Transfer and Dial up Networking.
- Strong Security support
 - ▶ SSH/SSL/TLS/IP filtering
- Flexible host mode support:
 - ▶ Multiple host connection/data transfer
 - ▶ Raw TCP, Telnet, SSL, SSH
- Supports system logging & port logging
- Flexible Customization support
 - ▶ Python Script Engine
- Supports Easy-to-use COM-Port redirector support
- 1 CF slot for PC card interface
- Linux-based Open platform (kernel 2.6.12)



Functions & Features

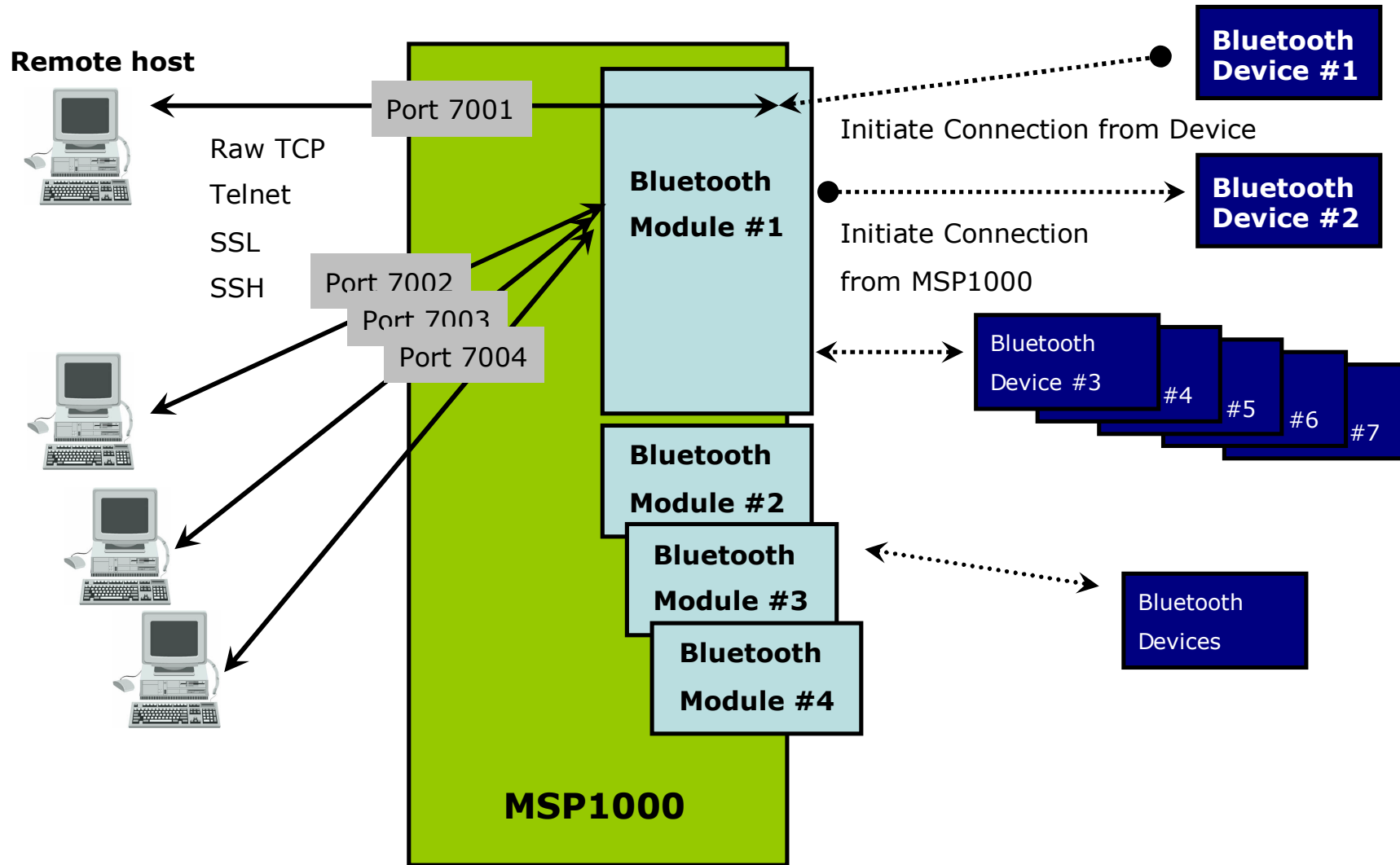
1. Operation modes
2. Data Logging
3. Security
4. CF Card support
5. Customization

Operation modes

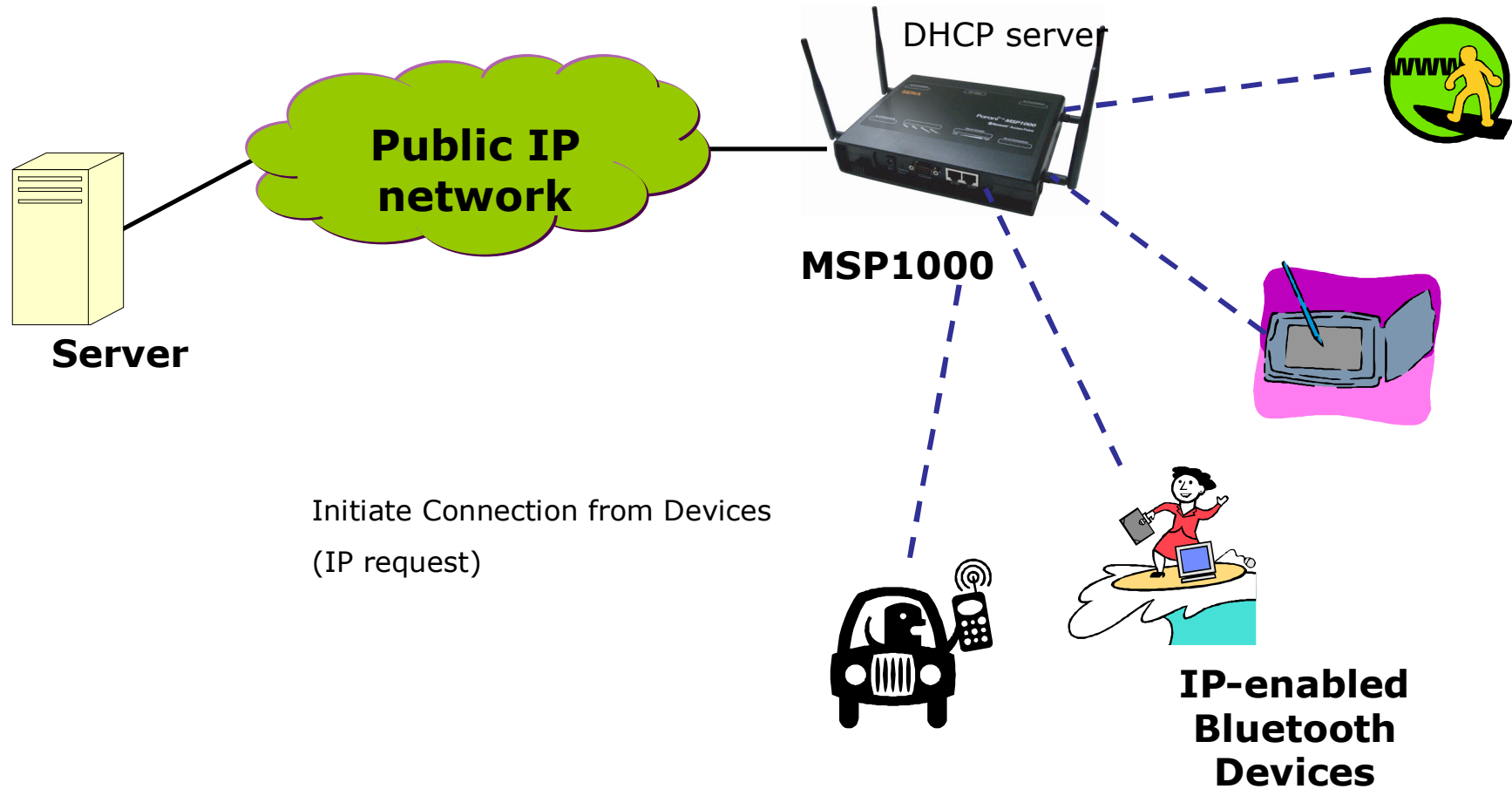
- Provides Bluetooth connections based on either SPP or PAN service
 - Users can set up connection property as either SPP or PAN
 - # of connections available
 - MSP1000A : Up to 7 Bluetooth connections
 - MSP1000B : Up to 14 Bluetooth connections
 - MSP1000C : Up to 28 Bluetooth connections
 - Connection type
 - SPP Connection
 - Works as if it is a Bluetooth-Serial to Ethernet Bridge (Device Server)
 - PAN Connection
 - Works as if it is Bluetooth-Network Access Point



Operation modes - SPP

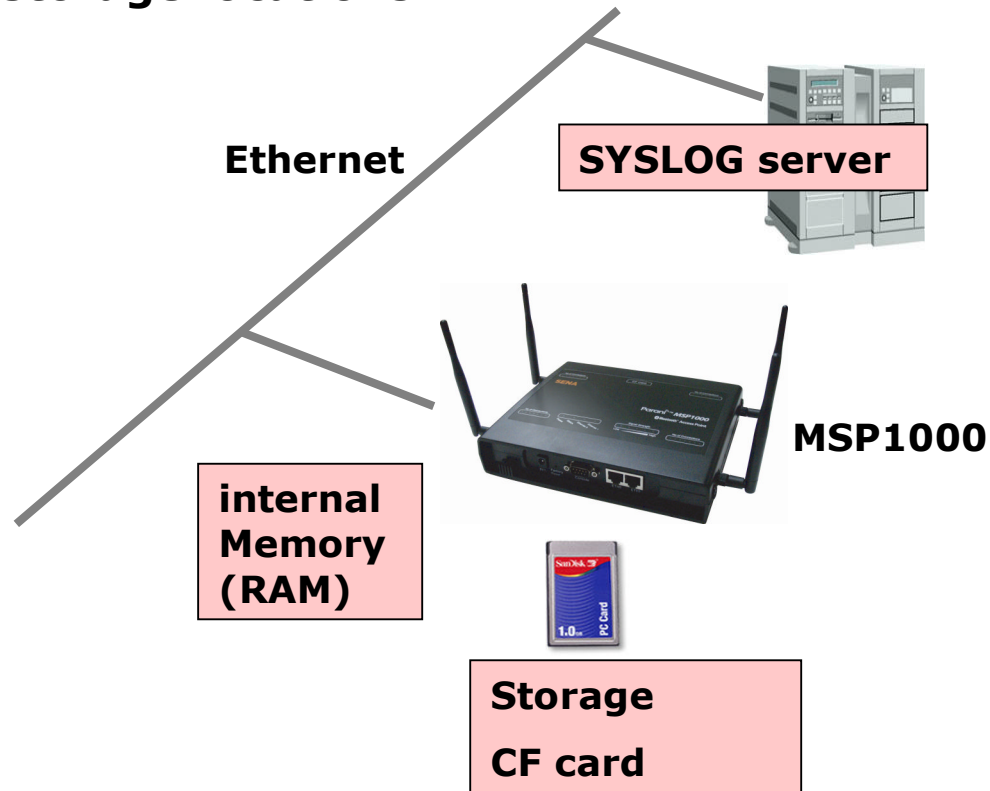


Operation Mode - PAN



Data Logging

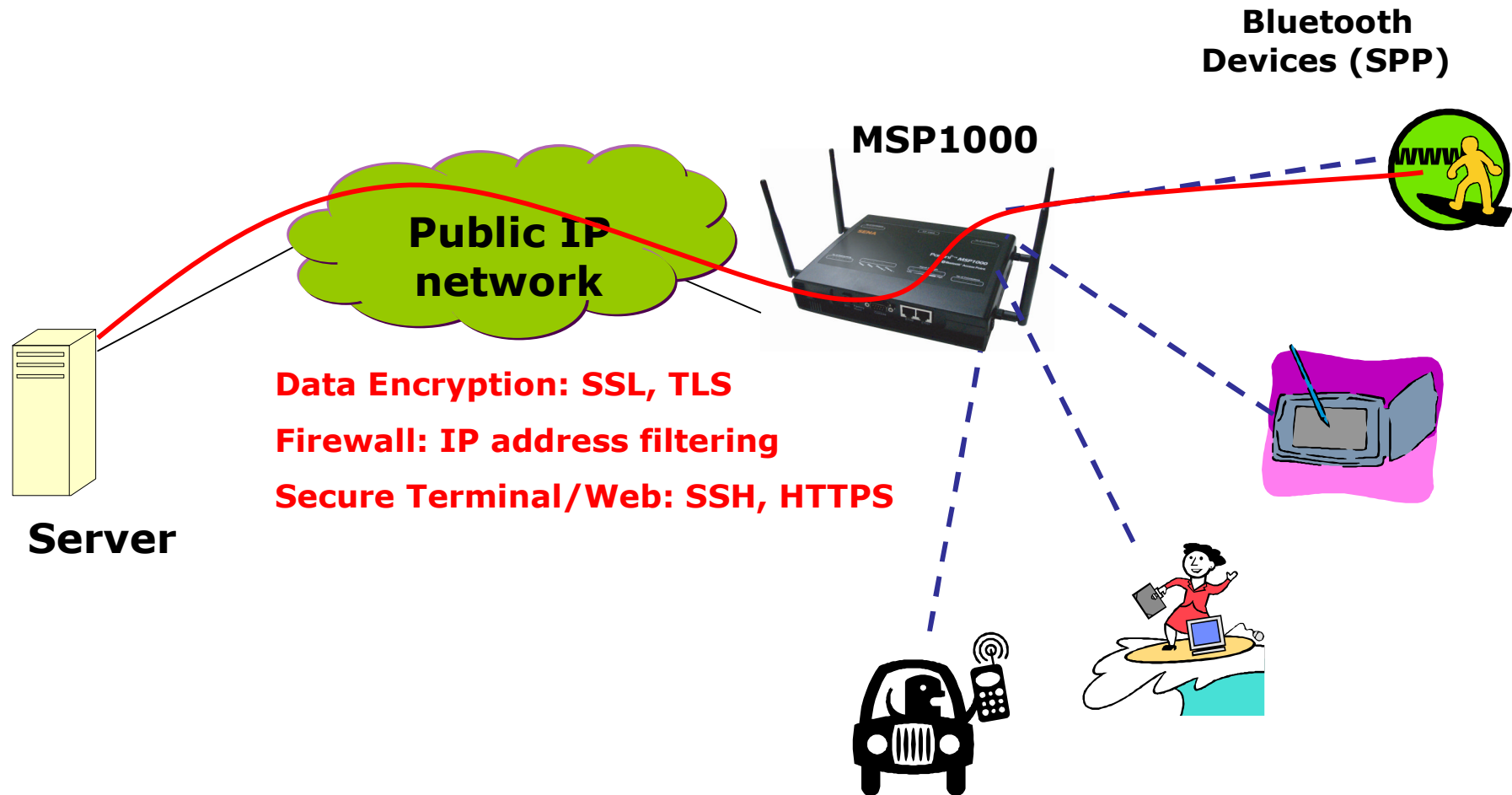
Data from the Bluetooth Devices can be stored in specified storage locations!



Works only in SPP mode !



Security



Works only in SPP mode !

CF Card support

- Support almost all Flash Memory card
- Others : TBD
 - Cellular modem (GSM, CDMA, HSDPA)
 - PSTN modem
 - Wireless LAN



Customization

Enjoy the full power of MSP1000's Linux platform to meet all your demands.

- **Linux kernel 2.6.12**
- **User space**
 - 2MB user space in Flash memory
- **Built-in Python Engine**
 - ▶ Network programming : Socket, Bluetooth
 - ▶ Protocol translation, monitoring, logging and whatever you want!
- **ELDK 4.0 support**
 - ▶ Users can compile their code and download it onto the machine



Future updates

- **Bluetooth Profiles**
 - ▶ Other Bluetooth profiles useful potentially
- **IPv6 support**
- **Network protocols**
 - ▶ SNMP Manageability
 - ▶ RADIUS, LDAP, TACACS
- **Customization Support**
 - ▶ Sample codes using Python script
 - ▶ Samples under ELDK environment
- **CF Drivers**
 - ▶ GSM, WLAN and so on

Technical Specifications

General	
CPU	Freescale PowerQUICC MPC880 (132MHz)
Memory (Flash/RAM)	16MB / 64MB
O/S	Linux Kernel 2.6.12
LEDs	Power, Status, Eth1, Eth2 Bluetooth connections and signal strength
Power Supply or Input Voltage	5VDC (Switching Power)
Power Consumption	N/A
Environmental	N/A
Approvals	CE/FCC/Telec SIG
Bluetooth Interface	
Stack version	2.0+EDR
Class	1
# of Bluetooth Connections	7
	Up to 28 connections
Antenna gain	3 dBi
Protocols	RFCOMM
Profile	SPP, PAN, FTP, LAP, DUN, GAP
Antenna extension	Dipole/Patch Antenna
Operating Range	Up to 1Km

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Technical Specifications

Ethernet Interface	
# of Ports	2
	Primary/Secondary
Protocols	IPv4, ICMP, ARP, TCP telnet, SSH, HTTPS, SSL/TLS, DNS, SCP/SFTP/FTP, RIP, syslog, NTP
Device Interface	
Serial Port	1
CF Port	1
	Flash memory (TBD : Modem, WLAN, Cell modem)
Serial-Bluetooth Features	
Virtual Serial Port support	Yes
Host mode support	Raw TCP, SSH, SSL, Telnet (RFC2217)
Multicasting	Yes
Multiple Connections	Yes
Port Logging	Yes (syslog, USB memory, CF memory)
Port Event Handling	No
Access Point Features	
IP address assignment	DHCP
Profiles Applicable	PAN



Technical Specifications

Security	
Encryption	SSH v2, SSL/TLS
IP Address Filtering	Yes
Customization Support	
Script Engine Support	Yes (Python)
ELDK Support	Yes (v4.0)
Management / Diagnostics	
Configuration	telnet/SSH/Web
Monitoring	telnet/SSH/Web
SNMP Support	No
Field-Upgrade	telnet/ssh, web, tftp CF memory,
Others	
Warranty (Year)	3



MSP1000 vs. MSP100

Model	Parani-MSP100	Parani MSP1000
General		
CPU	Samsung ARM9 2510	Freescale PowerQUICC MPC880
Memory (Flash/RAM)	4MB / 16MB	16MB / 64MB (Upto 128MB)
O/S	Linux Kernel 2.4.19	Linux Kernel 2.6.12
LEDs	Power, Status, Error, Ext, Int	Power, Status, Eth1, Eth2 Bluetooth Connections Signal Strength
Bluetooth Interface		
Stack version	2.0+EDR	2.0+EDR
Class	1	1
# of Bluetooth Connections	7/14	7/14/28
	Up to 14 connections using USB adapter	Up to 28 connections Built-in adapter
Profile	SPP, PAN, LAP, DUN	SPP, PAN, FTP, LAP, DUN
Ethernet Interface		
# of Ports	2	2
	External/Cascade	Primary/Secondary
Protocols	IPv4, ICMP, ARP, TCP, HTTP, telnet, TFTP	
	-	SSH, HTTPS, SSL/TLS, DNS, SCP/SFTP/FTP, syslog, NTP

MSP1000 vs. MSP100

Model	Parani-MSP100	Parani MSP1000
Device Interface		
Serial Port	1 Serial Hub mode	1 Console
Real Time Clock	No	Yes
CF Port	No	1
Serial-Bluetooth Features		
Virtual Serial Port support	Yes	Yes
Host mode support	TCP Server, TCP Client, Vertex Serial Hub	Raw TCP, SSH, Telnet (RFC2217), SSL
Multicasting	No	Yes
Multiple Connections	No	Yes
Port Logging	No	Yes (syslog, CF memory)
Security		
Encryption	No	SSH v2, SSL/TLS
IP Address Filtering	No	Yes



MSP1000 vs. MSP100

Model	Parani-MSP100	Parani MSP1000
Customization Support		
Script Engine Support	No	Yes (Python)
ELDK Support	No	Yes (v4.0)
Management / Diagnostics		
Configuration	Web Parani-MSP Manager	telnet/SSH/Web
Monitoring	Web	telnet/SSH/Web
SNMP Support	No	Yes
Field-Upgrade	Yes	Yes
	TFTP	telnet/ssh, Web, tftp CF memory



Typical Application Scenarios

- **Device Server Application**
 - ▶ **Wireless Control and monitoring using [SPP]**
- **Internet Access Point Application**
 - ▶ **Wireless POS using [PAN/DUN/LAP]**
- **Retail/Entertainment Application**
 - ▶ **LBS Application using [PAN/FTP]**



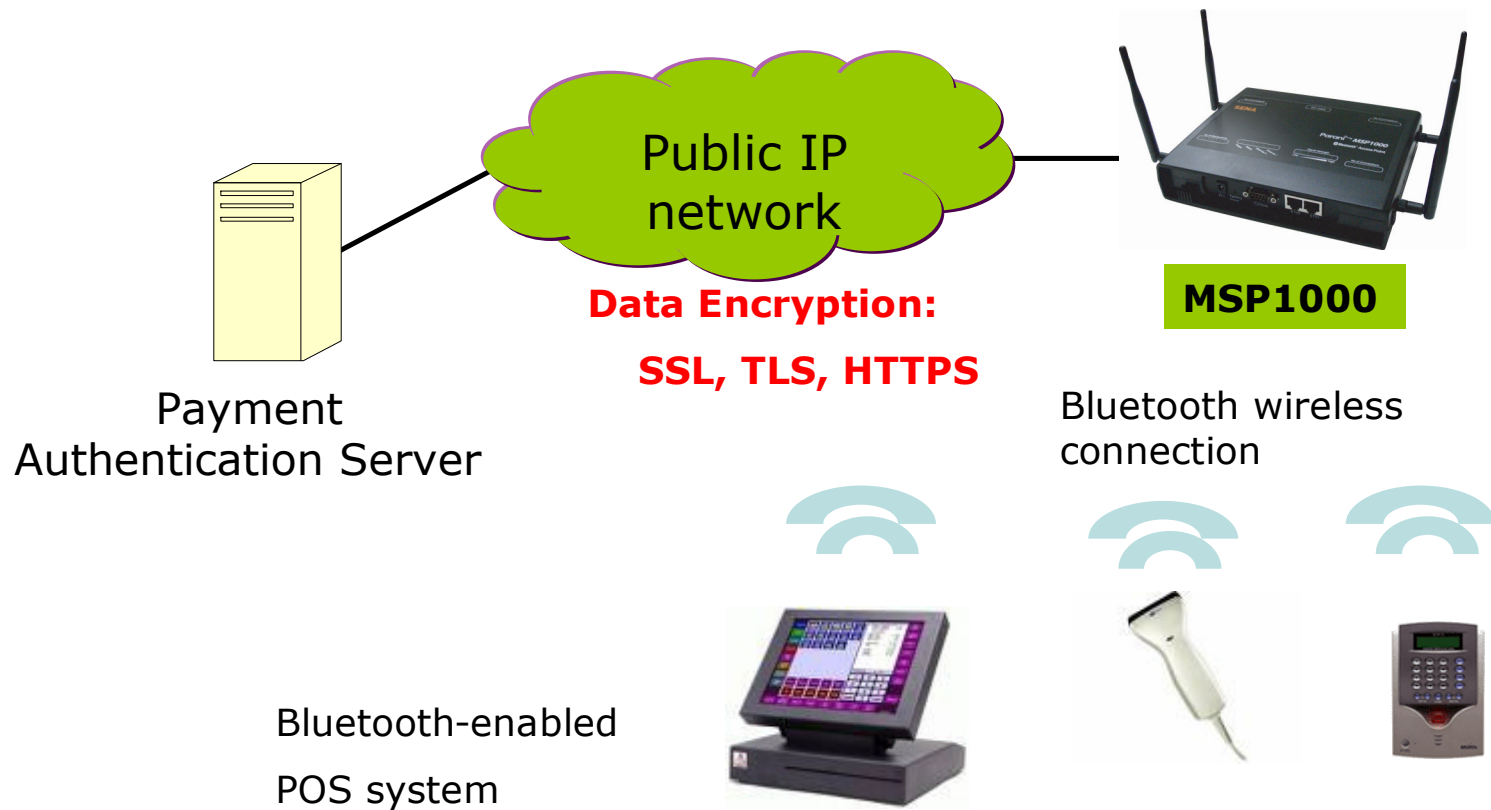
Device Server Application

- **Wireless Control and monitoring using [SPP]**



Internet Access Point Application

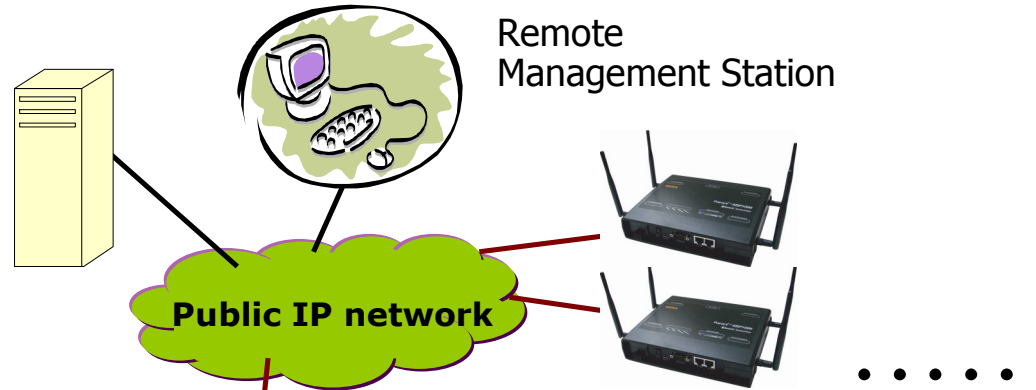
- **Wireless POS using [PAN/DUN/LAP]**



Retail/Entertainment Application

▪ LBS Application using [PAN/FTP]

Customer Database Server
Contents Storage Server



MSP1000 Bluetooth profiles:
SPP, PAN(LAP, DUN),
OBEX, FTP and so on

MSP1000 Built-in CF Memory :

- Multimedia contents files
(mp3, mpeg, jpg, mp4)
- Coupons/lottery
- Location Based Service
(gas station, shops, restaurants)

Bluetooth-enabled
Devices:

- Cell phones
- Car Navigators
- PDAs and so on



MSP1000