

## Fixed RFID Reader

# FR900



### Sleek, Refined Design

- Sleek, compact, and sophisticated design
- Fits well in any corporate office or public environment such as a retail store or hospital
- Compact form factor: 253 x 254 x 56 mm

### Perfect Accuracy

- Dense Reader Mode provides high accuracy and prevents reader-to-reader interference
- High accuracy even in applications with metal and liquid
- EPC Class-1 Gen-2 V2 compliant

### Durable in Rough Environment

- Performs in dusty environments with IP53 sealing

### Low-Cost and Easy Deployment

- Power-over-Ethernet (PoE and PoE+) allows flexible, low cost, single-cable installation
- Easy to install in tight spaces

### One Reader, Multiple Antennas

- One reader connects up to 8 antennas
- Flexible and cost-effective modular solution

### High Speed Processor & Linux

- Powerful processor and flash memory
- Linux OS



- **POE INSTALLATION**
- **COST-EFFECTIVE**
- **LESS CABLE CLUTTER**



- **EASY TO USE**
- **EASY TO DEPLOY**



- **PERFECT ACCURACY**

### FR900 Applications

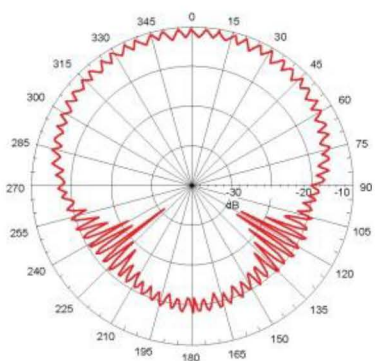
- Personnel Tracking
- Real-Time Inventory
- Anti-Theft Sensing
- Drug Management
- Asset Management
- Inventory Management
- Patient Monitoring

# FR900

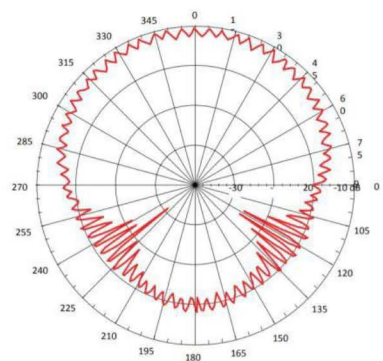


## FR900 Antennas' Radiation Patterns

### AN950

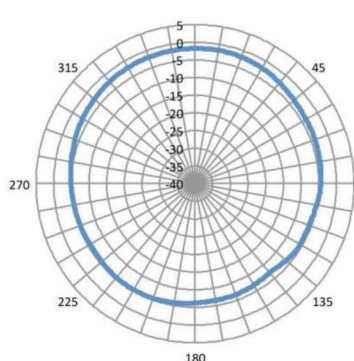


FCC

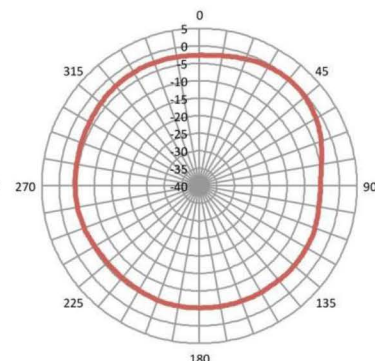


ETSI

### ANS950

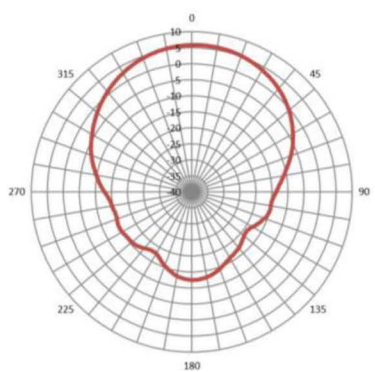


FCC (Vertical)

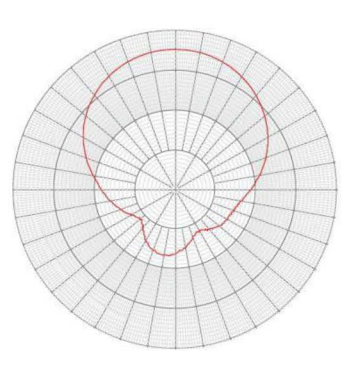


FCC (Horizontal)

### AN970



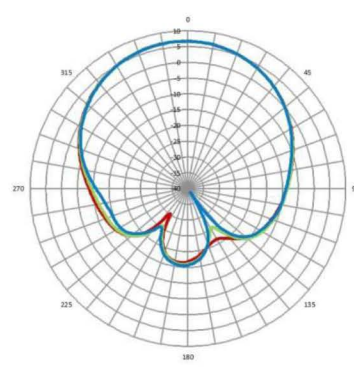
FCC



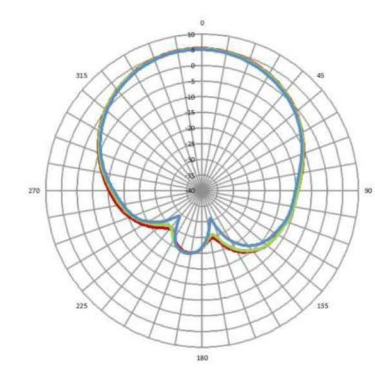
ETSI

### AN971

— 902 MHz — 915 MHz — 928 MHz



FCC(LHCP)



FCC(RHCP)

## FR900 Antennas

PRODUCT NAME	AN950	ANS950	AN970	AN971
Concept	- Mid Performance & Compact - Compact indoor/outdoor antenna for customer-facing environments	- Mid Performance & Slim - Sleek, Discreet, Rugged	- High Performance & General Purpose - Global flexibility for all enterprises	- High Performance & Large Area
Used For	Warehouse - Stocks Transition (Fork lift) - Conveyors Retail Back-room - Inventory Management - Gates	Sales-room - Display Shelves (wall, ceiling) - Display Hangers Fitting-room (wall, ceiling)	Warehouse - Portals, Outdoor gates Retail Back-room - Inventory Management - Gates	Warehouse - Portals, Outdoor gates Retail Back-room - Inventory Management - Gates

PRODUCT NAME	AN950	ANS950	AN970	AN971
<b>PHYSICAL</b>				
Dimensions (L x W x D)	132x 132x 18mm 5.2 x 5.2 x 0.7 in.	74 x 74 x 9.5mm 2.9 x 2.9 x 0.4 in.	259 x 259 x 33.5mm 10.2 x 10.2 x 1.3 in.	259 x 575 x 33.5mm 10.2 x 22.6 x 1.3 in.
Connectors	Type N, SMA RP-TNC, RP-SMA (Female)	MCX	Coax Pigtail, Rev TNC Male (others available)	N-type Female 2x or Configurable
Mounting Bracket	VESA support	VESA support	VESA support	VESA support
Weight	0.37 Kg / 0.82lb	0.6 kg / 1.32lb	1.0Kg / 2.2lb	1.9kg / 4.2lb (Laird)
Casing	Aluminium with white plastic cover	Superior Kydex	Aluminium with white plastic cover	UV Stable ASA, White
<b>OPERATIONAL</b>				
Frequency Range	865MHz ~868MHz / 902 ~928MHz	865MHz ~868MHz / 902 ~928MHz	865MHz ~868MHz / 902 ~928MHz	865MHz ~868MHz / 902 ~928MHz
Gain	8.5dBic	2 dBic	9 dBic	9 dBic
VSWR (Return Loss)	1.5:1	1.4:1	1.3:1	1.4:1
Front to Back Ratio	8 dB	4 dB	20 dB	20 dB
Polarization	LHCP OR RHCP	LHCP OR RHCP	LHCP OR RHCP	1x LHCP and 1x RHCP
3db Beam Width	100°	120° x 120°	70°	70°
Max Input Power	10 W	6 W	10W	10W
Axial Ratio	2dB typical	2 dB typical	1dB typical	1dB typical
<b>ENVIRONMENTAL</b>				
Operating Temperatures	-30° C to +70° C / -13° F to +158° F	-30° C to +65° C / -22° F to +149° F	-25° C to +70° C / -13° F to +158° F	-25° C to +70° C / -13° F to +158° F
Sealing	IP67	IP54	IP54	IP67
Storage Temperatures	-40° C to +85° C / -40° F to +185° F	-40° C to +70° C / -40° F to +158° F	-40° C to +70° C / -40° F to +158° F	-40° C to +85° C / -40° F to +185° F
Vibration	MIL-STD-810	MIL-STD-810	IEC-68 series	IEC-68-2-6 (10 to 150 Hz, 0.5g, one hour in each of two axes) (Random Vibration)
Humidity	IEC-68-2-30	IEC-68-2-30	IEC-68-2-30	MIL-Std 810G, METHOD 507.5, Procedure II-Aggravated



# FR900

## Specifications

PHYSICAL	
Dimensions	253 x 254 x 56 mm
Weight	1.5kg
Visual Status Indicators	Multicolor LEDs : Power, Activity, Status, Fault, Ant 4-8
RF CHARACTERISTICS	
MaxReceive Sensitivity	-84 dBm monostatic
Return Loss (min)	10 dB
Air Protocols	ISO 18000-63 (EPC Class 1Gen-2 V2)
Frequency (UHFBand)	US: 902-928MHz EU: 865-868MHz JP1: 916-921MHz, JP2: 916~923MHz CN: 920.5-924.5MHz Russian Federation: 866-868MHz
Transmit Power Output	US : 6 dBm to +36 dBm (EIRP) at the antenna EU : 3 dBm to +33 dBm (ERP) at the antenna configurable in 1 dB steps (Max radiated power at antenna should be lower than 4W EIRP for US/Canada and 2W ERP for EU)
CONNECTIVITY	
Communications	10/100 BaseT Ethernet; USB Host & Client (Type A & B); DB9 1ea, RJ-45 1ea, HW Resetbutton, Function button (Optional) Wi-Fi and Bluetooth via dongleadapter
General Purpose I/O	4 inputs, 4 outputs optically isolated (Terminal Block)
Power Supply	POE / POE+ +24V DC Universal Power Supply
Antenna Ports	8 monostatic ports (Reverse Polarity TNC) circular or linear polarization; near and far field compatible
ENVIRONMENTAL	
Operating Temp.	-20° to +55°C / -4° to +131°F
Storage Temp.	-40° to +85°C / -40° to +185°F
Humidity	5-95% non-condensing
Sealing	IP53
Shock / Vibration	MIL-STD-810G

HARDWARE, OS AND FIRMWARE MANAGEMENT	
Processor	600 MHz Processor
Memory	256 MB RAM / 512MB Flash
Operating System	Linux
Firmware Upgrade	USB storage device Web-based and remotefirmware upgrade capabilities
Management Protocols	Bluebird Shell (SSH Protocol), RM Agent (MQTT Protocol)
Network Services	DHCP, HTTP, FTP, SFTP, SSH, NTP, mDNS, LLMNR, MQTT
Network Stack	IPv4 and IPv6
Security	Transport Layer Security Ver 1.2, FIPS-140SSL / SSH-based security
Host Interface	EPCglobal Low Level Reader Protocol (LLRP)
API Support	.NET, C and JavaEMDK
Software Support (Bluebird)	Bluebird Universe™ for RFID
REGULATORY COMPLIANCE	
Safety	UL 60950-01, UL 2043, IEC 60950-1, EN 60950-1
RF / EMI / EMC	FCC Part 15, RSS 210, EN 302 208, ICES-003 Class B, EN 301 489-1/3 For Malaysia: 919-923MHz
SAR / MPE	FCC 47CFR2: OET Bulletin 65; EN 50364
Other	ROHS
WARRANTY	
Warranty	One year



## EMPOWERING BUSINESSES WITH ACTIONABLE DATA

BUSINESS INTELLIGENCE DELIVERED BY HIGH-PERFORMANCE RFID SOLUTIONS FROM BLUEBIRD