



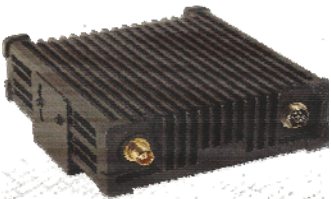
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# MakSat mobile Radio communication system

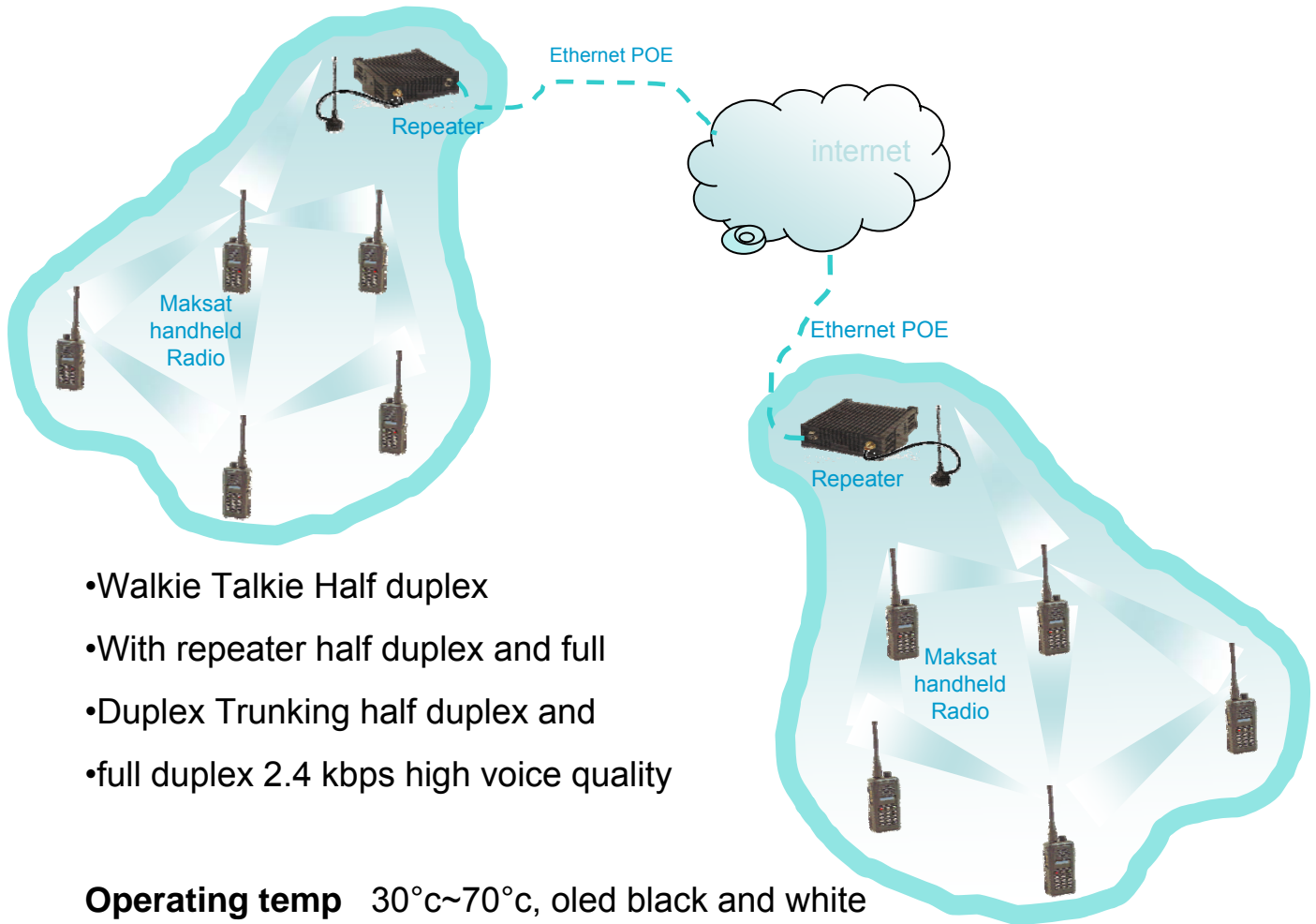
Maksat Handheld mobile Radio communication system is a brilliant concept to replace the use of CDMA/GSM mobile phones at high security and sensitive areas.



Maksat Handheld mobile Radio can communicate securely to long ranges , these devices are pre installed with inbuilt tracking RF ID chips to track them , they are capable of both half duplex as wakie talkie and full duplex communication with repeater unit , trunking is possible at both half and full duplex, with 2.4kbps high voice quality codec's and extreme operating temperatures of upto -30c to 70c . it comes with a highly rugged casing meeting MIL\_810 and IP67 standards, plus 2500ma standard and 3000ma high capacity battery packs and inbuilt GPS receiver, for suiting the defence forces requirement , the device has operating frequency of 136 to 174 and 385 to 470 MHz in VHF and UHF bands.



The repeater unit has time three slots (channels) with TDMA FXO lines and Ethernet interface; it has both repeater and trunking modes



- Walkie Talkie Half duplex
- With repeater half duplex and full
- Duplex Trunking half duplex and
- full duplex 2.4 kbps high voice quality

**Operating temp** 30°C~70°C, oled black and white display. Meet-810 and IP67 standards. rugged case and high stability, digital operation, high level voice quality, GPS receiver build in

- TDMA
- FXO Line interface
- Ethernet interface
- Repeater/Trunking mode

**Repeater**

Repeater has 3 time slot (channels)

**Available in VHF and UHF Bands**

136-174 MHz

385-470 MHz

3.5 wt output power

# Mak3Gsupercam

*Cutting edge Surveillance solution*



The Maksat 3G super cams is a state of art cutting edge camera surveillance system, Mak 3Gsuper cam is an IP camera connected to GPRS or CDMA modems for Internet.

The GPRS or CDMA modems are connected to the camera through a serial cable. One could dial to the camera with correct caller ID to wakeup the camera to log onto our free mobile DDNS for you to view from remote PC, PDA, Smart phone, Java phone.

With our remote camera service (RCS), the camera will send the image to our RCS servers and send you SMS for warning upon motion detection or sensor triggered

The camera uses our proprietary worldwide free IP gatekeeper for dynamic IP after connected to Internet via GPRS or CDMA modems. They are specially designed for managing and marketing your business where no broadband is available. It could also be scheduled to enter into security mode.

## **General Features**

- Connect to Internet via external GPRS or CDMA modems
- Wake up by Caller ID, Motion Detection or External Sensors
- 48 Zone selectable motion detection
- Built in real time clock for weekly and daily schedule for security mode and recording
- Encrypted data
- View from PC, Pocket PC, Smart phone and Java phone
- Optional Remote Camera Services for you to generate monthly recurring revenue

## **Special Feature**

- One trigger-in and One trigger-out
- Daisy chained to power Box for turn on/off the AC power

## **Application Software**

- Utility Program for ISP parameter setup
- Use Internet Explorer to view the cameras
- Use Java Midget for the MIDP2.0 Java phones to view, activate, deactivate the camera peer to peer without the data going through a server
- Use for Pocket PC to view the cameras peer to peer without the data going through a server
- Windows Application Software Features

- Schedule security mode daily or weekly
- Schedule auto-recording daily or weekly
- Snapshot
- Replay recorded images
- Up to sixteen cameras display on

Windows based

Application Software

## Specifications

Pan Speed: 21 to 10.5 degrees/second

Power consumption: 5V DC, ~390 mA still, ~420 mA rotating

### Cable Connection

RJ12 connector for 5V DC/90~240V AC

DB15 for RS232 for external GPRS or CDMA modems and for parameters through Windows based software

Transmission speed depends on ISP conn speed.

Assuming 33.6kbps upload

High Resolution (640x480): ~0.125 frames/second

Medium Resolution (320x240): ~0.5 frames/second

Low Resolution (160x120): 1~2 frames/second

### Camera Specification:

CMOS Camera support Specification:

300K pixels, 1/3

S/N Ratio: > 48dB

Gamma Correction: 0.45

Min. Illumination: <2.5 lux @ f2.0

Default Lens:

Relation between Lens Angles,

Distance and Identifiable Target

Focal Length 6mm

Back Focal Length 5.8mm

Aperture F 2

Angle of View (DIA) 70°

### Operation Environment

Temperature: 0°C~55°C Humidity: 85% relative at 25deg

Weight: 150g

Dimension: 10cm x 13.5cm x 15cm

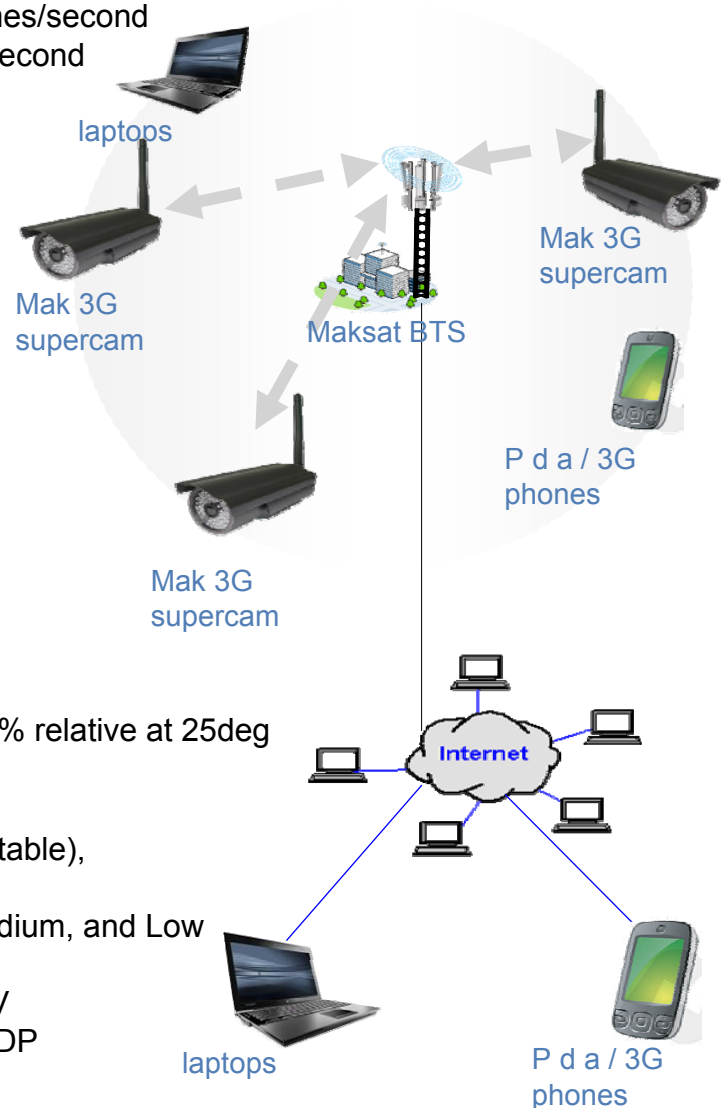
Trigger in: NO or NC (Software Selectable),  
or 5V level trigger

Motion detection sensitivity: High, Medium, and Low

Motion Detection Zones: 48

Trigger out: Low to High TTL Level 5V

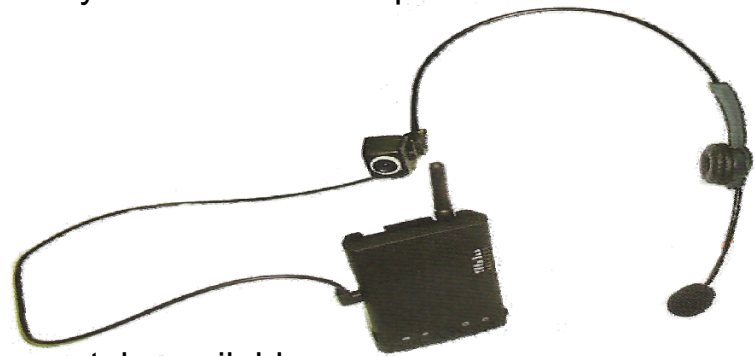
Internet Protocol for IP connection: UDP



# Mak 3G Supercam Mobile Headsets

The camera is also available in Mobile Headgear model, MakSat 3G supercam mobile headsets is a mobile camera using 3G cellular network or WiFi access points and WDS (wireless distribution system) to link to the remote site.

The device is designed especially for field workers like police, fire fighters, security guards, rescue teams, field inspectors and construction workers, etc; the best part of this model is that it can provide you with video scenes and audio clips right from the security men's head view position.



## Basic function:

- both 3G and WiFi models are separately available
- "push to link" to remote central site for a live connection
- "SMS request to link" from remote site to make a live connection
- Making VoIP phone call or video Voip phone call when linked to remote site
- saving GPS data to SD card
- Recording video images to SD card

## Operation Modes:

- Deep Sleep Mode
- GPS Recording mode
- GPS recording and reporting mode
- GPS and video recording mode
- GPS and video recording and live link mode

## Specifications:

- internal GPS
- Lithium battery operation
- internal HSDPA or HSUPA
- 3~4 Hrs continuous link operation
- >3 hrs video and GPS recording (total capacity with 2Gb SD card)
- internal high dynamic audio codec for field conference



# MakSat MIMO Plus

MakSat MIMO Plus is a high power Carrier class Backhaul solution equipment that is specially designed to meet the requirements of long distance and high throughputs connectivity, the equipment is capable of providing high data rates of upto 300 mbps, the equipment can also be made available with interfaces like E1/2E1

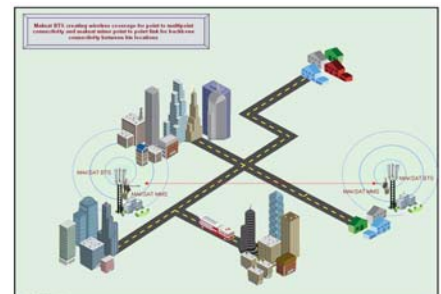
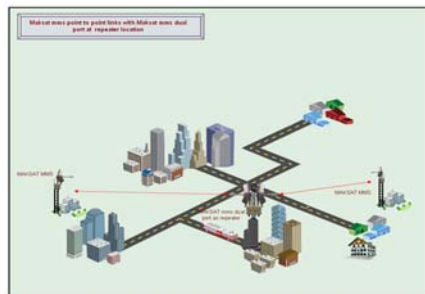
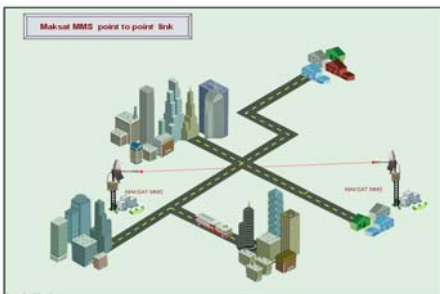
MakSat MIMO Plus balances enterprise-scale security, management and Quality of Service features with high performance.

## Features Benefits

The MakSat MIMO Plus Radio Bridge & Router is a any Point to Multipoint and Multipoint-to Multipoint OFDM Radio Bridge Equipment for High Bandwidth connectivity in 2GHz and 5GHz bands. It has a range of up to 100kms with the possibilities of other interfaces like E1/E2 in addition to Ethernet.

## Applications

- Point to point links
- Point to multipoint links
- Option available Ethernet and/or E1
- High capacity backhaul links
- High throughputs multi application
- data , video and voice traffic
- Multi frequency operability



# MakSat MIMO<sup>Plus</sup>

## Radio Bridge & Router

### *Built-in Router Specifications:*

#### **Basic Network Platform**

TCP/IP protocol suite

#### **Firewall and NAT**

Packet filtering, source and destination NAT, source MAC addresses, ports, protocols, protocol options, interfaces.

#### **Routing**

RIP 1 / 2, OSPF v2, OLSRD, BGP v4, equal cost multi-path routing, Policy based routing, firewall marked packet routing

#### **Bridging**

Spanning tree protocol, multiple bridge interfaces, bridge firewall

#### **Bandwidth Management**

Per IP / protocol / subnet / port, CBQ, RED, SFQ, byte limited queue, packet limited queue

L2 MESH (option available)

#### **Tunnels**

PPTP, EoIP (Ethernet over IP)

**OPEN VPN** support for super secrecy

**Multicasting** support

**VLAN**, Virtual LAN support

#### **NTP**

Network Time Protocol server and client

#### **QOS**

Full Scale QOS with traffic shaping and user friendly Presets .

#### **DNS client/Server**

Name resolving for local use, Dynamic DNS Client

### **Models:**

**MIMO 2 : 2.192-2.499**

**MIMO 5 : 4.9-6.1**

#### **Monitoring/Accounting**

IP traffic accounting, firewall actions logging

#### **SNMPV2**

read only access

### *Administration*

#### **General**

History, undo / redo /display, multiple administrator connections real time updates in GUI, real time Configuration

#### **Web/GUI**

Uses HTTP/ HTTPS for remote administration, graphing of traffic, statistics, and resource

monitoring multiple internal configuration windows Terminal Console standard keyboard and monitor connection, scripting import /export of configuration scripts to screen / file command history, hierarchical command structure monitoring of interface status and traffic, context specific hints.

#### **Telnet/ SSH**

All terminal console features, SSH option, cut/paste of configuration

#### **FTP**

For uploading upgrade packages, uploading and downloading scripts, Hot Spot authorization.

#### **Upgrading**

Remote Firmware Upgrade

# MakSat MIMO Plus

## Wireless

Radio Operation	2.4Ghz (MIMO 2) 5.8Ghz (MIMO 5)
Channel Width	40Mhz, 20Mhz, 10Mhz,
Receiver Sensitivity	Up to -96dBm
Processing Gain	> 10 dB
Antenna	Dual polarity Dish, 29dbi, 60cm
Integrated Design	23dbi Cross Polarity Integrated
Option of Additional Ethernet 10/100/1000 Interface	Yes
RF Modulation Scheme	QAM64, QAM16, QPSK, BPSK, CCK (OFDM, DSSS)
Duplex Format	TDD, FDD
Certification	FCC,ISO 9001-2000
Range	Up to 150Km*
Output Power	Super power MIMO, up to 28dBm
Software controllable	Yes (Steps of 1 dB)
Extended Range (XR)	Best in the industry (-) 105dBm
Watch Dog Timer	Software/Hardware/Temperature
QOS/COS/GOS	Yes
Bandwidth Management	Yes
Router	Yes
Packet Format	IEEE 802.3 and Ethernet II
Security	256 bit AES, WPA and WPA2 encryption, Security, VPN and firewall
Data Security Password	Network attachment is password protected

## Network

Network Connection	10/100/1000* Base T (optional) RJ Female Ethernet Connection
Bridge Functionality	Intelligent Local Packet Filtering Node by node user configurable data rates (CIR and MBR)
Network Topologies	Any point-to Multipoint Multipoint-to Multipoint
Repeater Mode	Built-in Mode
RF Collision Management	Combined TDD and FEC

## Physical

Power Adapter Requirement	110 VAC or 220 VAC , 7V - 18V DC
Power Consumption	Less than 20W (fully loaded)
Height x Width x Depth Weight	7" x 11" x 5" 3Kg
Operational Temperature	(-)40C to (+)80C
Humidity	Humidity 0-95% non condensing, Outdoor weatherproof enclosure

## Management

Remote Management	HTTP, HTTPS ,Telnet, SSH
Monitor/Control	Through Ethernet port using HTTP/HTTPS/Telnet
SNMP	v2c
Management Port Functionality	Full configuration/management from any station through a command line
Software Management	File download over RF for firmware updates

MCS Index	Spatial Streams	Modulation Type	Coding Rate	Data Rate Mbps			
				20 MHz channel		40 MHz channel	
				800ns GI	400ns GI	800ns GI	400ns GI
0	1	BPSK	1/2	6.50	7.20	13.50	15.00
1	1	QPSK	1/2	13.00	14.40	27.00	30.00
2	1	QPSK	3/4	19.50	21.70	40.50	45.00
3	1	16-QAM	1/2	26.00	28.90	54.00	60.00
4	1	16-QAM	3/4	39.00	43.30	81.00	90.00
5	1	64-QAM	2/3	52.00	57.80	108.00	120.00
6	1	64-QAM	3/4	58.50	65.00	121.50	135.00
7	1	64-QAM	5/6	65.00	72.20	135.00	150.00
8	2	BPSK	1/2	13.00	14.40	27.00	30.00
9	2	QPSK	1/2	26.00	28.90	54.00	60.00
10	2	QPSK	3/4	39.00	43.30	81.00	90.00
11	2	16-QAM	1/2	52.00	57.80	108.00	120.00
12	2	16-QAM	3/4	78.00	86.70	162.00	180.00
13	2	64-QAM	2/3	104.00	115.60	216.00	240.00
14	2	64-QAM	3/4	117.00	130.00	243.00	270.00
15	2	64-QAM	5/6	130.00	144.40	270.00	300.00

