



MULTI-TASKER

**CELL FINDER - TRACKER - SMS BROADCASTER
EMERGENCY CELLSITE - ALL IN ONE UNIT**



The Mactro Multitasker is a portable powerful GSM base station designed jointly with government authority to help search & rescue operations.

Output power of 3 Watts-Per-Channel gives necessary coverage for areas, when the normal GSM network is affected.

The unit is a cost efficient unified standalone network-in-a-box solution that works on any GSM frequency and can send SMS to a mobile phone or all mobiles located within the range of a system.

All standalone Mactro Multitasker could be interconnected into the unified search & rescue network over VSAT or any other IP channels.

Capacity and Coverage

- up to 124 concurrent SMS
- up to 3 km coverage radius

Key Features

- Detect location of a mobile subscriber at different moments of time
Mobile subscriber location is calculated based on signal propagation time from MactroCell to a mobile subscriber
- Detect IMSI of all mobile devices in the coverage area created by MactroCell
- SMS chat between selected IMSI and Mactro Multitasker terminal
- Automated SMS sending:
 - welcome messages for newly registered mobile subscribers
 - messages for mobile subscribers who initiated outbound SMS exchange
- Map of a S&R area can be cached to use offline.
- Mobile subscribers are exposed on the map
- User interface is web-browser based and working over Wi-Fi connected to MactroCell

The screenshot displays a web-based interface for tracking mobile subscribers. On the left, a map shows a street grid with a red circle indicating a tracked location and a larger green circle representing the coverage area. On the right, there are two main sections: 'TRACKING' and 'SMS COMMS'.

TRACKING

Start Tracking Clear Results

REGISTERED MOBILE IMSI

IMSI	Last activity
250018520598185	0
250018527269573	5

SMS COMMS

To IMSI (10 Nov 2015, 13:24:42):
Your SMSs are being sent to a mobile search and rescue team. Reply to this message to communicate.

To IMSI (10 Nov 2015, 13:23:18):
Hello, how are you?

To IMSI (10 Nov 2015, 13:20:40):
You are connected to a mobile search and rescue team. Please SMS to 10001 to communicate. Your temporary phone number is 28680

SMS Message

Specifications

Mechanical specification

Enclosure

- Dimensions: 450 mm x 350 mm x 170 mm
- Weight: 6 kg

Software / Logical specification

Number of Transceivers

- 2 TRX / 16 timeslots

Voice codecs

- FR/HR/EFR/AMR; RTP stream

Ciphering

- A5/0, A5/1, A5/2 and A5/3

GPRS/EDGE

- GPRS

Capacity

- maximum concurrent calls (FR/HR): 15/30
- maximum simultaneous SMS: 124 (15*SDCCH/8 + 1*SDCCH/4)

Software stack

- GSM stack implementation based on Mactro
- Kannel SMS gateway
- Supervisor (Process control system)
- GPSd daemon to process GPS receiver data

Backhaul Interface

- 1 x RJ45 Ethernet (100/1000Mbit)



Electrical specification

RF Input/Output

- GSM 850/900/1800/1900 band (chosen at order time)
- 2 independent TRX
- 3W per channel (6W total)
- 50 Ohm N-type connector

Reference Clock

- GPS disciplined VCTCXO 26 MHz
- OCXO (on special request)

Input Voltage and Power

- Power consumption: 45W peak
- Input Voltage: +16.5V to +30V DC for full RF output power, +12V to +16V DC for reduced RF output power (1.5W-2W).
Warning: Input voltage below 10V DC can cause malfunction

