

SOFTWARE DEFINED RADIO

Handheld **COMP@N**

Radio Communications of the Future



**TACTICAL VHF AND UHF COMMUNICATION
FOR LAND FORCES**



**TACTICAL COMMUNICATION VHF
FOR AIR FORCE**



COMMUNICATION WITH CIVILIAN SERVICES

Wide range of functionalities:

- Basic e.g. voice transmissions broadcast
- Complex e.g. MANET radio / all available functions

Within the family of COMP@N radios it is possible to choose between different waveforms (WF) and range of supported frequencies.

The narrowband system based on COMP@N radios

Current requirements of the modern battlefield, with all limitations of available radio resources, determine the need to use various types of radios working with many types of waveforms (WF). Fulfilling of these expectations is a challenge that can only be achieved by a radio communication system, for which the main goal is to provide a comprehensive implementation of user's services while taking into account the limitations of the planning spectrum.

COMP@N family radios provide a comprehensive security in the range of TRANSEC, NETSEC and COMSEC mechanisms based on AES-256 algorithms and additional usage of SCIP technology (STANAG 5068).

Main services

data services	IP data
	Serial Data
	sensor data
	data for BMS systems → Situation Awareness / GPS
voice services	analog voice
	digital voice (which supports the flat and vertical structure)
management services	remote (e.g. SNMP v3)
	local (e.g. HMI, Fillgun)

Capability to integrate with existing infrastructure elements:

- other radios
- other terminal devices (e.g. user terminal)
- vehicle infrastructure
- wired infrastructure (e.g. LAN)

Effective extension of narrowband system

The flexibility of the system allows for its cooperation with other currently use and future radios and communication systems. In such manner the core of the system is being complemented with additional services and possible operational scenarios. These are i.e. the functionalities offered by:

- VHF tactical radios e.g. 3501, F@STNET
- PRR personal radios e.g. 35010, PERAD
- wideband radios
- satellite communications (SATCOM)
- on-board communication and integration system on the vehicle e.g. FONET
- crypto devices
- multisystem gateways e.g. PIK
- communications with the UAV e.g. FlyEye
- wired network infrastructure

General specification of the handheld COMP@N platform

FM/AM fixed frequency	modulations	FM, AM	
	transmission modes	F3E, A3E	
	channel	FM: 25 kHz	
		AM: 8.33 kHz, 25 kHz	
	Squelch		
	Nº of channels	1000	
	Scan		
	FCS (free channels search)		
General	a large color display		
	auto backlight intensity regulation		
	menu		
	double PTT button		
	backlit keyboard		
	Emergency Clear button		
	build-in GPS receiver		
	dimensions	220 x 86 x 44 mm (without antenna)	
	weight (with battery)	~ 1000 g	
	with amplifier and adapter creates 50 W vehicular set		
RF	frequency range	30 ÷ 520 MHz	
	output power	up to 5 W	
	3 definable output power levels		
	suppression of harmonics: > 50 dBc		
	frequency stability: ± 1 ppm		
	sensitivity: - 116 dBm (SINAD 20 dB)		
	adjacent channel selectivity ≥ 50 dB		
Interfaces	Audio / PTT		
	RS232		
	Ethernet 10/100		
	USB		
	Side Connector (to work with COMP@N accesories)		
Enviromental parameters	operational temperature: -32°C ÷ +55°C		
	immersion 1 m for 2 hours		
	MIL-STD-810G		
	EMC MIL-STD-461F		

COMP@N H07 Waveforms

DV	operating modes	FH (Frequency Hopping): 100 hop/s
		FF (Fixed Frequency)
	digital voice transmission	
	channel 25 kHz	
	security (AES-256 based)	TRANSEC COMSEC
	pre-defined profiles with set of mission parameters (radio data, encryption keys)	
RSD	channel 25 kHz	
	capability to enter data via Ethernet or serial port	
	capability to transmit GPS reports	
	modulation	$\pi/4$ DQPSK
	data rate	up to 40 kb/s

COMP@N H09 Waveforms

BMS IP WF	MANET class waveform	mobile self-configuring and self-organizing network
		extended range of services (retransmission within waveform – multihop relay)
		operation in IP networks, build-in IP router, QoS supporting
W2FH	EPM (Electronic Protective Measures) class waveform	LPD (Low Probability of Detection)
		LPI (Low Probability of Interception)
		AJ (Anti-Jamming)
	operating modes	for BMS IP: 50 hop/s for W2FH: 300 hop/s
	simultaneous voice and data services	
	voice services	digital voice (np. MELPe 2400, CODEC2)
		group calls
		privileged users
		priority calls (break-in)
		multi-hop voice
	data services	IP data
		Serial data
		SA (Situation Awareness) messages
		GPS reports
		short text messages
		sensor data
		files, video, pictures, mail transmission supporting
		data retransmission
		synchronization without GNSS (e.g. GPS)
		channel
		for BMS IP: 50 kHz
		for W2FH IP: 25 kHz
	security (AES-256 based)	TRANSEC
		COMSEC
		NETSEC
	data rates	BMS up to 40 kb/s
		W2FH up to 3.3 kb/s
	definable frequency range and sub-bands	
	pre-defined BMS IP WF or W2FH profiles with set of mission parameters (radio data, encryption keys)	
	operational in radio silence mode	
	number of networks	20



Antennas for various frequency bands



Case



Headsets



Manipulator

Antennas for various frequency bands

	Antenna 4702/1	Antenna 4702/2	Antenna 4702/3
frequency range	30 ÷ 90 MHz	90 ÷ 250 MHz	220 ÷ 520 MHz
length	1395 ± 25 mm	832 ± 25 mm	491 ± 25 mm
mass	280 ± 50 g	187 ± 50 g	180 ± 50 g



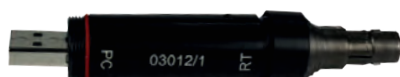
Li-Ion battery with a charge indicator



One station charging device



Four station charging device



FillGun programmer

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