

SkySweep Technologies

Dedicated Solutions for High Speed
HF/VHF/UHF DIGITAL RADIO



SkySweep Digital Radio System
VHF/UHF IP Data Radios

Industry & Utilities

The SkySweep IP radio system (SkyIPR) is a high speed (up to 915 kbit/s) IP over VHF/UHF radio solution. The products are based on the state-of-the-art new generation radio technology which provides TDD time division duplex transmission and OFDM modulation. SkyIPR enables fluent use of IP based applications over VHF/UHF radio networks. The SkySweep IP radio high speed data solution revolutionises the way in which today's mission critical networks can transmit data. What's more, it answers the needs of end users and network operators as well.

With the SkySweep IP radios professional users will be able to access services and features previously available only via commercial, non mission critical networks. With the emergence of mission critical data new operational models can be developed and user organisations can achieve new levels of effectiveness.

Network operators will appreciate the boost that SkyIPR solutions will bring to their network's data capabilities. These solutions can take advantage of high data speeds, guaranteed data delivery times, high availability, utmost reliability and uncompromising security. Commercial off the shelf solutions simply can't match them.

In the SkyIPR solutions, leading edge, high speed data technology is complemented by advanced third party applications that take advantage of faster, mission critical data. SkySweep's SkyIPR can bring to life what previously has been out of reach, enabling completely new data services, such as remote video recognition, and fast checking of identities using biometric recognition. For example, existing vehicle location systems already transmit vehicle locations to the central AVL system via the radio network, so that central command and control >

personel can have the advantage of knowing where each vehicle is at any given moment. A SkySweep IP radio (SkyIPR) solution can make it possible to share location information effectively, in real time with the field forces. This can significantly improve the overall situational awareness.

SkySweep IP radio (SkyIPR) for complete mobility

With secure connectivity and mobility of SkySweep solutions, users can stay online and updated at all times. Mission-critical data may be related to situational awareness, to the event at hand or to reading from a sensing system. Whatever the case, users can receive data according to their specific situation and even according to their specific radio network and devices. The higher bandwidth goes far beyond delivering more of the same information. It provides field operatives with entirely new types of information, such as surveillance camera feed or patient monitoring data.

Another significant benefit is the wide area coverage, in stark contrast to coverage within urban areas that some technologies provide. The SkySweep IP radio system (SkyIPR) solutions can be utilised wherever voice coverage is already in use, typically in existing PMR networks. Voice communication cannot be bettered, when a critical situation calls for split-second action but most field work is not like that. Complementary of a dispatcher having to issue all the instructions and information associated with a routine task verbally, SkyIPR uses IP over VHF/UHF data and messaging to assign tasks, provide access to databases, to all the information needed by field operatives and enable them to submit reports without having to return to the headquarters. This two way SkySweep IP radio system (SkyIPR) communication process can be tailored to fit each organisation's operational needs and legal requirements.

The SkySweep IP Data Radio latest embedded platform technologies supports customer specific based IP applications which can be connected to other mobile stations or to fixed IP network.

Two examples of the system key benefits :

- Cost efficient system. The system is based on the IP network architecture and high coverage IP base stations.
- Low power consumption. The SkyIPR transmitter are switched on only, when there is something to send. The system can be powered independently by solar energy or a very small fuel cell. Long battery based operating times are ideal for emergency systems, etc. There are no control channels needing continuous transmit power.



The SkySweep IP Data Radio (SkyIPR) allows users to enjoy uninterrupted access to simultaneous IP data services from their vehicles or mobile devices. In previous data solutions relying on TETRA or other PMR (professional mobile radio) networks the need for voice and data services to alternate limited any operational setup that depended on constant access to both voice and data. With the SkySweep system solution it makes sense to equip vehicles with the SkySweep IP Data Radio (SkyIPR) alongside existing TETRA, P25, DMR or Analog systems. This provides parallel always on connections for voice over existing PMR networks and for data over the state-of-the-art SkySweep IP Data Radios.



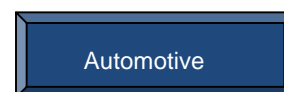
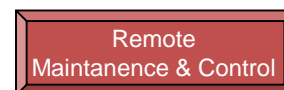
In today`s modern times permanent access to information and data is established more and more as a standard.

Unfortunately it is not technically possible in existing VHF/UHF PMR radio networks to directly request the mobile communication network via the Internet and to integrate processes in it, like for example, to monitor or control systems. The connection must always be established directly at the terminal. This type of communication is often simply very difficult to implement.

With the SkySweep IP Data Radio (SkyIPR) we have a simple solution for the problem: a permanent fixed address is assigned to a SkyIPR terminal, like for example a router, a RTU or a PDA. This is directly accessible without restrictions via a secured access to the customer server. In this way connected terminals can be integrated in the existing process very simply without additional configuration. It is also possible to have direct communication between SkyIPR mobile or stationary terminals in every direction.

Examples of services:

- IP transmissions to Base Stations sites
- access data for mobile terminals
- access via VPN client
- remote desktop administration for mobile and VPN accounts
- optionally the SkySweep IP Data Radio (SkyIPR) IP network can be addressed directly by VPN location via IPsec
- secure customer specific data connections



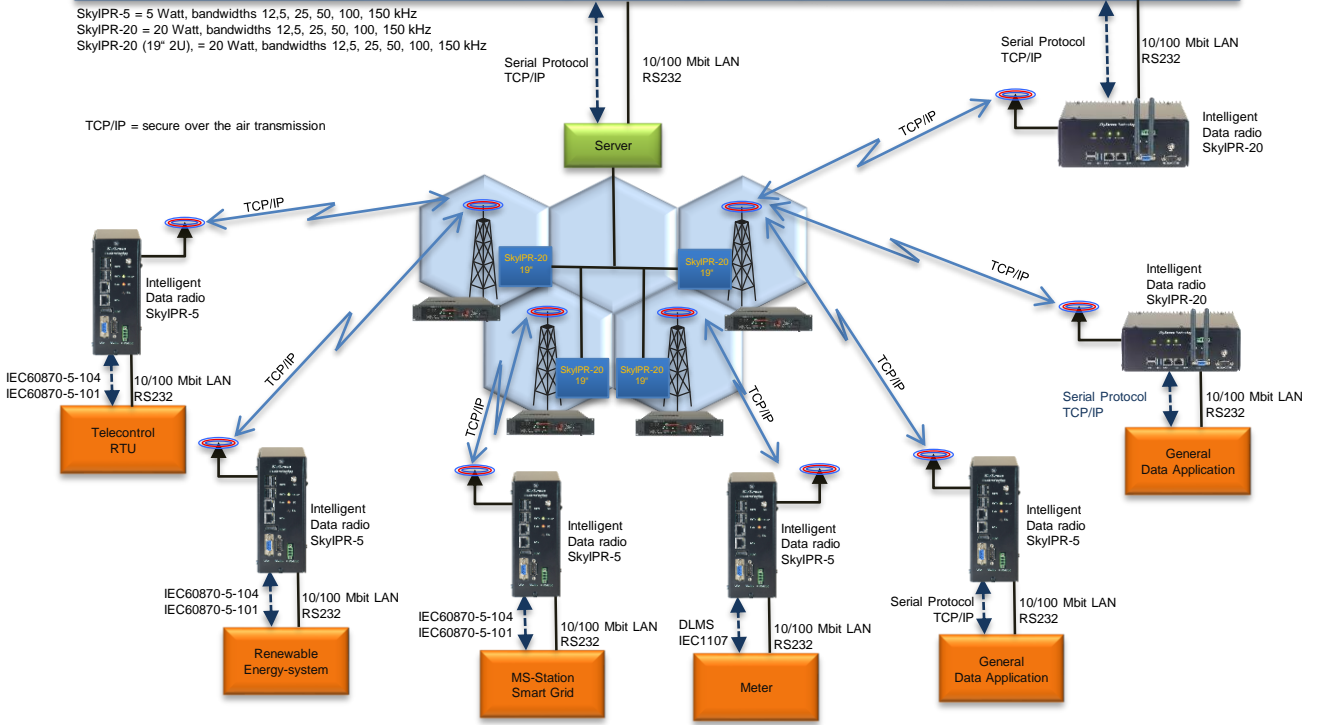
Examples of use:

- remote monitoring of clean solar or wind power plants
- remote monitoring of traffic control systems
- remote reading of heat consumption meters
- remote monitoring of sluices
- data communication with electric meters, machines, and more of the same
- communication via standard protocols such as IEC60870-5-101/104, Modbus or many other protocols

Customer benefits:

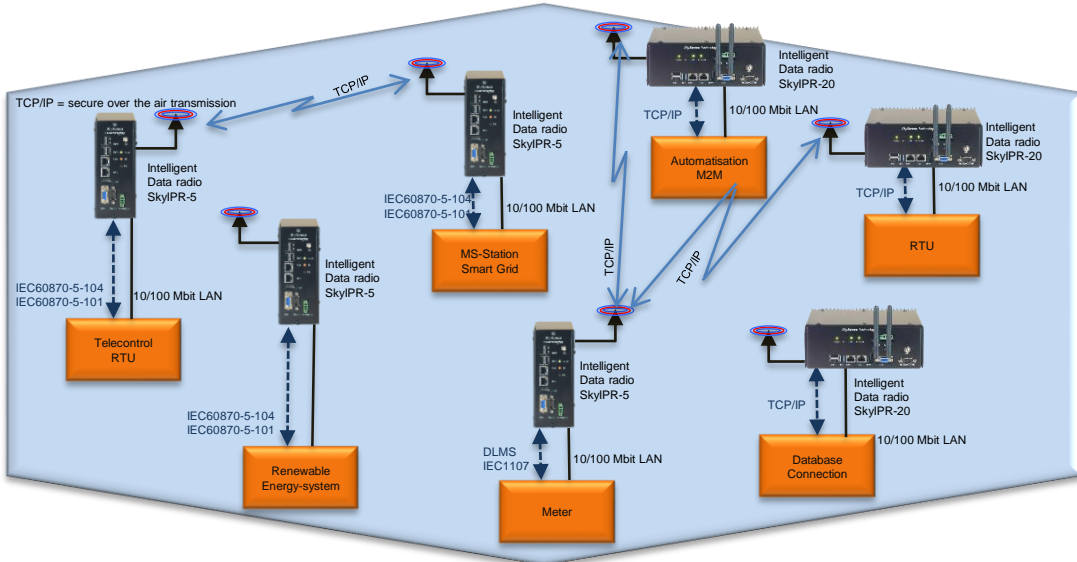
- Simple: connection of your outstation with SkySweep IP Data Radio (SkyIPR) high speed IP over VHF/UHF radio
- Safe: integrated firewall feature, secure encrypted transmission
- Low priced: use of the inexpensive and existing VHF/UHF frequencies of your own or your trunking network operator
- SkyIPR provides the ideal communication solution for a wide range of critical applications
- Simplex channel operation - easy utilization of existing simplex channels. No need for duplex channels

Network control center - Metering – Energy management – Other applications



The SkySweep IP Data Radio is transporter of IP data services to be connected to other Stations P2P (point-to-point) or P2MP (point-to-multipoint) or routing IP to fixed IP network through a IP capable Base Station.

Wide Area IP Network (Direct Mode)



In the direct mode the SkyIPR stations communicate directly with each other without any base station infrastructure. The SkyIPR stations need to stay within coverage of each other. The direct mode is often used in situations where no coverage of the base station network infrastructure is available.

The SkySweep IP Data Radio (SkyIPR) stations provides very cost efficient digital data communication and high coverage solutions on VHF to UHF frequency bands.

SkyIPR variants (bandwidths 12.5, 25, 50, 100, 150 kHz)	TX-power	DIN-RAIL	19"	Horiz	WLAN	Vi	CA	COM	TR
SkyIPR-5	5 Watt								
SkyIPR-20	20 Watt								
SkyIPR-20 19" 2U	20 Watt								

Explanations of abbreviations	
DIN-RAIL	DIN RAIL vertical clip mounting
19"	19 inch enclosure
Horiz	Horizontal enclosure mount possibility
WiFi / WLAN	Wireless LAN with 2 x diversity antennas
Vi	Video service capability (IP based applications)
CA	Customer own TCP/IP applications (email etc.)
COM	Data connection support RS232 / 422 / 485
TR	Tracking service capability (IP based applications)

Available SkyIPR VHF & UHF frequency ranges for order	
F1.1	68-88 MHz
F2.1	136-174 MHz
F5.1	378-470 MHz

Other frequencies by request

See about the SkyIPR device specs in the separate available datasheets.

Note: SkyIPR data radio specifications might be subject to change due to product innovation and improvements without prior notice.

SkySweep Technologies

Dedicated Solutions for High Speed HF/VHF/UHF DIGITAL RADIO

About SkySweep Technologies Oy

Operating World Wide the SkySweep Technologies provides HF/VHF/UHF digital voice and data radios, IP based data radios, controllers, high speed modems, protocols and applications.

Customers include Military, Embassies, public safety, transport companies, telecommunications operators, utilities, international aid organizations, oil and gas companies and security organizations. SkySweep digital radios are optimized for performance in harsh environments, supporting TCP/IP, STANAG5066, serial data and customer applications.

While every precaution has been taken in the preparation of this literature, SkySweep Technologies Oy assumes no liability for errors or omissions, or for any damages resulting from the use of this information. This document is protected by copyright belonging to SkySweep Technologies Oy and may not be reproduced or republished in whole or part in any form without the prior written consent of SkySweep Technologies. The contents and product specifications within it are subject to revision due to ongoing product improvements and may change without notice.



**If you have any questions about our products,
please do not hesitate to contact us:**

Global Sales:
E-Mail: sales@skysweep.com
Tel: +358 10 3465185
Web: www.skysweep.com

Mail: SkySweep Technologies Oy
P.O. Box 6
02661 Espoo - Finland
Street-Address: Linnoitustie 4