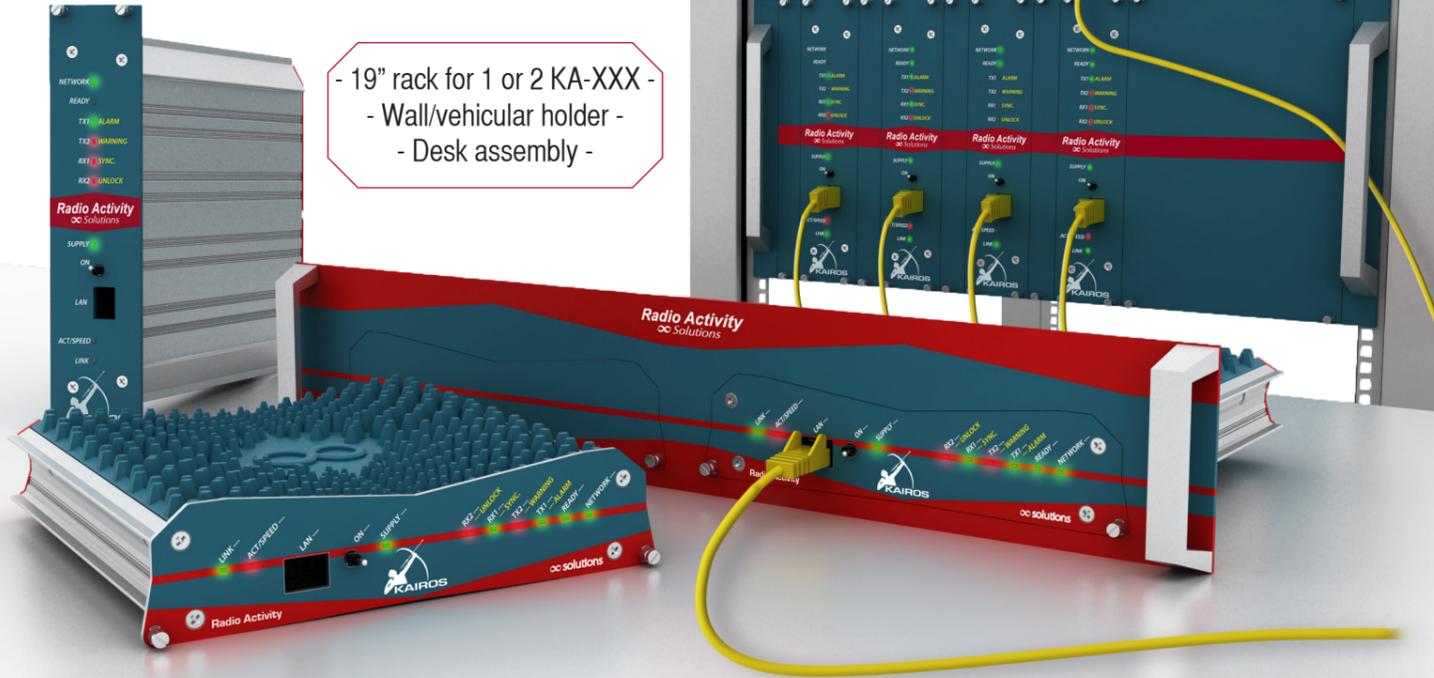


Mounting accessories



- 19" rack for 1 or 2 KA-XXX -
- Wall/vehicular holder -
- Desk assembly -

Engineering specifications

Available Models	Model	KA-080	KA-160	KA-350	KA-450	KA-500	KA-900
	MHz	66-88	136-174	350-400	400-470	450-527	850-960
Channelization	25/20/12,5/6,25 KHz						
RF output power	1-25 W / 100% duty cycle / selectable per channel						
Synthesis step	50Hz						
Frequency stability	0,5 p.p.m. (without GPS)						
Synchronization sources from	Internal, GPS/GLONASS, Ethernet, 2 wire, Digital RX, External						
Operating temperature	-30°C ÷ +60°C						
Power supply (negative ground)	Min.		Typ.		Max.		
		11V		13,8V		15V	
Power consumption	TX: 60 W @25W RF / RX: 5 W @Main+Div enabled						
Dimensions & weight	160x200x45mm / 3.2Kg						
Audio lines	2x 4 wire + E&M						
LAN port	Ethernet 10BT/100TX (auto MDI/MDI X) on an RJ45 socket						
IP multisite traffic	70 kb/s in analog to/from Master 24 kb/s in DMR to/from Master (both DMR timeslots)						
Maximus tolerable IP delay	960ms (round trip)						
Aux I/O	3xIO + 2xAnalog input						

Some specifications may change without prior notice.

Radio Activity
∞ Solutions

Via De Notaris, 50
20128 Milano - (Italy)
Tel. +39 0236 514 205
Fax. +39 178 2242408

E-mail: comm@radioactivity-tlc.it
Website: www.radioactivity-tlc.com
Designed & Manufactured in Italy

For more information please contact your local Radio Activity representative:

Little differences between real product and product indicated by printing material may occur due to printing reasons. Should any printing mistake occur, Radio Activity doesn't bear relevant responsibility.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

Radio Activity
∞ Solutions

Professional infrastructure for Digital Mobile Radio



KAIROS

Base station/Repeater

"Kairos" is a Greek word meaning the right time, a moment of time in which something special happens. Right timing is the secret of the Radio Activity digital simulcast technology. Years of study and experience just to fix the right moment in the core of our KA-XXX series of base stations.



Designed & Manufactured in Italy



Radio Activity KAIROS Base Station/Repeater

The KA-XXX coming out from the best Italian tradition, where all details, also the invisible ones, are important and need a care. Designing a mobile radio infrastructure is an art, that needs a complete knowledge of all the possible aspects to avoid unexpected situations. Our long experience in building infrastructure has generated this professional transceiver: the right building block for a number of applications ranging from a simple standalone repeater to a national wide system. We solved the complexity to ease your creativity.

Main Characteristics

The KA-XXX is a "soft radio" in which all the demodulation and filtering processes are achieved through SW algorithms implemented in Digital Signal Processing (DSP) devices. This technique assures repeatability and perfect matching between the base stations. Since a new protocol or a new standard is only a SW upgrade, the investment is future proof.

The KA-XXX has got an effective SW and HW platform that realizes a powerful embedded workstation. Its LINUX core, thanks to the continuous upgrading from thousands of developers around the world, interfaces naturally IP devices and networks. It allows also an high level of customizations to satisfy the most exigent Customer's needs, without troubles and reducing the development time.

The radio performances are at the top level in the market, because it is designed for infrastructure applications where radiofrequency pollution is a well known problem. Excellent resistance to adjacent channel and blocking, noiseless transmitter and soft diversity reception reduce in-field troubles and give excellent coverage and clean communications.

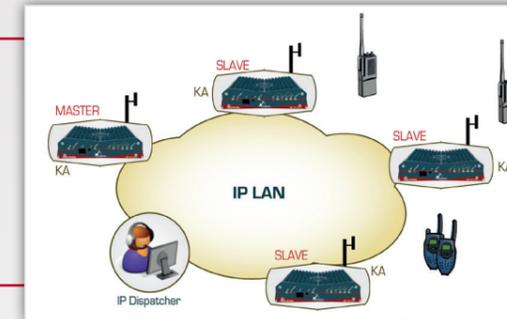
Key Features

- ∞ DUAL MODE; it performs the automatic switching between Analog and Digital modulation according to the incoming signal.
- ∞ IP MULTISITE MULTICAST AND SIMULCAST; it integrates all the necessary algorithms to realize professional multisite networks: IP interfaces, voting system, automatic equalization, protocol coherence, synchronization recovery, network managing, ...
- ∞ UHF LINKING; RF interconnections between sites where IP backbone is not available, carrying analog & digital signal. It's a MIXED LINKING NETWORK (IP+UHF chance).
- ∞ SYSTEM REDUNDANCY; it can be assembled as 1+1 (main + standby) and it supports the Backup Master functionality (a Slave that automatically replaces the failed main Master, restoring all the network functions). The LINUX platform allows a distributed elaboration in the system, increasing its flexibility and reliability.
- ∞ SOFT DIVERSITY RECEPTION; it is a receiving technique based on the vectorial treatment of two or more incoming signals. It strongly enhances the range and the clearness of a digital mobile communication system, removing fading holes.
- ∞ SIP/RTP-IP PORTS; a wide range of applications for Control Room benefit of this direct connection with the radio network: SIP/RTP-IP dispatching systems, automatic roaming between different networks and/or repeaters (mobility), automatic phone-radio bridging, ...
- ∞ POWERFUL REMOTE CONTROL; setup and network maintenance operations are simplified and speeded up thanks to this remote detailed monitoring and configuration tool. It allows also secure SW upgrade, IP backbone diagnosis and an overview of the complete radio system. The KA-XXX supports also the SNMP protocol for direct reporting to a generic surveillance system.
- ∞ LIGHT AND RUGGEDIZED; the robust assembly has a very compact size and weight. Thanks to its environmental robustness and its low power consumption, it is a "green" solution, able to survive in uncomfortable sites powered by just a small solar panel.
- ∞ RELIABLE; the power supply input is protected from short circuit, under/over/inversion voltage and transient. The RF power devices are protected from reverse power, over temperature and over current, allowing a 100% saving of the duty cycle.

Applications

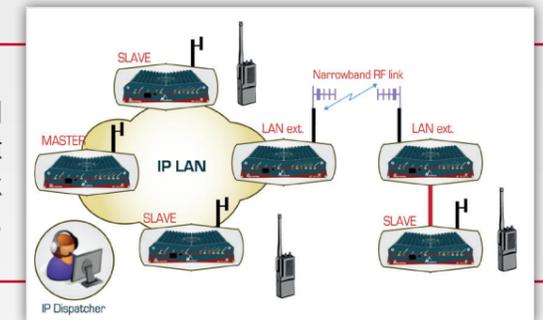
All configurations below are available both in multicast or in simulcast technology. They support the dual mode functionality, an IP-connected or a conventional dispatcher, a phone patching and the SIP mobility.

2 timeslots fixed/repeater station. The KA-XXX can manage the 2 DMR timeslots at the same time using a single antenna. It can be configured to access a radio network or, simply adding a duplexer, to act as a repeater, controlled by the dispatcher.

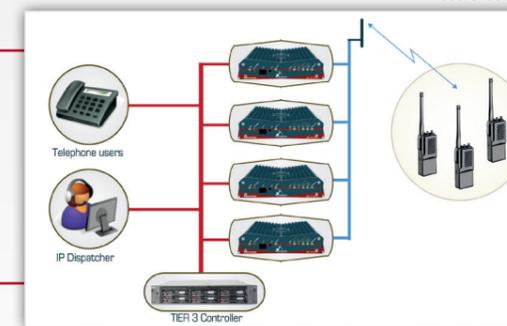


Base station IP-linked. The KA-XXX supports IP connections among the base stations to realize multisite hierarchical systems. The role of a device can be set as Master, Secondary Master, Slave or Backup Master. A Master manages up to 32 Slaves/Secondary Master.

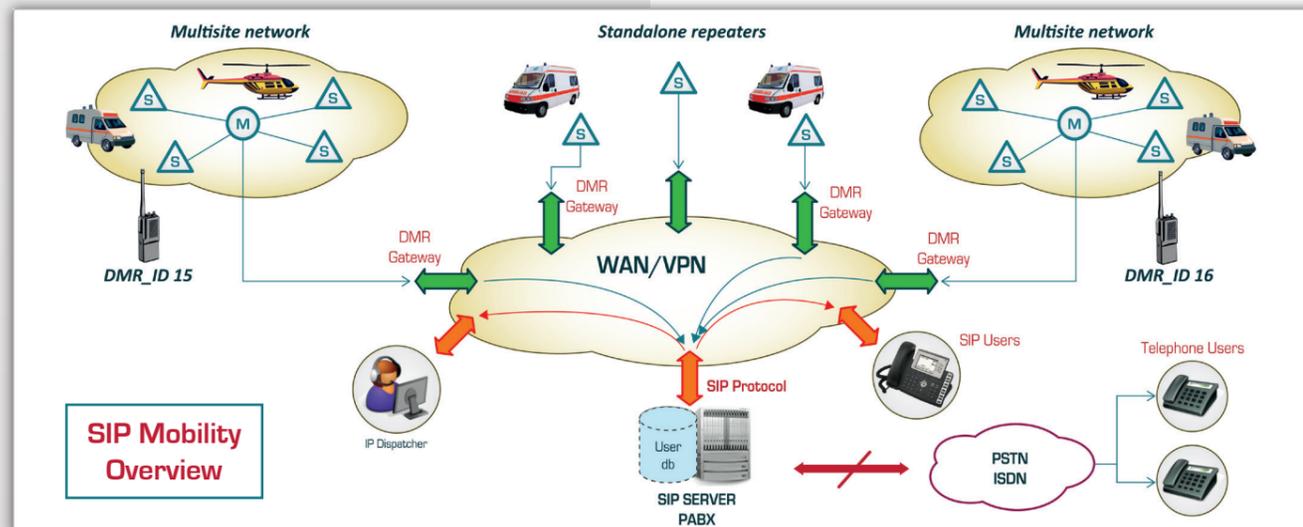
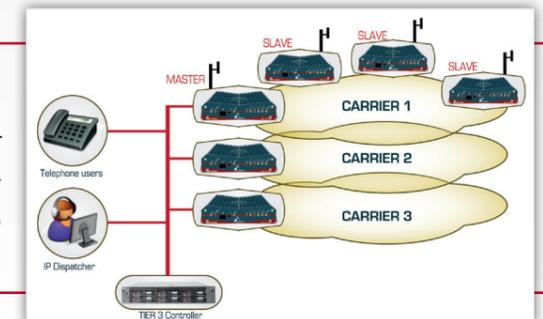
Base station RF-linked. A KA-XXX can be configured as "LAN extender" supporting the RF narrowband connection between different sites. It is a perfect solution in all the cases where a microwave link has not the required line of sight.



Single site TIER 3 trunking system. Adding the TIER3 Controller to a group of KA-XXX, the channels can be efficiently shared between all users according to the ETSI standard TIER3 Trunking protocol.



Multisite simulcast TIER 3 trunking system. The TIER3 Controller can manage a group of IP-linked simulcast networks realizing a wide-area trunking system.



Built-in signaling & protocols

- ∞ DMR TIER2 and TIER 3 protocols (group/individual calls, late entry, txt messages, GPS positioning, raw data, encryption, registration, ...)
- ∞ IP protocols with optimized bandwidth to link all the repeaters
- ∞ Synchronized CTCSS and DCS codec
- ∞ FFSK modem
- ∞ 1Hz programmable tone-key options
- ∞ SIP/RTP-IP protocol for direct connection to a dispatching system
- ∞ SNMP protocol for remote monitoring
- ∞ Multistandard analog selcall codec (ZVEI, CCIR, EIA, EEA, DTMF)
- ∞ Squelch tail cutting