TECHNICAL DATA

AR5000/ AR5000A

Frequency range	10 kHz – 2600 MHz (min. 5 kHz) 10 kHz – 3000 MHz with AR5000A
Tuning	NCO 1 Hz – 999.999999 kHz
Modes	AM, FM, USB, LSB & CW
I.F frequencies	1st I.F. 622.0 MHz 2nd I.F. 10.7 MHz 3rd I.F. 455 kHz
Standard fitted filters	3 kHz, 6 kHz, 15 kHz, 30 kHz, 110 kHz & 220 kHz, (500 Hz option)
Memory channels	1000(100ch x 10 banks)
Search banks	20
Memory scan speed	25 ch/s standard mode, 45 ch/s (max) in Cyber Scan
Search speed	25 ch/s in standard mode 45 inc/s (step size 100 kHz) in Cyber Search
PASS frequencies	2100 total 21 banks x 100 ch inc VFO)
Priority	1 channel
I.F. output	10.7 MHz ± 5 MHz max
External reference	10.0 MHz input
Mute	Phono/RCA socket CMOS input pull-up to 5 V at 100 kΩ
Operating temp.	0 to +50^{0}C
Aerial input	50 Ω unbalanced. N-TYPE & SO239
Audio output (13.5V)	1.7 WATT into 8 Ω at 10% THD
Power requirements	nominal 13.5 V d.c. (12 — 16 V) at 1 A or less
Dimensions (WxHxD)	217x100x260 mm
Weight	3.5 kg

ARK-1000

Number of inputs	4
Frequency ranges per inputs	
1. HF	1.5 — 30 MHz
2. LP/VHF	20 — 100 MHz
3. LP/UHF	100 — 1000 MHz
4. VHF/UHF	20 — 1000 MHz
optionally up to	3000 MHz
Input impedance	50 Ω
Output impedance	50 Ω
Input VSWR	≤2,5
Maximal input level	+ 17 dBm
Input connectors	N
Output connectors	BNC
Number of outputs	8
Attenuation of output to input	
1. HF	≥20 dB
2. LP/VHF	≥30 dB
3. LP/UHF	≥30 dB
4. VHF/UHF	≥30 dB
Attenuation between outputs	≥20 dB
Gain	1dB±1,5 dB
Noise factor	5 dB typical
Intermodulation, 2nd order	min. –40 dB
1 dB output compression point	min. +12 dBm
Output VSWR	≤1,5
Power supply	220 V ±10%, 50 Hz, 60 VA,
Operated temperature range	0 to +45°C
Dimensions (WxHxD)	132x428x415 mm

KNF-4, KNF-4/K

Audio inputs	
receivers:	RxI and Rx2
cassette recorder:	KAS-R and KAS-L
Auxiliary:	Auxin
Audio outputs	headset/speaker, Aux out, KAS-L, KAS-R
Input signal gain	
inputs Rx 1, Rx2, Auxin	0 dB
inputs KAS-L, KAS-R	**1**0 dB
Nominal output level for headset	-10 dBm, adjustable from - 20 to +15 dBm
Frequency response	20 Hz to 15 kHz ± 2 dB
Distortion (THD)	≤0,2 %
SINAD (S+N+D/N+D)	≥53dB
Auxiliary DC output	2 x (+12 V/1 A)
Antenna selection (for RxI and Rx2)	HF, VHF/UHF or LPA (VHF/UHF)
Power supply	220 V ±10%, 50 Hz, 60 VA
Dimensions (HxWxD)	132x428x415 mm
Operated temperature range	0 to +45°C

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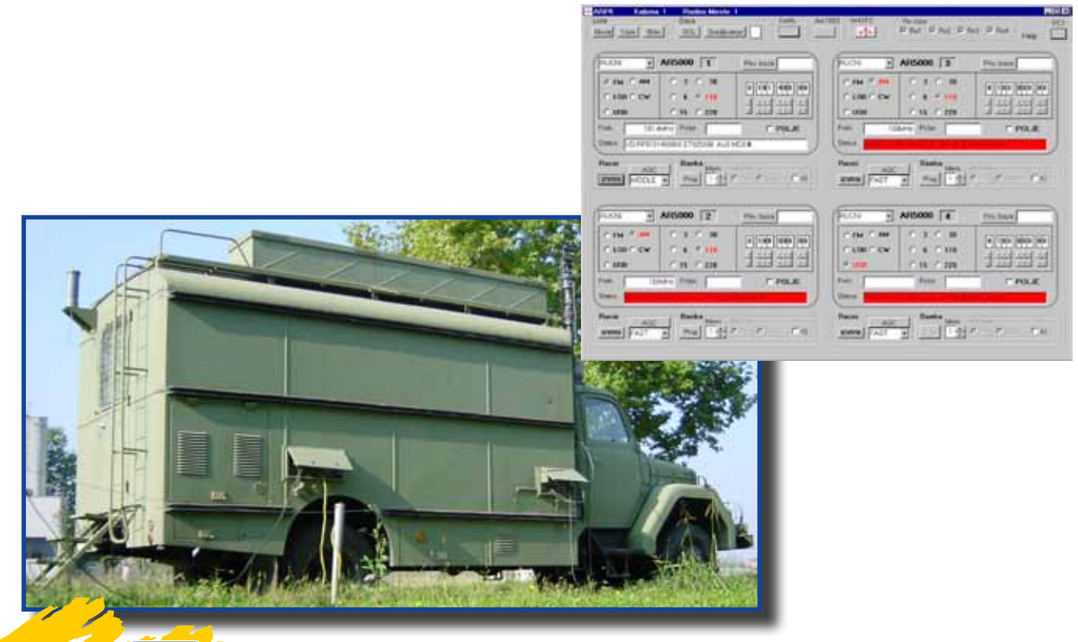
7/2005

Radio Communications

RMTA-1004

RADIO MONITORING AND TECHNICAL ANALYSIS SYSTEM

- **HF/VHF/UHF bands**
- **Frequency range: 1,6 - 2600/3000 MHz**
- **Signal classification and determination of parameters**
- **3 D spectrum representation (“waterfall”)**
- **Spectrum analysis**
- **Cost effective solution**



IRITEL bright connections

TELECOMMUNICATIONS AND ELECTRONICS
http://www.iritel.com e-mail: info@iritel.com

Applications

Radio Monitoring and Technical Analysis System RMTA-1004 is an computer controlled Communications Intelligence System used to provide scanning, monitoring and technical analysis of radio emissions of interest in the frequency range from 1,6 to 2600 MHz (option 3000 MHz). All the relevant collected data are stored in specially designed data base of built-in PC-s.

Basic configurations

RMTA-1004 contains:

- Antenna subsystem,
- Two operating positions for scanning, monitoring and technical analyses (TA),
- Two operating positions for scanning and monitoring (RM) and
- Line modem (56 kb/s) for remote control of RMTA-1004
- Option: Optical line terminal 8/155 Mbit/s

Antenna subsystem contains:

- Four antennas and
- Antenna distribution unit ARK-1000

TA operating position contains:

- Two radio receivers AR5000 (option AR5000A),
- One rugged PC, ADVANTECH,
- Technical analysis, demodulation and decoding unit W 41 PC MK II, built in PC,
- Audio distribution unit KNF-4/K,
- Signal classifier module, built in KNF-4/K and
- Double audio cassette recorder PMD 510.

RM operating position contains:

- Two radio receivers AR5000 (option AR5000A) and
- Audio distribution unit KNF-4.

Wide band receiver AR 5000

Main features

RMTA-1004 has various scanning, monitoring and signal analysis possibilities in HF/VHF and UHF frequency range.

The applications software ARPK made in Visual Basic 6 (Windows NT 4.0 PC operating system) enables control of all functions of RMTA-1004 system:

- Scanning and monitoring algorithms,
  - Fixed frequency operation
  - Memory scanning
  - Band scanning
  - Signal classification
  - Technical analysis
  - Demodulation
  - Decoding of different coding systems
- Control of antenna distribution unit, radio receivers, audio distribution units, audio cassette recorders, technical analysis, demodulation an decoding unit and line modem,
- Data base creation
- Remote control of RMTA-1004
- Software packages ARPK:
  - Remote control of AR5000A radio receivers
  - Spectrum scanning and monitoring of radio emissions
  - 3D spectrum representation
  - Signal classification
  - Data decoding

Radio Monitoring and Technical Analysis System RMTA-1004

Antenna distribution unit ARK-1000

Audio distribution unit KNF-4/K

Wide band receivers AR5000/AR5000A

AR5000/AR5000A is modern microprocessor controlled receiver which covers the whole frequency range specified for RMTA-1004. The main features of receiver are:

- High speed Cyber Scan and Cyber Search,
- Multi VFO (5-VFO),
- A minimum of 1 Hz tuning rate by NCO,
- Auto aerial selection - programmable,
- Wide range of search/scan facilities,
- Pre-programmed automode (receive mode, step size, IF bandwidth),
- Step-adjust for unusual banplans,
- Standard TCXO plus external 10 MHz input,
- RS232 PC remote control,
- Large capacity EEPROM.

All functions of receivers can be controlled by PC-s or by front panel keyboards of receivers.

Antenna distribution unit ARK-1000

Basic purpose of ARK-1000 is to receive the four antenna signals within the frequency range of interest and distribution/commutation of the received signals to eight receivers.

All control functions of ARK-1000 are supported by an internal microprocessor module with front panel key pad and status display which show connection between antenna inputs and outputs. ARK-1000 has two standard RS-232 interfaces for connection with two PC-s, four interfaces for connection with KNF-4 units and two interfaces for tape recorders control.

Choice of wanted antenna, for each of eight receivers, can be done by front panel keypad of ARK-1000, from front panels of KNF-4 units or by keyboards of two PC-s.

Audio distribution units KNF-4, KNF-4/K

Audio distribution units KNF-4 and KNF-4/K enables selection of audio signals for monitoring by headphones or speaker and recording by tape recorder. Output levels of selected signals are adjustable. KNF-4/K has built in an additional signal-processing module for signal classification.

One KNF-4 or KNF-4/K is connected with two receivers and one tape recorder. There are interconnections between KNF-4 and KNF-4/K units at RM and TA positions.

KNF-4 and KNF-4/K are also connected with antenna distribution unit ARK-1000. This connections enables the operator to select antenna inputs for two receivers by front panel keyboard of KNF-4.

Radio Monitoring and Technical Analysis System RMTA-1004