

**ST131«PIRANHA II»,
ST131N
Multifunctional
detection devices**



PURPOSE

Multifunctional detection devices ST 131 PIRANHA-II and ST131N are intended for detecting and localization of eavesdropping devices as well as identification of natural and artificial sources of information leakage.

■ **ST131N has additional option of NON LINEAR JUNCTION DETECTOR IN WIRE LINE.**

The main types of the Bugging devices , for detection of which ST131 is designed are following:

The Bugging devices with transmission of information by radio channel:

- RF microphones including devices with storage and subsequent transfer of information (burst transmitter) and Frequency Hopping Spread Spectrum (FHSS);
- RF stethoscopes.
- Wireless cameras.
- Mobile phones and modems of the CDMA, GSM, 3G, DECT standards used without authorization.
- Devices using digital channels of data transmission of the 4G, WLAN and BLUETOOTH standards.
- GPS tracker

The Hardware wiretap that use telephone, coaxial, security and fire alarm lines for information transfer in audio and RF frequency range

Carrier Current Bug

The Bugs that are characterized by transmission of information in infrared, visible and ultrasonic frequency range



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DETECTION CHANNELS

ST131 has four detection channel which cover frequency range 10Hz -18GHz:

- **RADIO** **0.01-18000 MHz**
- **WIRE LINE** **0.0003-3000 MHz**
- **OPTICAL** **770-1600/550-1100nm**
- **ACOUSTOELECTRIC** **0.01-125KHz**

and option

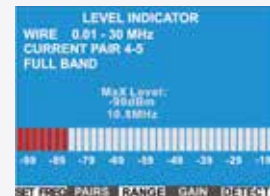
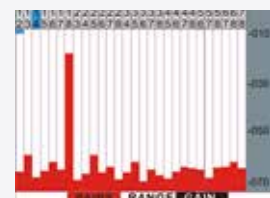
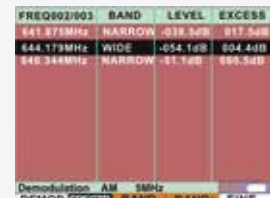
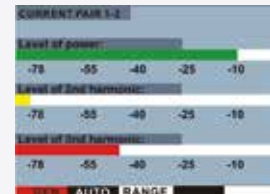
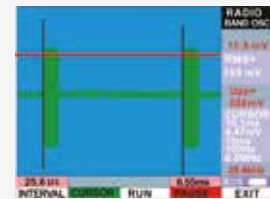
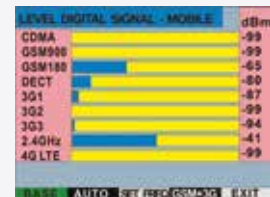
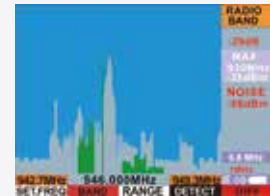
- **NON LINEAR JUNCTION DETECTOR IN WIRE LINES for ST131N.**



The ST131 is used in two basic use case:

“**HANDHELD**” This variant is intended for operational movement on the survey area,

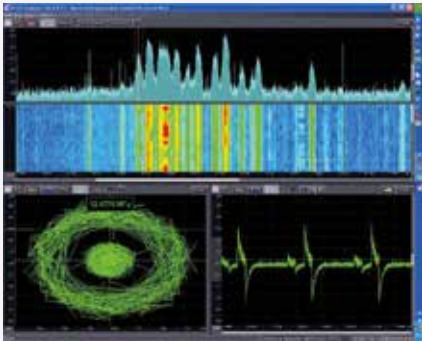
“**STATIONARY**” In this case the ST131 is used with PC running special software «ST131 ANALYZER PRO».



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SPECIAL SOFTWARE «ST131 ANALYSER PRO»

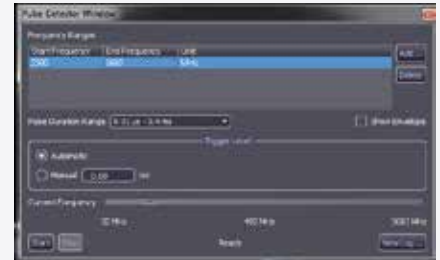


Spectral, oscillographic and vector analysis

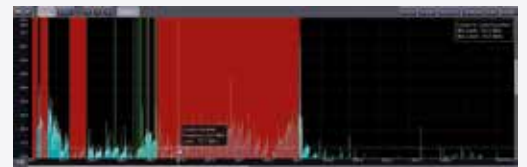
Data base of wireless standarts



24/7 Monitoring mode



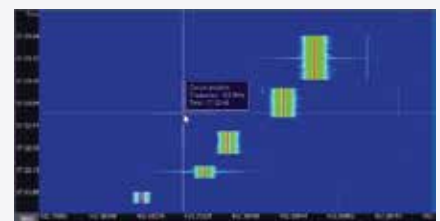
Detection of pulse signals



Using Templates



Automatic analysis and classification of signals



Waterfall mode

“ST131 ANALYZER PRO” software expands capabilities of ST131 for analyzing and processing of signals.

Firmware updates via internet.

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COMPLETE SET

Main unit	1
UHF converter (ST131.UHF)	1
Wire line adapter ST 131.AWL (ST 131.AWLN for ST 131N)	1
Wire line radio adapter ST 131.RAWL	1
Adapter «F- BNC-SMA»	1
Telescopic antenna	1
Broadband UHF antenna (ST131.UHF.A)	1
Test Leads	1
Power supply unit	2
Main unit supporting block	1
Main unit shoulder holder	1
Tripod	1
USB cable	1
AA batteries	8
Headphones	1
USB flash drive	1
User manual	1

ADDITIONAL COMPLETE SET

1. SHF antenna-detector ST131.SHF
2. Infrared probe ST131.IR
3. Magnetic field probe ST131.MAG
4. Testing device ST131.TEST

SPECIFICATIONS

DIGITAL SIGNAL PROCESSING MODULE

Simultaneous processing frequency range, MHz	0.01-30
Resolution of ADC, bits	10, 14, and 16
Number of FFT points	32768 (with PC software) 512 (the ST131 main unit)
DDC filter bandwidth, MHz	0.0005-10 MHz
Demodulators	AM, FM, SSB, TV (AM)
Detectors	RMS, average, peak-hold, quasi-peak

RADIO CHANNEL

Frequency range 1, MHz	0.01-30
Displayed noise level FULL RANGE, dBm	Minus 110 (minus 130 for PC software)
Input signal maximum level, dBm	5
Frequency range 2, MHz	30 - 4400
Displayed noise level	
• FULL RANGE, dBm	Minus 90 (minus 100 for PC software)
• 1 KHz bandwidth, dBm	Minus 110
Maximum input level, dBm	5
Analysis speed, not less, GHz/sec, at least	10
Input attenuation value, dB	0 - 30 with step 5
Identifiable standards of data communication	CDMA, GSM, 3G, 4G, WLAN, DECT
Frequency range 3, MHz	4000 - 18000
Threshold sensitivity, dBm	Minus 65

“WIRE” CHANNELS

Frequency range 1, KHz	0.3-15
Displayed noise range, not worse, dBm	Minus 115 (minus 140 for PC)
Common mode rejection ratio (CMRR), not less, dB	60
Maximum allowed input voltage, V	250
Frequency range 2, MHz	0.01-30
Displayed noise level FULL RANGE, dBm	Minus 90 (minus 120 for PC)
Input signal maximum level, dBm	10
Maximum allowed input voltage, V	250
Frequency range 3, MHz	30-3000
Displayed noise level FULL RANGE, dBm	Minus 90 (minus 100 for PC)

“OPTICAL” CHANNEL

Threshold sensitivity, dBm	Minus 70
Dynamic range, not worse, dB	75
Frequency range, MHz	0.01-10

“ACOUSTO-ELECTRIC” CHANNEL

Frequency range, KHz	0.01-125
Displayed noise level FULL RANGE, dBm	Minus 110 (minus 140 for PC software)

NON-LINEAR JUNCTION DETECTOR

Frequency of test signal, KHz	150-220
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MAIN UNIT

Dimensions, mm	190 x 97 x 50
Weight (without batteries), kg	0.8
Indication	TFT, 3.5", 240x320, 262,144 colors
Interface	USB 2.0, up to 224 Mbit/s
Supply current, A	0.4-0.6
Power supply	6 AA type batteries (or rechargeable batteries)

PURPOSE

■ The «ST131.TEST» is intended to control operability of ST131.

The main unit has six control signal sources which provide a check of all detection channels

SPETIFICATIONS

OUTPUT "UHF":

Frequency, MHz	200, 600,1000,1750,3500
Level of signal, dBm	-45+/-5
Type of modulation	AM, FM, FHSS
Frequency of modulation, Hz	300, 600, 1000, 1500

OUTPUT "CH2" AND SOURCE OF MAGNETIC FIELD "MAG":

Frequency, kHz	1, 5, 15, 60, 120
Level of signal, dBm	-35+/-5

OUTPUT "AWL"

Frequency, kHz	1, 3, 5, 10, 14, 500, 1000, 5000, 10000, 20000
Level of signal, dBm	-30+/-3

SOURCE OF SHF RADIO EMISSION "SHF"

Frequency, GHz	8
Type of modulation	PCM

SOURCE OF INFRARED EMISSION "IR":

Spectral range, by level of 10%, nm	750±1100
Type of modulation	PCM

POWER

Power	Li pol akk, 2.2A/h
Maximal current consumption, mA	<500
Dimensions of main unit, mm	110X60X28:

COMPLETE SET

1. Main unit
2. Cable "RJ-45"
3. Cable "SMA-SMA"
4. Adapter "F-BNC"
5. Power supply



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SETTINGS..
RADIO 30 - 4100MHz
RADIO 4 - 18GHz
WR-RD 0.01 - 30MHz
WIRE 0.3 - 15kHz
WIRE 30-1000MHz
OPTIC .001- 30MHz
ACOUST .01-125kHz
    
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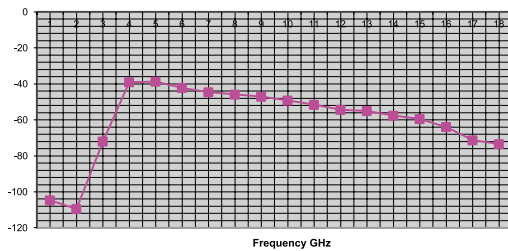
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RADIO 30 - 4100MHz
Carrier frequency
3500.00MHz
Modulation AM
Freq 600Hz
Power ON
    
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Additional probes for ST131 PIRANHA II and ST131N

ST131.SHF SHF ANTENNA-DETECTOR

Frequency range, MHz	4000-180000
Threshold sensitivity, W/cm ²	2x10 ⁻¹⁰
Directional pattern width, degree	30-60



ST131.IR INFRARED PROBE

Frequency range, MHz	0.01-30
Dynamic range, dB, not worse	75
Spectral range, nm	770-1600
Angle of sight, degree	30
Total length of stand, m	0,9
Maximal angle of turn, degree	180



ST131.MF MAGNETIC FIELD PROBE

Frequency range, Hz	30 - 30000
Threshold sensitivity, A/m * Hz ^{1/2} , less than	2x10 ⁻⁶

