

IDA-3106
Interference Analyzer



Interference and Direction Analyzer

Portable signal analyzer for radio monitoring and interference analysis from 9 kHz to 6 GHz. Active directional antennas with embedded electronic compass for emission location from 20 MHz to 6 GHz

- ▲ Extremely fast sweep time at 12 GHz/s
- ▲ Real-time bandwidth of up to 32 MHz for intercepting short term signals
- ▲ Direction Finding Mode with automatic azimuth determination
- ▲ Embedded GPS receiver and electronic compass for easy emitter location
- ▲ SmartDF manages triangulation results and automatically calculates emitter positions
- ▲ Rugged and highly size-efficient low weight package (less than 3 kg)

OPTIONAL

- ▲ Mapping capabilities with onboard maps stored on microSD card
- ▲ High resolution oscilloscopic view for signal classification
- ▲ I/Q demodulation recorder



IDA-3106 Analyzer with Directional Antenna

DESCRIPTION

IDA-3106 is a highly sensitive signal analyzer combining excellent RF signal selectivity with high speed monitoring capabilities and built-in geolocation tools including dual-compass and mapping software. The system is designed for portable use and outdoor field applications as well as for indoor emitter location and is the ideal solution when high mobility and rapid deployment are essential.

The main tasks for IDA-3106 are detecting, classifying and localizing RF signals. The unique directional antenna set with embedded electronic compass and data communication between antenna and analyzer makes these jobs very easy. Outstanding for a portable device are such features as Horizontal Scan with automatic azimuth determination and SmartDF for auto calculation of emitter positions.

The rugged, ergonomic design withstands mechanical stress, foul weather conditions and very high RF exposure.



Outdoor localization of radio transmitters

APPLICATIONS

Further rapid growth in the use of mobile wireless technologies is certain. The risk of RF interference due to unintended emissions will increase as a result. IDA-3106 has been developed to quickly detect and find any kind of RF emission. Some example applications are:

- Detecting interference caused by industrial facilities**
- Securing communication at mega events**
- Localization of emergency transmitters**
- Jammer location**
- Radio monitoring tasks**
- Security-critical missions**
- Localization of miniature transmitters**
- Signal monitoring for border patrols**
- Close range reconnaissance**
- Detection of improvised explosive devices (IED)**



Interference may be generated by sources at a shared antenna site



Securing communication on events

OPERATING MODES

Detecting, classifying and localizing emissions successfully greatly depends on result visualization. IDA-3106 meets this requirement, thanks to its various operating modes and impressive presentation of measurement results. The following operating modes are available:

- SPECTRUM
- DIRECTION FINDING
- MULTI CHANNEL POWER
- LEVEL METER
- SCOPE and IQ Demodulation (option)

Spectrum

Spectrum mode provides extremely fast scans across the entire frequency range, ideal for detecting, monitoring and analyzing all kinds of signals. A full 6 GHz spectrum scan is performed in less than 500 ms, even for high-resolution results (RBW = 500 kHz, 250 kHz marker resolution).

The extremely low noise level down to -30 dB μ V/m in conjunction with Narda Directional Antennas allows the detection even of very low-power devices.

Resolution bandwidths range from 10 Hz to 20 MHz to match any modern communications equipment or even of pulsed signals. Maximum (Max), average value (Avg) and minimum (Min) traces allow initial classification of the nature of a signal.

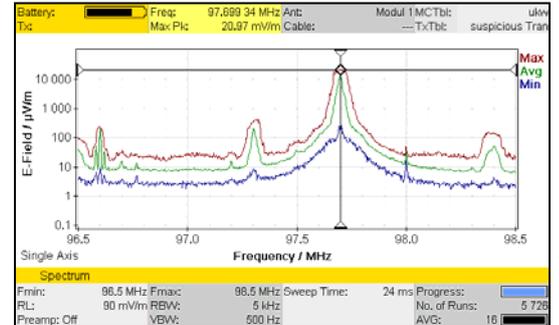
Suspect signals can be isolated using convenient marker functions, can be quickly zoomed in on and directly transferred to the other operating modes for in-depth analysis.

SPECTROGRAM (Waterfall) view is ideal for long-term surveillance of the RF spectrum and identification of permanent, transient and frequency-hopping signals. This view also allows identification of emitters with varying power and/or varying bandwidths.

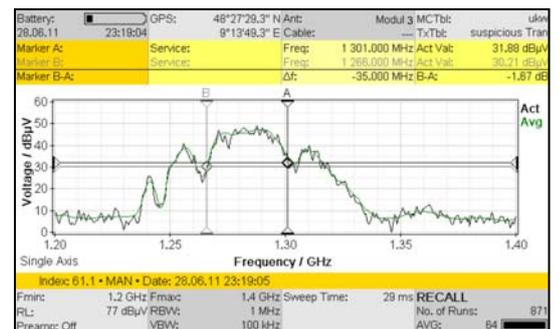
An outstanding feature is the capability of simultaneously recording RMS, +Peak and -Peak traces of the spectrogram.

The large 7-inch color display presents the results as a

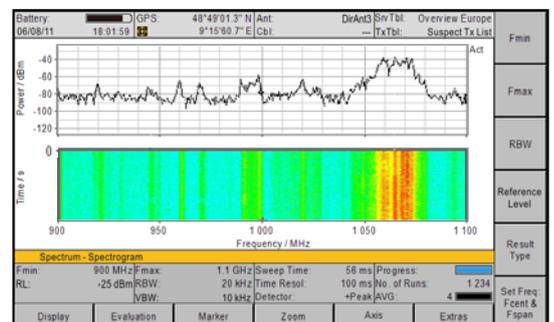
- a spectrum,
- a spectrogram,
- a spectrum and spectrogram,
- or as a table of highest peaks



Spectrum view for detection purposes



Spectrum view for initial classification of signals



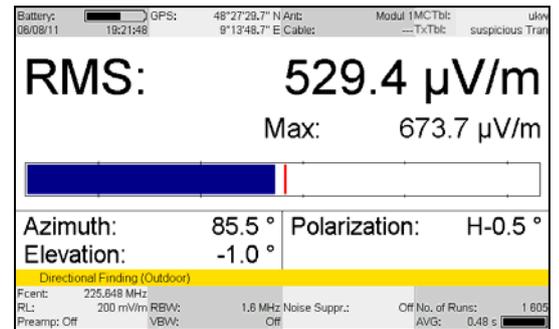
Spectrum and Spectrogram view for transient detection

Direction Finding

(requires Narda directional antennas)

Manual Bearing

Once the signals of interest have been identified, bar graph and numerical representation of the signal level make it easy to determine the direction (maximum level). Alongside the screen information, an audible tone dependent on field strength is available to enable location of hot spots without looking at the monitor. The current antenna orientation is displayed on the IDA screen, and is updated continuously with the aid of an embedded electronic compass. Supplemented by the position measured by the integrated GPS receiver, this provides ideal support for classical direction finding.

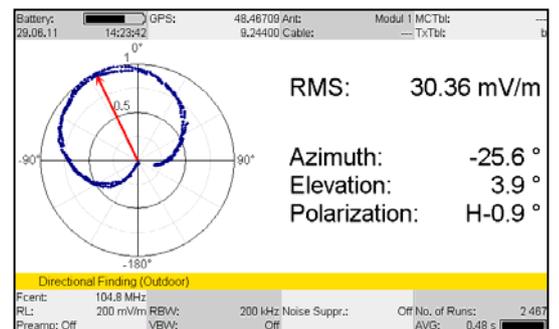


Direction finding using Manual Bearing

Horizontal Scan

Horizontal Scan provides accurate and automatic determination of the azimuth of the targeted emitter. For each frequency of interest a scan is started and stopped by pushbutton on the antenna handle, with the antenna being smoothly rotated horizontally during the scan. A transmitter table of frequencies can be created to simplify and speed up scanning of multiple signals.

The measurement results of a horizontal antenna scan are shown in a polar diagram. Based on this information, IDA calculates the most likely direction of the emitter. Continuous or discrete point scans can be performed. Audio indication helps to keep the antenna levelled to avoid polarization or elevation errors. As soon as the scan result has been saved, SmartDF handles further processing.



Horizontal scan is a quick direction finding tool

SmartDF

Localization can be performed by triangulation from at least two direction-finding results. An additional estimation of the distance to the emitter can be made by considering the signal attenuation vs. distance. The SmartDF algorithm determines latitude and longitude of the targeted emitter based on the saved Horizontal Scan or Manual Bearing results. Positions and directions are displayed as a graph, underlaid with an optional map. No more need for paper maps, compass and pencil. For indoor use (e.g. in conference rooms) SmartDF supplies an editable room plan display.

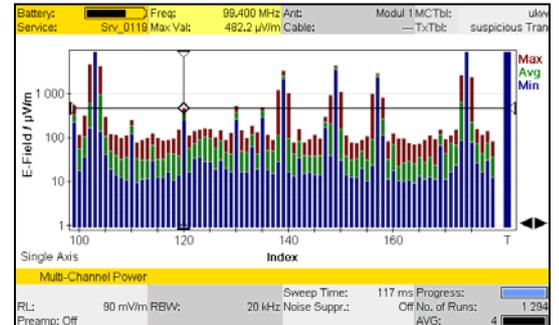


Optional maps support localization of an emitter

Multi Channel Power

MCP mode is perfect for a very fast overview of specified frequency bands or channels. Service tables can be defined containing up to 500 freely selectable channels each with a dedicated RBW and service name.

Simultaneous representation of maximum (Max), average (Avg) and minimum (Min) values allows immediate distinction between permanent and non-permanent signals.



Multi Channel Power for an overview of who is on air

Level Meter

Level Meter mode allows selective measurements at a defined frequency (Fcent) e.g. for monitoring a specific channel (Zero Span operation). Resolution bandwidth (RBW) can be set according to the channel width in the range of 100 Hz to 32 MHz. The steep filter characteristics provide precise separation from adjacent channels. Peak detector values (for short pulsed) and RMS detector values (for fluctuating signals) are displayed simultaneously. Level Meter mode provides gapless and interruption-free measurements.



Level Meter for gapless signal measurements

Scope and IQ Demodulation (Option)

Scope mode provides an oscilloscopic view of signals. Almost all details can be made visible in this mode to allow rapid classification. The minimum resolution time of 32 ns even allows analysis of high-speed data transmissions or pulsed signals such as radar. A top sweep time of 24 hours allows full-day power monitoring of a single carrier. Extensive trigger functions allow for triggering and subsequent display of burst signals including a pre-trigger view.

RF signals can be completely described by I/Q data. The I/Q Demodulation Recorder enables the user to store I/Q data on the instrument and transfer it to PC for analysis.



Scope view for detailed analysis versus time

ACTIVE DIRECTIONAL ANTENNA SET

Narda offers a set of three directional antenna modules covering the frequency range from 20 MHz to 6 GHz. This addresses all major applications for interference and direction finding.

The snap-in connector of the Active Antenna Handle picks up one of the directional antenna modules aligned for either horizontally or vertically polarized signals. IDA recognizes the type of antenna, alignment (H or V) and corresponding antenna factors. Correction data based on the frequency response calibration of the handle is automatically transferred to the instrument. Inside the antenna handle a low noise, switchable amplifier (0 dB/ 20 dB) provides very high sensitivity for weak signals. Position sensors in combination with a 3D high resolution compass accurately determine the current antenna orientation. This information is automatically transferred to the IDA-3106 and assigned to the measured RF signal.

Measurements from different locations are tracked by the IDA embedded GPS receiver. Thus, triangulation can be performed immediately and the results then be graphically displayed on the screen of the IDA-3106. Triangulation becomes even more effective with the Option Mapping, drawing bearing results and suspected emitter positions directly onto a map.

IDA-3106 can also be used with antennas from other manufacturers, e.g. for signal monitoring with omnidirectional antennas.

OTHER FUNCTIONS

Additional functions support practical applications during measurement, analysis and evaluation. They make the IDA-3106 into a masterpiece for interference finding, triangulation and localization:

Delta spectrum for easy detection of newly appeared emitters (available in 2012)

High capacity time- or event-controlled data logger

Demodulation (via build in speaker or headphone)



Directional Antenna 1, ranging from 20 MHz to 250 MHz



Directional Antenna 2, ranging from 200 MHz to 500 MHz



Directional Antenna 3, ranging from 400 MHz to 6 GHz

DEFINITIONS AND CONDITIONS

Conditions

Unless otherwise noted, specifications apply after 30 minutes warm-up time within the specified environmental conditions. The product is within the recommended calibration cycle.

Specifications with limits

These describe product performance for the given parameter covered by warranty. Specifications with limits (marked as <, ≤, >, ≥, ±, max., min.) apply under the given conditions for the product and are tested during production taking measurement uncertainty into account.

Specifications without limits

These describe product performance for the given parameter covered by warranty. Specifications without limits represent values with negligible deviations which are ensured by design (e.g. dimensions or resolution of a setting parameter).

Typical values (typ.)

These characterize product performance for the given parameter that is not covered by warranty. When stated as a range or as a limit (marked as <, ≤, >, ≥, ±, max., min.), they represent the performance met by approximately 80 % of the instruments. Otherwise, they represent the mean value. The measurement uncertainty is not taken into account.

Nominal values (nom.)

These characterize expected product performance for the given parameter that is not covered by warranty. Nominal values are verified during product development but are not tested during production.

Uncertainties

These characterize an interval for a given measurand estimated to have a level of confidence of approximately 95 percent. Uncertainty is stated as the standard uncertainty multiplied by the coverage factor k=2 based on the normal distribution. The evaluation has been carried out in accordance with the rules of the "Guide of the Expression of Uncertainty in Measurement" (GUM).

SPECIFICATIONS

Basic Unit IDA-3106			
RF DATA ^{a)}			
Frequency	Frequency range	9 kHz to 6 GHz	
	Phase noise (SSB)	< -100 dBc/Hz (@ 300 kHz carrier offset) verified at (57.5 / 2140.5 / 4500.5) MHz	
	Reference frequency	Initial deviation < 1 ppm Aging < 1 ppm/year, < 5 ppm over 15 years Thermal drift < 1.5 ppm (-10 °C to +50 °C)	
Amplitude	Display range	From Displayed Average Noise Level (DANL) to +20 dBm	
	Reference level (RL)	-30 dBm to +20 dBm in steps of 1 dB	
	RF Input attenuation	0 to 50 dB in steps of 1 dB (coupled with reference level)	
	Reference level setting	Set individually from a list or using the "RL Search" function for determining the optimum reference level at a given time	
	Level uncertainty	≤ 1.2 dB (15 °C to 30 °C) valid for Spectrum Analysis and Multi Channel Power modes	
	Displayed Average Noise Level (DANL) Basic unit only	f ≤ 30 MHz: < -160 dBm/Hz (noise figure < 14 dB) f ≤ 2 GHz: < -156 dBm/Hz (noise figure < 18 dB) f ≤ 4 GHz: < -155 dBm/Hz (noise figure < 19 dB) f ≤ 6 GHz: < -150 dBm/Hz (noise figure < 24 dB)	RL=-30 dBm (input attenuation = 0 dB)
	Displayed Average Noise Level (DANL) in conjunction with Active Antenna Handle, preamp on, (typ.)	f ≤ 3 GHz < -167 dBm/Hz (noise figure 7 dB) f ≤ 4 GHz < -166 dBm/Hz (noise figure 8 dB) f ≤ 6 GHz < -164 dBm/Hz (noise figure 10 dB)	
	3 rd order intermodulation	< -60 dBc for two single tones with a level of 6 dB below RL, spaced by 1 MHz or more	
	Spurious responses (input related)	< -60 dBc or RL -60 dB (whichever is worse) and a carrier offset of 1 MHz or more	
	Spurious responses (residual)	< -90 dBm (RL=-30 dBm, input attenuation = 0 dB) For (294 to 306) MHz and (4534 to 4586) MHz limited to < -85 dBm	

a) RF data apply in the temperature range of 20°C to 26°C and a relative humidity between 25 % and 75 %.

RF input	Type	N-Connector, 50 Ω, female	
	Maximum RF power level	+27 dBm (destruction limit)	
	Maximum DC voltage	±50 V	
	Return loss	> 12 dB (typ.), f ≤ 4.5 GHz > 10 dB (typ.), f > 4.5 GHz	RL ≥ -28 dBm (input attenuation ≥ 2 dB)

OPERATING MODES		
Operating modes	Measurements vs. frequency	Spectrum Analysis Multi Channel Power
	Measurements vs. time	Level Meter Scope (option)
	Measurement vs. orientation/position	Direction Finding including Horizontal Scan and Localization

SPECTRUM ANALYSIS		
Measurement principle	Spectrum analysis	
Resolution bandwidth RBW, (-3 dB nominal)	10 Hz to 20 MHz (in steps of 1, 2, 3, 5, 10, 20, ...)	
Video bandwidth VBW	Off, 0.2 Hz to 2 MHz (in steps of 1, 2, 3, 5, 10, 20, ... coupled with selected RBW)	
Filter	Type	Gaussian
	Shape factor (-60 dB/ -3 dB)	3.8 typical
Result Type	Act:	Displays instantaneous (actual) spectrum
	Max:	Maximum hold function
	Avg:	Average over a selectable number of spectra (4 to 256) or a selectable time period of 1 to 30 minutes
	Max Avg:	Maximum hold function after averaging
	Min:	Minimum hold function
	Min Avg:	Minimum hold function after averaging
Units	With Antenna	V/m, A/m, W/m ² , mW/cm ² , dBV/m, dBmV/m, dBA/m, dBμV/m
	Without Antenna	dBm, dBV, dBmV, dBμV
Display functions	Y-scale reference:	-130 dBm to 40 dBm
	Y-scale range:	20 dB, 40 dB, 60 dB, 80 dB, 100 dB, 120 dB
	Screen arrangement:	help line, status lines on/off
	Spectrogram	(available in 2012)
Marker functions	Highest peak, next peak right, next peak left, next higher peak, next lower peak Information provided by marker: frequency, level, channel name according to selected channel table.	
	Delta marker to measure difference in level and frequency of the same trace or to display the difference between two different traces e.g. average and maximum at the same frequency	
Evaluation functions	Peak table (list of up to 50 highest peaks)	
	Channel power measurement	
Spectrogram time axis (available in 2012)	Up to 288 traces	
	Observation length: app. 2.88 s up to 28.8 hours	
	Time resolution: as fast as possible, 10 ms, 20 ms, 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s, 20 s, 50 s, 1 min, 2 min, 5 min or 6 min	
Spectrogram detection (available in 2012)	RMS, +Peak, -Peak	
Zoom	Select frequency window for zoom by: Zoom Min, Zoom Max, Zoom Cent, Zoom Span	
	Execute Zoom: sets selected frequency window to measured frequency range	
Extras (Transfer Parameters)	Transfers center frequency and span to other operating modes	

MULTI CHANNEL POWER	
Measurement principle	Spectrum analysis, followed by Channel Power evaluation
Number of channels	1 to 500, to be defined on instrument or by IDA-Tools PC software
Channel band width CBW, (-3 dB nominal)	Individually selectable for each channel, from 40 Hz to 6 GHz
Roll-off factor	$< 4 * RBW / CBW$
Applied RBW	Automatic: Frequency range of channel divided by 4 but not more than 20 MHz Manually: Can be set in the range of available RBWs of spectrum analysis, but not more than CBW of channel divided by 4
Name of channel	User definable, maximum 15 characters Automatic creation of communication channel lists by PC software. Channel name is assigned automatically
Detection	Root mean square value (RMS), integration time = 1 / RBW
Result Type, Unit, RBW	See spectrum analysis mode
Display: Table view	Channel name, corresponding frequency band, measurement result, RBW if set individually for each channel Sort function according to columns
Display: Bar graph view	Bar graph for measurement result of each channel
Evaluation function: Distribution	Distribution of each channel in relation to total amount
Marker functions for bar graph view	Highest peak, next peak right, next peak left, next higher peak, next lower peak Information provided by marker: channel index, level, channel name according to selected channel table Delta marker to measure difference in level between two different channels or to display the difference between two different result types e.g. average and maximum at the same channel
Noise threshold	Identifies whether measured values are above device noise floor. Setting of an additional threshold possible. Selectable at 0, 3, 6, 10, 15, or 20 dB relative to device noise floor. Measurement values below threshold are shown as the absolute threshold value marked with "<" (less than threshold)
Others	Summarizes all measurement values for frequency gaps within the list of channels and shows the total value for all gaps. Value is displayed as an additional channel in the channel list. Can be switched off if not required
Extras (Transfer parameters)	Transfers center frequency and span to other operating modes

SCOPE (OPTION)		
Measurement principle	Selective level measurement at a selectable frequency from 9.05 kHz to 5.999 999 95 GHz	
Resolution bandwidth RBW, (-6 dB nominal)	100 Hz to 32 MHz (in steps of 100, 125, 160, 200, 250, 320, 400, 500, 640, 800, 1000, ..., 10 MHz, 13.333 MHz, 16 MHz, 20 MHz, 26.666 MHz, 32 MHz)	
Filter	Type	Steep cut-off channel filter (app. raised cosine)
	Roll-off factor	0.16
Video bandwidth (VBW)	Off, 0.01 Hz to 32 MHz (depending on the selected RBW)	
Sweep Time	500 ns to 24 h	
Time Resolution	Selectable from 31.25 ns up to 90 min	
Result type	Time resolution = 1/ RBW	Act: Instantaneous magnitude value I, Q or I & Q (Option, I/Q Demod Recorder)
	Time resolution > 1/ RBW	MAX: Maximum value within the time resolution interval (corresponds to peak detector). AVG: Average value within the time resolution interval (corresponds to RMS detector). MIN: Minimum value within the time resolution interval.
Marker function	Highest peak, next peak right, next peak left, next highest peak, next lowest peak Delta marker	
Evaluation functions	Duty cycle (ratio of average power to maximum power)	
Display function	Magnitude I/Q Real and imaginary part (Option, I/Q Demod Recorder)	
Triggering	Free run, single, multiple, manual start, time controlled Programmable trigger level, trigger slope and trigger delay	
Extras (Transfer parameters)	Transfers center frequency and span to other operating modes	

LEVEL METER	
Measurement principle	Selective level measurement at a selectable frequency from 9.05 kHz to 5.999 999 95 GHz
Detection	Peak
	Root mean square value (RMS), average time selectable from 480 ms up to 30 min
Resolution bandwidth RBW (-6 dB)	100 Hz to 32 MHz (in steps of 100, 125, 160, 200, 250, 320, 400, 500, 640, 800, 1000, ..., 10 MHz, 13.333 MHz, 16 MHz, 20 MHz, 26.666 MHz, 32 MHz)
Filter	Type
	Roll-off factor
Video bandwidth (VBW)	Steep cut-off channel filter (app. raised cosine) 0.16
Result type	Off, 0.01 Hz to 32 MHz (depending on the selected RBW)
Noise threshold	Peak ACT: Displays the actual peak value
	Peak MAX: Max hold function for peak values
	RMS ACT: Averaging over a defined time period (0.48 s to 30 min)
	RMS MAX: Max hold function for RMS values
Extras (Transfer parameters)	Identifies whether measured values are above the device noise floor by setting a threshold. Selectable at 0, 3, 6, 10, 15, or 20 dB relative to device noise floor. Measurement values below the threshold are shown as the absolute threshold value marked with "<" (less than threshold). Only applies to the numerical result display (Value)
	"Go to ..." transfers the Center Frequency and RBW to other operating modes Selection of individual services allows "zapping" through a service table

DIRECTION FINDING - requires Narda Active Antenna Handle	
Measurement principle	Selective level measurement at a selectable frequency from 9.05 kHz to 5.999 999 95 GHz
Antenna direction indication	Possible parameters and settings as specified under LEVEL METER Numerical display of Azimuth, Elevation and Polarization determined by the embedded electronic compass of the antenna handle.
Position indication	Outdoor
	Indoor
Result type	Instrument position displayed as latitude and longitude (GPS WGS84) determined by the embedded GPS receiver of the basic unit. Optional: Graphical indication of the current position drawn on a map. Peak or RMS detection RMS averaging time: selectable, 0.48 s to 30 min
Display modes	Manual Bearing
	Horizontal Scan
	SmartDF
Horizontal Scan	Discrete
	Continuous
SmartDF (Localization)	Bar graph and numerical display of the signal level and indication of the direction Polar diagram of the signal level vs. antenna orientation, normalized to the maximum signal. Automatic direction finding and indication Graphical indication of the triangulation results for all measurement positions. Accepts measurements being performed by Manual Bearing or Horizontal Scan. Display of the estimated emitter coordinates, optional drawn on a map (Option Mapping).
Transmitter Table	For every key press on the antenna handle the polar diagram is updated with the current signal level and compass data. At least 3 samples are required for calculating the target azimuth (up to 2000 samples are possible). Useful for longer averaging times. Every 120 ms the polar diagram is updated with the current signal level and compass data. Start and Stop is initiated by key press on the antenna handle. The duration of a scan is limited to a maximum of 4 min. The target azimuth is calculated automatically.
Maps (option)	Shows the vector of target azimuth related to the measurement position. Triangulation results based on several vectors will be calculated and the geo coordinates of the potential transmitter position will be displayed. Coordinates are referenced to the WGS84 geodetic datum. Signal fading vs. distance can be taken into account for target position calculation. Remotely determined vector data can be added by manual entry.
	Used to simplify frequency settings and speed up finding multiple sources transmitting at different frequencies. Tables can be created on-site and include Fcent and RBW.
	Display of high-resolution street maps in various zoom levels. OpenStreetMap bitmap tiles can be downloaded from internet free of charge using the Narda Map Download Tool. Map data are stored on microSD card and then plugged into the IDA card slot for portable use.

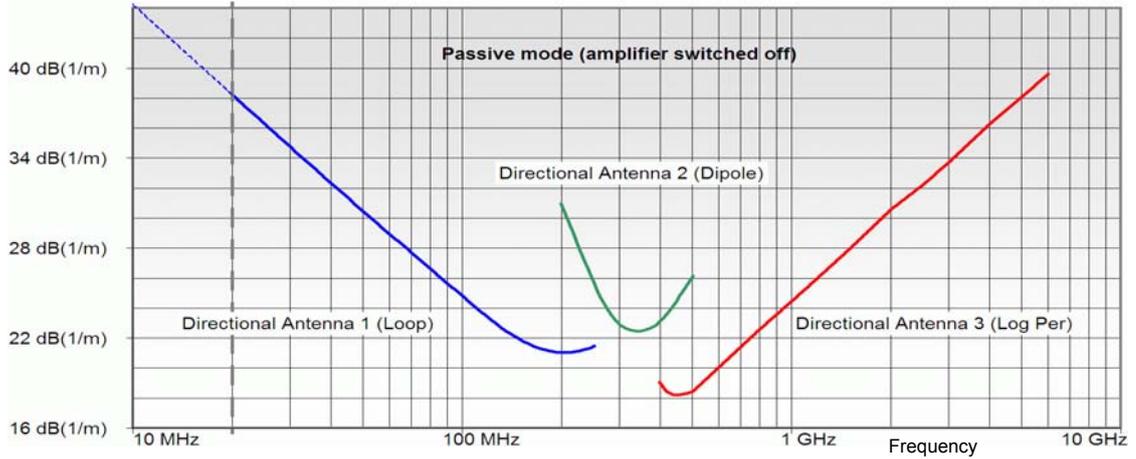
GENERAL SPECIFICATIONS - BASIC UNIT			
Display	Type	TFT color display with backlight	
	Size, resolution	7 inch (152 mm x 91 mm), 800 x 480 pixels	
Interface		USB mini B (USB 2.0)	
		Optical RS 232 (Baud rate 115 200)	
		Earphone 3.5 mm TRS, switches off the integrated speaker when connected	
		microSD-card interface for maps	
Antenna detection		Narda Directional Antennas are automatically detected (type, polarization, consideration of typical antenna factors, preamp gain and frequency response). For other antennas parameters can be defined and selected manually.	
Cables and external devices		Narda RF cables are automatically detected (type, frequency response and more) Other cables and external devices (e.g. filters) can be defined and selected manually.	
Demodulation	Modulation Types	AM, FM, LSB, USB (see Scope mode for details on I/Q demodulation)	
	Representation	Instrument speaker or external earphone	
	Squelch	-120 dB to -40 dB nominal, Off	
	Recording	16 kHz / 16 bit wave file recording (WAV)	
Setups		Up to 200 complete device configurations can be saved in the basic unit; can be uploaded and downloaded using IDA-3106 Tools software.	
Storing	Format	Result can be stored as a screenshot (in png format) or as ASCII data sets for further evaluation and import into e.g. MS-Excel	
	Conditional Storing	Conditional storing of results exceeding a user definable threshold value with individual storage rates and reset function (except for modes Scope and Direction Finding)	
	Time Controlled Storing	Timer controlled storage of results for long term monitoring (except for Direction Finding) Start date, start time and duration: resolution one second. Duration maximum 99 hours Storage rate settable to every 1.2 s, 2.4 s, 3.6 s, 6 s, 12 s, 18 s, 30 s, 1 min, 2 min, 3 min, 5 min, 6 min, 10 min, 15 min, 20 min, 30 min	
	Memory capacity	128 MB internal memory to store up to 8000 spectra, 4000 screen shots	
Operating temperature range		-10 °C to +50 °C during normal operation	
		0 °C to +40 °C when charging	
Compliance	Climatic	Storage	1K3 (IEC 60721-3) extended to -10 °C to +50 °C
		Transport	2K4 (IEC 60721-3) restricted -30°C to + 70°C due to display
		Operating	7K2 (IEC 60721-3) extended to -10 °C to +50 °C
	Mechanical	Storage	1M3 (IEC 60721-3)
		Transport	2M3 (IEC 60721-3)
		Operating	7M3 (IEC 60721-3)
	ESD and EMC		EN 61326 -1: 2006
	Dust and water resistance		IP 52 (with antenna attached and interface protector closed)
	Safety		EN 61010-1:2004
	EU Guidelines		2003/11/EG 06.02.2003 (PBDE and OBDE) 2002/95/EG 27.01.2003 (RoHS) 2002/96/EG 27.01.2003 (WEEE)
	CE (European Community)		Yes
	Air humidity (operating range) RF		< 29 g/m ³ (< 93 % at +30 °C)
Weight		2.8 kg (basic unit including rechargeable battery)	
Dimensions		297 x 213 x 77 mm	
Power supply	Rechargeable battery	Lithium-Ion rechargeable battery pack, "hot-swappable" within 10 seconds operating time: 2.5 hours (nominal) charging time: 4.5 hours (nominal)	
	External power supply	Input: 9 to 15 V Adapter 100-240 V _{AC} / 12 V _{DC} , 2.5 A	
Recommended calibration interval		24 months	
Country of origin		Germany	

SPECIFICATIONS OF ANTENNAS

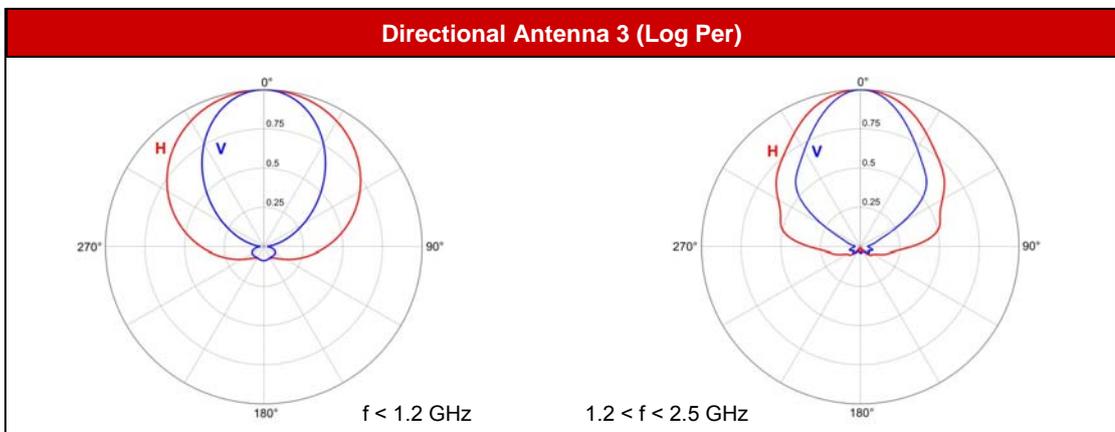
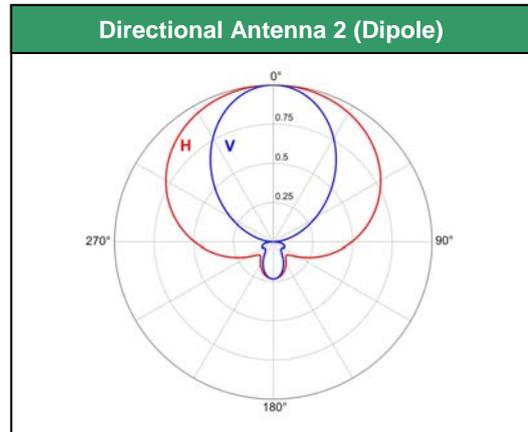
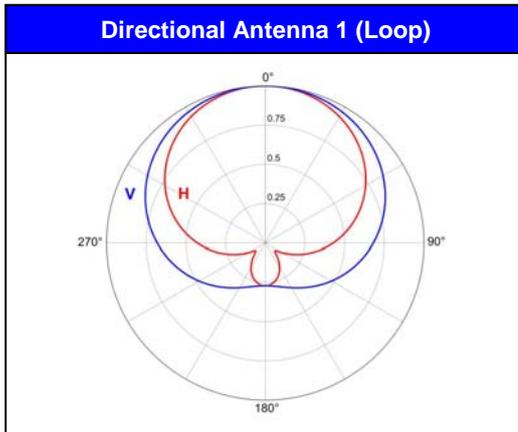
ACTIVE ANTENNA HANDLE (3100/10) - WITH ELECTRONIC COMPASS AND PREAMPLIFIER			
Frequency range	20 MHz to 6 GHz (preamp off: 9 kHz to 6 GHz) Frequency response correction is applied automatically when used in conjunction with the IDA basic unit.		
Preamplifier	Built in, can be switched off Amplification 20 dB, noise figure < 6 dB		
Compass	Embedded electronic compass, uncertainty < 1.5° RMS (typ.) for tilt < 15° Pitch- and roll uncertainty < 3° RMS (typ.) in the range of +/- 30°		
Connection cable to IDA basic unit	RF cable and control cable combined in a flexible tube, length of 1 meter		
RF connector to basic unit	N-connector, male, 50 Ω		
RF connector to Narda directional antennas	BMA 50 Ω, (female on handle side)		
Antenna connectivity	Narda antennas can be plugged in with horizontal and vertical polarization. Type of antenna and polarization detected automatically and transferred to basic unit		
Power supply	From basic unit		
Mounting	Connecting thread on the underside of the handle for tripod mounting		
DIRECTIONAL ANTENNA 1 (3100/11)			
Frequency range	20 MHz to 250 MHz Typical antenna factor correction is applied automatically when used in conjunction with the IDA basic unit and Narda Active Antenna Handle		
Antenna type	Loop antenna		
Antenna factor	21 dB(1/m) typical @ 200 MHz		
DIRECTIONAL ANTENNA 2 (3100/12)			
Frequency range	200 MHz to 500 MHz Typical antenna factor correction is applied automatically when used in conjunction with the IDA basic unit and Narda Active Antenna Handle		
Antenna type	Dipole antenna		
Antenna factor	23 dB(1/m) typical @ 300 to 400 MHz		
DIRECTIONAL ANTENNA 3 (3100/13)			
Frequency range	400 MHz to 6 GHz Typical antenna factor correction is applied automatically when used in conjunction with the IDA basic unit and Narda Active Antenna Handle		
Antenna type	Log-periodic antenna		
Antenna factor	20 dB(1/m) typical @ 600 MHz		
GENERAL SPECIFICATIONS - ANTENNA HANDLE AND ANTENNAS			
Operating temperature range	-10 °C to +50 °C		
Compliance	Climatic	Storage	1K3 (IEC 60721-3) extended to -10 °C to +50 °C
		Transport	2K4 (IEC 60721-3)
		Operating	7K2 (IEC 60721-3) extended to -10 °C to +50 °C
	Mechanical	Storage	1M3 (IEC 60721-3)
		Transport	2M3 (IEC 60721-3)
		Operating	7M3 (IEC 60721-3)
	ESD and EMC	EN 61326:2006	
	Safety	EN 61010-1:2002	
	EU Guidelines	2003/11/EG 06.02.2003 (PBDE and OBDE) 2002/95/EG 27.01.2003 (RoHS), 2002/96/EG 27.01.2003 (WEEE)	
	CE (European Community)	Yes	
Air humidity	< 29 g/m ³ (< 93 % at +30 °C)		
Dimensions	Active Antenna Handle	165 mm length; 165 mm height; 43 mm width, weight: 450 g (w/o cable)	
	Directional Antenna 1	325 mm length; 255 mm height; 80 mm width, weight: 450 g	
	Directional Antenna 2	285 mm length; 410 mm height; 43 mm width, weight: 350 g	
	Directional Antenna 3	460 mm length; 320 mm height; 48 mm width, weight: 400 g	
Country of origin	Germany		

DIRECTIONAL ANTENNAS - CHARACTERISTICS

Antenna Factors (typical)



Radiation Pattern (typical)



ORDERING INFORMATION

IDA	Part number
IDA Set with Antennas	
IDA-3106 Interference Analyzer , Set with 20 MHz - 6 GHz Antennas includes: <ul style="list-style-type: none"> - IDA-3106 Basic Unit - Active Antenna Handle - Directional Antenna 1, 20 MHz - 250 MHz - Directional Antenna 2, 200 MHz - 500 MHz - Directional Antenna 3, 400 MHz - 6 GHz - Arm Support - Headphone, 3.5 mm Plug - Carrying Strap for IDA - Power Supply 12VDC, 100V-240VAC - Cable, USB 2.0, A/B mini, 1.8m - Configuration Software - Operating Manual IDA-3106, English - Hardcase for IDA Sets - Calibration Reports (Basic Unit and Handle) 	3106/102
IDA Basic Unit	
IDA-3106 Interference Analyzer , Basic Unit Set includes: <ul style="list-style-type: none"> - IDA-3106 Basic Unit - Power Supply 12 VDC, 100 V-240 VAC - Cable, USB 2.0, A/B mini, 1.8 m - Configuration Software - Operating Manual IDA-3106, English - Calibration Report 	3106/101
OPTIONS	
Option, Mapping	3100/95.01
Option, Scope and I/Q Recorder	3100/95.02
ANTENNAS	
Active Antenna Handle (required for Dir. Antennas 1, 2 and 3, Calibration Report included)	3100/10
Directional Antenna 1, 20 MHz - 250 MHz	3100/11
Directional Antenna 2, 200 MHz - 500 MHz	3100/12
Directional Antenna 3, 400 MHz - 6 GHz	3100/13
Arm Support (for Active Antenna Handle)	3100/90.10
ACCESSORIES	
Battery Pack, Rechargeable, 7V4 / 5100 mAh (one is included with each IDA Basic Unit)	3001/90.01
Charger Set for Battery Pack, External	3001/90.07
Power Supply DC Vehicle Adapter	2260/90.56
Protective Soft Carrying Bag for IDA-3106 Basic Unit	3001/90.13
Hardcase for IDA Sets (included in Set 3106/102)	3100/90.01
Headphone, 3.5mm Plug (included in Set 3106/102)	3100/90.11
O/E Converter USB, RP-02/USB	2260/90.07
Cable, FO Duplex (1000µm), RP-02, 20m	2260/91.03
RF-Cable, 9 kHz – 6 GHz, N 50 ohm, 5m	3602/02
Tripod, Non-Conductive, 1.65 m, with Carrying Bag	2244/90.31
Operating Manual IDA-3106, German	3106/98.01

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