

R&S® DDF1555

Compact Direction Finder

Accurate direction finder
for outdoor use



R&S® DDF1555

Compact Direction Finder

At a glance

The R&S®DDF1555 compact direction finder combines accurate direction finding with wideband monitoring capabilities in a compact housing suitable for outdoor use. In combination with a Rohde & Schwarz compact DF antenna, the R&S®DDF1555 DF system becomes an optimum solution for applications that require portable and mobile direction finders for use in outdoor environments. A comprehensive range of accessories further enhances the flexibility of the DF system.

The R&S®DDF1555 compact DF system relies on high-precision DF methods. It can be used as a mobile or portable DF system or as a temporarily deployed DF station. Thanks to its low weight and compact dimensions, the DF system can be set up and configured quickly and easily. It has a low power consumption, allowing a long operating time in battery-powered applications.

The direction finder's integrated wideband receiver offers ample functionality for signal search and display, including a panorama scan function (option) for the fast scanning of wide frequency ranges and a fast spectrogram (waterfall) display.

For mobile DF applications, the R&S®DDF1555 is combined with an R&S®ADD107 compact VHF/UHF DF antenna (20 MHz to 1.3 GHz) or an R&S®ADD207 compact UHF/SHF DF antenna (690 MHz to 6 GHz). These antennas come with an integrated GPS module, an electronic compass and an optional magnetic mount vehicle adapter. Installing the portable direction finder in a commercial vehicle takes only a few minutes.

For best DF accuracy and sensitivity in portable applications, the R&S®DDF1555 can be combined with the R&S®ADD307 collapsible VHF/UHF DF antenna. This combination delivers significantly wider coverage in the VHF range. The antenna's integrated GPS module and electronic compass allow for a quick and easy system setup.

Key facts

- Wide frequency range from 20 MHz to 6 GHz (DF mode) and 9 kHz to 7.5 GHz (receive mode)
- High-precision correlative interferometer DF system with superior DF accuracy and sensitivity
- Compact and robust for outdoor use
- Integrated, fast wideband receiver with optional panorama scan for high-speed scanning of wide frequency ranges
- Compact DF antennas with integrated GPS module and electronic compass, with optional magnetic mount
- Comprehensive range of accessories (options) for enhanced operational flexibility and quick and simple setup of the DF system
- For use in AoA (angle of arrival), TDOA (time difference of arrival) and hybrid (AoA plus TDOA) radiolocation systems



R&S®DDF1555

Compact Direction Finder

Benefits and key features

Extensive DF and radio reconnaissance capabilities

- ▮ Quick channel scan for automatic signal search
- ▮ Detailed IF spectrum display at high bandwidths
- ▮ Fast spectrum monitoring
- ▮ Demodulation of wideband signals

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High-precision DF methods

- ▮ Accurate radiolocation results even for weak signals
- ▮ Correlative interferometer DF method
- ▮ Watson-Watt DF method (for R&S®ADD107 below 173 MHz)

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Support of various applications

- ▮ Mobile direction finding
- ▮ On-the-march operation
- ▮ Man portable DF station
- ▮ Temporarily deployed DF station
- ▮ Standalone DF station or remotely connected as part of a radiomonitoring and/or radiolocation system

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Accurate, compact DF antennas

- ▮ Quick and easy setup
- ▮ Commercial vehicle turns into a DF vehicle within minutes
- ▮ Integrated GPS module and electronic compass, magnetic mount as an option

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Signal analysis and classification

- ▮ Monitoring of complete signal scenarios
- ▮ Automatic detection, classification, demodulation and decoding of multiple signals
- ▮ Continuous I/Q data streaming

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Wide range of options and accessories

- ▮ R&S®DDF1555-IR internal recording
- ▮ R&S®DDF1555-IG internal GPS module and external GPS antenna
- ▮ R&S®DDF1555-PS panorama scan

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Control and system software

- ▮ R&S®DDF1555-CTL control software
- ▮ R&S®RAMON software components (options)
 - ▮ R&S®RA-DFWEB graphical user interface
 - ▮ R&S®RA-MLWEB graphical user interface

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Extensive DF and radio reconnaissance capabilities

Quick channel scan for automatic signal search

The R&S®DDF1555 offers a quick DF memory scan for automatic signal search. In this mode, the R&S®DDF1555 scans through a user-defined list of frequency channels and takes bearings on active channels automatically. All results can be saved to the device or to a control PC.

Detailed IF spectrum display at high bandwidths

In the IF panorama mode, the R&S®DDF1555 displays signals up to a bandwidth of 10 MHz. The waterfall display can additionally be activated to visualize signal behavior versus time. The IF panorama mode allows detailed signal analysis with high resolution. Even extremely short emissions down to 20 ns are reliably detected.

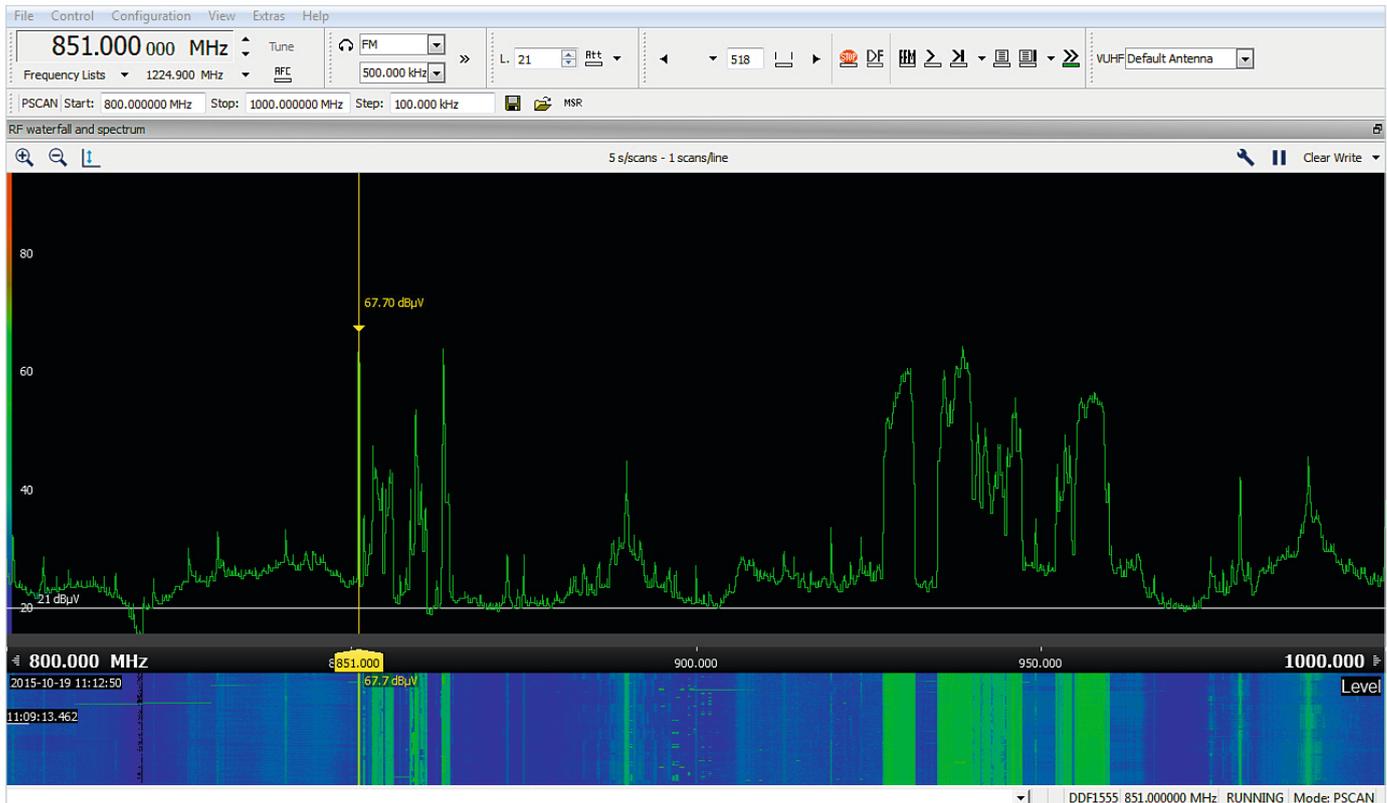
Fast spectrum monitoring

The R&S®DDF1555 can be equipped with the R&S®DDF1555-PS panorama scan option. This enables fast scanning at speeds of up to 1.8 GHz/s to obtain a quick overview of the spectrum.

Demodulation of wideband signals

The R&S®DDF1555 demodulates signals with a bandwidth of up to 500 kHz and outputs them as I/Q data that can be used for signal analysis. It also demodulates analog modulated signals and outputs them for monitoring.

Fast panorama scan from 800 MHz to 1 GHz using the R&S®DDF1555-CTL control software (GUI).



High-precision DF methods

Correlative interferometer DF method

The R&S®DDF1555 uses the correlative interferometer DF method in conjunction with an R&S®ADDx07 compact DF antenna. In contrast to other direction finders using simple amplitude comparison methods, the R&S®DDF1555 offers significantly higher DF accuracy up to class A in line with ITU recommendations.

This high DF accuracy relies on the precise measurement of the phase angles between the reference antenna element and the other elements. Measuring the phase difference between two signals normally requires two coherent receive paths. For this reason, most interferometer direction finders on the market use at least two receivers. With the R&S®DDF1555, the two receive paths are coherently linked in the DF antenna using a patented method from Rohde&Schwarz. As a result, the single-channel interferometer DF method implemented in the Rohde&Schwarz direction finder provides the same DF accuracy and immunity to reflections as delivered by direction finders with two or more receive paths – without requiring additional hardware.

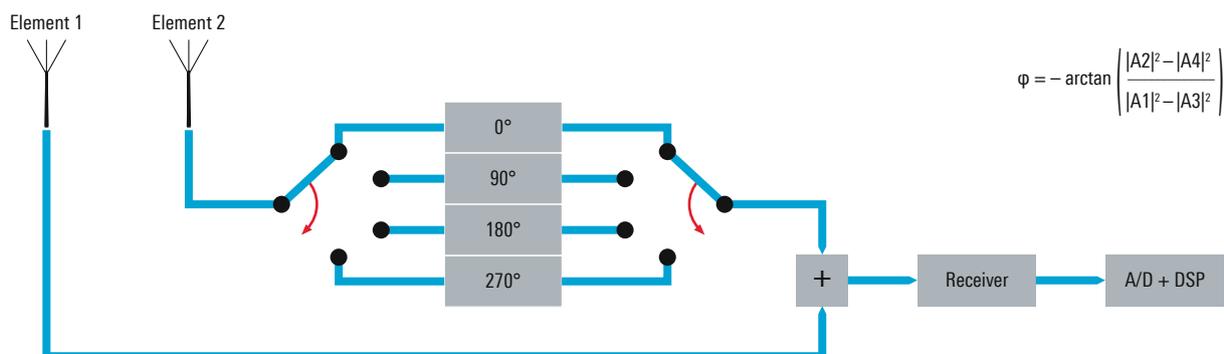
For the R&S®ADD107 VHF/UHF DF antenna, the Watson-Watt DF method is used in the frequency range below 173 MHz. This method offers high DF accuracy even for small DF antennas.

Single-channel interferometer DF method

The correlative interferometer DF method is based on measuring the phase differences between the reference antenna element and the other elements of a DF antenna. To measure the phase angle φ between the signals of two antenna elements by means of a single receiver – independently of the frequency and phase modulation of the signal to be measured –, a patented method from Rohde&Schwarz is used. With this method the phase of one of the two signals is shifted in four steps ($0^\circ/90^\circ/180^\circ/270^\circ$) in a quadrature multiplexer, and the two signals are added in each case. The receiver measures the amplitude of the sum signal after each phase shift. Inserting the four amplitude values obtained ($A1/A2/A3/A4$) into the formula (see diagram) yields the phase angle φ between the two signals. This measurement is performed for each antenna element.

Most interferometer direction finders on the market use at least two receivers. The two receive paths must be in phase and need to be calibrated accordingly since otherwise the measurement time will be significantly extended. Moreover, the local oscillator signals need to be multiplied and distributed in-phase. This means that more hardware is necessary than with a single-channel interferometer direction finder: an additional receive path, in-phase multiplication and distribution of the local oscillator signals, a calibration signal generator, calibration signal distribution and an additional cable to the DF antenna for the calibration signal.

Single-channel interferometer DF method



Support of various applications



Temporary installation of an R&S®DDF1555 DF system in a commercial vehicle.



Man portable DF station with the R&S®DDF1555.

Mobile direction finding

Faulty, poorly shielded or incorrectly set electronic devices can unintentionally emit electromagnetic waves and degrade or even disrupt radiocommunications. Consequently, it is necessary to quickly locate the building, or the specific room within a building, from which radio interference originates. Unfortunately, buildings of interest are often to be found in densely built-up areas.

If radio interference occurs continuously or frequently, using a mobile direction finder is the fastest way to locate the interference source. Within minutes, the compact DF system based on the R&S®DDF1555 can turn a normal vehicle into a DF vehicle, covering the frequency range from 20 MHz to 6 GHz. This vehicle makes it possible to find the right building in a timely manner. In addition, during the drive, the R&S®MobileLocator software (with R&S®RA-LOC radiolocation module) automatically locates the source of interference with a high degree of accuracy.

On-the-march operation

Some applications require direction finding on the move. Using the R&S®DDF1555X08 carrying holster, the R&S®DDF1555 DF system can be carried by one person, and bearings can be taken on the move.

Touchscreen operation is also possible with R&S®RAMON software modules installed on the handheld tablet PC used for controlling the DF system. Settings are made more easily and can be conveniently displayed along with the map application that presents DF results on a digital map.

Man portable DF station

Short-duration radio interference can disturb other radio services. When that happens, the building that houses the radio interference source must be located quickly. Short-duration radio interference cannot be located using a mobile DF system, because the emissions are not long enough for homing in on the source.

This situation occurs, for example, with public mobile radio (PMR). PMR devices are widely used today since they are readily available and can be operated without a license. They are frequently used for mobile applications; their emissions typically last only a few seconds.

Short-duration radio interference originating from public mobile radios or other sources can be located using two or more compact DF stations with the R&S®DDF1555. The compact DF antennas are mounted on lightweight tripods and installed temporarily at exposed sites, e.g. on the rooftops of tall buildings.

In such cases, a DF station often needs to be transported and set up by one person. A complete R&S®DDF1555 based DF station can be accommodated in a backpack and carried up to a rooftop or to any other remote location accessible on foot only.

Temporarily deployed DF station

Special means are required when analyzing and locating radio interference sources and other emitters in the following scenarios:

- In areas where authorities cannot eliminate radio interference or monitor compliance with radiocommunications regulations
- In security-critical areas, such as airports, seaports and military bases
- In areas where certain radio services are not allowed and compliance with this rule must be monitored
- At major events, e.g. sporting events

These applications call for the temporary installation of a DF system for detecting and locating transmitters and radio interference.

The R&S®DDF1555 based DF system can be deployed and expanded flexibly. Radio interference and other signals are detected, analyzed and located in a timely manner. The compact DF antenna can be mounted on a mast to provide better sensitivity and coverage in rural areas or areas offering little or no infrastructure for monitoring and taking bearings. The integrated wideband receiver in the R&S®DDF1555 makes it possible to scan the spectrum and identify, analyze and record signals of interest. If necessary, the compact DF antenna (R&S®ADD107 or R&S®ADD207) can be mounted on a vehicle roof in just a few easy steps and used to locate transmitters. DF stations can be networked, and radiolocation results optionally displayed on a map (additional hardware and software required).

The R&S®DDF1555 based DF system can be conveniently stored in a transport case.



Temporarily deployed DF station with the R&S®DDF1555.



On-the-march DF system with the R&S®DDF1555.

Accurate, compact DF antennas

The R&S®ADD107 and R&S®ADD207 compact DF antennas set new standards in their class with respect to DF accuracy and sensitivity. Together, they cover a wide frequency range from 20 MHz to 6 GHz. Both feature an integrated GPS module and electronic compass. The optional R&S®ADD17XZ3 vehicle adapter with magnetic mount allows temporary installation of the antennas on a vehicle roof within minutes.

For maximum DF accuracy and sensitivity in the VHF range, the R&S®ADD307 compact DF antenna offers accurate direction finding in a collapsible lightweight design with an integrated GPS module and electronic compass. In combination with a portable mast (to be purchased separately), the R&S®ADD307 provides exceptionally good coverage. Due to its compact and robust design, the DF antenna is especially well suited for operation in harsh environments.

Compact DF antennas

R&S®ADD107 compact VHF/UHF DF antenna

- Frequency range from 20 MHz to 1.3 GHz
- Above 173 MHz
 - High-precision correlative interferometer DF method
 - Multi-element DF antenna with eight antenna elements
- Below 173 MHz
 - Powerful Watson-Watt DF method
- Active antenna elements
- Integrated electronic compass
- Integrated GPS module with GPS antenna
- For installation on a tripod or vehicle roof
- R&S®ADD17XZ3 vehicle adapter with magnetic mount for fast antenna installation on a vehicle roof (option)
- R&S®DDF1555X01 lightweight tripod (option)



R&S®ADD107 compact VHF/UHF DF antenna.

R&S®ADD207 compact UHF/SHF DF antenna

- ▮ Frequency range from 690 MHz to 6 GHz
- ▮ High-precision correlative interferometer DF method
- ▮ Two multi-element DF antennas mounted one above the other, each containing eight passive antenna elements
- ▮ Integrated electronic compass
- ▮ Integrated GPS module with GPS antenna
- ▮ For installation on a tripod, portable mast or vehicle roof
- ▮ R&S®ADD17XZ3 vehicle adapter with magnetic mount for fast antenna installation on a vehicle roof (option)
- ▮ R&S®DDF1555X01 lightweight tripod (option)

R&S®ADD307 collapsible VHF/UHF DF antenna

- ▮ Portable DF antenna from 20 MHz to 690 MHz
- ▮ Accurate correlative interferometer DF antenna, optimized for size and weight (approx. 6 kg)
- ▮ Collapsible design
- ▮ Active antenna elements
- ▮ Integrated GPS module and electronic compass
- ▮ For installation on a tripod or portable mast
- ▮ R&S®DDF1555X01 lightweight tripod (option)

Integrated GPS module and electronic compass

The R&S®ADD107, R&S®ADD207 and R&S®ADD307 compact DF antennas have an integrated GPS module including a GPS antenna that continuously determines the current location of the antenna. The DF antennas also contain an electronic compass that continuously measures the antenna's alignment to magnetic north to ensure that the DF results displayed on a map are accurately referenced to north. The electronic compass is used when the R&S®ADD107, R&S®ADD207 or R&S®ADD307 is mounted on a tripod or mast for stationary operation.

When the R&S®ADD107 or R&S®ADD207 is mounted on a vehicle roof with the R&S®ADD17XZ3 adapter, the GPS function is used to determine the vehicle's orientation relative to geographical north.



R&S®ADD307 collapsible VHF/UHF DF antenna (left: set up for operation; right: collapsed for storage and transport).

Signal analysis and classification

Signals with analog or digital modulation up to 500 kHz bandwidth can be analyzed by using the R&S®DDF1555 in conjunction with the R&S®CA100 signal analysis and processing software (additional PC needed).

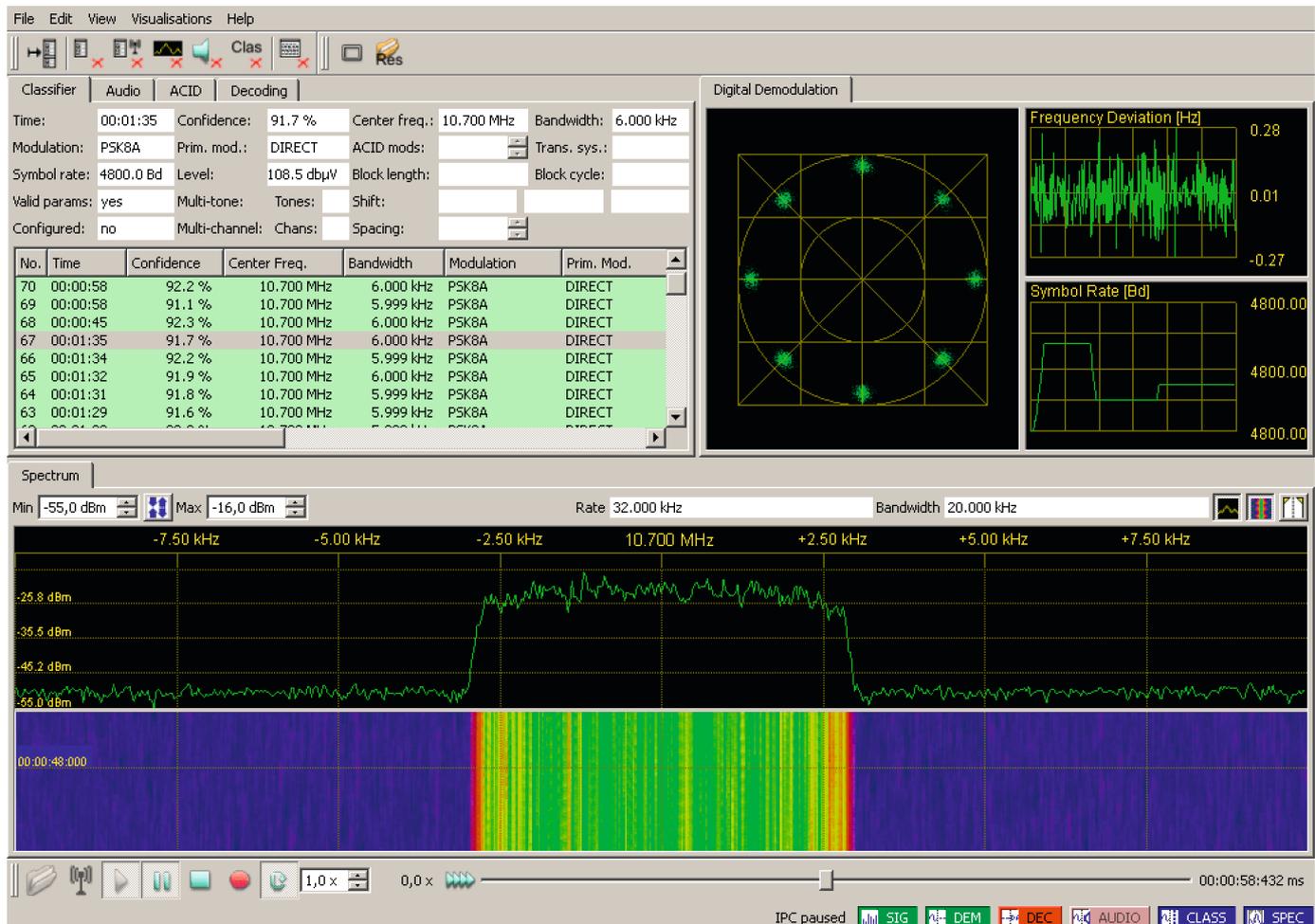
Monitoring of complete signal scenarios

The R&S®CA100 signal analysis and processing software provides an overview of a frequency range of interest using a high-speed spectral or waterfall display. Signals are automatically searched and intercepted in a user-defined range. R&S®CA100 has an automatic detector that enables users to scan or monitor frequency ranges automatically for fixed-frequency and burst signals. The R&S®DDF1555 performs the search by combining the panorama scan mode and the fixed frequency mode (FFM).

Automatic detection, classification, demodulation and decoding of multiple signals

R&S®CA100 supports both the monitoring of known signals (demodulation and decoding to content level) and surveillance/search operation by automatically detecting signals of interest and performing a classification. A powerful classifier with well-established algorithms automatically detects numerous modulation types, transmission systems and signal parameters. Content is extracted based on the software's extensive library of demodulators, decoders and transmission systems.

The R&S®DDF1555 using the R&S®CA100 software for signal analysis down to bit level.



Wide range of options and accessories

Options

R&S®DDF1555-IR internal recording

The R&S®DDF1555-IR option allows measured data to be recorded and saved to the direction finder's RAM. Recorded data can be replayed at a later time for detailed analysis using the R&S®DDF1555-CTL control software on a laptop/PC. Recorded data can include audio data in WAV format (replay using e.g. Windows Media Player), I/Q data, and spectrum and spectrogram (waterfall) data.

R&S®DDF1555-IG internal GPS module and external GPS antenna

With the R&S®DDF1555-IG option, the internal GPS module's NMEA protocol sets the system time. The R&S®DDF1555 direction finder's internal 10 MHz reference frequency can be synchronized to the pulse-per-second (PPS) signal from the GPS module. This increases the accuracy of the internal reference frequency to typically 10^{-11} (or better). It also significantly increases the accuracy of the time stamp in the direction finder's output data stream to a value typically in the nanosecond range.

The option can be used to determine the position of the direction finder. It is also suitable for use in TDOA based applications or as a hybrid system that employs both DF and TDOA for radiolocation.

R&S®DDF1555-PS panorama scan

When equipped with the R&S®DDF1555-PS option, the R&S®DDF1555 traverses a user-defined frequency range at maximum speed in monitoring mode. This provides users with a quick overview of the spectrum occupancy. Any changes caused by illegal radio services, interference sources, temporary emissions, etc. can be recognized immediately. The R&S®DDF1555-CTL marker function can be used to take a bearing of the target signal with just one mouse click.

R&S®DDF1555: standard scope of delivery

R&S®DDF1555 compact direction finder	
LAN cable, length: 5 m (RJ-45)	for use with a laptop/PC with a standard RJ-45 LAN connector
Power cable, length: 5 m (banana plugs)	for use with any DC power supply or battery
Auxiliary cable, length: 1.5 m (DB9)	for changing the device IP address
Car adapter	for operating the R&S®DDF1555 from a standard commercial 12 V/24 V cigarette lighter receptacle

Description of accessories

R&S®ADD17XZ3 vehicle adapter with magnetic mount and R&S®DDF1555X2B DF antenna cable set

The R&S®ADD107 or R&S®ADD207 compact DF antenna can be attached to an R&S®ADD17XZ3 vehicle adapter with magnetic mount. The R&S®DDF1555X2B DF antenna cable set is used to connect the DF antenna to the R&S®DDF1555 DF unit, then the DF antenna is mounted centrally on the vehicle roof. Thanks to its large magnetic surface and ability to adapt to slightly curved vehicle roofs, the adapter has been approved for speeds up to 130 km/h.

R&S®DDF1555X01 tripod with adapter

The R&S®DDF1555X01 lightweight tripod allows quick and easy setup of a DF station, with a DF antenna height of up to 1.6 m above ground. In addition, the tripod can be easily folded and stowed away in a very compact size, making it ideal for portable applications. The tripod can be used with all R&S®ADDx07 compact DF antennas (R&S®ADD107, R&S®ADD207, R&S®ADD307).

R&S®DDF1555X04 antenna mast adapter

The R&S®DDF1555X04 antenna mast adapter can be used for installing a Rohde&Schwarz compact DF antenna on one of the following recommended portable masts:

- BlueSky mast, AL1 and AL2 standard series
- Clark mast, QT series



R&S®DDF1555X01 tripod with adapter.

R&S®DDF1555X08 carrying holster

The R&S®DDF1555X08 carrying holster comes equipped with pouches, ready cable sets, a wireless radio system (5 GHz) and a DF antenna adapter.

The following components need to be added to obtain a DF station for on-the-march operation:

- R&S®DDF1555 compact direction finder
- R&S®ADD107 or R&S®ADD207 compact DF antenna
- One or two R&S®DDF1555X10 batteries
- Tablet PC (e.g. RODA SolidPad LR7)

The above components are easily integrated into the carrying holster (see instructions supplied with the direction finder).

R&S®DDF1555XCH carrying harness

The R&S®DDF1555XCH carrying harness can accommodate the following:

- R&S®DDF1555 compact direction finder
- R&S®ADD107 or R&S®ADD207 or R&S®ADD307 compact DF antenna
- Two R&S®DDF1555X10 batteries
- R&S®DDF1555X01 lightweight tripod
- DF antenna cable set, length: 5 m
- Tablet PC or laptop (e.g. RODA SolidPad LR7 or RODA Lizard® RS11)



R&S®DDF1555XCH carrying harness accommodating the R&S®DDF1555 DF unit, R&S®ADD107 compact VHF/UHF DF antenna and accessories.

The carrying harness provides portability when a DF system needs to be transported on foot, e.g. up to a rooftop for temporary installation. It allows the DF system to be carried by one person.

R&S®DDF1555X06 transport case

The R&S®DDF1555X06 transport case can accommodate the following:

- ▮ R&S®DDF1555 compact direction finder
- ▮ R&S®ADD107 or R&S®ADD207 or R&S®ADD307 compact DF antenna
- ▮ Two R&S®DDF1555X10 batteries
- ▮ R&S®DDF1555X01 lightweight tripod
- ▮ DF antenna cable set, length: 5 m
- ▮ Tablet PC or laptop (e.g. RODA SolidPad LR7 or RODA Lizard® RS11)

The transport case protects the DF equipment and accessories against damage and harmful influences. It is ideal for transport and storage.



R&S®DDF1555X06 transport case.



R&S®DDF1555X06 transport case accommodating the R&S®DDF1555 DF unit, R&S®ADD307 collapsible VHF/UHF DF antenna and accessories.

R&S®DDF1555X10 battery

The R&S®DDF1555X10 battery is the well-established BB-2590 type. It delivers up to 10 hours of DF operation.

Cable sets

R&S®DDF1555X2A DF antenna cable set

The DF antenna cable set consists of one DF antenna control cable and one RF cable with both cables bundled together. It is available in 5 m standard length that is most widely used with tripod installations. For installation on a mast, lengths of 15 m and 30 m are available for the R&S®ADD307.

R&S®DDF1555X2B DF antenna cable set

The DF antenna cable set consists of one DF antenna control cable and one RF cable with both cables bundled together. It is available in 5 m standard length that is most widely used with magnet-mount installations on vehicle roofs.

R&S®DDF1555X05 battery cable

The R&S®DDF1555X05 is an SMBus battery cable with a length of 0.8 m. It is used for connecting the R&S®DDF1555 with the R&S®DDF1555X10 battery.

R&S®DDF1555X3A LAN cable

The R&S®DDF1555X3A is a 5 m LAN cable with a Fischer connector used for connecting the R&S®DDF1555 with a RODA Lizard® RS11 13" notebook.

R&S®DDF1555X3B LAN cable

The R&S®DDF1555 comes as standard with a 5 m LAN cable with an RJ-45 LAN connector for connecting the DF unit to a laptop or tablet PC. The 2 m R&S®DDF1555X3B LAN cable version is available for applications where a shorter cable length is preferred.



R&S®DDF1555X10 battery.

Control and system software

R&S®DDF1555-CTL control software

The R&S®DDF1555 can be operated from a standard laptop or PC using the R&S®DDF1555-CTL control software supplied with the direction finder. R&S®DDF1555-CTL is part of the R&S®RAMON software family and can be used together with other R&S®RAMON software modules (options) to integrate the R&S®DDF1555 compact direction finder into complex radiomonitoring and radiolocation systems.

R&S®DDF1555-CTL supports the fixed frequency mode (FFM) and the fast panorama scan mode for frequency ranges wider than the direction finder's realtime bandwidth. Results can be displayed in various formats:

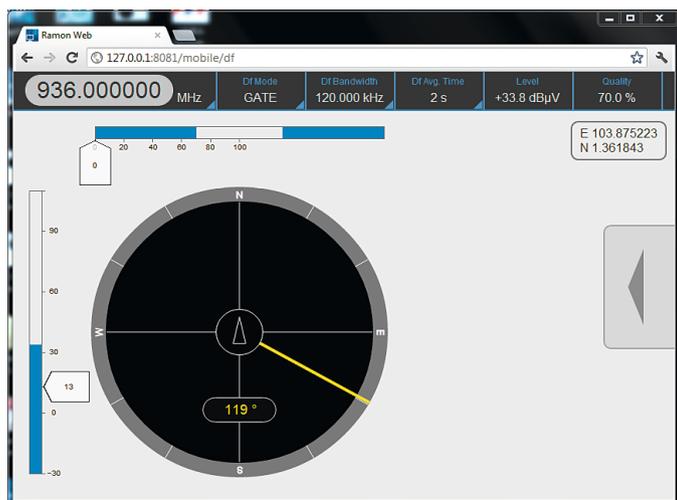
- Polar display with DF quality and level bargraphs for a specific (fixed) frequency
- DF IF spectrum plus waterfall display
- RF panorama spectrum plus waterfall display

R&S®RAMON software components

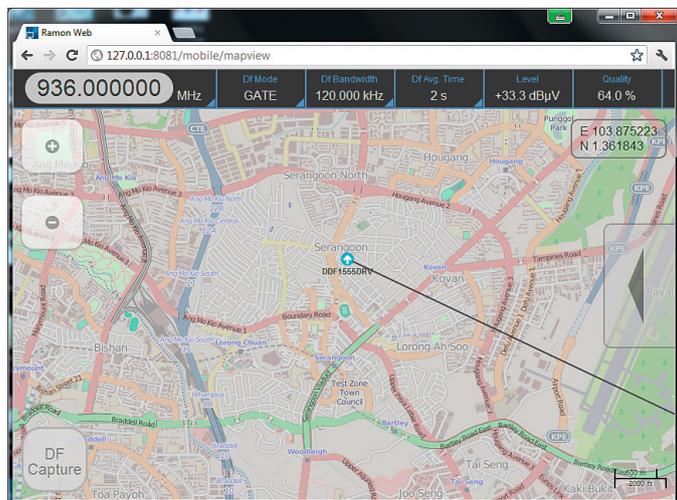
The R&S®DDF1555 can be enhanced with R&S®RAMON software modules to add versatile functionality:

- Automatic radiolocation of conventional signals with one direction finder while on the move, using R&S®MobileLocator (for detailed information, see PD 3607.1271.12)
- Recording and replay of RF and IF signal spectra; storage of digital audio data and I/Q baseband data of up to 500 kHz bandwidth
- Remote control of one or multiple R&S®DDF1555 over WAN networks with intelligent data reduction
- Extended storage capabilities and offline analysis of DF and radiolocation results
- R&S®RA-DFWEB graphical user interface (GUI) optimized for use with a compact touchscreen tablet PC (e.g. RODA SolidPad LR7)

R&S®RA-DFWEB graphical user interface on a tablet PC.



Display of current position and DF results either in a polar representation or on map.



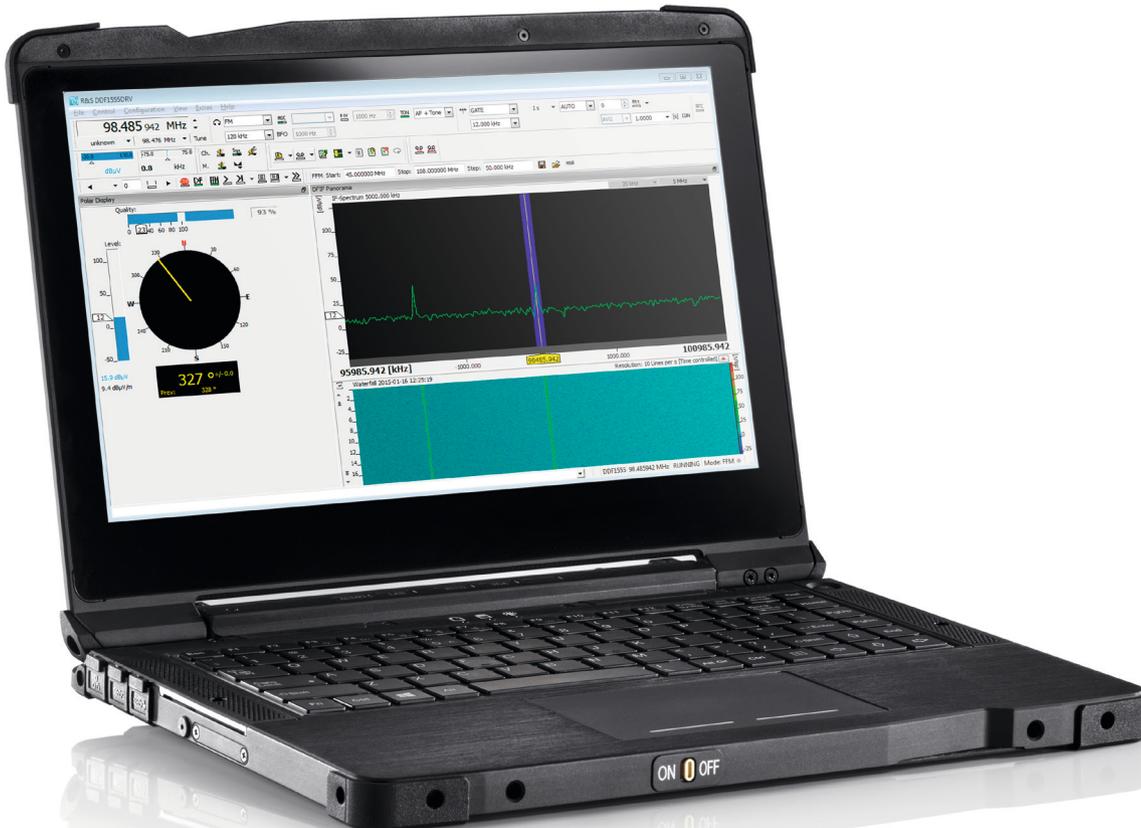
For operating the R&S®DDF1555 DF system, use of the RODA Lizard® RS11 notebook or the RODA SolidPad LR7 tablet PC is recommended. For detailed information, refer to the RODA website. Other Windows based PCs or tablet PCs can also be used, provided they meet the minimum recommended requirements listed below.

Minimum recommended requirements for operating the R&S®DDF1555 using R&S®RAMON software modules:

- PC operating system: Windows 7 Service Pack 1
- PC hardware: Intel® Core™ i3 or higher
- Web browser: Chromium (or derivative) version 40.0.2182.0 or higher



RODA SolidPad LR7 tablet PC with R&S®RA-MLWEB graphical user interface.



RODA Lizard® RS11 notebook with standard R&S®DDF1555-CTL graphical user interface.

Specifications in brief

Specifications in brief		
DF mode		
Frequency range	with R&S®ADD107	20 MHz to 1.3 GHz
	with R&S®ADD207	690 MHz to 6 GHz
	with R&S®ADD307	20 MHz to 690 MHz
DF method	with DF antenna R&S®ADD207 or R&S®ADD307, or with R&S®ADD107 above 173 MHz	correlative interferometer
	with DF antenna R&S®ADD107 below 173 MHz	Watson-Watt
Display resolution	selectable	0.1° or 1°
System DF accuracy	depends on DF antenna (i.e. R&S®ADD207 or R&S®ADD307), in reflection-free environment	
	20 MHz to 6 GHz	typ. 1° (RMS)
DF sensitivity	depends on DF antenna (i.e. R&S®ADD207 or R&S®ADD307), for 5° RMS DF fluctuation, 5 s integration time and 600 Hz DF bandwidth	
	20 MHz to 50 MHz	typ. 2 µV/m to 8 µV/m
	50 MHz to 3 GHz	typ. 1.0 µV/m
	3 GHz to 6 GHz	typ. 2 µV/m to 8 µV/m
Minimum signal duration	for a single burst signal	10 ms
Minimum burst duration	for multiple burst signals	0.5 ms
Receive mode		
Frequency range	with separate monitoring antenna	9 kHz to 7.5 GHz
IF spectrum display range	selectable	up to 10 MHz
Demodulation bandwidth	selectable	up to 500 kHz
Monitoring scan speed	with R&S®DDF1555-PS option	up to 1.8 GHz/s
General data		
Dimensions	W × H × D	approx. 210.8 mm × 87.6 mm × 300 mm (8.3 in × 3.45 in × 11.81 in)
Weight		approx. 4.5 kg (9.92 lb)
Operating time	with R&S®DDF1555X10 battery in DF mode	approx. 10 h

For data sheet, see PD 3606.9762.22 and www.rohde-schwarz.com

Ordering information

Designation	Type	Order No.
Base unit		
(including supplied accessories: 5 m LAN cable (RJ-45), 5 m power cable with banana plugs, 1.5 m auxiliary cable (DB9), car adapter (12 V/24 V) and operating manual, see table on page 11)		
Compact Direction Finder	R&S®DDF1555	4500.0000.02
Options		
Panorama Scan	R&S®DDF1555-PS	4500.1920.02
Internal Recording	R&S®DDF1555-IR	4500.1820.02
Internal GPS Time Synchronization	R&S®DDF1555-IG	4500.2010.02
Documentation of Calibration Values	R&S®DDF1555-DC	4500.2090.02
System components		
Compact VHF/UHF DF Antenna	R&S®ADD107	4090.7005.02
Compact UHF/SHF DF Antenna	R&S®ADD207	4096.0002.02
Collapsible VHF/UHF DF Antenna	R&S®ADD307	4098.2002.07
Vehicle Adapter with Magnet Mount	R&S®ADD17XZ3	4090.8801.02
Tripod with adapter	R&S®DDF1555X01	4500.4506.02
DF Antenna Cable Set, for R&S®ADD107 and R&S®ADD207, length: 5 m	R&S®DDF1555X2B	4500.4487.02
DF Antenna Cable Set, for R&S®ADDx07, length: 5 m	R&S®DDF1555X2A	4500.4458.05
DF Antenna Cable Set, for R&S®ADD207 ¹⁾ and R&S®ADD307, for use with portable mast, length: 15 m or 30 m	R&S®DDF1555X2A	4500.4458.15/.30
LAN Cable, length: 5 m (Fischer)	R&S®DDF1555X3A	4500.4529.02
LAN Cable, length: 2 m (RJ-45)	R&S®DDF1555X3B	4500.4535.02
Antenna Mast Adapter, for R&S®ADD207 and R&S®ADD307	R&S®DDF1555X04	4500.4541.02
Battery Cable, length: 0.8 m	R&S®DDF1555X05	4500.4558.02
Battery	R&S®DDF1555X10	4500.4564.02
Transport Case	R&S®DDF1555X06	4500.4570.02
Carrying Harness	R&S®DDF1555XCH	4500.4612.02
Carrying Holster, with cable set and antenna adapter	R&S®DDF1555X08	4500.4593.02

¹⁾ Reduced sensitivity for frequencies higher than 1 GHz because of cable attenuation.

Service options		
Extended Warranty, one year	R&S®WE1	Please contact your local Rohde & Schwarz sales office.
Extended Warranty, two years	R&S®WE2	
Extended Warranty, three years	R&S®WE3	
Extended Warranty, four years	R&S®WE4	
Extended Warranty with Calibration Coverage, one year	R&S®CW1	
Extended Warranty with Calibration Coverage, two years	R&S®CW2	
Extended Warranty with Calibration Coverage, three years	R&S®CW3	
Extended Warranty with Calibration Coverage, four years	R&S®CW4	

Your local Rohde & Schwarz expert will help you determine the optimum solution for your requirements. To find your nearest Rohde & Schwarz representative, visit www.sales.rohde-schwarz.com

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- | Local and personalized
- | Customized and flexible
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- | Long-term dependability

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The Rohde & Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, radiomonitoring and radiolocation. Founded more than 80 years ago, the independent company which is headquartered in Munich, Germany, has an extensive sales and service network with locations in more than 70 countries.

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Certified Environmental Management

ISO 14001

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R&S®DDF1555 Compact Direction Finder

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