



NAVIGATOR 10/100/1000

The easy way to control your FM Signal

NAVIGATOR is a compact and affordable family of products for easy field surveys as well as on site/studio monitoring of a station's complete FM signal

Use the Navigator as a portable FM modulation controller to control modulation levels, to adjust sound processing, to improve your audio quality over your competition and to check SCA and analyze RDS and DARC.

Use the Navigator as a RF coverage meter to attain a record of what the real-world contours of stations look like, to compare your main signal with your auxiliary and competitors, to analyze antenna patterns and to correlate real field readings with predicted data.

Field surveys... as easily as driving a car

Broadcasters need to measure their signal in the field, where their listeners are. NAVIGATOR 100 makes these surveys easy and fast.

We've combined a complete RF/Stereo/RDS/DARC measurement system with a sophisticated on-board control computer and GPS receiver, in a ruggedized case. No other equipment is needed in the field.

Measurement campaigns can be completely preprogrammed at the station. The field operator merely has to turn the system on and drive around the coverage area.

You can set NAVIGATOR 100 to examine just your station, a list of preselected stations, every frequency with RDS subcarrier or the entire FM band. Choose Fast Mode to gather RF levels, basic multiplex information, and error rates as quickly as one every two seconds. Or select Slow Mode, and once per minute the system performs a complete analysis, including MPX power and deviation for each subcarrier along with RDS parameters and DARC error rate.

Sub-carrier and RDS/DARC analysis

Navigator is the ideal tool to check a signal after repairs or set-up of new equipment at the transmitter site.

It enables full AF analysis, Pilot/RDS/DARC/Audio (L+R, L-R, L, R) evaluation, MPX/composite deviation and MPX power analysis (according to ITU BS 412-7 2.3 recommendations) and offers various data representations and statistics: such as bargraph and density.

3 versions to answer your needs

NAVIGATOR100 includes a GPS receiver for mobile RF surveys and a MapPoint DLL for direct exportation and map display.

NAVIGATOR10 is specially adapted for RDS analysis after an FM site set-up (no GPS and no Flash Card to save).

NAVIGATOR1000 is designed for fixed installations and provides similar measurements in a rack-mount. The unit has relay output relays for alarm triggering.



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All You Need in One Small Package

NAVIGATOR 100 is a complete system which incorporates Global Positioning System technology to store each measurement's location automatically with the signal parameters.

- Measurement campaigns are stored on non-volatile Flash Card for easy use.
- Measurement levels can be read from the front panel or automatically stored on the Flash Card for later use with any PC. Data can be exported into third-party programs such as MapPoint™ for automatic mapping of signal parameters.
- Includes a built-in speaker and headphone jack to verify tuning, plus flexible MPX/composite and data I/O for custom applications.

Flexible

All NAVIGATOR models include MPX/composite signal in/out and RS-232 control for custom applications. You can set your unit to analyze every aspect of a MPX/composite signal for sophisticated sub-carrier

balancing, or concentrate on specific parameters for mapping and proof of performance.

Every measured parameter and system setting can be accessed from a connected computer, using simple ASCII commands or our FM Explorer software.

FM Explorer Software

Our control and analysis software is designed to complement NAVIGATOR perfectly. It interprets NAVIGATOR 100 data graphically, with many parameters available in multiple views. Functions include complete FM multiplex power, deviation analysis, and interpretation of RDS and DARC signals.

FM Explorer is also used to:

- Read files used for calibrated antennas
- Download measurement campaigns (and then import them into MapPoint)
- Edit measurement files

Specifications

Operating conditions

- Specifications given for an ambient temperature of 20°C
- Equipment operational between: 0° and 50°C
- EMC immunity: 10V/m

Power supply

- Connector: 4 pin, male XLR, pin-out compatible with professional video power supplies and batteries.
- Navigator 10: 11,0V to 15,0V (max: 25V), 350 to 450 mA
- Power supply accessories: mains transformer supplied cigarette lighter cable supplied optional battery pack

Human machine Interface

- 2 push buttons
- 1 LED, 10 character, red, adjustable intensity, alphanumeric display
- 1 menu scrolling wheel
- 1 buzzer (TA, error indication)
- 1 internal loudspeaker (Navigator 100 only)

COM port RS232

- Speed: 9600 baud except for certain commands at 19200 bauds
- Communication protocol: ASCII commands, compatible with all ASCII terminals
- Access to all parameters (measurements, RDS, DARC, configuration, calibration) through the command interpreter

Antenna input

- Connector: BNC on rear panel
- Impedance: 50 ohms
- External attenuator: 20dB

FM Multiplex input (BNC socket)

- Connector: BNC Impedance = 50 Kohms
- Max input level: 8800mV (+12dBu)

FM Multiplex output (BNC socket)

- Connector: BNC
- Impedance: < 20ohms
- Max level: 4400mV (+6dBu)
- Pass-band: +/- 1dB from 50Hz to 50KHz
- Stereo cross-talk: 36dBu typ. at 1KHz (adjustable by potentiometer)

RF receiver

- FM frequency: 87.5-108.0 MHz
- RDS sensitivity: 0 errors at Vrf=-90dBm, 4KHz RDS deviation, no modulation
- DARC sensitivity: 0 errors at Vrf=-65dBm, 6KHz DARC deviation, no modulation
- Strong fields: 3 AGC loops, AGC device taking the adjacent levels into account
- RF level evaluation: +/- 4dB from 15°C to 25°C, from 20dBuV to 80dBuV without modulation
- Dynamic: 0 to 94dBμV
- External attenuator delivered: 20dB

Stereophonic decoding

- Cross-talk: >20dB, typ >36dB @ 1KHz
- Typical cross-talk: approximately 26dB to 35dB

RDS decoding indicator

- Led on front panel

DARC decoding indicator

- Led on front panel

Optional GPS receiver (NAVIGATOR 100)

- Number of channels: 8
- Antenna: pre-amplified, 5m of cable, magnetic
- Connector: SMB, rear panel of the FM Navigator
- GPS differential: dGPS input on the rear panel of the FM Navigator (extension connector) Headphones output
- Headphones connector: stereo / 3.5mm jack
- Volume: adjustable via front panel and ASCII protocol (RS232)
- Max level: +6dBu for 75KHz deviation

Optional buzzer (NAVIGATOR 100 only)

- Uses: error signalling, TA switching, arrival of a paging message
- Signalling during scrolling of a measurement campaign
- Signalling of control or input errors.

Accessories

- Cigarette lighter cable
- 20 dB attenuator
- Optional portable battery pack



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