Garmin charges into the

Family Radio Service (FRS)/General

Mobile Radio Service (GMRS) market

The convenience of GPS with a 2-way radio

with a new breed of electronics: Rino.

Rino (Radio Integrated with Navigation

for the Outdoors) combines a powerful

two-way radio with a WAAS-enabled

GPS receiver. Its exclusive location

reporting feature allows you to send

and receive GPS positions with other

Rino users on FRS channels. Locations

appear on the map page so you can

easily navigate to them. What's more,

Rino is the first completely waterproof

FRS two-way radio. Confirmation Rino

doesn't just talk tough — it is tough.

Radio features

Channels: 22 (1-14 FRS, 15-22 GMRS*, 15R-22R GMRS repeater); 7 NOAA weather channels w/ weather alert mode (Rino 130 only)

Squelch codes: 38

Range: Up to 2 miles on FRS channels; 5 miles on GMRS

Modes: Channel scan with programmable scan list; channel monitor

Call tones: 10 call and ring tones, 4 roger tones

VOX: External Voice Activation with sensitivity selection

Other features: Alarm, calculator, calendar, clock, lap timer, stopwatch, games

Location reporting features

User ID: 10-character name with graphic symbol

Location sending: One button press with Call or Talk button**

Location receiving: Automatic; keep track of up to 50 Rino contacts, allows user to poll other user's position

Contact GoTo: Navigation data automatically updated to contact's latest location

Contact TracBack®: Lets you retrace the path of up to 20 contacts

Contact Quick View: Lets you quickly center all contact locations on map

Contact Assembly: Lets you and your contacts send and navigate to a common destination

Proximity alarm: Alerts you if contact moves out of a specified distance radius or if you are within a specified distance of a waypoint

Navigation features

Waypoints/icons: 500 with name, graphic symbol and notes

Routes: 20 reversible

Tracks: Automatic track log; 20 saved tracks let you retrace your path in both directions

Trip computer: Current speed, average speed, time of sunrise/sunset, resetable maximum speed, trip timer, trip distance, electronic compass (130 only) and barametric altimeter (130 only)

Tables: Built-in celestial tables for best times to fish and hunt, sun and moon rise/set based on date and location

Map datums: More than 100

Position format: Lat/Lon, UTM/UPS, Maidenhead, MGRS, Loran TDs and other grids

GPS performance

Receiver: WAAS enabled, 12 parallel channel GPS receiver continuously tracks and uses up to 12 satellites to compute and update your position

Acquisition times:
Warm: Approximately 15 seconds
Cold: Approximately 45 seconds
AutoLocate™: Approximately 5 minutes
Update rate: 1/second, continuous
GPS accuracy:
Position: < 15 meters, 95% typical***
Velocity: 0.05 meter/sec steady state
DGPS (USCG) accuracy:
Position: 3-5 meters, 95% typical
Velocity: 0.05 meter/sec steady state
DGPS (WAAS) accuracy:
Position: < 3 meters, 95% typical***
Velocity: 0.05 meter/sec steady state
Dynamics: 6g's
Interfaces: RS232 with NMEA 0183, RTCM 104 DGPS data format and proprietary GARMIN
Antenna: Quad-helix

Power

Source: 3 "AA" batteries (not included)

Battery life: 15 hours (110/120); 14 hours (130 only)

Physical

Size: 4.5"H x 2.3"W x 1.6"D; 7"H with antenna (11.4 x 5.8 x 4.1 cm; 17.8 cm with antenna)

Weight: 7.6 ounces (236 g) with batteries (110/120); 8 ounces (130 only)

Display: 1.4"H x 1.4"W (3.6 x 3.6 cm) 160 x 160 pixels, high-contrast LCD with bright backlighting

Case: Waterproof to IEC 529 IPX7 standards

Temperature range: 5°F to 158°F (-15°C to 70°C)

User data storage: Indefinite, no memory battery required
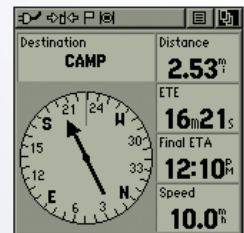
Accessories

Standard: PC interface cable (120/130)
User's guide
Quick reference guide
Belt clip
Wrist strap

Optional: Automotive mount
Handlebar mount
Carrying case
Bash guard
2.5 to 3.5 mm jack adapter
Earbud with push-to-talk microphone
Flexible ear receiver
Headset with boom mic
12-volt adapter cable
PC data cable
PC data cable with 12-volt adapter
NiMH battery charger
MapSource™ CD-ROMs
Instructional video

When another Rino user sends their location, it appears on your map page (screen is from Rino 120).

The navigation page helps guide you to a destination or another contact's location.

With downloaded detail from MapSource, view listings of services and more.

©2003 Garmin Ltd. or its subsidiaries

GARMIN.

Specifications are preliminary and subject to change without notice.

*Using GMRS requires FCC license.

**Location sending/receiving only available on FRS channels. Minimum time between updates is 10 seconds as specified by FCC.

***Subject to accuracy degradation to 100m 2DRMS under the U.S. Department of Defense Selective Availability Program.

Here's how the units are different

	Rino 110	Rino 120	Rino 130
voice scrambler	no	yes	yes
vibration alert	no	yes	yes
database or map	city point database	detailed basemap	detailed basemap
MapSource™	accepts 1 MB data from the Points of Interest CD	accepts 8 MB of downloaded map detail from a variety of MapSource CDs	accepts 24 MB of downloaded map detail from a variety of MapSource CDs