LOWRANCE SIMRAD B&G

# Addendum for compatible Navico MFD's that support the following Broadband 4G™ Radar features:

- Dual Radar
- Dual Range
- 4G Radar Controls
  - Target Separation
  - Noise Rejection
  - Fast Scan
- Directional Clutter Rejection
- Reset Device ID
- 4G Compatibility Chart


☞ *The MFD screenshot examples used in this addendum is based on the SIMRAD NSE Multi-Function Display. The actual screen layout in your compatible MFD may vary in layout or color pallet, but essentially the controls and sequences are the same.*

Part no. 988-10224-001

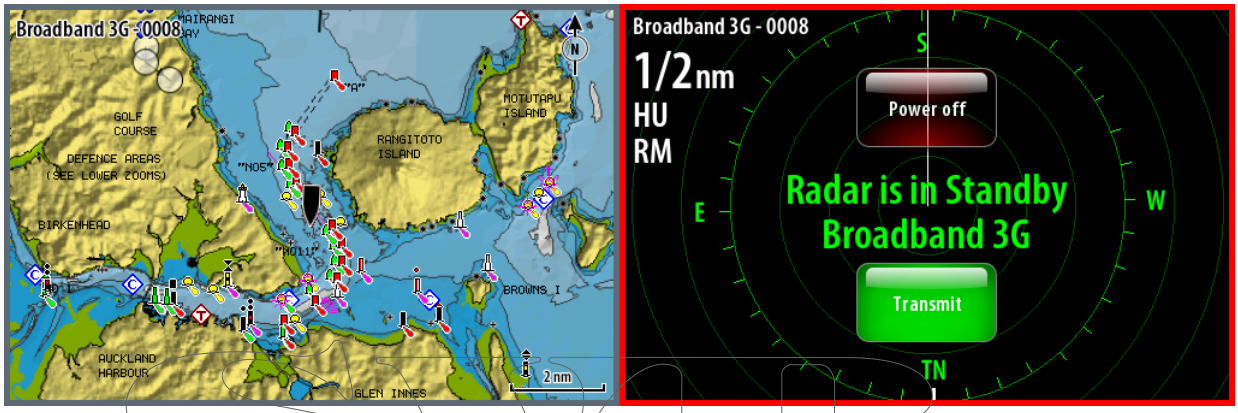
## Dual Radar

With dual radar capability, it is possible for two radar sources to be displayed simultaneously. Connect either two Broadband Radars or two Pulse Radars or one of each and see both radar images at the same time.

*Interference will be seen on the Broadband Radar on most ranges when a pulse radar and a Broadband Radar are transmitting at the same time on the same boat. It is Navico's recommendation to only transmit on one radar at a time e.g. Broadband Radar for typical navigational usage or pulse radar to locate weather cells, defined coastlines at a distance and to trigger Racons.*

**Initial setup:**

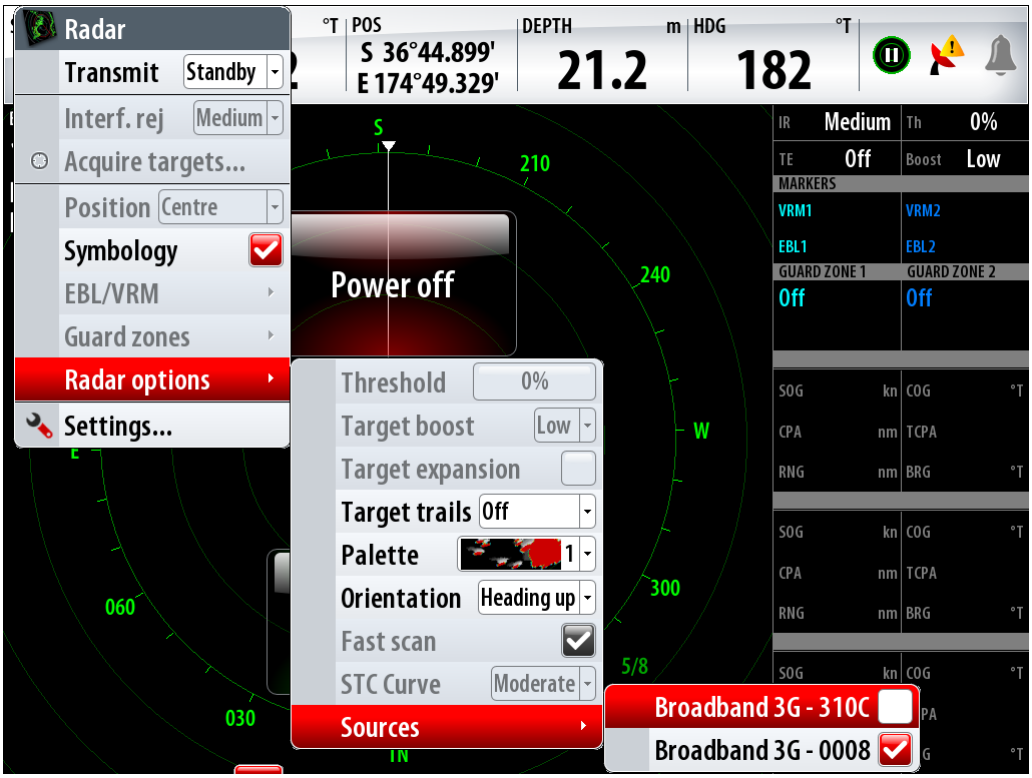
1. Power up the system including both radars.
2. On any display, the first radar detected by the display will be used as the source for all chart and radar panels. This source will be used by default for every system power-up thereafter, until changed.



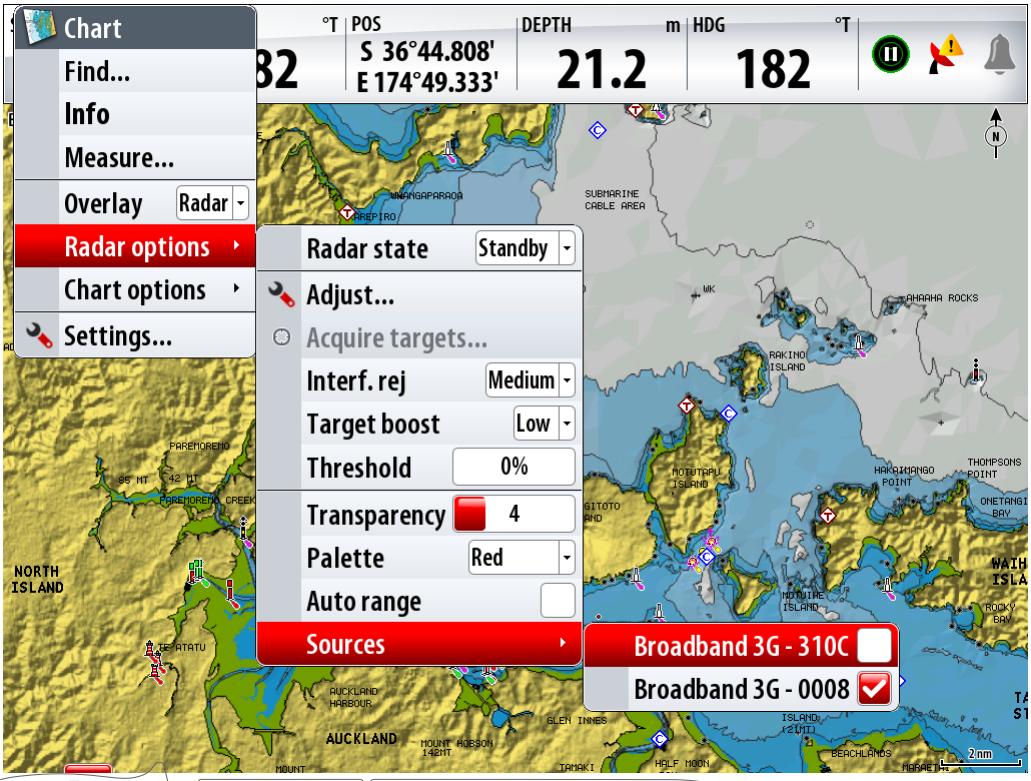

The radar source is identified by radar type with a four-digit number and is displayed in the top left corner of chart and radar panels.

*The four-digit number is the last four digits of the radars serial number.*

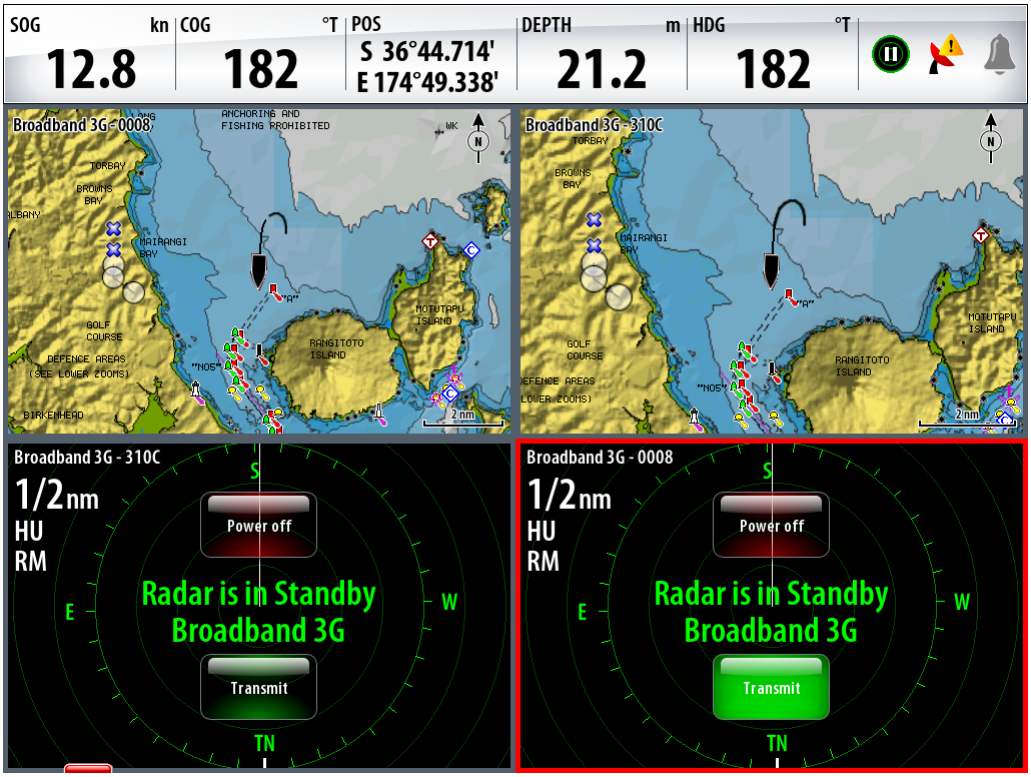
3. For a radar panel, the radar source can be changed in the menu as shown below:



4. For a chart panel (with radar overlay on), the radar source can be changed in the menu as shown below:



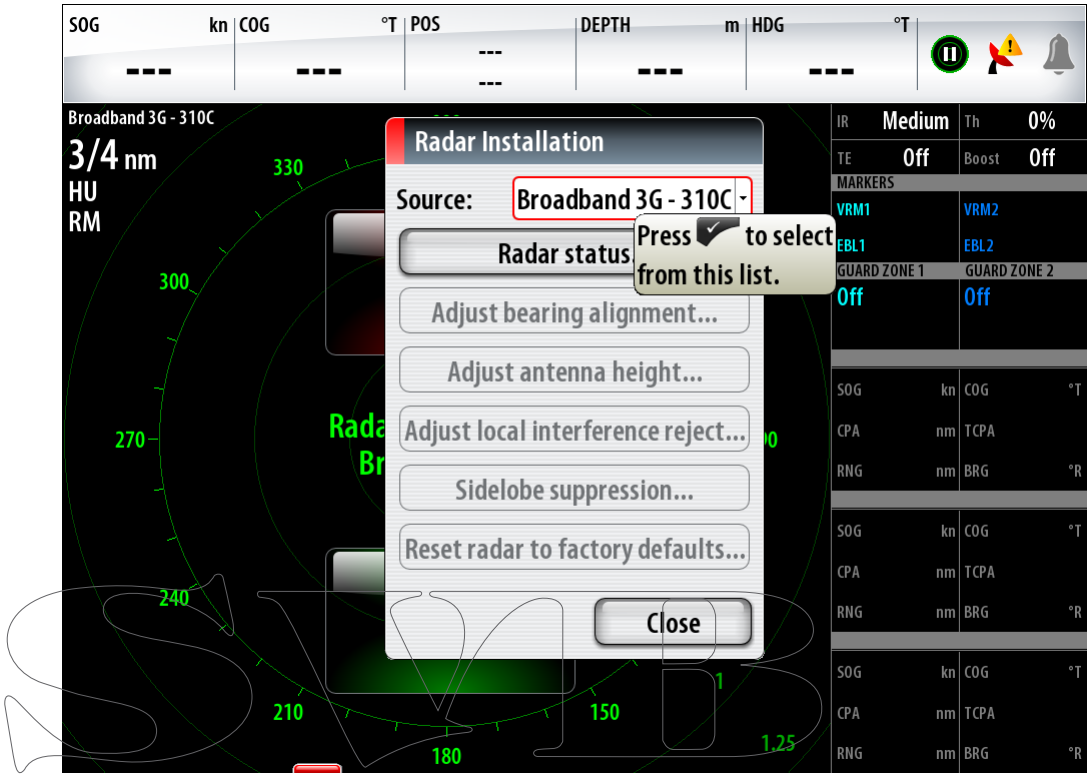

5. For pages with more than one radar or chart panel, it is possible to set up different radar sources for each panel:



6. The radar source selection is not global, so it will only apply to the display on which the source was selected. The radar source will need to be set up for each display on the network.

   Once the radar sources have been set up, they will be retained for every system power-up until changed by the user

7. To view or change items in the installation menu for a particular radar source, the radar source must first be selected, as shown below:



## Dual Range

When connected to a Broadband 4G™ Radar, it is possible to run the radar in Dual Range mode. The 4G radar will appear in the radar sources menu as two virtual radar sources A and B. Range and radar controls for each virtual radar source are fully independent* and the source can be selected for a particular chart or radar panel in the same manner as dual radar described in the previous section.

MARPA is fully independent and up to 10 targets may be tracked for each virtual radar source.

Up to two independent Guard Zones may also be defined for each virtual radar source.

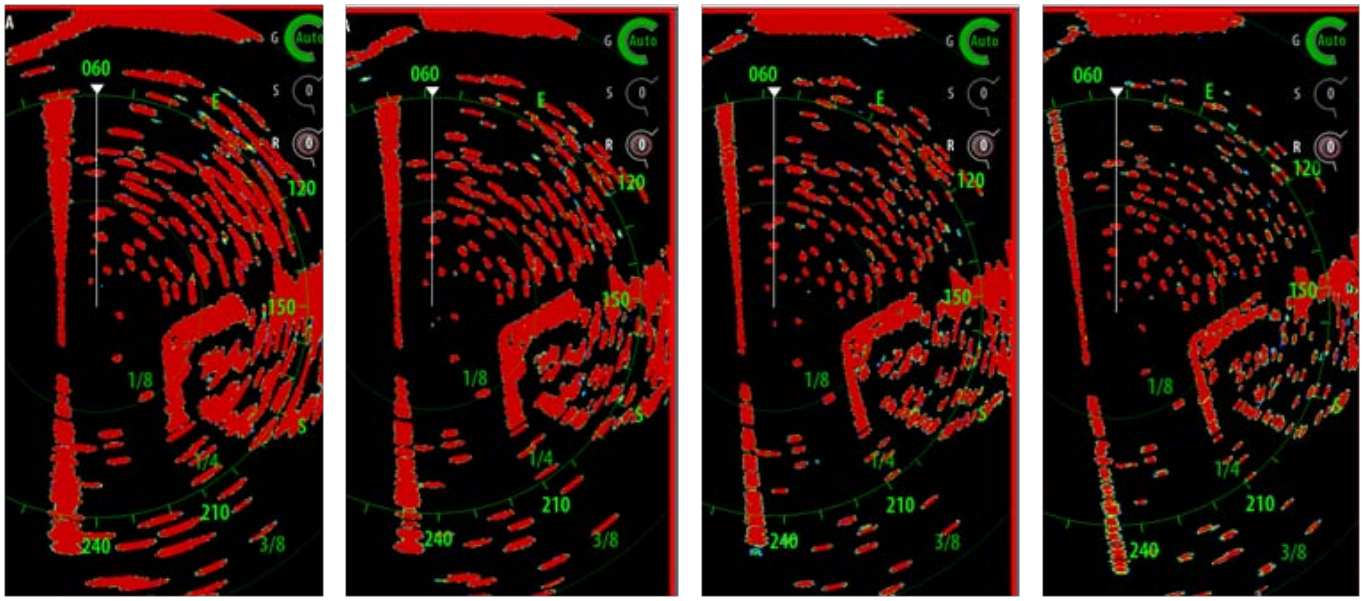

*Some controls that are related to physical properties of the radar itself are not independent of source. These are Fast Scan, Antenna Height and Bearing alignment.

## 4G Radar Controls

Broadband 4G™ Radar has several controls not found on any other Navico radar:

### Target Separation

The Target Separation control allows you to control the target discrimination of the radar as illustrated below:

**Off** **Low** **Med** **High**

## Noise Rejection

The Noise Rejection control sets the amount of noise filtering applied by the radar. Target sensitivity is increased at longer ranges when this control is set to Low or High, but does cause some loss of target discrimination.

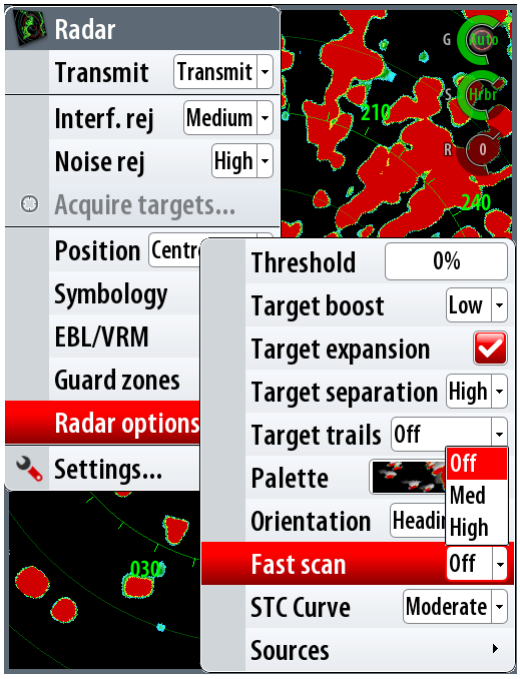
Tip: To get maximum range performance from 4G, transmit on one range only, set Noise Reject control to High and threshold as low as possible. The default is 30% for less clutter on the screen. If OFF is selected for NSE, NSO and Zeus, the range performance is about equal to our 3G radar. In some areas where extreme high interference may exist, try OFF for best radar image.


SVB

## Fast Scan

The Fast Scan control sets the rotation speed of the radar scanner. For Broadband 4G™ Radar there are Off/Medium/High (24/36/48 rpm nominal) settings. However, Fast Scan speed will be limited in certain modes of operation:

- In Dual Range mode, speed is limited to 24 rpm
- With Noise Rejection set to Low or High, for ranges 1 nm or greater, speed is limited to 21 rpm.



## Directional Clutter Rejection

This mode automatically works when GAIN = AUTO and SEA = HARBOR or OFFSHORE. The purpose is to allow smaller vessels to be seen in the leeward direction of the sea clutter. The GAIN of the radar receiver is increased dynamically during the sweep, in the leeward direction, for increased target sensitivity in heavier sea states.

When GAIN or SEA = MANUAL, the Directional Clutter Rejection mode will be OFF (non-directional).

In addition, CALM, MODERATE or ROUGH STC Curve settings are available in the Radar options menu to better optimize the radar image to your liking.

## Reset Device ID

It is not necessary to reset the radar device ID for dual radar operation. This feature is provided to enable displays that do not support dual radar to view a particular radar source. This operation must be performed with only the radar intended for Device ID reset connected to the network.

The Reset Device ID button is located in the Radar Status window in the Radar Installation menu. After the reset is performed, power cycle the radar and reconnect any other radars. The reset radar will now be visible on Navico displays that do not support dual radar.

## 4G Compatibility Chart

| **Broadband 4G™ Radar** | **LOWRANCE** | **SIMRAD** | | | **B&G** |
|---|---|---|---|---|---|
| | **HDS** | **NSE** | **NSO** | **NSS** | **ZEUS** |
| Beam Sharpening | ✓ | ✓ | ✓ | ✓ | ✓ |
| → Target Separation control | Fixed: 2.6° | 5.2° to 2.6° | 5.2° to 2.6° | Fixed: 2.6° | 5.2° to 2.6° |
| Range - 50% more range than 3G and 2x over BR24 | ✓ | ✓ | ✓ | ✓ | ✓ |
| → Noise Rejection control | Fixed: High | Off, Low, High | Off, Low, High | Fixed: High | Off, Low, High |
| Maximum Range Scale - 36 nm, in 18 range settings | ✓ | ✓ | ✓ | ✓ | ✓ |
| Dual Range Operation | × | ✓ | ✓ | × | ✓ |
| Maximum Rotation Speed (Less than 1 nm) | 36 RPM | 48 RPM | 48 RPM | 36 RPM | 48 RPM |
| Advanced Directional Clutter Rejection | ✓ | ✓ | ✓ | ✓ | ✓ |
| Advanced Sidelobe Rejection | ✓ | ✓ | ✓ | ✓ | ✓ |
| Best-In-Class Range Resolution | ✓ | ✓ | ✓ | ✓ | ✓ |

SAMPLE