136.01.1706.UG
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Antenna Pattern Measurement Helper

One to Two Weeks in Advance

___Make sure you have all equipment needed Transponder, GPS, whips.

___Check transponder battery & charge > 12 volts (a new battery will be > 13 volts when fully charged)

Day of APM

___Synchronize the computer to GPS clock and confirm site and antenna are functioning properly

___Quit all applications except SeaSondeController and SeaSondeAcquisition

___Stop logging cross spectra, checkmark "Enable Loop Diagnostics"

CONFIGURE RECEIVER

___Use SeaSondeController menu Receiver Controller->Receiver APM Configuration

or

___STORE receiver's normal operating settings in AWG register 3 (in SEND box: type save 3, press enter key)

___CONFIGURE RECEIVER with APM Settings as follows and then store the settings in AWG register 2:

SeaSonde Model	Bandwidth	Blanking	Bdly µs	Attenuation Boat/Walking	Sweep Frequency	Pulse Shaping
5MHz	25kHz	120	~4.75	15/30db**	2Hz	Off
12MHz	50kHz	60	~4.75	15/30db**	4Hz	Off
25Mhz	150kHz	60	~4.75	15/30db**	8Hz	Off
42MHz	150kHz	60	~4.75	15/30db**	8Hz	Off

Configure Transponder

___Connect USB cable between XPNDR and Mac laptop and launch SeaSonde Transponder Application

___Configure TRANSPONDER by clicking "INITIALIZE" button in SeaSonde Transponder application

The Default Settings in the Transponder application will place the transponder signal in range cell 10 (±2 rc's) and approximately 75% to the right of center (DC) in SeaSondeAcquisition spectral doppler.

___Save settings to the transponder (press STORE button) and verify that they remain after cycling power

CONFIGURE TRANSPONDER ANTENNA as indicated below:

SeaSonde Model	Antenna Configuration (Boat Run-APM)	**Antenna Configuration (Walking-WAPM)
5MHz	12MHz head w/green antenna + OCEAN GND	three 8' white whips on sides and top
12MHz	12MHz head w/green antenna + OCEAN GND	three 8' white whips on sides and top
25Mhz	White whips (2 - 4' whips on sides + 8' on top)	two 4' white whips on sides and 8' top
42MHz	White whips (2 - 4' whips on sides + 4' on top)	three 4' White whips on sides and top

___Turn off all SeaSondes operating at the same frequency that are within range
___Place transponder > 1 wavelength from receive antenna and test
___Identify the peak in the Doppler spectra plot and check for Time Series (Lvl) file creation. Save screenshot.
___Note range cell number, signal strength (dBm) and Doppler bin number of transponder peak
___Collect two shore-based data points (ends of the arc) with the transponder and handheld GPS

At the Boat

___Check boat & assemble transponder antenna
___Install antenna so it is not blocked to either side & configure antenna sea water ground if using green whip
___Configure (or confirm) Transponder Settings
___Clear GPS memory then configure the GPS for logging every 1–5 seconds and also to "stop when full"
___Turn off GPS and proceed to position where antennas are visible from boat
___Turn handheld GPS receiver on and confirm it is logging data. Place it in safe location with 5+ satellites visible

At the Receiver

___Boat proceeds to center of arc a few ~ 100–300m offshore to provide good signal for testing
___Identify the peak in the Diagnostics window, start logging Time Series and check for Lvl file creation
___Boat proceeds to starting point of 1st arc to begin the pattern
___Confirm peaks in channels 1, 2 and 3 as transponder travels through its arcs– ideal peak strength –90 to –120dB

Revision History

First Draft Jun 30, 2017

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