

APM Crib Sheet For All Systems

September 15, 2010 (rev 10)

One to Two Weeks in Advance

__ Check transponder battery & charge (> 12 volts)

The Day of the Calibration

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

__ Synchronize the computer to GPS clock

__ Quit all applications except SeaSondeController and SeaSondeAcquisition

__ Stop logging cross spectra, enable diagnostic processing

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

Note:(XPNDR will function only when receiver is set to sweep "DOWN")

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

* Note: Older model 5MHz systems will not accept 60us, use 120us in this case ** Reduce Attenuation if Transponder doesn't respond.

__ **CONFIGURE TRANSPONDER** by clearing old settings (in SEND box: type **default**, press enter key)

THE SETTINGS BELOW WILL PLACE THE TRANSPONDER PEAK IN RANGE CELL 10 (+/- 2 RC'S) APPROXIMATELY 75% TO THE RIGHT OF CENTER OF THE SEASONDE ACQUISITION SPECTRAL PLOT WINDOW FOR ALL SYSTEMS

__ Set transponder's frequency and offset according to the recommended settings in the table below:

Disregard ALL boxes in the "Transponder Controller->Transponder RC 2" window except the frequency and offset boxes

Seasonde Model	Frequency (center)	Offset
5MHz	your center frequency	20.7 Hz
12MHz	your center frequency	40.7 Hz
25Mhz	your center frequency	40.7 Hz
42MHz	your center frequency	80.7 Hz

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

__ Set up the appropriate antenna configuration with the transponder:

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

**** A single vertical whip may be adequate for WAPM**

__ 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.

__ 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 5-10 seconds and 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**

__ After completing second arc, turn off handheld GPS

__ Restore operating settings (in SEND box enter: **load 3** to recover settings) and then **STORE**. Restart the computer

__ Verify SeaSonde settings have returned to normal operational values and that they have been stored