



The Dream Suite

If you've got a budget for an electronics upgrade, we've got advice for spending it wisely.

BY ZUZANA PROCHAZKA

When my editor called and said he'd be giving me three budgets for retrofitting an electronics suite, I thought "Woo hoo, how fun is that?" Then reality set in. Not only were the budgets hypothetical and I wasn't actually going shopping, but the three numbers were \$5,000, \$10,000 and \$15,000. Gulp. How was I going to revamp the electronics on a sizeable boat for that? But when I started researching what was available, I was pleasantly surprised by the myriad choices.

If you're contemplating an electronics upgrade, you need to think about three things. First, what is absolutely necessary for a basic system? Second, what are the nice-to-have add-ons? Third, do you want to mix and match from a variety of manufacturers, or do you want to stick with one brand to maximize simplicity and good crosstalk between the components?

Most electronics today will connect via their proprietary networks or via NMEA0183 or NMEA2000 protocol, so you can assemble best-of-breed solutions from various brands. Sometimes, you'll find that installing a package from a single manufacturer is easier because the installation may be simpler, technical support will require a single phone number and there are price advantages to buying packs from one maker. The basics generally include a GPS chartplotter and VHF radio, and then expanding into radar and an autopilot as budgets allow. Whether you mix and match or decide to become, for example, a Raymarine or a Garmin boat," here are some ideas on how to spend your money wisely.



BUDGET: \$5,000

Whether your budget is \$5,000, \$10,000, \$15,000 — or you're lucky enough to say "What's a budget?" — you can find quality electronics to update your boat. We searched high and low for the best offerings your money can buy. Find them on this and the following pages.

GARMIN GPSMAP 740



GMR 18HD



GMI 10



GARMIN VHF 300

Sticking to a Budget

BUDGET: \$10,000



SIMRAD NSE 8

SIMRAD BR24



SIMRAD AP24



SIMRAD RS25 VHF

\$5,000

Yes, Virginia, Santa Claus can deliver for under 5K. And pretty well, too. From the offerings in our matrix, I thought Garmin's compact package was the most comprehensive because it included a plotter, charts, instruments and radar. It starts with the GPSmap 740 stand-alone touch-screen chartplotter with preloaded U.S. coastal maps and a nice 7-inch display. Add to that the GMR 18 HD 4 kw radar with a 36 n.m. range and MARPA tracking. Finish it off with the GMI 10 instrument display that can be customized with various sensors to show depth, speed, water temperature, fuel-flow rate, engine data and wind direction. And, finally, add Garmin's VHF 300 25-watt radio and you have a package for less than \$4,900, including various cables, transducers and other accessories.

Since radios are often the easiest equipment to integrate across brands, you might want to consider substituting Standard Horizon's Matrix GX2150 fixed-mount VHF with a built-in AIS receiver for \$399. This

is a receiver, not a transceiver, which means you'll be able to get information from broadcasting vessels in your vicinity, but you won't be able to send your information to others. But for less than \$400, you get a powerful Class D VHF with AIS capabilities.

\$10,000

When you have \$10,000 to work with, your electronics retrofit takes on a whole new dimension. For our middle-of-the-road budget, Simrad, part of the Navico marine electronics umbrella, adds some interesting features to the basics. At the heart of the system is the versatile NSE 8, an 8-inch chartplotter that can accommodate quite a bit of future expandability and comes loaded with Navionics Platinum charts. Now add the very compact BR24 broadband radar with excellent target detection, low power draw and low radiation output. At this budgetary level, you can afford an autopilot such as the reputedly bulletproof Simrad AP24 for boats 30 to 80 feet. Be sure to include the Simrad RS25 fixed-mount VHF

Apples to Apples Here's a side-by-side comparison of three companies' offerings

Item	Garmin			Raymarine	
	\$5K Budget	\$10K Budget	\$15K Budget	\$5K Budget	
➔ Chartplotter	GPSmap 740S \$1,500	GPSmap 6212 \$4,000	GPSmap 7212 \$5,000	C90W System Pack \$3,360	
➔ Radar	GMR 18 HD \$1,200	GMR 24 HD \$2,000	GMR 404 xHD Open Array & Pedestal \$3,700		
➔ VHF and/or RAM mic	VHF 300 \$700	VHF 200 \$400	VHF 200 \$400		
➔ AIS			AIS 600 \$1,400		
➔ Autopilot & Pump		GPH10&1.2L Pump \$3,000	GPH 10 & 1.2L Pump \$3,000	SPX-5R Autopilot \$1,950	
➔ Transducers/Cables/Access.	\$933	\$583	\$1,332	Included in pack above	
➔ Other					
➔ Instruments (speed/depth/temp)	GMI 10 \$500				
➔ TOTAL:	\$4,833	\$9,983	\$14,832	\$5,310	

and the NAIS 300 black box AIS transponder, which will send your vessel's information to other boats as well as track boats around you.

But we're not done yet. Simrad tosses in its WM-2 weather module, which is a smart antenna that delivers real-time, high-resolution weather information and displays it on your NSE chartplotter. You can also use it to get sports and high-quality digital radio with a Sirius subscription. Finally, add the Simrad Sonic Hub, which has a waterproof iPod/iPhone/MP3 docking station that is again controlled via the NSE display and even provides an AM/FM tuner, so you don't need a separate stereo. That's a lot of functionality for \$10,000.

\$15,000

Got \$15,000? Now we're talkin'. Check out Raymarine's high-end package that is ideal for managing all the sophisticated add-ons at the multiple stations on larger vessels. The package starts with the versatile E120 Widescreen multifunction display. You choose whether you'd like

the touch-screen or keypad interface. This intuitive, waterproof display can be networked with multiple other units on the flybridge, in the pilothouse, on the aft deck and more. The E120W has Navionics Platinum Plus 3-D charting and may be customized to interface with digital fishfinders, HDTV, closed circuit and infrared cameras, and more. Raymarine's high-definition RD418 HD is a 4 kw digital radar with a 48 n.m. range that also delivers crisp, accurate echoes up-close.

The tough ST70 SmartPilot x-10 autopilot will keep the course as well as allow you to do a variety of programmable fishing and box patterns. Now add the AIS 500 Class B transceiver and the Ray218 Class D VHF with a built-in 30-watt loudhailer and listen-back capability. Finally, complete your helm with the ST70 display, which is a sunlight-viewable, color instrument display that shows depth, speed, wind, navigation data, autopilot status, engine monitoring and more. That last part will take you just a notch above our target budget, to \$15,275, but it's a combination that will allow you to expand and upgrade in the future.

BUDGET: \$15,000



RAYMARINE E120



RAYMARINE RD418 HD



RAYMARINE ST70 SMARTPILOT



RAYMARINE RAY218 VHF

Navico/Simrad

\$10K Budget		\$15K Budget		\$5K Budget		\$10K Budget		\$15K Budget	
C120W Radar System Pk	\$5,130	E120W Multi Display	\$4,995	Simrad NSE 8 Plotter	\$2,950	Simrad NSE 8" Plotter	\$2,950	2X12" Network Display	\$6,950
4kW included in pack above		RD418HD Hi Def Radar	\$2,895	BR24 Radar	\$1,850	BR24 Radar	\$1,850	BR24 Radar	\$1,850
				included above		included above		included above	
Ray55 Class D VHF	\$310	Ray218 Class D VHF	\$600	Simrad RS25 VHF	\$270	Simrad RS25 VHF	\$270	Simrad RS25 VHF	\$270
		AIS 500 Class B Transceiver	\$1,400			NAIS 300 Black Box Transponder	\$900	NAIS 300 Black Box Receiver	\$900
ST70 SmartPilot x-10	\$2,800	ST70 SmartPilot x-10	\$2,975			Simrad AP24	\$2,989	Simrad AP24	\$2,989
Various	\$1,420	Various	\$1,815						
		ST 70 Color Multi Inst.	\$595			Simrad WM-2 Weather Module	\$700	Simrad WM-2 Weather Module	\$700
						Sonic Hub Audio Server	\$350	Sonic Hub Audio Server	\$350
						IS 20 Instruments	\$688	IS 20 Instruments	\$688
	\$9,660		\$15,275		\$5,070		\$10,009		\$14,697

BUDGET: UNLIMITED



RAYMARINE T400



JENSEN 42-INCH LCD TV



FUSION MS-RA200 W/WIRED REMOTE



YACHT CONTROLLER

Working with a Smaller Budget?

What if you don't have \$5,000 to spend but still need some basics? Raymarine offers a solution with the A50D 5-inch sunlight-readable GPS chartplotter/fishfinder with built-in U.S. charts, an internal GPS antenna that will work in the cabin and an included transom-mount depth/speed/temp transducer (\$999). Add to that the S1000 wireless autopilot (\$1,185) for hydraulic steering and a wireless remote so you can move about on deck freely. Finally, add a Ray49 DSC/VHF (\$229). That leaves \$87 to put toward a Shakespeare VHF antenna. Total without radar, \$2,500.

Not to be outdone, Standard Horizon also has some economical solutions. Its top-of-the-line equipment includes the CP1010i color 10-inch multimedia GPS chartplotter with the FF525 black box fishfinder and DST527 transducer (\$3,140), the GX2150 fixed-mount VHF and CMP30 second station remote mic (\$520). All this comes in at just less than \$3,700.

Important Websites

To find out more about these upgrades and many other products, visit:

Navico.com
 Simrad.com
 Raymarine.com
 Flir.com
 Garmin.com
 StandardHorizon.com
 Lowrance.com
 Fusionelectronics.com
 Majesticinternational.com
 Jensenmarinedirect.com
 Kvh.com
 Yachtcontroller.com

The Bells & Whistles

OK, what if you won the lottery or you already have a decent suite of electronics but still want to upgrade the functionality or entertainment options on your vessel?

You could start by making docking easy no matter the conditions. Yacht Controller is an innovative Florida company that developed a retrofit solution to integrate engines, thrusters and even the windlass so you can control your boat with one wireless remote. You can move about the deck or even step off onto the dock to handle the lines and still be in control. Yacht Controller's dual-band receiver/transceiver device has been installed on more than 2,500 boats, mostly between 50 and 70 feet but ranging up to 120 feet in length. You can put engines in and out of gear, engage bow and stern thrusters as needed based on wind and current, and even deploy the anchor remotely. System pricing depends on what kind of engine controls you have and the number of functions you want to add beyond engines. The basic install

starts at \$7,500 and goes up to \$11,500, depending on complexity, yacht location and other factors.

For the fishing crowd, there are a number of stand-alone and black box fishfinders from fishing experts such as Lowrance and Humminbird that you can network to your multifunction display. One that stands out is Lowrance's Structure Scan sonar imaging that came out last year and starts around \$600. The Structure Scan shows crystal-clear images of drop-offs, ledges, channels, brush and fish holes. You can scan left or right, and the clarity of what's below you is downright eerie.

How about some entertainment? The Fusion MS-RA200 is an ultra-compact model measuring just 6 inches by 3 inches and is completely waterproof. This palm-sized unit has iPod and iPhone connectivity, USB compatibility, an AM/FM tuner, a VHF receiver and is Sirius satellite ready. With an external iPod dock and speakers, it sells for around \$300, and you can add a second remote control, the MS-WR600C, for about \$150. This unit is so small, you might think about adding it to your center-console tender to take your tunes along.

Why not add a TV to the big boat?

Jensen has four LCD flat-screen models to choose from, including 19, 26, 32 and 42 inches, ranging from \$400 to \$1,000. The 42-inch JE4208RTL has an integrated HDTV tuner, a corrosion coating to protect against humidity, easy front controls, and reinforced mounting points to handle shock and vibration when you're in a hurry to get home in a choppy sea.

Majestic, an Australian company, offers a 12v combination LCD TV and DVD, which makes things easy and doesn't require an inverter. The 19-inch HD TD1920U has a built-in, side-loading DVD player and touts lightweight construction and low power consumption, all for only \$500.

Now, what are you going to watch on that beautiful flat-screen at sea? How about a satellite TV antenna to bring real-time football games with you? Raymarine's 33STV 13-inch dome is a compact solution for smaller vessels and starts at just less than

\$3,000. This HD antenna weighs less than 10 pounds and comes standard with the DirectTV MIM, which switches across three broadcast satellites automatically so you get uninterrupted channel surfing just like at home.

For a larger vessel, say 50 feet and over, consider the KVH TracVision T-6. This 24-inch antenna receives more than 300 channels, including HDTV and Internet data broadcasts, and is great for geographic areas with weaker signal strengths. It can pretty much work around the world and retails for \$7,500.

Finally, how about some night-vision assistance? FLIR, which bought Raymarine last year, has several cameras that work on thermal imaging rather than light amplification and show great detail at night when approaching a new marina or searching for someone in the water. Its T300 and T400 fixed-camera systems have been integrated with Raymarine E-

Series HybridTouch technology and the G-Series remote keyboard/joystick option. Move the camera via the touch screen and use the 2x zoom to see 360 degrees around the boat in the dark. The price range, depending on the resolution and model, is between \$9,000 and \$15,000.

These are just some ideas to get you started. Remember these prices are estimates and will vary with the specific configuration and where and when the products are purchased. There is quite a lot of information online, and you'll be making choices depending on the size of your boat and whether you're primarily cruising or fishing. But first decide what you absolutely need, what niceties you'd like, and whether you want to piece options together or stick with one brand, at least for the navigation basics. Chances are, you can put together a dream suite on just about any budget. 🍷

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