February 2021

Media	Context	Links
BoatUS Magazine	Fingertip Docking	Print
Marine Electronics Journal Magazine	Joysticks: Getting Smarter All the Time	Print
Marine Electronics Online	Upgrades to Wireless Remote Control System	Link
Panbo Online	Docking Remote Control with Marc Curreri	Link
Powerboat World E-News	New Features and Innovations	Newsletter
Yachting Journal Online	Upgrades to Wireless Remote Control System	Link

Rushton Gregory
Coverage Content

Dockmate: Fingertip Docking

Dockmate allows you to park your boat from anywhere on deck, so you can always see from the best vantage point.

Dockmate is a wireless control system that allows the skipper to control the boat from anyplace on board — helm, bow, stern, midship. About the size of a large cellphone, the wireless controller has a range of 150 feet and allows the user to operate bow and stern thrusters, main engines, even the horn and windlass. Compatible with most electronically controlled engines, the system is available in four models: Single, Twin, Twist 3-axis joystick with proportional control, and Twist IPS for POD drives such as the Volvo IPS.

The compact receiver measures 8.75 x 8.75 x 2.5 inches, allowing for discrete installation, is compatible with both 12- and 24-volt systems with power redundancy for added safety, and sports a modular construction for quick customization and installation of additional control modules.

Dockmate is the only wireless control currently on the market that features Frequency Hopping Spectrum System (FHSS), a two-way, five channel wireless technology that spreads the signal over rapidly changing frequencies to prevent interference from other radio transmitting devices (e.g., cellphones, walkie-talkies) and is difficult to intercept. It has a range of 150 feet.

This is a pretty cool gadget that's likely to prove popular for the larger boat owner and remove some of the stress from docking, but we tested one out on a 24-footer and came away impressed with being liberated from the helm while docking. A five-function Dockmate system (two engines, thruster, anchor, and horn) has a suggested retail price of $6,800. Dockmate.us

BoatUS.com

Joysticks

Getting smarter all the time

For most people, docking is the most stressful part of boating. However, these days joystick steering and engine control have made it much easier to dock like a pro. Joysticks have brought a great number of new boaters into the sport, increased boat sales—and saved a lot of marriages. It all began with electronically controlled engines.

The backbone of joystick control systems is typically CAN bus communication protocols that allow certain NMEA 2000® inputs. Mercury joysticks, like this one, work via the company's SmartCraft system, which is a collection of electronic controls governed by its own proprietary CAN bus protocol.

BY PETER A. ROBSON

As most of us know, joysticks allow a vessel's controls, which may include throttles, shifters, thrusters and steering, to be operated by a single three-axis lever/control head that allows precise maneuvering in any direction.

Volvo Penta was the first to introduce marine joysticks in 2006, one year after the launch of their revolutionary Inboard Performance System (IPS) with steerable pods and forward-facing dual props. The enabling technology behind the joystick was Volvo Penta's Electronic Vessel Control (EVC), which was unveiled with their new D4 and D6 diesel engines in 2004.

Jens Bering is VP of Marine Sales for Volvo Penta of the Americas. He was with Volvo Penta during the development of IPS and EVC. "The key to all these new products," he explained, was "... a new electronic platform that we called EVC. All our engines today are operating on this electronic platform and you can think about it maybe as a Windows operating system or maybe comparable to Apple. This was a major breakthrough for us and for the marine industry in total. No one had ever done this before."

In 2008, Cummins-MerCruiser came out with their version of pod drives: Zeus. It wasn't much longer before joysticks were being developed for single and multiple outboards, shaft-drive vessels and most recently for sailboats, jet boats and wake boats. Today, most types of vessels can be controlled by a joystick. Nearly all are installed at the boat builder level, though a few can be retrofitted.

Mostly proprietary

The majority of joystick providers offer systems specific to their proprietary equipment. For example, Volvo Penta joysticks only work with Volvo Penta systems. Same goes for Mercury and Yamaha. Twin Disc offers their Express Joystick System that only works with their QuickShift transmissions. ZF Marine offers their Joystick Maneuvering System for vessels with ZF transmissions, as does Cummins with their Inboard Joystick. Where thrusters are part of a shaft-drive systems, third-party products are tied into joysticks.

Other companies offer joystick controls for a variety of different outboards, inboards, transmissions and thrusters. SeaStar Solutions (now owned by Dometic) was the first company to offer joystick steering for outboards with their Optimus 360 system introduced in 2012. Initially it was offered for mechanically controlled shift and throttle and later for electronically controlled engines. Yacht Controller and Dockmate both offer wireless handheld remotes that can be added to almost any existing vessel with any make of equipment. Glendinning's ProPilot joysticks and Yacht Controller's fixed joystick can also be installed with most

Dockmate Twist 004

Dometic EJ 1400

Dometic Electric Cylinder EA1000-p401

Glendinning ProPilots, Genesys

Mercury Joystick

brands of engine, transmission or thruster (including a model for single-engine vessels). The same goes for Italy's Xenta.

As with proprietary systems, both the Glendinning and Dometic systems are typically installed by boat builders, though these systems are retrofittable, as are the two wireless handheld remotes.

"Our joysticks are sold in conjunction with our controls systems directly to boat builders or to our dealers, and the installation happens at those locations," says Drew Orvieto, Senior Manager, Commercial Fast Craft Product Line and Engineering at ZF Marine Propulsion Systems Miramar. "Our engineers are then responsible for doing the commissioning of these applications. In the case of production boat builders, we typically commission the first model and then preload the parameters onto all subsequent systems so that the performance is consistent across a given model's production."

Companies such as Glendinning, Comfo-Drive and Xenta, offer joystick steering for sailboats though none are seeing widespread use. Most sailboat owners simply use their single engine and a bow thruster. ZF, however, has a unique steerable (360-degrees) sailboat pod drive that mates with small diesel engines and a bow thruster. Beneteau offers this system on two of their sailboat models under the Dock & Go label.

Installation at the OEM level is easiest with fully electronic systems (helm and engines/transmissions). Then it's just a matter of plugging it all in. Volvo Penta offers the most comprehensive system, supplying complete packages from the props, transmissions, engines, controls, joystick, autopilot, glass cockpit and all the harnesses as a single part number.

Things get a bit more complicated when it comes to older vessels with mechanical (i.e. cable or hydraulic) controls between the helm and the engines. Yacht Controller offers a unique system called Yacht Controller Mechanically Actuated Systems (YAMAS) that ties a fixed or wireless remote joystick to fully mechanical controls between the helm and the engine. They do this by installing an electronically controlled actuator box. In other cases, Yacht Controller and other companies such as Glendinning and ZF can replace an older vessel's mechanical controls at the helm with electronic controls. Then, an electronic actuator in the engine room operates short stub cables from there to the engines.

Networking and CAN bus

At the heart of any joystick system is a network that pieces together the component hardware and software. The challenge is to write algorithms that accurately configure thrust vectors for specific boat brands, so that when the joystick is turned the boat actually goes in that direction. In addition, the software must be configured for each model and horsepower of engine, transmission and thruster (when fitted) that will be using that particular joystick.

The backbone for joystick control systems is CAN bus communication protocols that allow certain NMEA 2000 inputs.

Mercury's joystick systems work through their SmartCraft system—a collection of electronic control units (ECUs). Rob Hackbarth is Mercury's Director of Controls and Rigging. He explains: "SmartCraft is the entire backbone of our system. We use our own proprietary CAN bus protocol. Think of it like your Apple mobile devices' iOS operating system. It reads, it controls, it notifies and it is proprietary. It is based on the engine you have and the products that are installed. We are effectively able to turn on the software to make it work—enabling it on the engine and the parts that are installed on it." Hackbarth says that each joystick boat has its own profile, or personality.

Security is a key concern for joystick manufacturers. Ry Landry is Product Education Manager for Yamaha. "We have our own firewalls installed in the system and select gateways and pathways for a limited amount of information to come from a NMEA network into our system. When specific information is requested by our system—say, what is our next waypoint?—our system will put out a call for that information. Then the chartplotter will respond with the next waypoint. Much of that done for security reasons." Landry gives the example of people hacking Tesla automobiles and driving them remotely. "The last thing we want to see happen is somebody hack a multifunction display or something else that is out of our control, and then control somebody's boat. It's a potential that we want to avoid, needless to say."

Volvo Penta's Bering agrees. "From a safety point of view, we do not allow people into our platform. We can't operate otherwise. That's too risky. We have a firewall and we do talk with an NMEA 2000 interface. We allow people to communicate with us and, if someone chooses to buy a Raymarine autopilot, for example, we can supply a NMEA 2000 interface. It's a little plug and play interface that allows them to communicate via a data link into our platform."

Brian Dudra is Vice President/General Manager of Dometic Vancouver. "Our system incorporates multiple CAN bus communications streams, including a dedicated steering CAN bus. "Steering is mission critical for boats, so this function is always on a dedicated communications line. It's important that we eliminate interruptions or crosstalk from any NMEA devices, GPS or other electronic devices. We do, however, listen to the NMEA network so we can get engine RPM and other useful data off the vessel's network. Our system is also fault tolerant," adds Dudra, "so if you lose a wire it has back-up communication streams."

Of course, third-party joystick producers must be able to integrate with a greater range of engines, transmissions and thrusters than those specific to a single manufacturer. Yacht Controller President Gerald Berton doesn't see that as a problem. "We have strong cooperation with a number of manufacturers such as ZF, Volvo, Aventics, Garmin and more. These manufacturers share the technical information we need in order to make our system work to control their system."

Once the installation is complete, it's time to make the system work. Joystick technology is never really plug and play. For best performance, software parameters must be customized for each vessel. ZF's process is typical, says Keith Stanley, ZF Marine's Pleasure Craft Product Line Manager. "After installing a joystick system on a vessel, our application engineers execute a series of steps to fine-tune performance at the time of commissioning. They optimize the software parameters based on vessel characteristics, typical sea conditions and captain preference. The application engineers responsible for commissioning joystick systems typically have hundreds if not thousands of parameters they can use to fine tune the performance. This tuning process is particularly important for station keeping, which is typically a balance between smooth engagement and system authority to ensure optimal performance even in elevated sea conditions."

Wireless remotes

Manufacturers of wireless handheld remotes have an additional issue to deal with—communications between the remote transmitter and the onboard receiver that control the joystick. Obviously, if that radio link is broken the remote will not function. Yacht Controller and Dockmate avoid interruptions through different protocols.

Dockmate uses frequency-hopping spread spectrum (FHSS) technology. FHSS is a method of transmitting radio signals within a single band and then rapidly changing channels within that band. This helps prevent this communication link from ever being interrupted.

Yacht Controller uses dual-band technology for most of its offerings. It involves continuously scanning two bands and numerous channels within those bands. Should either band be interfered with, the system can function on the other band, making the system redundant and safe. Both Yacht Controller and Dockmate have alarms to alert the user if communications are lost.

Additionally, when it comes to redundancy, Yacht Controller's Berton says, "We have four microprocessors for each and every function, whether it's the engine, thrusters or anchor. Each one of those has quad microprocessors that secure the control and confirmation into the system to prevent it from any kind of fusing of a relay, a spike or surge in power or whatever. It's impossible to lose control with our system."

Autopilots and station keeping

One of the attractions of joystick systems is their ability to hold a vessel in position regardless of wind and current. Of course, this requires the system to be interfaced (usually via NMEA 2000) with an autopilot, two GPS sensors or a combination of GPS/IMU (Inertial Measurement Units) and some form of display. That function is variously called Station Keeping, Dynamic Positioning, Virtual Anchor, Skyhook and so on. In addition to position holding, other standard features include the ability to hold the vessel in position on a certain compass heading and the ability to maintain a specific heading without holding position.

Marine electronics dealers and installers—what's in it for me?

Since basic control system components are supplied almost exclusively by the engine supplier and fitted by the boatbuilder, the reality is that there is not a lot out there for the traditional electronics dealer or installer. For those willing to think outside the box, however, there may well be opportunities.

"In general, for the last 20 years or so, we haven't found much interest on the part of marine electronics dealers in handling products which interact with the propulsion system," says John Glendinning. "This is interesting because back in the day, marine electronics dealers were some of our best customers." However, Glendinning believes that in some cases, a boat owner could be better served by an electronics dealer who they trust to service and support the controls "rather than getting an engine guy in who may or may not understand his own product.

"I think there could be opportunities for marine electronics dealers to service or add on products to existing boats with things like joysticks or dynamic positioning controllers or perhaps wireless remote controls. But it would take a special dealer who could think beyond chartplotters or radars or radios."

Larger inboard yachts and sail-powered vessels typically use components from a number of different manufacturers and in that case, the skills of installers are still very valuable. Yamaha's Ry Landry says that with the transition from mechanical to digital control systems for outboards, the industry began to see a change. "OEM's would equip boats with more items that were considered to be accessories during the build process and many builders preferred the total integration of a control system from one single entity. This largely helped with the service and after-sales support should something fail."

Landry believes that marine electronic installers still can provide a large value for a marina or a dealer where their understanding of how electrical systems operate and integrate when it comes time to add or repair a boat's systems. "The trickle down of more complex systems such as electronic switching or stabilization devices into outboard-powered boats is really just the beginning of more opportunities as the electric complexity of outboard-powered vessels is increasing every year."

While most of Dometic's Optimus outboard joystick systems are installed at the OEM level, the company also offers aftermarket upgrades and sees a high number of retrofits being done every day. Dometic's Brian Dudra explains: "To serve the aftermarket/upgrade marine business, we have an established network of authorized Optimus dealers. Those who want to become authorized dealers must attend a week-long training course in Sarasota, Florida, that involves both classroom and on-the-water instruction. To help ensure the best possible customer experience, we want to ensure that dealers are well trained in our technology, its installation and integration with other systems."

Volvo Penta Joystick


Yamaha Joystick

Yacht Controller Fusion Plus Remote


ZF Joystick LQ BGW

Dockmate Upgrades Its Wireless Remote Control System

Wednesday, February 03, 2021 |

Dockmate, manufacturer of advanced wireless remote controls for yachts, announced today its next generation remote control transmitters and an all-new mounting option with a custom-designed fixed-mount, wireless charging Cradle.

Key innovations in the upgraded hardware are an easier-to-use interface for the TWIN+ touch pad remote control and added wireless charging capability. The next generation of Dockmate remotes also gain the advanced functionality of a new vibration response, which means that they now have three types of feedback: visual (LEDs), audible (buzzer) and tactile (vibration), for added safety and a more intuitive user experience.

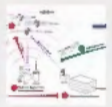
With the new Dockmate Cradle fixed-mount, wireless charging pad, users no longer have to choose between a fixed joystick or a remote control. The combination of the Dockmate TWIST joystick remote and the new Dockmate Cradle enables a cutting-edge feature: Fixed Joystick Mode. Once the TWIST joystick remote is placed in the Cradle, it can be used just like any other third-party joystick docking system. The true innovation is that by taking the remote out of its Cradle, users immediately have the flexibility of a wireless remote control. This gives users incredible savings, both in cost and helm space, as the Cradle only takes up about 20 cm by 8 cm of surface mounting space for a tidier bridge station.

Developed specially by Scanstrut to accommodate the Dockmate remote, the Cradle is also waterproof (IPX6), UV-resistant, and has an anodized aluminum chassis. It can be mounted anywhere inside or out, like on the flybridge, and it can be used to charge cell phones as well. The Cradle is perfect for frequent users, keeping the remote in an easy-to-reach location and ensuring the unit has a full battery and is ready-to-use.

"We're the fastest growing wireless remote control company in the world because we understand what boaters want with this type of safety equipment, and we're committed to providing a continuously improving system," said Dirk Illegems, president, Dockmate. "While the Dockmate wireless remote control system is well-known for being an affordable and highly innovative product for slow-speed maneuvering, our next generation offers even more flexibility and the incredible cost savings of adding a fixed joystick, and replacing it with a dual fixed and wireless system."

NAVIGATION

EDITORS' BLOG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Panbo Podcast #8 – Dockmate docking remote control with Marc Curreri

BY BEN STEIN · PUBLISHED FEBRUARY 26, 2021 · UPDATED FEBRUARY 26, 2021

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Dockmate U.S.'s Marc Curreri sat down with me to discuss their docking remote controls. Dockmate offers wireless remotes to control your engine(s), thruster(s), windlass, and horn. Dockmate's remotes are available in push button and joystick configurations and all of their systems are hugely configurable to match boat owners' preferences for maneuvering.


Marc Curreri

I have a Dockmate remote control system installed on *Have Another Day* and I really appreciate the ability to move around the boat while docking, especially if I'm maneuvering short-handed. I really appreciate my Dockmate while tightening dock lines. Being able to stand on the dock and thrust the boat over makes the entire process much easier.

PRESS RELEASES


Carling Technologies introduces new digital switching platform


VETUS Certified as First Thruster Integrator for NMEA 2000

Intellian's innovative new v45C antenna brings VSAT to smaller vessels

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Ben Ellison – Across Ocean Systems NMEA 2000 pressure sensor, smart & useful – 5 days ago

Ben Ellison – EPIRB and PLB Return Link Service, what's the holdup? – 5

During the episode, Marc mentions the new IPX-67 receiver and the new remotes. Pictured above you can see both. Additionally, you can see the full range of remotes Dockmate offers. Also, the custom ScanStrut charging cradle is shown with a twist in the cradle.

Configuration software screenshots

Marc also mentioned the configurability of the system and I think the screenshots above give you a sense of just how many options can be configured. This software isn't available to the end-user but allows a Dockmate installer to customize the system to match your preferences.

All episodes of the Panbo Podcast are available here and on all major Podcast platforms including Amazon Podcasts, Apple Podcasts, Google Podcasts, iHearRadio Podcasts, Pandora, Podcast Addict, PodChaser, Spotify, and Stitcher. Your suggestions for new topics are always welcome!

Ben Stein

Publisher of Panbo.com, passionate marine electronics enthusiast, completed the Great Loop in 2017.

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Form follows function - Or does it? - PowerBoat-World.com Newsletter

18/02/2021

powerboat world

Form follows function - Or does it?

WHY200 - photo © Wally Yachts

Dear Recipient Name

It is one of the cornerstones of design philosophy. As too is blue and green should never be seen, without another colour in between. However, in modern times, the latter one has been totally shattered, with design houses even putting out logos with lime green and navy blue right there abutting each other. Wow.

So yes, if there is one thing that you can say about now, it is that change is well and truly with us. Arguably, we have not seen this sort of shift in the paradigm since Bertram, Hatteras (and if you're Australian, the big Savages with Chrysler Hemi power) took over from the era of lovely ChrisCrafts or Halvorsens.

Designed and built by the Halvorsen marque upon craftsmanship philosophy the 48 foot Palmyra is recognised as part of a grand era of Australian boat building. - photo © Power Equipment Pty Ltd

Even iconic Wellcraft Scarabs and Cigarettes can trace their lineage back to that point, which is a bit like all dogs are wolves when you boil it all down... Of course the maintenance and fuel bills have helped them become yesterday's star, whilst the incredible utility of the centre console, and the insane horsepower available in an outboard to make 60 knots+ more than achievable, all did their bit to make the go fast boat just a little bit obsolete...

Much to be excited about for Maritimo in 2021

This year is set to be a very exciting and successful one for the award-winning Australian luxury motor yacht manufacturer, Maritimo.

TCY introduce new design: stunning Galeon 325 GTO

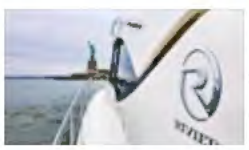
It is a breakthrough design for Galeon combining a multi-purpose Sportsboat semi-open type boat with Outboards technology. This combination is arguably a worlds-first showing once again the innovation we can bring to our clients.

Yamaha introduces new, updated V6 Offshore Outboards for 2021

Yamaha Marine kicks off 2021 with brand new product offerings including updated V6 Offshore outboards that combine new benefits with a reliable performance legacy.

Aquila 54 Yacht Power Catamaran launched

Aquila's rapid growth and global success has challenged our international design and engineering teams to elevate expectations with a newer, larger, and more elegant cruising model.



New York to Kenosha: the Great Lakes adventure with Don Larsen on his Riviera SUV

The maiden voyage of Loose Wire, Don Larsen's Riviera 525 SUV (now the 545 SUV), proved to be a spectacular inland adventure as she cruised to her home port through the Midwest of the United States.

MY4.S catamaran by Fountaine Pajot: XXL spaces on a prestigious motor yacht

Call her the MY4.S, the brand-new Motor Yacht by Fountaine Pajot. Feel at home in all the most beautiful bays in the world. And within your wake, the powerful satisfaction of a rare and refined luxury.

Back Cove Photo Contest Winner

Thank you to all of our owners who submitted to our 2020 Photo Contest! The winning photo (featured above) was chosen by Back Cove's Production Manager, Rob Lord.

New and innovative features for award-winning Dockmate Remote Control System

Dockmate, manufacturer of advanced wireless remote controls for yachts, announced todayits next generation remote control transmitters and an all-new mounting option with a custom-designed fixed-mount, wireless charging Cradle.

Scania-powered Viking 46 Billfish is in production

Scania, one of the world's leading manufacturers of engines for boats, trucks, buses and industrial applications, announced today a new build, 46-foot Viking Billfish sportfishing yacht (46BF)

Galeon Yachts announce new outboard models

Galeon Yachts recently announced a new outboard collection, enhancing their already stunning lineup.

Dockmate Upgrades Its Wireless Remote Control System

February 3, 2021

(Image: Dockmate)

Dockmate, manufacturer of advanced wireless remote controls for yachts, announced today its next generation remote control transmitters and an all-new mounting option with a custom-designed fixed-mount, wireless charging Cradle.

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Yacht Tech: New Features for Dockmate Wireless Remote Control System

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