

The Graupner MC-20 could be the last radio you will ever need. Each switch is programmable and the software programming can accommodate airplanes, helicopters, gliders and multirotors.



Graupner HoTT MC-20

A top-end tray transmitter with perfect features for the multirotor pilot

BY MIKE GANTT PHOTOS BY JOHN REID

When I first saw a tray-type transmitter, it seemed a little goofy to me. Then I saw the extremely talented Gernot Bruckman using one of them and knew then that there was nothing goofy at all about using a larger-size radio. Many multirotor pilots like to "pinch" the sticks with both thumb and index digit while flying model aircraft, this makes for better control and a smoother flight, the Graupner MC-20 tray type transmitter is ideal for this. I will add that tray systems are typically supported with a neck strap; transmitter strap or shoulder cuffs and these are typically adjusted to a pilot's physical liking.

A flat black face covers the business area of the MC-20 and its all-aluminum frame looks nothing shy of superb. The frame also serves as support for the internal structure, which also contains ball-bearing-supported

gimbals. Aluminum is the material of choice for the slide levers and trim levers. All channels can be mapped or made to perform any function the pilot desires. Four different flight modes allow pilots from around the globe to use this transmitter and switching between them is quite convenient. The MC-20 employs Graupner's HoTT hopping-telemetry transmission protocol, which provides not only transmission and reception of signal but also will give you real-time, in-air aircraft data.

HoTT STUFF

When your delivery person finally rings the doorbell, you're going to love that your new radio includes a locking aluminum case, 6000mAh LiPo battery, a neck strap, a telemetry logging module with SD card slot, and a USB update cable. A wall charger and

an instruction manual are also included. While most of these items are self-explanatory, a few are worth discussing. The USB cable allows you to update firmware, install the latest programming features and it can also be used for charging. At least five languages are available and are only a download away; an integrated speaker or an earpiece can be used for audible alerts, telemetry read-outs, and music! During a flight and with the different available sensors, you can instantly and always know things such as receiver signal strength and voltage level (down to each battery cell), altitude, motor rpm and temperature, flight battery voltages and more. Visible readouts are easy to see thanks to two backlit screens, which allow you to simultaneously monitor both telemetry and transmitter information.

All of this is possible due to the use of



Note the speaker grille: it emits audible telemetry readouts, warnings, and even music!



Aluminum slide switches are super smooth and easy to access.



Two sets of sticks are included; these are the longer ones, which many seem to prefer.

an onboard 32-bit processor, which keeps everything moving fast. Several switches are located on two panels and are easy to reach. There are three three-position switches, seven two-position switches (two of which are locking), two momentary switches, two slide switches and two bottom buttons configured from the factory. All the switches can be configured to any task and all that is required during setup is the movement of the switch to select it. As always, Graupner has made an

effort to make the end user's life comfortable, and traversing through menus and setting up an aircraft is quite intuitive. Entering and exiting the various menus is done via two touch-sensitive pads. Circular in shape, the pads feature four directions and a center button for making and securing your choices during setups. A 24-model memory should be able to handle most hangars but if not a micro SD card will allow for many more. Models with multiple servos per control surface are covered as up to four

actuators can be configured to operate as one "block." Transmission speed or signal repetition time can be adjusted down to 10ms when using digital servos. Some of the MC-20's channels are multi-function and can be expanded to give you up to 14 additional channels for demanding projects. The included receivers are a GR-24L (12-channel) and a GR-12L (6-channel); they are full-range lightweight units that can run on voltages ranging from 3.6 to 8.4, and that kind of versatility is a good thing.

THE MC-20 HAS TOO MANY FUNCTIONS AND FEATURES TO LIST ... THE BOTTOM LINE IS IF YOU CAN THINK IT, THIS RADIO CAN PROBABLY DO IT

SPECIFICATIONS

Transmitter: MC-20
Manufacturer: Graupner/SJ
Distributor: openhobby.com
Type: Tray-style computerized HoTT transmitter
Channels: 12
Frequency: 2400-2483.5MHz (2.4GHz FHSS)
Range: approx. 2.5 miles
Weight: 50 oz.
Price: \$689

HIGHLIGHTS

- + Aluminum structure feels substantial and looks great
- + Very easy channel mapping and switch assignment
- + Two backlit screens are very eye- and user-friendly
- + Case and plenty of accessories included in the price



Touch pads navigate through menus, backlit screens are easy to view, and we love the center slide trims in addition to the digital ones.



There are plenty of switches within easy reach, all of which are programmable and assignable to your liking.

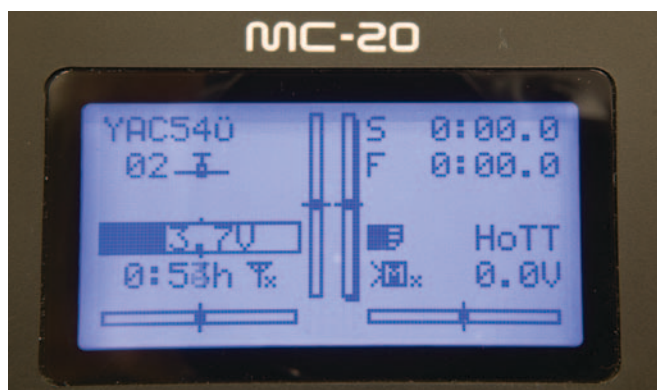
FEEL AT THE FLIGHTLINE

First, I found that the hand rests are awesome. When my hands are on them, the rests alleviate the pressure and stress from my arms and hands, allowing my fingers to do their job. The result is less fatigue with smoother and easier stick movements. Speaking of sticks, an extra set that are longer than those installed from the factory are included. They can be swapped in seconds. Another sweet treat is that the aerial/antenna is located inside the radio body so it will never get in the way. Setup is a breeze. Last-minute adjustments before takeoff are easy and efficiently accessed. I actually forgot to set up one test model before arriving at the field but in less than 5 minutes I had it dialed in and ready to roll out. Most pilots can appreciate the use of flight phases/flight modes and seven are available, are nameable and are individually adjustable per model; we all know this leads to more manageable routines.

For example, we can set up a flight mode for takeoffs and landings, with softer control and stick movements, and another mode for fast flight for those of you who are into FPV racing. Even if you managed to set up five flight phases and you would still have two more available to play with! Mixing is another beneficial aid in relieving pilot load. In addition to a myriad of standard mixes pre-programmed into the MC-20, you can also program in 12 more custom mixes any way you want, which is what most multirotor pilots will do. Timers can be activated via a control or a switch and there are cool things like lap counters and a stopwatch with recording feature. This would allow you to use the telemetry function to monitor battery voltage while the flight is timed. The timer memory would save that time and then you could use that data for subsequent flight timing. This will help you to avoid hitting the low-voltage cutoff taking away the guesswork of flight time. With timing and telemetry combined, it is easy to see when a battery starts to get old and weak and the flight duration can be adjusted accordingly for safety. After using the MC-20 to pilot a quadcopter, then a sailplane, an electric jet, and on to a gas-powered 3D airplane, I have to say it passed my tests with "flying" colors.

BOTTOM LINE

The MC-20 has too many functions and features to list in the space I have here. The bottom line is if you can think it, this radio can probably do it. Bi-directional transmission gives you telemetry out of the box and more sensors can be added for more real-time data; a micro SD card can be used to record and log flight data or transfer it to your PC. The radio with its tray-type setup never feel bulky or heavy and all switches, trims and menu buttons are in close proximity and easy to access. This is a great transmitter and it's priced well, especially considering how much it has to offer. ✈️



This information screen contains relevant flight information and is constantly on display on the bottom screen of the transmitter.



Many of the menu movements and selections are made from this touch rotary button.