

UBIDIUM

*Next Generation
Timing*



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Next Generation Timing

Ubidium starts a new era in sports timing. Born from the collective experience of thousands of events and shaped by the diverse needs of customers from around the globe, this revolutionary timing system represents the epitome of precision and reliability.
For active and passive technology.
For all kinds of events.
For you.



Ubidium can be operated in any weather condition.
Display and buttons are always visible and accessible.
The control unit does not need to be protected by a lid.



The completely new form factor guarantees maximum flexibility.
With two batteries inserted, it weighs only ~ 4.1 kg.
The connections on the front and back allow easy operation.



Insert one or two batteries and hot swap them while switched on.
In active timing mode, you can reach over 30 hours of runtime!
Ubidium can also be powered via USB-C, POE, DC or even solar panel.



Enhanced Active Timing

Directly plug your active timing loop into Ubidium. No more extensions required. Build timing lines with widths of up to 30 meters* and with 100% loop power. Ubidium fits seamlessly into the existing RACE RESULT active system architecture, supporting functionalities like stored passings and repeat mode.

* depending on regulatory region

Revolutionary Ground Antenna Concept

The new foldable ground antenna connects with a single plug - and you're ready to go. Each antenna element now contains its own UHF element, enabling antenna lengths of 23 m with one single system and 6 hours battery runtime.



Staying Ahead of the Game

The 6.2' screen in combination with the always visible LEDs and large buttons, makes it easy to maintain an overview of all relevant timing data and functions. The display is even readable in extreme temperatures. Reliable battery status reporting provides accurate information about the remaining runtime.

Unparalleled Connectivity

Ubidium has GPS and 4G on-board. 3 Ethernet ports provide extended networking capabilities, internal switching to connect multiple devices. You can even power them over POE using the internal Ubidium battery. Internal and external SIMs allow for data transmission backup and, if necessary, remote support access to the device. Ubidium can connect directly to your PC via USB-C. It also offers Wi-Fi, USB-A, DC Power In, trigger input/output and the connection of an external 4G antenna.



Resistant in all Conditions

Ubidium ensures optimal performance in all weather conditions. A heating element keeps the device above freezing point, ensuring optimal battery performance. An integrated fan will cool the system down if necessary and blows moisture out if the integrated humidity sensor indicates a condensing risk. The front lid covers the connectors and effectively protects the system from rain and splashing water.

Ubidium Foldable Ground Antenna

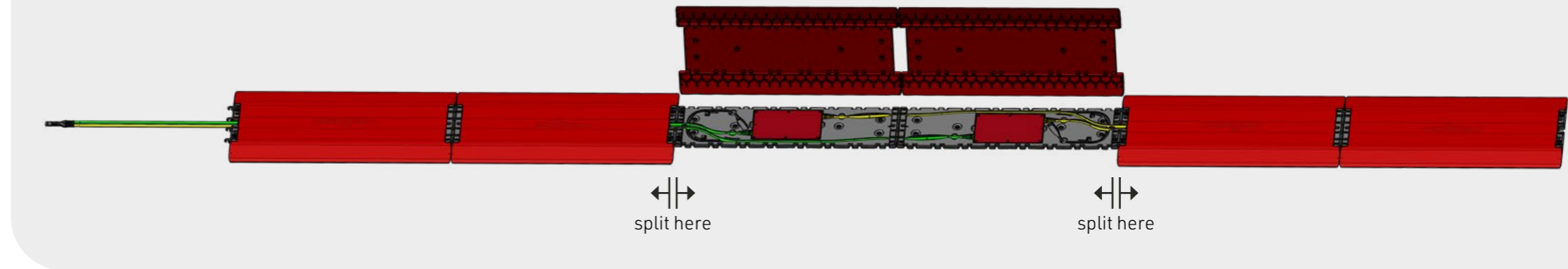


Plug and Go

The mat connects directly to Ubidium with a single connector, no additional device required. For reliability, two independent, robust cables lead to the first antenna segment and form two separate strings throughout the whole mat.

Improved Shaping, Less Weight

The new design gives the mat an even better profile on the road. Flatter edges allow for a more comfortable crossing of the mat. At 77 cm, the segments are longer than before. In the standard 4.6 meter configuration (6 elements), the mat weight is just 21 kg, 20 % less than our previous ground antenna.



Up to 23 m Mat Length

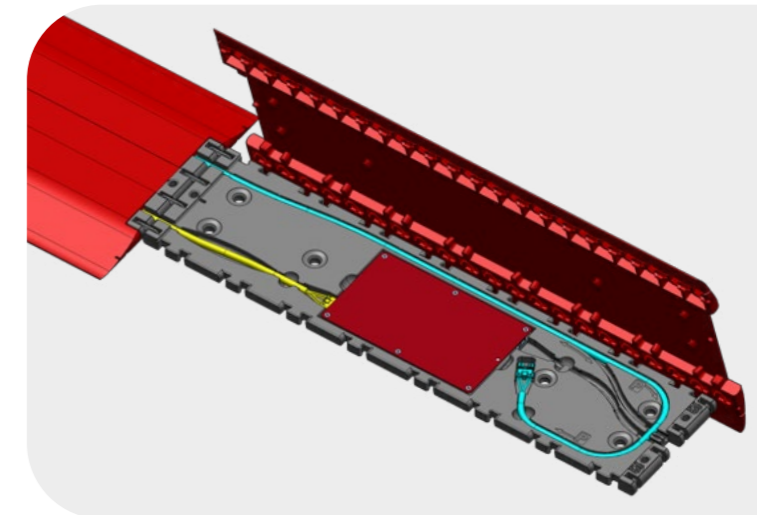
As you are not limited by the 8 ports of conventional UHF readers you can now create up to 23 m long timing mats. Each mat segment contains its own integrated reader and antenna, specifically designed by RACE RESULT for sports timing purposes. It requires less power than standard UHF readers, therefore increasing system battery life. It also allows synchronized reading with multiple elements at the same time, significantly increasing read rates and timing precision.

Interleaving Connection

Every reader element is connected to the reader two mats earlier, creating two separate data lines. A defective element does not block later elements from functioning, and even if one complete strand should fail, timing remains functional.

Easy Length Adaption

You only need to open one antenna segment on either side of a joint to split the mat. The cables for each segment can stay inside the mat at any time using the inner storage channel. The mat can be extended/shortened by pairs of two segments, resulting in widths between 1.5 meters (2 segments) and 23 meters (30 segments).



Technical Details

Ubidium

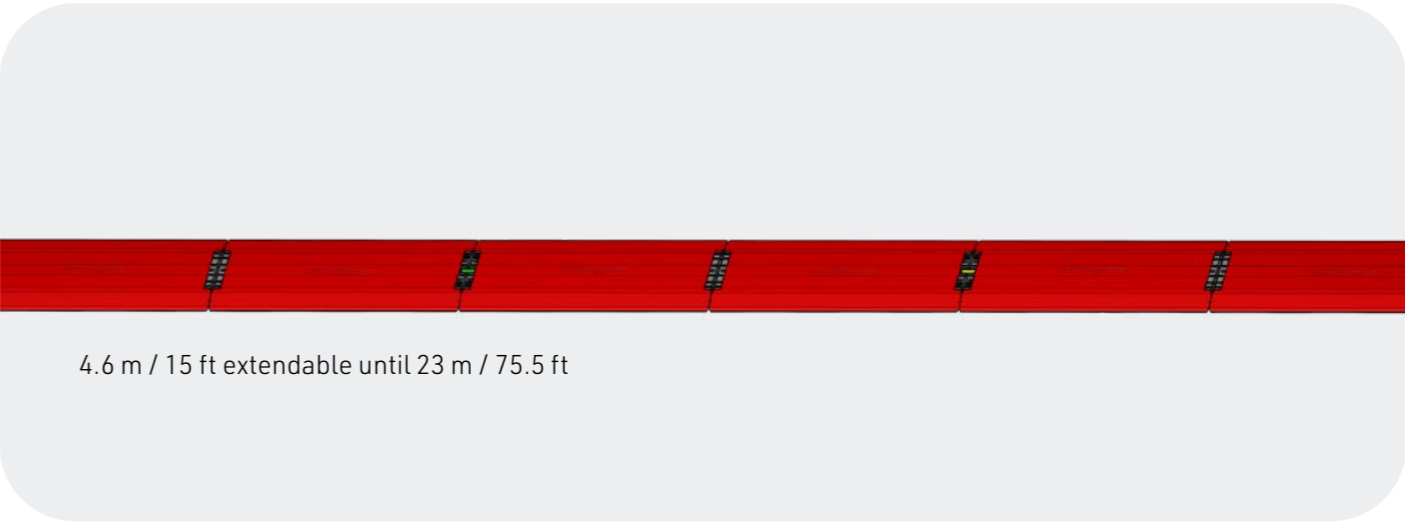


General	
Weight	~4.1 kg with two batteries (each 450 g) ~3.2 kg without batteries)
Dimensions	30 x 25 x 13 cm / 1 x 0.8 x 0.4 ft
IP Rating	Lid open: IP21 (objects > 4 mm, dropping water) Lid closed: IP44 (objects > 1 mm, spray water from all sides)
Temperature range	-20 °C – 40 °C (50 °C in shade) / -4 °F – 104 °F (122 °F in shade)

Connectivity	
WiFi	WiFi 802.11ac/a/b/g/n
2G/3G/4G	Internal antenna + external SMA
GNSS receiver	GPS/GLONASS/BeiDou/Galileo
3 x Ethernet	Internal GBit, external 100 MBit/s
Trigger	Input or output, 3 – 12 V, Open Collector
USB2.0	1 x USB-A, 1 x USB-C

Power Connectors & Ratings		
		Pmax
AC	100 – 240 V / 47 – 60 Hz	120 W
DC In battery	11 – 15 V / 5 A	75 W
DC Out	11 – 16.8 V (fused 2.4 A)	25 W @ 11 V (empty battery) 40 W @ 16.8 V (full battery and AC)
USB-C PD	PD supply min. 27 W (15/20 V up to 3 A)	60 W
PoE-In	802.3 bt	up to 73 W
PoE-Out (low power)	802.3 af	15.4 W Out, battery supplied
PoE-Out (high power)	802.3 at	30 W Out, only with external power

Battery & Power (preliminary!)			
All including 4G	1 battery	2 batteries	Power consumption*
Battery life active (50 % loop power)	16 h	32 h	6 W
Battery life passive (4.6 m antenna)	6 h	12h	13.4 W
Battery life passive (7.7 m antenna)	5 h	10 h	19 W
Battery life passive (15.4 m antenna)	4 h	8 h	22.6 W
Battery life passive (23 m antenna)	3 h	6 h	31.4 W
Power performance may be reduced above 25 °C (77 °F) / in strong sunlight. Heating element keeps system above freezing point for battery charging.			
* not charging, mobile data and 4G active, no Ethernet			



Ubidium Foldable Ground Antenna

Single Antenna Segment	
Weight	3.5 kg
Dimensions	77 x 35 x 2 cm / 2.5 x 1.1 x 0.07 ft
IP Rating	IP56 (shortly submerging won't destroy)

Typical Configurations			
"Ubidium Ground Antenna" Standard configuration	6 segments	4.6 m / 15 ft	21 kg
"Ubidium Ground Antenna Extension" Shortest possible configuration	2 segments	1.5 m / 5 ft	7 kg
Standard + 2 Extensions	10 segments	7.7 m / 25 ft	35 kg
Maximum possible length Standard + 12 Extensions	30 segments	23 m / 75.5 ft	105 kg

"A vision come true"

CTO Nikias Klohr about the concept and development process of Ubidium

What was your vision when you started writing down the first outline of a new timing system back in 2018?

We wanted to make something completely new, not just an update version of an old concept. Until now, all timing system manufacturers took some kind of box, screwed in a reader, battery, computer, and display. Ubidium is really a new generation in this regard. We basically started from scratch and that gave us a lot of freedom in terms of design and features. The focus of all our considerations was the usability for the timer out in the field. We heard a lot of opinions and made conclusions from the past 10 years. What do our customers really need? What is missing so far? What would be a revolutionary feature? We tried to pack as much of this into the system as possible.

So, what is the revolutionary feature?

To me, it is the new foldable ground antenna. Putting our own UHF readers into each antenna segment is indeed a vision come true. We've delved really deep into UHF technology over the past few years. The development of our custom reader, which is also an essential part of the Track Box Passive, is now paying off all the more. The mat is now connected with only one double stranded

cable and can easily be extended up to 23 meters – with better performance and less energy consumption as the old mat/reader combo. In addition, we further improved the shape of the mat and reduced the weight by around 20 %. These are all facts that play an important role at events.

What did you personally learn during the development, about yourself and RACE RESULT?

This is by far our largest project to date. With a team of eight engineers and many more involved, we worked with great attention to detail for three years. Covid got in the way, as did the supply chain issue – that slowed us down a bit. But the level of detail we worked with is extraordinary. The Ubidium display alone has taken months of work to select and improve; silicone buttons tailor-made for us; an integrated cooling fan; a battery heater – we really tried to think of every little detail.

And that's my biggest take from this project: We at RACE RESULT can master such really complex projects. Because we are a great team where everyone contributes with his skills and creativity. We have grown with this challenge and have also learned a lot for future projects.



Watch Nikias' video introduction into Ubidium





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