RACE RESULT

www.raceresult.com

RACE RESULT SYSTEM 5000S

Data Sheet

Please note:

Although the data in this document remains accurate for the listed products, the Decoder 5000S is no longer manufactured.

Decoder 5000S

The RACE RESULT Decoder receives the signals from the transponders, calculates the exact finish time and provides the data to the scoring software like RACE RESULT 12 in real time. The system runs independently from your computer and from your power supply.

Timing System for

- Running
- Triathlon
- MTB
- Cycling
- Inline skating
- Skiing

- 8-10h (passive) / 24h (active) internal battery
- Precise, synchronized GPS time
- Integrated 4G/LTE module
- Easy setup and handling
- Online firmware update

Endless Application Options in Combination with RACE RESULT 12 Software

- Net time timing
- Lap counting and lap timing
- Team scores and age group results
- Multiple distances on the same course at the same time
- Multiple timing points
- Multiple decoders per timing point
- Real time presentation of results
- Simultaneous work via internet or local network

Safety & Conditions Decoder	
Protection class with closed cover	IP54
Safety norm	EN60950
Regulatory conformity	CE, RoHS, FCC
Relative humidity	Max. 90% non-condensing
Temperature range	-20°C to 50°C

Decoder Weight	Decoder Pack-Size
12.5kg	36 x 26 x 45cm

LTE/4G/3G/2G Module	
29-Band 4G/ LTE/3G/2G Module	FDD: B1/B2/B3/B4/ B5/B7/B8/B12/B13/ B18/ B19/B20/B26/B28 TDD:B38/B39/B40/ B41 WCDMA: B1/B2/B4/ B5/B8/B6/B19 GSM: B2/B3/B5/B8
Antenna	Internal External SMA (optional)
SIM card	Standard

Power & Battery Decoder	
AC power supply	110V - 230V 50 - 60Hz (2 A fuse)
DC power supply	12V - 14V 2A (when battery full)
Battery flight safety	15Ah (Pb) IATA - A48/A67
Charging time	4h (switched off) 7h (running)
Power consumption	26W (battery full) 60W (charging)
Battery life (passive)	8 - 10h[1)]
Battery life (active)	24h[1)]

1) Battery life can be reduced by usage of LTE/4G (-10 %), low temperature (-25 % @ 0°C/32°F) and battery age.

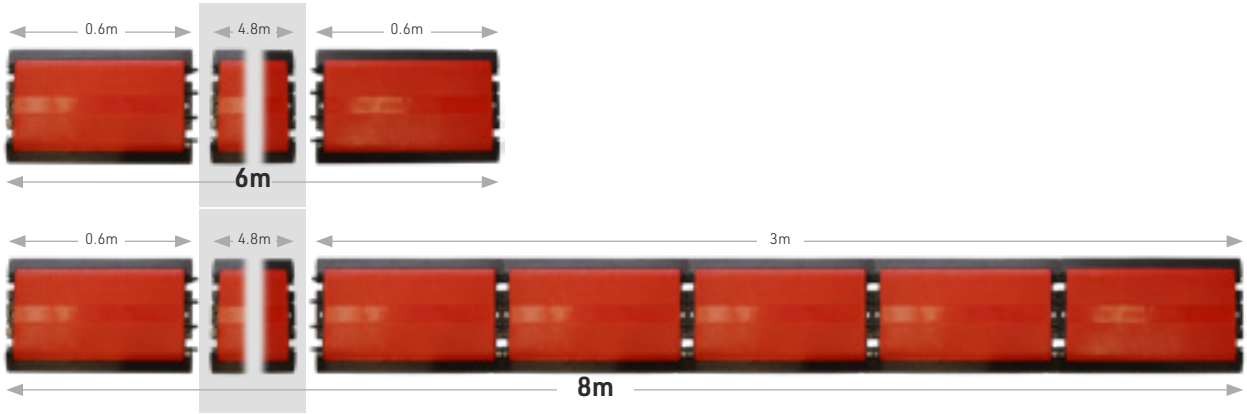
Ports & Features	
Internal GPS	uBlox 50 channel receiver, 30 seconds cold start
2 x LAN	Dual 100MBit / 10MBit lan port. auto crossover detection. Switched internally for loop through to next device.
USB	Thumb drive for backup
Antenna ports	8 x BNC
Feature port	Supplies 5V (500mA), 12V (500mA) output, start gun, photo sensor
Audio beep	3.5mm headphone plug (mono)

Passive Antenna

The passive UHF antenna can be used with all passive RACE RESULT transponders. Standard length is 4.8m / 16ft (antenna every 60cm / 2ft), extendable to 6m / 20ft or 8.4m / 26ft.

Passive Antenna Features

- **Easy setup in just a few seconds**
  Simply unfold the antenna and connect it to the decoder.
- **Easy to ship**
  The 4.8 meter antenna weighs 25.9kg / 57lbs and can be shipped via regular mail.
- **Flat design**
  The height of only 2cm ensures excellent safety for all kinds of events.
- **Incredibly durable**
  The antenna can be passed over by cars or even trucks.
- **German engineering inside**
  Application optimized antennas guarantee the best detection rates.
- **6m or 8m Extension Kit**
  Two or six additional elements to extend the antenna to 6m / 20ft or 8.4m / 26ft.



Antenna & Transponder (passive)	
Transponder frequency	866MHz (EU) 903-927MHz (US) 920-925MHz (AUS)
TX power	up to 36dBm EIRP radiated and 30dBm conducted
Track width	4.8m 6m or 8m with Extension Kit
Read range[1)]	4m
Detection rate read rate	> 99.8%[2)] > 2,500chips/min
Maximum transponder speed [3)]	40km/h 25mph
Timing accuracy [4)]	200ms

	Weight	Size
4.8m antenna	25.3kg 25.5kg (incl. packaging)	Single element: 58 x 36.5 x 2cm Total: 465 x 36.5 x 2cm Cable length: 110cm Pack size: 60 x 40 x 20cm
6m Extension Kit	6.2kg	60 x 37 x 5cm
8m Extension Kit	18.6kg	60 x 37 x 15cm
Antenna height	2cm	
Antenna width	29cm	

1) Transponders are detected multiple times while crossing the antenna. The detection with the highest signal strength – right above the antenna – is used for timing.
2) With transponders attached correctly and with redundancy (two transponders on the bib or backup timing line).
3) Higher speeds are possible, detection rate may be lower.
4) Use GPS time to get most accurate results.

Dedicated Data Ground Antenna

EU Antenna

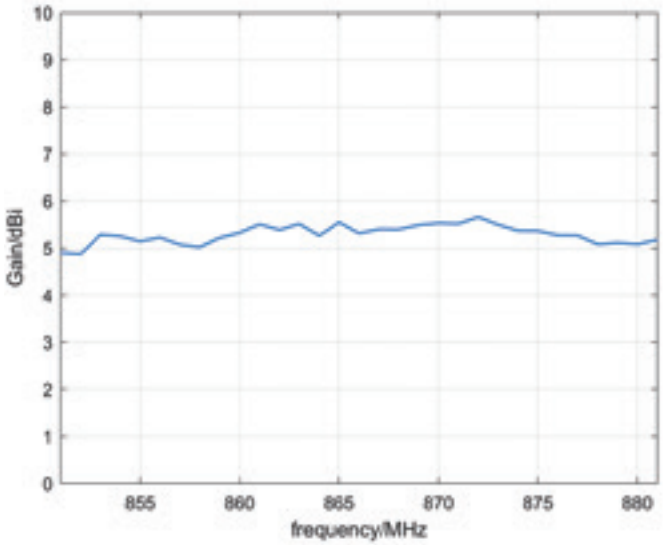
Elevation H-plane
- max. Gain at 356°
- -3dB right: 32°, left: 31°, Beamwidth: 63°
- front to back ratio -13.0dB

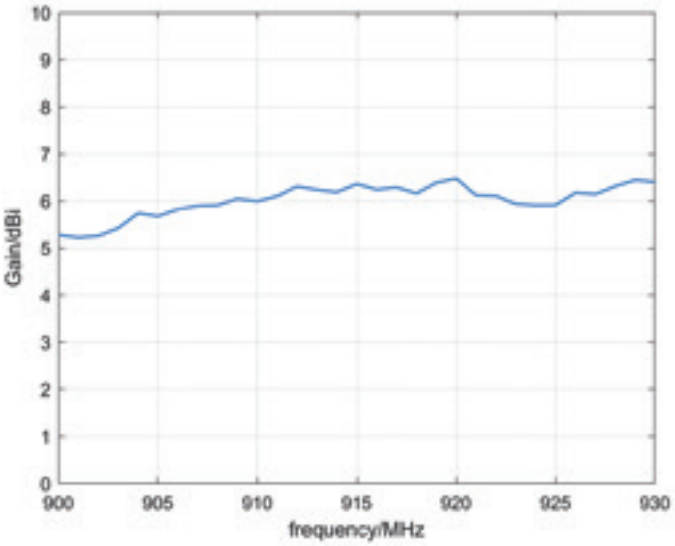
Azimuth H-plane
- max. Gain at 6°
- -3dB right: 39°, left: 41°, Beamwidth: 80°
- front to back ratio -9.9dB

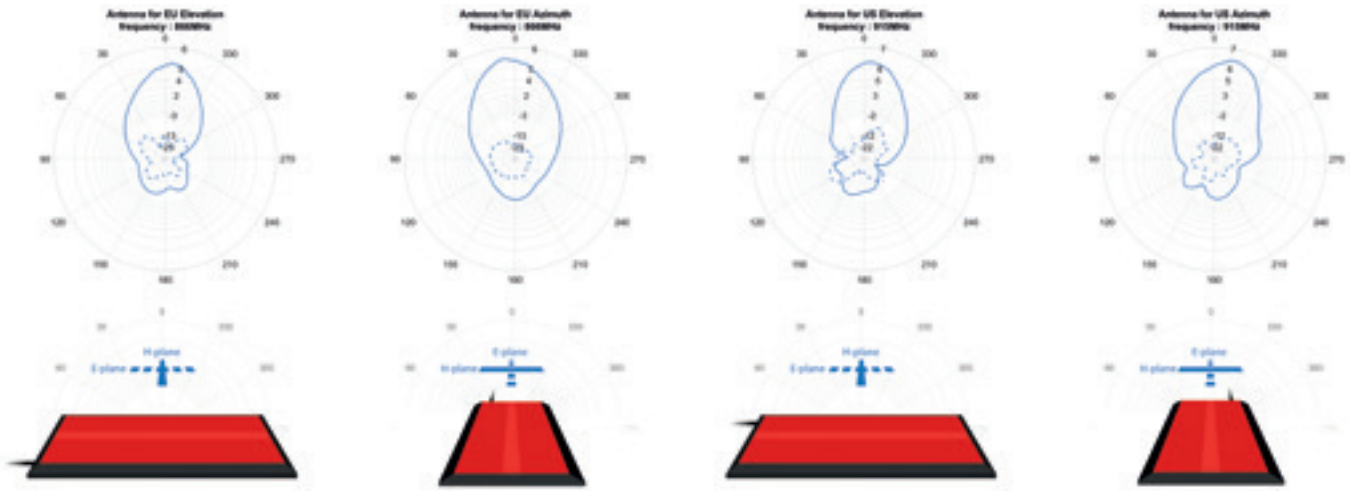
US Antenna

Elevation H-plane
- max. Gain at 355°
- -3dB right: 38°, left: 25°, Beamwidth: 63°
- front to back ratio -12.6dB

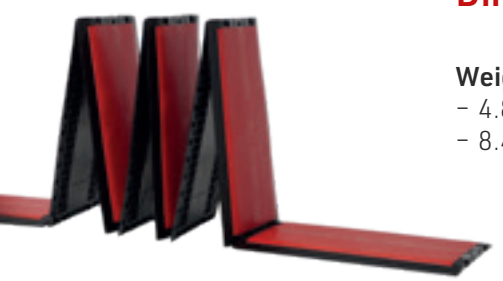
Azimuth H-plane
- max. Gain at 350°
- -3dB right: 42°, left: 31°, Beamwidth: 73°
- front to back ratio -11.7dB







Dimensions and Weight



Weight
- 4.8m = 27kg
- 8.4m = 40kg

Dimensions
- Single element: 58 x 36.5 x 2cm
- 4.8m: 465 x 36.5 x 2cm + 110cm cable
- 6m extension: 2 single element = 116 x 36.5 x 2cm
- 6m extension: 581 x 36.5 x 2cm
- 8m extension: 6 single element = 349 x 36,5 x 2cm
- 8m extension: 8.29 x 36.5 x 2cm

Active Extension

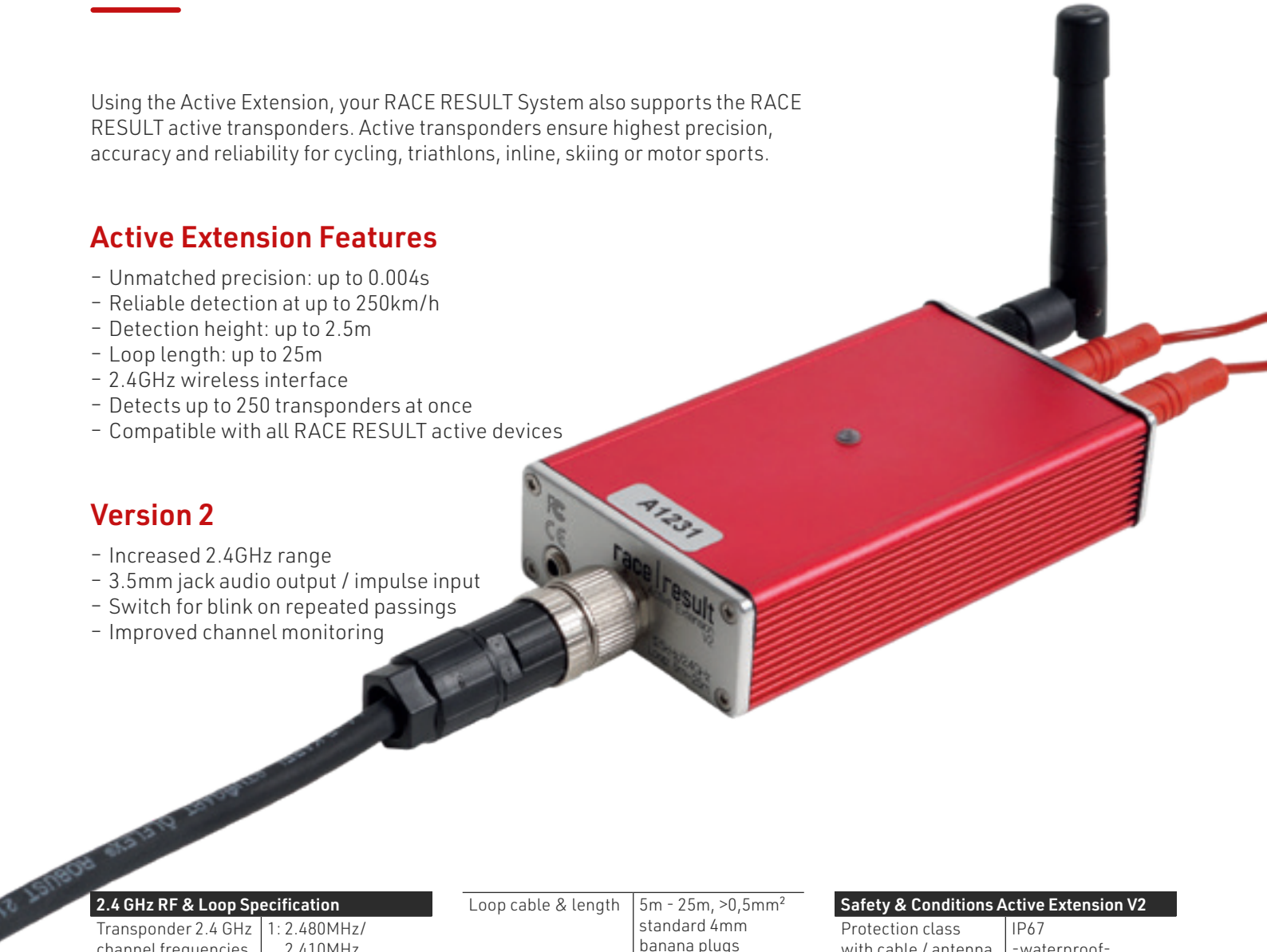
Using the Active Extension, your RACE RESULT System also supports the RACE RESULT active transponders. Active transponders ensure highest precision, accuracy and reliability for cycling, triathlons, inline, skiing or motor sports.

Active Extension Features

- Unmatched precision: up to 0.004s
- Reliable detection at up to 250km/h
- Detection height: up to 2.5m
- Loop length: up to 25m
- 2.4GHz wireless interface
- Detects up to 250 transponders at once
- Compatible with all RACE RESULT active devices

Version 2

- Increased 2.4GHz range
- 3.5mm jack audio output / impulse input
- Switch for blink on repeated passings
- Improved channel monitoring



2.4 GHz RF & Loop Specification	
Transponder 2.4 GHz channel frequencies main / backup (worldwide compliance)	1: 2.480MHz/ 2.410MHz 2: 2.405MHz/ 2.470MHz 3: 2.425MHz/ 2.465MHz 4: 2.475MHz/ 2.440MHz 5: 2.415MHz/ 2.445MHz 6: 2.460MHz/ 2.430MHz 7: 2.435MHz/ 2.455MHz 8: 2.450MHz/ 2.420MHz
2.4GHz TX power	17.5dBm
Loop frequency & data	125kHz Data-Packet = Loop ID + channel Packet rate: 150Hz OOK-modulation, manchester encoded, 16 bit anti-false-wakeup pattern
Loop power	100% = 250mA RMS regulated peak current

Loop cable & length	5m - 25m, >0,5mm² standard 4mm banana plugs
Data cable	5m (standard), 15m, 30m
Read range 25% loop power 100% loop power	 60cm (2ft) 2.5m (8ft)
Detection rate read rate	100% > 100 chips per second burst for 20 seconds > 50 chips per second continuously
Internal data buffer	1,000 passings
Clock stability	24/1,000th second per day 0.28ppm TCXO calibrated to rubidium frequency standard traceable to NIST
Forewarn data delay	100ms (from entering the loop field)
Max passing data delay	250ms (after loop center)
Repetitive passing rate over loop	1 per second

Safety & Conditions Active Extension V2	
Protection class with cable / antenna screwed on	IP67 -waterproof-
Safety norm	EN60950
Regulatory conformity	CE, RoHS, FCC
Temperature	-30°C to 70°C
Dimensions / weight	27 x 66 x 117mm / 190g

RACE RESULT System firmware version 1.94 or higher recommended

High Gain Antenna

For Barrier-Free Finish Lines
Perfect for special purposes like mass road cycling events. With high signal power these antennas provide long range and high precision. The passive transponder is usually put to the seatpost sticker participants have attached to their bike.

Please note: Using the High Gain UHF Antenna you need to apply to legal regulations and the correct setup is very important to achieve good results!

Features	
Frequency Range	865-868MHz (EU) 900-930MHz (US)
Gain	13dBi (min)
Polarization	Linear (Vertical or Horizontal)
Dimensions (LxWxD)	450 x 450 x 36mm
Weight	3kg (max)
Connector	N-Type female

The tripod is sold separately in the shop.

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