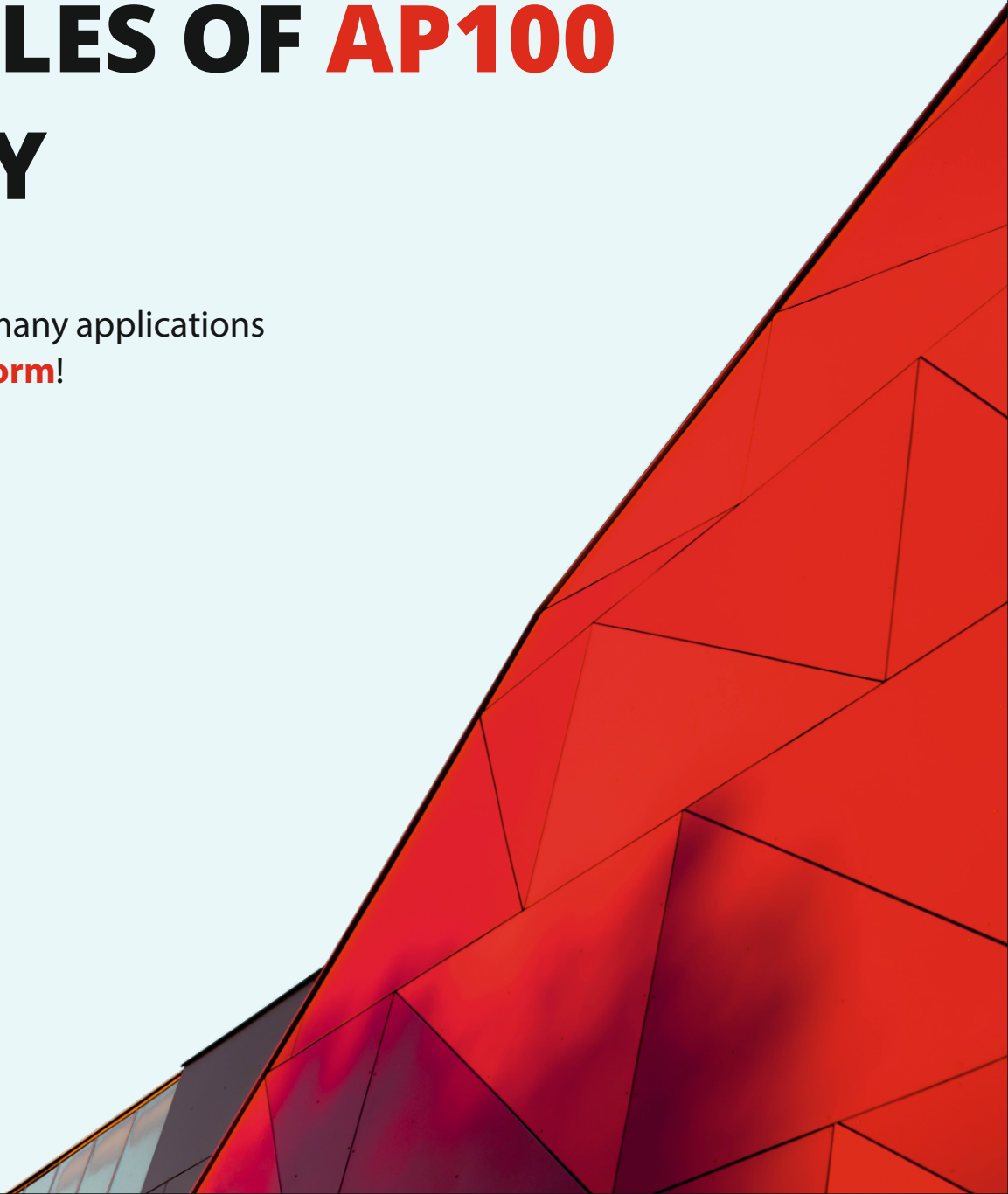




HIGH-PRECISION OEM GNSS RECEIVER MODULES OF **AP100** FAMILY

Different markets, many applications
and only **one platform!**



HIGH-PRECISION OEM GNSS RECEIVER MODULES OF AP100 FAMILY

Single/dual-antenna high-precision OEM GNSS receiver modules of AP100 family provide precise RTK positioning combined with 3D attitude (yaw, pitch, roll) determination (optional). They track GPS L1/L2/L5, GLONASS L1/L2, Galileo E1/E5a/ E5b, BeiDou B1/B2, NavIC (IRNSS) L5/S-band and SBAS signals. On-board loosely-coupled GNSS/INS integration algorithm helps to fuse data from GNSS measurement unit with MEMS-based IMU sensor. The raw measurement data are available for user's secondary processing, as well as API functions for own developments, thus, using our modules, users are free to create an effective solution for each specific application.

- STM32H7 MCU is available on-board for the user's developments
- On-board 9-axis MEMS IMU
- Loosely-coupled GNSS/INS integration algorithm
- Aided inertial navigation support optional

GENERAL FEATURES

Measurement precision (RMS)

C/A pseudoranges¹: 20 cm

L1, L2 carrier phase: 0.8 mm

Horizontal position accuracy (RMS)

Standalone mode: 1.5 m

DGPS mode²: 0.25 m

RTK mode²: 5 mm + 0.5 ppm

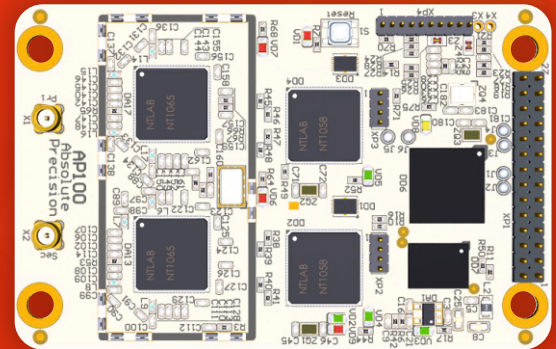
Horizontal velocity accuracy (RMS): 0.1 m/s

Vertical velocity accuracy (RMS): 0.15 m/s

Time accuracy (RMS): 20 ns

¹ Smoothed pseudoranges

² Optional



- Based on NTLab chipsets: 4-channel RF FE ASIC and navigation processor
- Raw measurements data output: code and carrier phase measurements
- Industry standard size (71x46x10 mm)
- Easy and fast integration

Raw data update rate: up to 100 Hz

Position data update rate

Standalone mode: 1 Hz

RTK mode: 1, 5, 10 Hz

INS aided mode: up to 100 Hz

Inertial measurement unit

Accelerometer range: 16 g

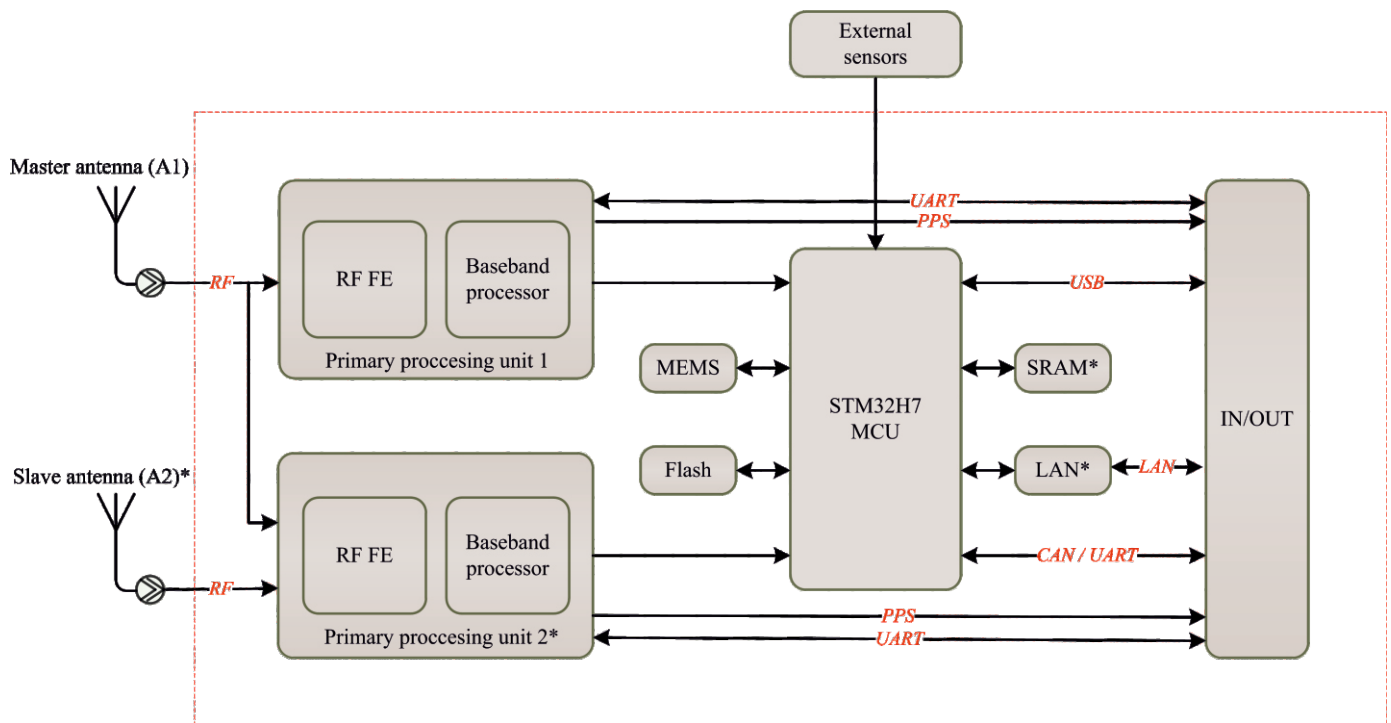
Gyroscope range: 2000 °/s

Magnetometer range: 4800 uT

Operating temperature: -50 °C ... +80 °C

	AP101	AP104		AP105		AP106
		Master antenna	Slave antenna	Master antenna	Slave antenna	
GPS	L1, L2	L1, L2, L5	L1, L2	L1, L2	L1, L2, L5	L1, L2
GLONASS	L1, L2	L1, L2	L1, L2	L1, L2	L1, L2	L1, L2
Galileo	E1, E5b	E1, E5a	E1	E1, E5b	E1, E5a	E1, E5b
BeiDou	B1, B2	B1, B2	B1	B1, B2	B1, B2	B1, B2
NavIC	-	L5, S-band	-	-	-	L5
SBAS	L1	L1	-	-	-	L1
Orientation angles accuracy(RMS)*:						
Yaw	2°	0.1°		0.1°		2°
Pitch	2°	0.2°		0.2°		2°
Roll	2°	1°		1°		2°
Interfaces	2 × UART, 1 × USB	3 × UART, 1 × USB (or 2 × UART + 1 × CAN), 1 × Ethernet, 1 × USB				
Interface protocols	RTCM 3, NovAtel OEM, NMEA-0183, NTL Binary					
Power consumption	<0.9 W	<1.8 W		<1.6 W		

*On 2 m length baseline for AP104 and AP105. AP101 and AP106 determines orientation angles by loosely-coupled GNSS/INS integration algorithm (on-board MEMS sensor)



*Optional. It depends on AP100 modification



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