



AHM27292U is the world's first WiFi HaLow™ industrial M.2/NGFF module

The AHM27292U module series allows building long range, ultra-low power WiFi networks in sub 1 GHz license-exempt bands, utilizing compact M.2/NGFF 3042 form factor. WiFi HaLow™ enables connectivity for many applications, including sensors and wearables.

With powerful ARM™ Cortex-A7 based SOC clocked at 528 MHz, official OpenWrt and U-Boot support, up to 15 Mbps data throughput and complete SDK for the HaLow™ radio SOC, getting started with this new WiFi standard is straightforward.

Key features

- 1 NXP™ i.MX 6ULL SOC (ARM™ Cortex-A7, 528 MHz) equipped with 256 MB of DDR3L RAM
- 2 Newracom™ NRC7292 WiFi HaLow™ SOC (IEEE 802.11ah draft 8.0 compliant)
- 3 Qorvo™ RFFM6901 front-end
- 4 IPEX4 (MHF4) antenna connector
- 5 4x LED
- 6 32 MB of SPI NOR flash (optional 2/4/8 GB eMMC)
- 7 5-pin serial console (2.00 mm pitch)
- 8 M.2/NGFF B-key 3042 with USB 2.0 bus support

Chipset	NXP™ i.MX 6ULL (MCIMX6Y1CVM05AB) Newracom™ NRC7292
RAM	256 MB of DDR3L
Flash/storage	32 MB of QSPI NOR flash Optional 2/4/8 GB eMMC
Frequency	847 MHz (TW) 866 MHz (EU) 915 MHz (US) 922 MHz (KR) 924 MHz (JP)
Modulation	OFDM with BPSK, QPSK, 16QAM, 64QAM
Data rate	150 Kbps – 15 Mbps
Channel bandwidth	1/2/4 MHz
Antenna connector	1× IPEX4 (MHF4)
Host interfaces	USB 2.0 UART
LED	1× TX 1× RX 1× status 1× WLAN
Form factor	M.2/NGFF B-key 3042
Dimensions	30 × 42 × 4 mm
Software	Officially supported in OpenWrt (Linux Kernel 5.10+) and U-Boot 2021.x ¹ Newracom™ SDK available at https://github.com/newracom/
Operating humidity	TBA
Operating temperature	TBA

¹⁾ official software support in OpenWrt and U-Boot projects is under development

Top		Bottom	
75	NC	3.3 V	74
73	GND	3.3 V	72
71	GND	3.3 V	70
69	NC	NC	68
67	RESET	NC	66
65	NC	NC	64
63	NC	NC	62
61	NC	NC	60
59	NC	NC	58
57	GND	NC	56
55	NC	NC	54
53	NC	NC	52
51	GND	NC	50
49	NC	NC	48
47	NC	NC	46
45	GND	NC	44
43	NC	NC	42
41	NC	NC	40
39	GND	NC	38
37	NC	NC	36
35	NC	NC	34
33	GND	NC	32
31	NC	NC	30
29	NC	NC	28
27	GND	NC	26
25	NC	NC	24
23	NC	NC	22
21	RESERVED	NC	20
Mechanical key			
11	GND	NC	10
9	USB 2.0 D-	W_DISABLE1	8
7	USB 2.0 D+	FULL CARD POWER OFF	6
5	GND	3.3 V	4
3	GND	3.3 V	2
1	RESERVED		



