

Compal Electronics RML Series 5G Embedded Modules

Compact, Powerful, Hostless and Highly integrated Proof 5G Modules

Advanced 5G LTE Data Module

Enabling a new generation of 5G state of the art data cards featuring both Sub-6 with LTE, WCDMA and GNSS support for the following applications: High Power Fixed Wireless Access, enterprise routers and gateways, indoor/outdoor CPE, video broadcasting and surveillance.



Compal RML is a series of 5G communication modules for Worldwide EU/US/Asia broadband Market, which support both 5G SA and NSA network architectures with faster transmission speed, better carrying capacity, and lower network latency.

RML Module supports the 5G NR Sub6 band, and is compatible with LTE and WCDMA standards, eliminating customers' investment concerns in the initial stage of 5G construction and responding to the commercial demand of rapid landing. Highly integrated solution with 22K DMIPS CPU, 3D Graphic, Network accelerator.

A rich set of Internet protocols, industry-standard interfaces (USB 2.0/3.0/3.1, PCIe 3.0, SGMI+, I2C, I2S, SPI, UART, DBI, DSI etc.) to support Bluetooth, Wi-Fi 6, Ethernet, Audio and Display without another host CPU. The abundant functionalities (USB drivers for Windows 7/8/8.1/10, Linux and Android) extend the applicability of the module to a wide range of IoT and M2M applications such as business router, home gateway, STB, pocket router, dongle, industrial laptop, consumer laptop, industrial PDA, rugged tablet PC and video surveillance.

Key Benefits

- Quad-core ARM CA55 2.0G Application Processor
- Rich interface to support tri-band WiFi 6 4x4 and EasyMesh
- Independent interface to support high-speed Ethernet and Ethernet switch
- 5G Sub-6 FDD and TDD and SA & NSA operations
- LTE R15, DL Cat.19, UL Cat.18
 - 1.6Gbps DL 5CC, 4x4 MIMO
 - 316Mbps UL 3CC
 - DL/UL 256QAM
- NR R15 Sep/Dec version
 - 4.67Gbps DL, 200MHz aggregated BW, 4x4 MIMO
 - 2.5Gbps UL, 200MHz aggregated BW, 2x2 MIMO
 - DL/UL 256QAM
- Rich NR Carrier Aggregation
- QoS, VPN, Security, Samba/NAS, Mesh, WPS, Device management
- SDK on OpenWrt

RML-N1t	
FORM FACTOR	LGA
FREQUENCY BANDS	
LTE	B2, B4, B5, B12, B25, B41, B48, B66, B71
5G Sub6	n25, n41, n48, n66, n71, New Sub6: n77
WCDMA	B1, B2, B3, B4, B5, B8, B9
Simultaneous GPS	L1/L5, GLONASS(GLO), Galileo(GAL) and BeiDou(BDS)
DL 4x4 MIMO	B2, B4, B5, B12, B25, B41, B48, B66, B71
HPUE (Class 2)	n25, n41, n48, n66, n71, n77 Power Class 1.5: n41, n77 Power Class 2: B41
INTERFACE	
Antenna Port	x 8 Support 4x4 MIMO
Tunable antenna	MIPI x 3
USB	USB 2.0 HS/3.0/3.1 SS Gen1: Support Slave or Host Mode Support Cable Power On (optional)
PCIE	PCIe Gen3 2-lane x2 PCIe Gen3 1-lane x 1
SGMII	x2 port for 1G/2.5Gbit
SPI	X1
ADC	PMIC Side 15bit ADC x 2 AP Side 12bit ADC x 3
GPIO	General-Purpose I/O x 11pin RF BPI Interface x 11pin
I2S	X1
PCM	X1
I2C	X2
SIM interface 1.8V/3V	2 SIM DSSA support
SDIO	SDIO3.0
Display	DSI x1, 720p+(21:9), HD 1280x720 DBI-C x1, 320x480 based on 2 data lane
PWM for BL Controller	X1
LED Indicate Control Pin	ISINK x 3 (up to 12 mA) Power On, Reset, Force USB DL Column Key x2, Row Key x3
Key	2 line for Debug, 4 line for Bluetooth command
UART	
Protocol Stack	IPV4/IPV6
Firmware update	FOTA
AT commands	3GPP TS 27.007 and 27.005
Software Features	Networking and Wi-Fi/BT, QoS, VPN, Security, Samba/NAS, Mesh, WPS, Device management (APN, Speed Test...) and other Operator requirement
Management tool	WebUI, APP for iPhone and Android
Dimensions	45.0mm x 45.0mm x 2.65mm
Temperature	
Operating temperature	-30°C ~ +75°C
Extended temperature	-40°C ~ +85°C
Support Voltage	
Power Supply Voltage	3.4~4.3V (Typ:4.2V)
APPROVALS	
RoHS Compliant	Y

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