Thread

What is Thread?

A low-power, secure, and reliable mesh networking protocol for the Internet of Things (IoT)

- Thread is an open-source, IPv6-based mesh networking protocol designed for low-power, battery-powered devices.

- Thread devices can communicate with each other over a mesh network, which means that they can relay messages through other devices to reach their destination. This makes Thread ideal for applications where devices are spread out over a large area, such as in a smart home or industrial setting.

- Thread is also designed to be secure and reliable. It uses industry-standard security protocols to protect data from unauthorized access, and it is self-healing, so it can continue to operate even if some devices are lost or disconnected.

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Global Solutions for Frequency Management
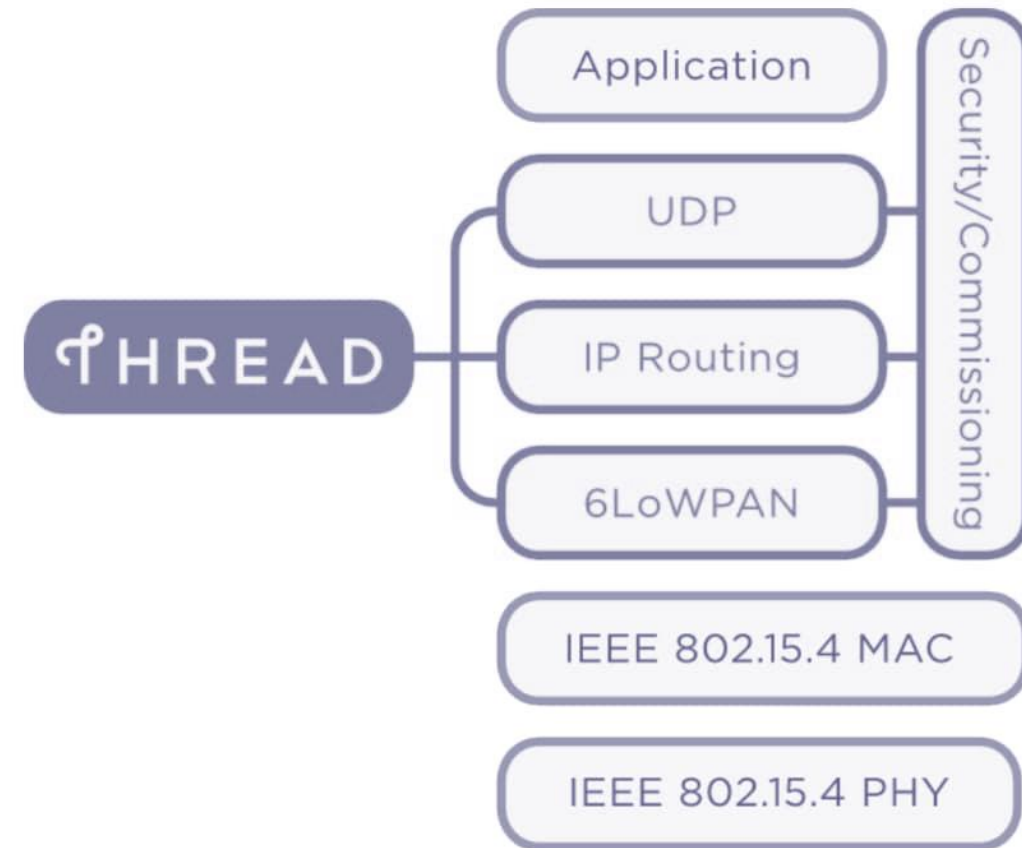
What are the Benefits of Thread?

o **Low power**
Thread devices can operate for years on a single battery. Thread uses a low-power radio frequency (RF) band, and it only transmits data when necessary.

o **Secure**
Thread uses industry-standard security protocols to protect data from unauthorized access. This includes encryption, authentication, and message integrity checking.
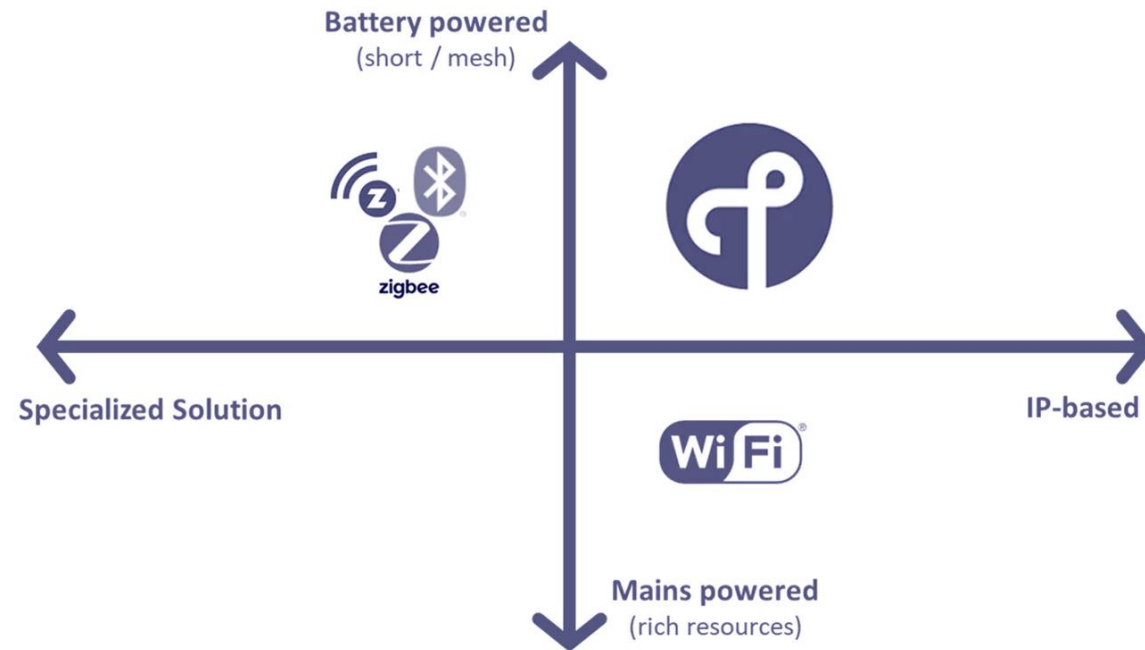
o **Reliable**
Thread networks are self-healing and can continue to operate even if some devices are lost or disconnected. Each device in a Thread network has multiple paths to communicate with other devices.

o **Interoperable**
Thread devices can work with devices from other manufacturers. Thread is based on open standards.

o **Scalable**
Thread networks can scale up to hundreds of devices. This makes it suitable for large-scale IoT deployments.

Source: https://www.embedded.com/thread-protocol-simplifies-iot-security/

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Applicable Raltron Products

Nordic - nRF5340

32 MHz Crystal Oscillator
R2520-32.000-8-F-1030-EXT-TR

32.768 kHz Crystal
RT3215-32.768-9-TR

NFC Antenna
RNF-VA1-4035-W-001
RNF-LF-P-50-W

Power management unit
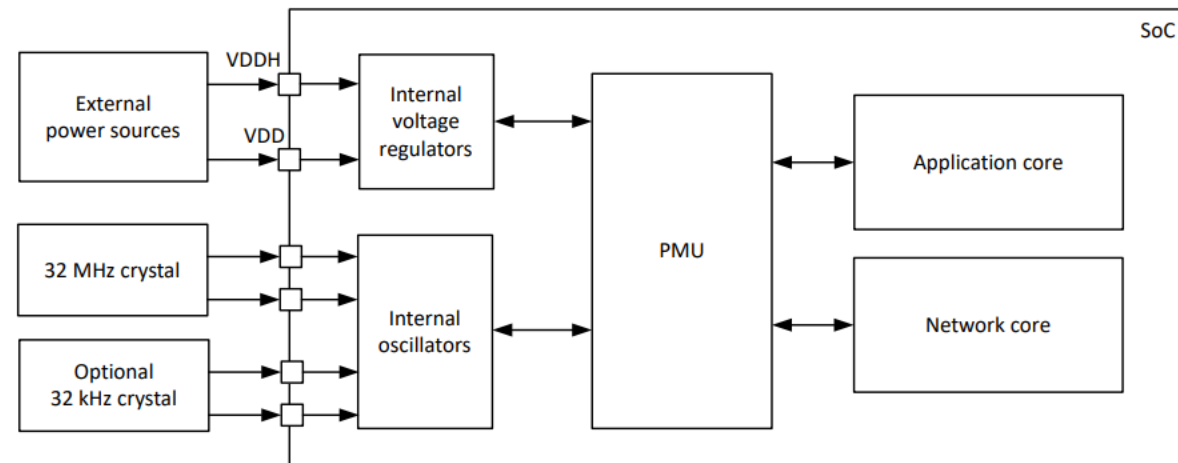
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Applicable Raltron Products

Silicon Labs - EFR32BG22

38.4 MHz Crystal
R2520-38.400-10-F-1020-TR

32.768 kHz Crystal
RT3215-32.768-6-TR

2.4 GHz Antenna
RST-2400-P-190-IPEX-H
RST-W2-P-105-RPSMA-H

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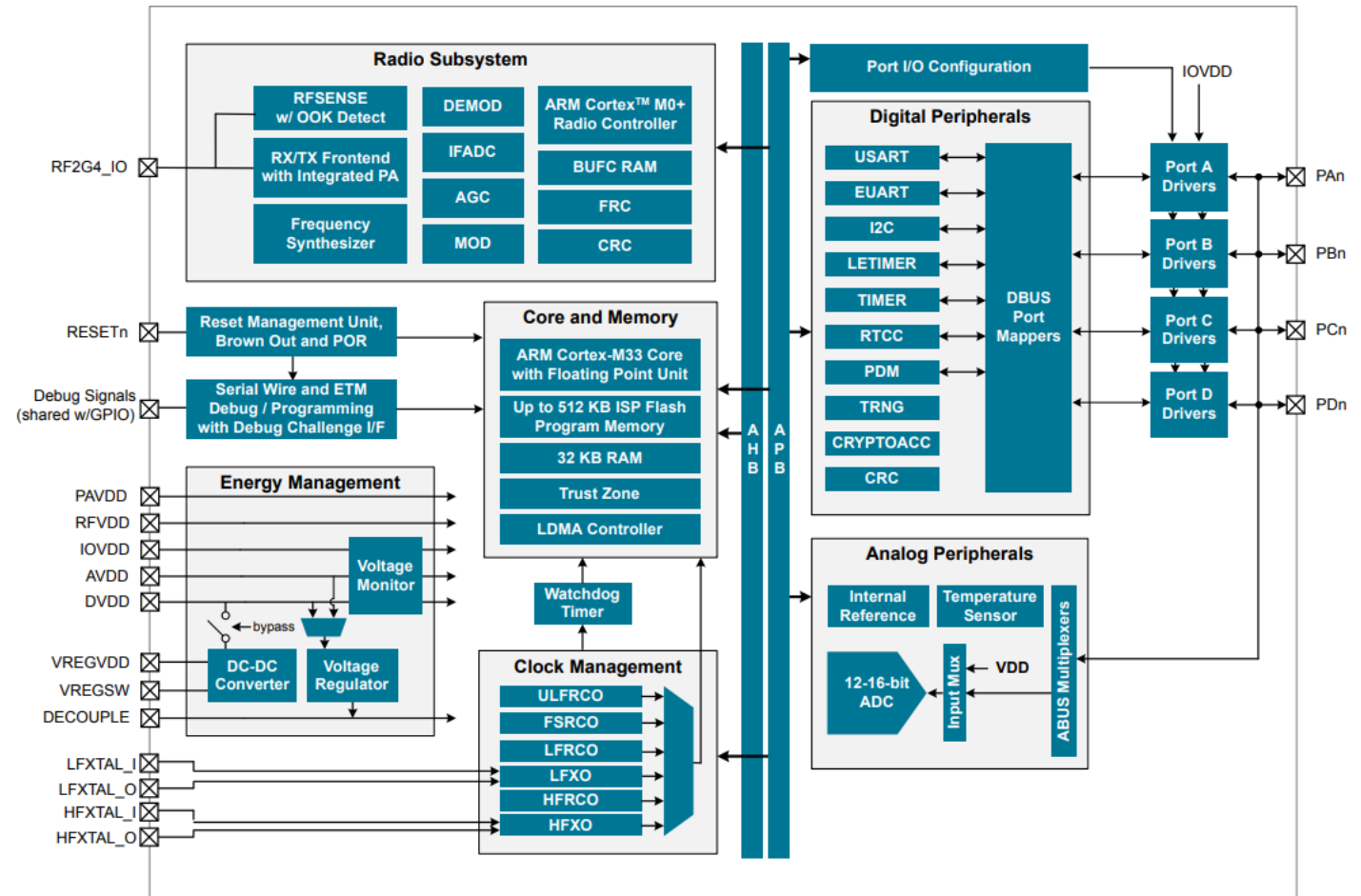
Applicable Raltron Products

Texas Instruments - CC2642R

48 MHz Crystal
R2016-48.000-7-F-0715-TR-NS1

32.768 kHz Crystal
RT3215-32.768-7-TR

2.4 GHz Antenna
RST-W2-P-105-RPSMA-H
RCA-5220-A0-TR
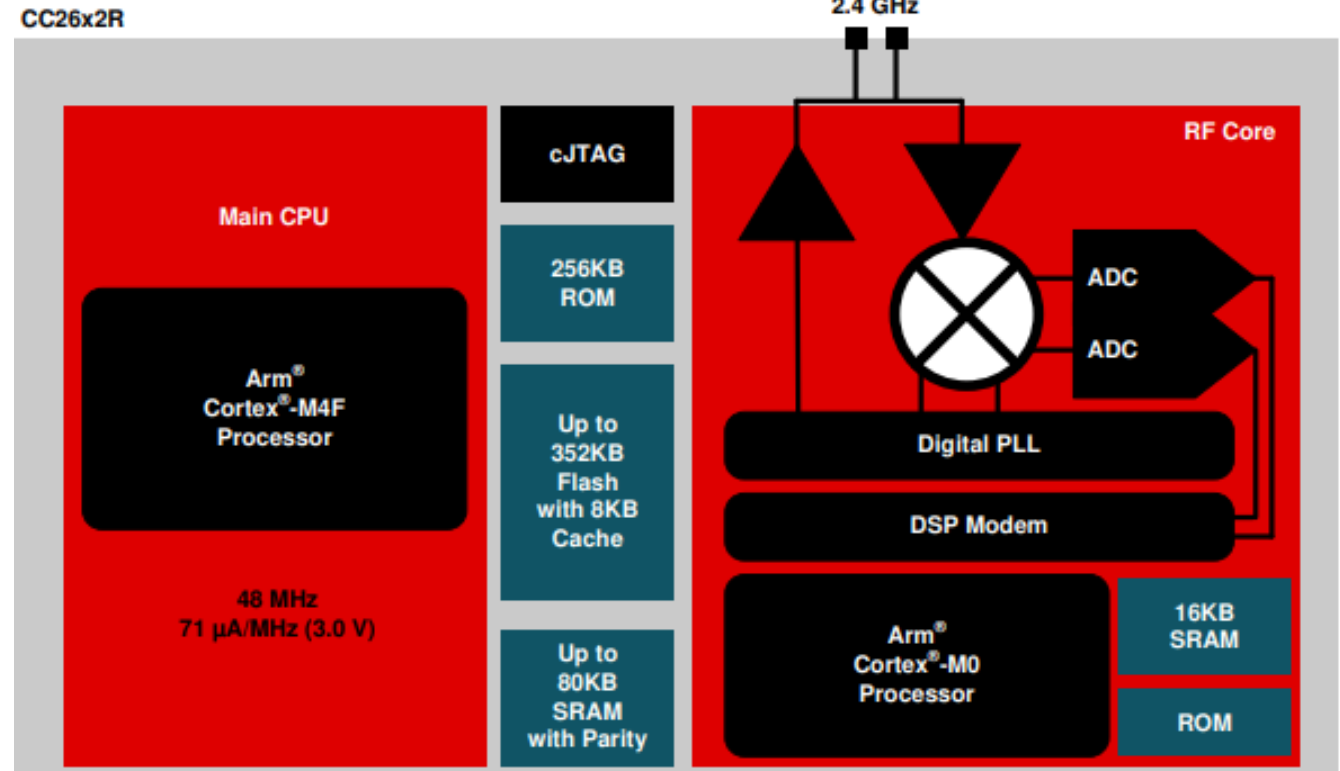
Raltron Solutions - MHz Crystals

Available Crystal Packages

Part #	Size(mm)
R2016-32.000-6-F-2020-EXT-TR	2.00 x 1.60 x 0.50
R2520-32.000-6-F-2020-EXT-TR	2.50 x 2.00 x 0.65
RH100-32.000-6-F-2020-EXT-TR	3.20 x 2.50 x 0.70

Typical Frequencies:
26 MHz, 32 MHz, 39 MHz, 40 MHz

Stock at our Distributors

Product Series	Datasheet	Image	Contact Us / Buy Now
R1612 View products in stock	PDF		Buy Now
R2016 View products in stock	PDF		Buy Now
R2520 View products in stock	PDF		Buy Now
RH100 View products in stock	PDF		Buy Now

See All Crystal Products

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Raltron Solutions – Oscillators

Raltron MHz Oscillators Solutions

Part #	SIZE(mm)	Frequency(MHz)
CO2016-32.000-3.3-50-EXT-TR	2.0 x 1.6	32
CO2520-48.000-3.3-50-X-T-TR	2.5 x 2.0	48

Raltron kHz Oscillators Solutions

Part #	SIZE(mm)	Frequency(kHz)
CO2016-0.032768-3.3-25-X-T-TR	2.0 x 1.6	32.768
CO2520-0.032768-3.3-50-X-TR	2.5 x 2.0	32.768

See All Products for Oscillators

Raltron Solutions - Tuning Fork 32.768 kHz

Available Tuning Fork Crystal Packages

Part #	SIZE(mm)
RT1210-32.768-9-TR	1.2 x 1.0
RT1610-32.768-12.5-TR	1.6 x 1.0
RT2012-32.768-7-20-EXT-TR	2.0 x 1.2
RT3215-32.768-7-TR	3.2 x 1.5
RSE-32.768-12.5-H14-TR	6.9 x 1.4
RSM200S-32.768-12.5-TR	8.0 x 3.8

Typical example of IC for Matter using a 32.768 kHz crystal as frequency reference:

Texas Instruments - CC2642R

Using 32.768 kHz crystal

CL: 6, 7 or 12 pF

ESR: 100 kΩ max

See All Crystal Products

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Product Series	Datasheet	Image	Contact Us / Buy Now
RT1210 View products in stock	PDF		Buy Now
RT1610 View products in stock	PDF		Buy Now
RT2012 View products in stock	PDF		Buy Now
RT3215 View products in stock	PDF		Buy Now
RSE H14	PDF		Buy Now
RSM200S View products in stock	PDF		Buy Now

Load capacitance values: 6 pF, 7 pF, 9 pF and 12.5 pF

Frequency Tolerances: ±20 ppm and ±10 ppm

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Raltron Solutions – Antennas

Raltron Antennas Solutions

Part #	Datasheet	Image	Frequency(MHz)	Contact Us / Buy Now
RST-W2-P-110-SMA-H	PDF		2400~2483	Buy Now
RPCF-MBE9-120050-O-W-001	PDF		698 ~ 960 / 1390 ~ 1435 / 1575 / 1710 ~ 2170 / 2400 ~ 2700 / 3400 ~ 3600 / 4800 ~ 6000	Contact Us
RPC-W2-P-35-70-G	PDF		2400 ~ 2500	Buy Now
RCA-5220-A0-TR	PDF		2450±50	Buy Now
RPC-W2A1-330172-O-E-001	PDF		2400 ~ 2500	Buy Now

See All Antenna Products

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Raltron Products – LTCC Filters, Baluns and Diplexers

Raltron LTCC Filters, Baluns and Diplexers Solutions

Part #	Size(mm)
RCF-5500.000-700000-1005-W-001	1.00 x 0.50
RBL-2430.000-1005-EV-001	1.00 x 0.50 x 0.40
RCDI-24-49-1608-W-TR	1.60 x 0.80 x 0.60
RCDI-W2A1-W5A17-1608-W-TR	1.60 x 0.80 x 0.60

See All LTCC Filters, Baluns and Diplexers Products

Raltron Solutions - RF Connectors

Raltron RF connectors with low insertion loss and excellent voltage standing wave ratio support the high-level performance demanded by Thread Applications.

Product #	Datasheet	Image	Connector Family	Description
RCN-3F-3108-K-001	PDF		BNC	BNC Straight Jack PCB Receptacle
RCN-4F-28012-K-001	PDF		MCX	MCX Straight Jack PCB Receptacle
RCN-5F-33106-K-001	PDF		MMCX	MMCX Straight Jack PCB Receptacle
RCN-17M-12816-K-001	PDF		N	Type N Right Angle Plug
RCN-1M-21419-K-001	PDF		SMA	SMA Straight Plug (Quick Fit) for Semi Rigid Cable
RCN-9F-16801-K-001	PDF		TNC	TNC Straight Jack Bulkhead Crimp

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Raltron Solutions - RF Cable Assemblies

Raltron cable assemblies range from simple jumpers to power and high-speed data cables.

Product #	Datasheet	Image	Cable Assemblies	Description
RCB-16-F-95-11-SD	PDF		SMA to IPEX	RP SMA Jack S/T For RF1.13 Cable
RCB-21-174-150-DO-001	PDF		MCX to MCX	MCX Plug to MCX R/A Plug For RG174 Cable
RCB-14-H-100-12-SD	PDF		MCX to SMA	SMA Jack to MCX Plug For RF1.37 Cable
RCB-15-A-100-12-SD	PDF		MMCX to SMA	SMA to MMCX For RG174 Cable
RCB-13-J-600-13-SD	PDF		TNC to SMA	TNC Jack S/T For RG316 Cable

CABLE ASSEMBLIES SHORT FORM CATALOG

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