

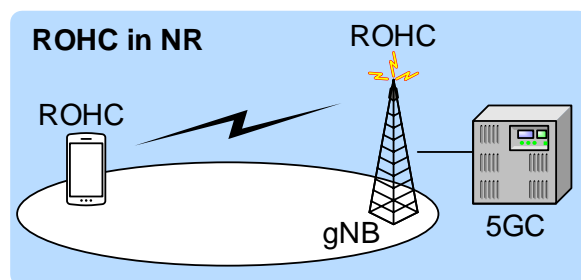
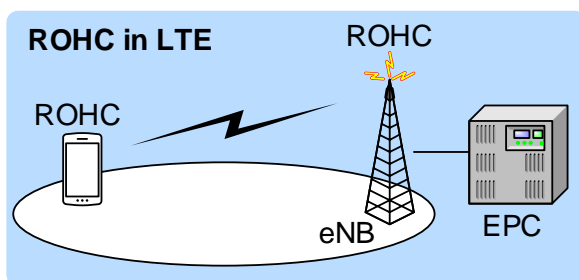
Effnet ROHC-TCP™

Saves bandwidth and improves QoS

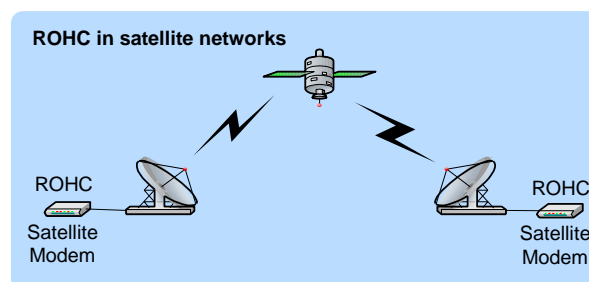
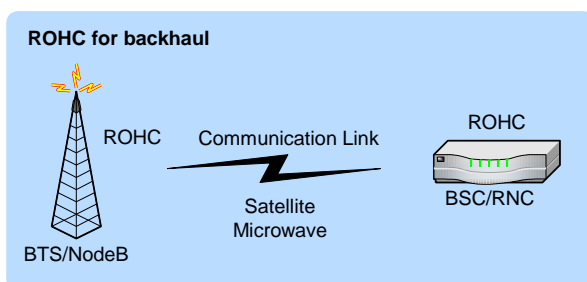


- ◆ Software fully compliant with the IETF standards RFC 5795 (4995) and RFC 6846 (4996)
- ◆ Lightweight implementation including all features suitable for low-end devices
- ◆ Highly portable ANSI C code with no operating system dependencies
- ◆ Platform and endianness (byte order) independent
- ◆ Highly configurable with compile- and run-time options
- ◆ Highly modular with external memory management
- ◆ Multi-threading support

Effnet ROHC-TCP™ is targeted for web (HTTP), email, and file transfer traffic and is highly effective for TCP short flows and acknowledge traffic. It is robust and maintains high compression efficiency even in the presence of high BER, long RTT, packet loss and pre- and on-link reordering. Such conditions are typical of wireless links, multi-hop networks etc. Effnet ROHC-TCP™ enables operators to save bandwidth and support more users in the available spectrum without affecting quality.



Effnet ROHC-TCP™ can be used in mobile broadband networks such as HSPA, LTE (4G) and NR (5G). The standards for LTE (3GPP Rel 8+) and NR (3GPP Rel 15+) recommends implementation of ROHC-TCP profile based on RFC 5795 and RFC 6846. Effnet ROHC-TCP™ can also be used in satellite networks based on BGAN, DVB-S and DVB-RCS standards.



Effnet ROHC-TCP™ provides improved bandwidth efficiency when used together with Protocol Enhancement Proxies on satellite networks, bandwidth optimization techniques in WAN optimizers, TCP accelerators and on backhaul links.

Effnet ROHC-TCP™ is a member of the Effnet Header Compression family. All products work together seamlessly and are easy to integrate into customer's products. One or more products can be delivered as a package to fulfil requirements of standards e.g. complete Effnet ROHC™ family for 3GPP Rel 8+ (LTE) and 3GPP Rel 15+ (NR). Also available is Effnet HC-Sim™ (Effnet Header Compression Simulator) which is used to simulate traffic and link conditions to test the functionality of header compression modules. Effnet HC-Sim™ features a wide range of test cases with comprehensive logging and statistics generation capabilities. This ensures detailed testing of all features and functionality in Effnet's header compression products. For more information about Effnet HC-Sim™, see the related data sheet at www.effnet.com

Effnet ROHC-TCP™ – a member of the Effnet ROHC portfolio:

Effnet ROHC-TCP™	Effnet ROHC™	Effnet ROHCv2™	Effnet HC-Sim™
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Effnet ROHC-TCP™ is designed to be easily adapted to a variety of operating systems and hardware platforms. The implementation is developer-friendly and available both for user space, kernel space, debugging and testing (with Effnet

HC-Sim™), and for link layer integration such as PPP according to RFC 3241. Effnet can assist in the link layer integration process as an engineering service.

Multiple Internet packet size studies¹ are in agreement that at least 40% of all IPv4 packets carry no or only a few bytes of payload i.e. packet sizes are at or very near to header size (IPv4+TCP). One study of IPv6 packets shows the same trend. Even more remarkable in that study is that for IPv6, 60-80% of the packets carry more header data than packet data. Effnet ROHC-TCP™ would be very beneficial in these cases.

	Average packet size (w/o ROHC) (bytes)	Average packet size (w ROHC) (bytes)	Savings (%)
TCP Ack (w/o options)	40	10	75
TCP Ack (Timestamp)	52	13	75

¹Packet size studies at www.caida.org

Effnet ROHC-TCP™ 2.7

This release supports the following functions:

- Profiles: ROHC-TCP (0x0006)
- Compression of both IPv4, IPv6 and extension headers
- All states and modes including mode transitions
- All ROHC packet types including feedback
- Packet types of both sequential and random IPID are supported
- Context initialization using IR packets
- Context replication using IR-CR packets in decompressor
- All encoding mechanisms: LSB, W-LSB, Offset-IPID encoding
- ROHC Segmentation and Reassembly
- Classifier & Context Manager

Effnet ROHC-TCP™ is provided together with a full featured classification and context management module. The classification and context management function is not defined in the standards but the module is provided as it is essential and eases the integration process. It includes efficient classification, context identification and management for various types of header chains including extension headers. With low platform resource requirements, this component is highly suitable for both handheld terminals and large network systems.

Platforms

Effnet ROHC-TCP™ has been ported to PowerPC, MIPS, ARM and x86 processors and VxWorks, Nucleus, Linux, FreeBSD and Windows operating systems. It can be easily ported to other platforms as well.

Support

Effnet products are offered with a full range of support services, including problem reporting, bug fixes, updates, training, consulting and integration services. A sample application, in source code form, is provided which demonstrates the use of the API to speed-up the integration process.

For more information and references about header compression and Effnet ROHC-TCP™, see our library of white papers and data sheets at www.effnet.com

About Effnet AB

Since its beginnings in 1997, Effnet has been involved in research and development of technologies that improve the performance and efficiency of IP based networks. Effnet is committed to continue to provide leading edge IP technology.

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