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UDP Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification

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# Introduction

## Revision history

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| --- | --- | --- | --- |
| Date | Rev | Characteristics | Prepared |
| 2006-09-21 | PA1 | First draft version | ETHLZR |
| 2006-11-14 | A | Approved after review | ETHESI |

## How to Read this Document

This is the Function Specification for the set of UDP protocol modules. UDP protocol modules are developed for the TTCN-3 Toolset with TITAN. This document should be read together with Product Revision Information ‎[3].

## Scope

The purpose of this document is to specify the content of the UDP protocol modules.

## References

1. RFC 768 – User Datagram Protocol
2. ETSI ES 201 873-1 v.3.1.1 (2005-06)  
   The Testing and Test Control Notation version 3. Part 1: Core Language
3. 109 21-CNL 113 420-1  
   UDP Protocol Modules for TTCN-3 Toolset with TITAN, Product Revision Information
4. 1/1553-CRL 113 200 Uen  
   User Documentation for the TITAN TTCN-3 Test Executor

## Abbreviations

RFC Request For Comments

TTCN-3 Testing and Test Control Notation version 3

UDP User Datagram Protocol

## Terminology

No specific terminology is used.

# General

Protocol modules implement the message structures of the related protocol in a formalized way, using the standard specification language TTCN-3. This allows defining of test data (templates) in the TTCN-3 language and correctly encoding/decoding messages when executing test suites using the TITAN TTCN-3 test environment.

Protocol modules are using TITAN’s RAW encoding attributes ‎[4] and hence is usable with the TITAN test toolset only.

# Functional specification

## Protocol version implemented

This set of protocol modules implements protocol messages and constants of the UDP protocol (see ‎[1]) with the modifications specified in ‎3.2.

## Modifications/deviations related to the protocol specification

None.

## Encoding/Decoding and Other Related Functions

This product also contains encoding/decoding functions which assure correct encoding of messages when sent from TITAN and correct decoding of messages when received by TITAN. Implemented encoding/decoding functions:  
Name Type of formal parameters Type of return value

f\_UDP\_enc( UDP\_packet) returns octetstring

f\_UDP\_dec( octetstring) returns UDP\_packet

The product also provides some additional functionality to the user via the following functions. The f\_UDP\_pseudo\_header\_enc () can be used.to encode the UDP pseudo header. The f\_UDP\_checksum() can be used to calculate the UDP checksum value.

f\_UDP\_pseudo\_header\_enc(UDP\_pseudo\_header) returns octetstring

f\_UDP\_checksum(octetstring) returns OCT2