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European Standard

VHF air-ground and air-air Digital Link (VDL) Mode 4 radio equipment; Technical characteristics and methods of measurement for aeronautical mobile (airborne) equipment; Part 1: Physical layer

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Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Aeronautics (AERO).

The present document is part 1 of a multi-part deliverable covering the VHF air-ground and air-air Digital Link (VDL) Mode 4 radio equipment; Technical characteristics and methods of measurement for aeronautical mobile (airborne) equipment, as identified below:

Part 1: "Physical layer";

Part 2: "General description and data link layer";

Part 3: "Additional broadcast aspects";

Part 4: "Point-to-point functions";

The present document is accompanied by an equivalent ground-based standard, EN 301 842 [10] parts 1 to 5, covering the VHF air-ground Data Link (VDL) Mode 4 radio equipment; Technical characteristics and methods of measurement for ground-based equipment.

NOTE 1: Minimum Operational Performance Specifications (MOPS) are also being developed for VDL Mode 4. EUROCAE have previously published Interim MOPS for VDL Mode 4 [i.2] which are a sub set of EN 302 842-1, 2 [7], 3 [8] and 4 [11]. EN 302 842-1, 2 [7], 3 [8] and 4 [11] complies with the requirements of CEC Mandate M/318 [i.3].

NOTE 2: Following the decision taken at the ICAO Aeronautical Communication Panel (Bangkok, February 2011), it is expected that ICAO Annex 10 will be amended in 2012 changing the frequency range from 108 MHz to 137,975 MHz to 112 MHz to 137,975 MHz. The present deliverable will be updated accordingly once the amendment is publicly available.

National transposition dates	
Date of latest announcement of this EN (doa):	31 October 2011
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 April 2012
Date of withdrawal of any conflicting National Standard (dow):	30 April 2012

Introduction

The present document states the technical specifications for Very High Frequency (VHF) Digital Link (VDL) Mode 4 aeronautical mobile (airborne) radio transmitters, transceivers and receivers for air-ground and air-air communications operating in the VHF band, using Gaussian Filtered Frequency Shift Keying (GFSK) modulation with 25 kHz channel spacing and capable of tuning to any of the 25 kHz channels from 118,000 MHz to 136,975 MHz as defined in ICAO VDL SARPs [2].

The present document may be used to produce tests for the assessment of the performance of the equipment. The performance of the equipment submitted for type testing should be representative of the performance of the corresponding production model.

The present document has been written on the assumption that:

- the type test measurements will be performed only once, in an accredited test laboratory and the measurements accepted by the various authorities in order to grant type approval;
- if equipment available on the market is required to be checked it may be tested in accordance with the methods of measurement specified in the present document or a documented alternative approved by the certifying authority.