

International Telecommunication Union

ITU-T

G.729 Implementers' Guide

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

(27 October 2017)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA,
DIGITAL SYSTEMS AND NETWORKS

Digital terminal equipment – Coding of voice and audio
signals

Implementers' guide for ITU-T Rec. G.729 (2012)
***Coding of speech at 8 kbit/s using conjugate-
structure algebraic-code-excited linear
prediction (CS-ACELP)***

ITU-T

Summary

This document contains the Implementors' Guide for ITU-T Recommendation G.729 (06/2012) that highlights a defect reported at SG 16's meeting 16 - 27 October 2017.

This document was approved by ITU-T Study Group 16 on 27 October 2017 (SG16-TD146/PLEN).

Change log

2017-10	V1 Created with documentation of mismatch between parameters G.729 Annex B VAD description and ANSI-C source code.
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ITU-T Study Group 16 /
Rapporteur Question 7/16

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Table of Contents

	Page
1 Scope.....	1
2 Introduction.....	1
3 Defect resolution procedure.....	1
4 References.....	1
5 Nomenclature.....	2
6 Technical and editorial corrections to G.729 Annex B VAD.....	2
6.1 Problem to be resolved	2
Annex: G.729 Defect Report Form.....	4

List of Tables

Page

No table of figures entries found.

List of Figures

Page

No table of figures entries found.

Implementers' guide for ITU-T Rec. G.729 (2012)

1 Scope

This guide resolves defects in the following categories:

- editorial errors
- technical errors, such as omissions and inconsistencies
- ambiguities

In addition, the implementers' guide may include explanatory text found necessary as a result of interpretation difficulties apparent from the defect reports.

This guide will not address proposed additions, deletions or modifications to the Recommendations that are not strictly related to implementation difficulties in the above categories. Proposals for new features should be made through contributions to ITU-T.

2 Introduction

This implementers' guide is a compilation of reported defects for ITU-T G.729 (2012). In this edition of the guide, reported defects identified as of 2017-10 are given for:

- The VAD specification in G.729 Annex B "A silence compression scheme for ITU-T G.729 optimized for terminals conforming to ITU-T V.70"

The changes, clarifications and corrections proposed herein are expected to be included in future versions of the affected Recommendations.

3 Defect resolution procedure

Upon discovering technical defects with any components of the texts covered by this implementers' guide, please provide a written description directly to the editors of the affected Recommendation(s) with a copy to the respective Rapporteur (See contacts above on page iii). The template for a defect report is located at the end of this guide. Return contact information should also be supplied so a dialogue can be established to resolve the matter and an appropriate reply to the defect report can be conveyed. This defect resolution process is open to any interested party. Formal membership in the ITU is not required to participate in this process.

4 References

This document refers to the following ITU-T G.729 Recommendation:

- G.729 (2012-06), *Coding of speech at 8 kbit/s using conjugate-structure algebraic-code-excited linear prediction (CS-ACELP)*.
<http://www.itu.int/rec/T-REC-G.729-201206-I/en>

5 Nomenclature

In addition to traditional revision marks, the following marks and symbols are used to indicate to the reader how changes to the text of a Recommendation should be applied:

Symbol	Description
<u>[Begin Correction]</u>	Identifies the start of revision marked text based on extractions from the published Recommendations affected by the correction being described.
<u>[End Correction]</u>	Identifies the end of revision marked text based on extractions from the published Recommendations affected by the correction being described.
...	Indicates that the portion of the Recommendation between the text appearing before and after this symbol has remained unaffected by the correction being described and has been omitted for brevity.
--- SPECIAL INSTRUCTIONS --- {instructions}	Indicates a set of special editing instructions to be followed.

6 Technical and editorial corrections to G.729 Annex B VAD

6.1 Problem to be resolved

Introduction

It has been reported to the TSB that there is a discrepancy between the text description and the C-code of a parameter used in the G.729 Annex B VAD. Specifically, in the C implementation of the file "**vad.c**" in the very end, the 14 multi boundary decisions (dSZC, dSE, dSLE, SD) seem to be different as compared to the table given in the documentation file "**g729anxb.pdf**". For example,

C code	Document
a1= -14680	a1= 23488

Normally C-code takes precedence over the text description, but further investigation has revealed that this was a known problem at the time of approval of G.729 Annex B, and the value in the text is, in fact, a better value. Some demonstrations were made at the time to show that using the value that is in the code does not significantly change the VAD performance.

Resolution

It is desirable to change the C-code to match the text. However, a number of modules may be impacted, including (but not limited to):

```
./G729_Release3/g729AnnexB/c_codeB/vad.c
```

./G729_Release3/g729AnnexB/c_codeB/vad.h
./G729_Release3/g729AnnexB/c_codeBA/vad.c
./G729_Release3/g729AnnexB/c_codeBA/vad.h
./G729_Release3/g729AnnexC+/c_code/vad.c
./G729_Release3/g729AnnexC+/c_code/vad.h
./G729_Release3/g729AnnexF/c_code/vad.c
./G729_Release3/g729AnnexF/c_code/vad.h
./G729_Release3/g729AnnexG/c_code/vad.h
./G729_Release3/g729AnnexG/c_code/vadg.c
./G729_Release3/g729AnnexI/c_code/vad.c
./G729_Release3/g729AnnexI/c_code/vad.h
./G729_Release3/g729AppII/c_code/vad.c
./G729_Release3/g729AppIII/c_code/vad.c
./G729_Release3/g729AppIV/vad_fx.c
./G729_Release3/g729AppIV/vad_fx.h

Annex: G.729 Defect Report Form
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DATE:	
CONTACT INFORMATION NAME: COMPANY: ADDRESS: TEL: FAX: E-MAIL:	
AFFECTED RECOMMENDATIONS:	
DESCRIPTION OF PROBLEM:	
SUGGESTIONS FOR RESOLUTION:	