

International Telecommunication Union

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**G.722.1**  
**Corrigendum 1**  
(06/2008)

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

Digital terminal equipments – Coding of analogue signals  
by methods other than PCM

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Low-complexity coding at 24 and 32 kbit/s for  
hands-free operation in systems with low frame loss

**Corrigendum 1: Correction of Annex B source  
code**

ITU-T Recommendation G.722.1 (2005) – Corrigendum 1



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# ITU-T Recommendation G.722.1

## Low-complexity coding at 24 and 32 kbit/s for hands-free operation in systems with low frame loss

### Corrigendum 1

#### Correction of Annex B source code

#### Summary

This corrigendum corrects changes necessary to the existing C code (Release 2.0) that is supplied with Annex B of ITU-T Recommendation G.722.1. No changes are made to the textual part of the Recommendation. For convenience of users, this corrigendum has been integrated into the base text of the Recommendation, changing for consistency the designation of the C code to *Release 2.1*. For access to the code in compilable form, please see <http://www.itu.int/rec/T-REC-G.722.1-200505-I>.

#### History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T G.722.1	1999-09-30	16
1.1	ITU-T G.722.1 Annex A	2000-02-17	16
1.2	ITU-T G.722.1 (1999) Cor. 1	2000-11-17	16
1.3	ITU-T G.722.1 Annex B	2000-11-17	16
2.0	ITU-T G.722.1	2005-05-14	16
2.1	ITU-T G.722.1 (2005) Cor. 1	2008-06-13	16

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# ITU-T Recommendation G.722.1

## Low-complexity coding at 24 and 32 kbit/s for hands-free operation in systems with low frame loss

### Corrigendum 1

#### Correction of Annex B source code

##### 1 Correction to floating-point C source code of G.722.1 Annex B

In the floating-point C source code of G.722.1 Annex B, one file is changed:

- decoder.c

These changes correct two problems:

- The noise fill energy was 26.8 dB too weak on the floating-point decoder, compared to the fixed-point source code. This has been corrected by defining a constant NOISE\_SCALE\_FACTOR, with the value of 22.0, and using this to scale the background noise.
- There was potential for an array overflow in certain circumstances. This has been corrected by bounding the index array.

#### 1.1 Changes to decoder.c

The changes to decoder.c are shown below.

```
Comparing files decoder.c.old and DECODER.C
***** decoder.c.old
 54:
 55: #define GET_NEXT_BIT \
***** DECODER.C
 54:
 55: #define NOISE_SCALE_FACTOR 22.0F
 56:
 57: #define GET_NEXT_BIT \
*****

***** decoder.c.old
 541:         n++;
 542:         if (fabs(*decoder_mlt_ptr) > 2.0*standard_deviation) {
 543:             n += 3;
***** DECODER.C
 543:         n++;
 544:         if (fabs(*decoder_mlt_ptr) > 44.0F*standard_deviation) {
 545:             n += 3;
*****

***** decoder.c.old
 547:         }
 548:         temp1 = noise_fill_factor_cat5[n];
***** DECODER.C
 549:         }
 550:         if(n>19)n=19;
 551:         temp1 = noise_fill_factor_cat5[n];
*****

***** decoder.c.old
```

```

562:         if ((random_word & 1) == 0) temp1 = noifillneg;
563:         *decoder_mlt_ptr = temp1;
564:         random_word >>= 1;
***** DECODER.C
565:         if ((random_word & 1) == 0) temp1 = noifillneg;
566:         *decoder_mlt_ptr = temp1*NOISE_SCALE_FACTOR;
567:         random_word >>= 1;
*****

***** decoder.c.old
572:         if ((random_word & 1) == 0) temp1 = noifillneg;
573:         *decoder_mlt_ptr = temp1;
574:         random_word >>= 1;
***** DECODER.C
575:         if ((random_word & 1) == 0) temp1 = noifillneg;
576:         *decoder_mlt_ptr = temp1*NOISE_SCALE_FACTOR;
577:         random_word >>= 1;
*****

***** decoder.c.old
604:         if ((random_word & 1) == 0) temp1 = noifillneg;
605:         *decoder_mlt_ptr = temp1;
606:         random_word >>= 1;
***** DECODER.C
607:         if ((random_word & 1) == 0) temp1 = noifillneg;
608:         *decoder_mlt_ptr = temp1*NOISE_SCALE_FACTOR;
609:         random_word >>= 1;
*****

***** decoder.c.old
614:         if ((random_word & 1) == 0) temp1 = noifillneg;
615:         *decoder_mlt_ptr = temp1;
616:         random_word >>= 1;
***** DECODER.C
617:         if ((random_word & 1) == 0) temp1 = noifillneg;
618:         *decoder_mlt_ptr = temp1*NOISE_SCALE_FACTOR ;
619:         random_word >>= 1;
*****

***** decoder.c.old
634:         if ((random_word & 1) == 0) temp1 = noifillneg;
635:         *decoder_mlt_ptr++ = temp1;
636:         random_word >>= 1;
***** DECODER.C
637:         if ((random_word & 1) == 0) temp1 = noifillneg;
638:         *decoder_mlt_ptr++ = temp1*NOISE_SCALE_FACTOR;
639:         random_word >>= 1;
*****

***** decoder.c.old
641:         if ((random_word & 1) == 0) temp1 = noifillneg;
642:         *decoder_mlt_ptr++ = temp1;
643:         random_word >>= 1;
***** DECODER.C
644:         if ((random_word & 1) == 0) temp1 = noifillneg;
645:         *decoder_mlt_ptr++ = temp1*NOISE_SCALE_FACTOR;
646:         random_word >>= 1;
*****

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