

Internal distribution code:

- (A) Publication in OJ
(B) To Chairmen and Members
(C) To Chairmen
(D) No distribution

**Datasheet for the decision
of 3 July 2013**

Case Number: T 1564/09 - 3.5.02

Application Number: 05425374.5

Publication Number: 1727287

IPC: H03M 3/02, H03M 3/04

Language of the proceedings: EN

Title of invention:

Method of adding a dither signal in output to the last integrator of a sigma-delta converter and relative sigma-delta converter

Applicant:

STMicroelectronics Srl

Headword:

-

Relevant legal provisions:

EPC Art. 109(1)

Keyword:

"Remittal - yes"

Decisions cited:

-

Catchword:

-



Case Number: T 1564/09 - 3.5.02

D E C I S I O N
of the Technical Board of Appeal 3.5.02
of 3 July 2013

Appellant: STMicroelectronics Srl
(Applicant) Via Olivetti 2
I-20864 Agrate Brianza (IT)

Representative: Pellegri, Alberto
Società Italiana Brevetti S.p.A.
Via Carducci, 8
I-20123 Milano (IT)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 12 March 2009
refusing European patent application
No. 05425374.5 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: M. Ruggiu
Members: R. Lord
W. Ungler

Summary of Facts and Submissions

- I. This is an appeal of the applicant against the decision of the examining division to refuse European patent application No. 05 425 374.5. The reasons given for the refusal were *inter alia* that the subject-matter of the independent claims 1 and 8 filed with letter dated 7 October 2008 was not new in the sense of Article 54(1) and (2) EPC.
- II. The following document of the state of the art has been cited in the decision under appeal:
- D1: US 5 905 453 A.
- III. In the statement of grounds of appeal dated 10 July 2009 the appellant requested that the decision of the examining division be set aside and that the application be processed for grant on the basis of claims 1 to 8 according to a main request, or alternatively on the basis of claims 1 to 3 according to an auxiliary request, both sets of claims being enclosed with that statement. In a communication accompanying a summons to oral proceedings, dated 29 April 2013, the board informed the appellant *inter alia* of its intention to remit the case to the department of first instance for further prosecution. In a letter dated 7 June 2013 the appellant stated that they were satisfied with that course of action, and withdrew the request for reimbursement of the appeal fee which they had made in their statement of grounds of appeal. In a communication dated 18 June 2013 the board cancelled the oral proceedings scheduled for 8 July 2013.

IV. Claim 1 of the appellant's main request reads as follows:

"A sigma-delta analog-to-digital converter, comprising at least a switched-capacitor integrator having a switched-capacitor network, to an input of which a signal (VIP2, VIN2) to be sampled is applied, and an amplifier (2) in cascade to the switched-capacitor integrator, characterized in that it comprises circuit means coupled to said amplifier (2) for adding to the output of the amplifier (2) an analog dither signal by inputting the analog dither signal to a virtual ground node of the amplifier (2)."

Claim 8 of the appellant's main request reads as follows:

"A method of adding an analog dither signal to the output of a switched-capacitor integrator of a sigma-delta analog-to-digital converter having a switched-capacitor network and an amplifier (2) in cascade to the switched-capacitor integrator, comprising the step of adding to the output of the amplifier (2) the analog dither signal by inputting the analog dither signal to a virtual ground node of said amplifier (2)."

Claim 1 of the auxiliary request also relates to a sigma-delta analog-to-digital converter, and includes all the features of claim 1 of the main request.

V. The appellant essentially argued as follows:

The amendments to the independent claims introduced in the sets of claims filed with the grounds of appeal resulted in the subject-matter of those claims being novel with respect to D1, thus addressing the sole objection to those claims in the decision under appeal.

Reasons for the Decision

1. The appeal is admissible.
2. The only grounds for refusal in the decision under appeal were that the subject-matter of independent claims 1 and 8 and dependent claim 3 lacked novelty (Article 54 EPC), and that the subject-matter of dependent claims 2 and 4 lacked an inventive step (Article 56 EPC).
 - 2.1 These objections were all based on the document D1, and arose because of the ambiguity in claims 1 and 8 as then on file (those filed with letter dated 7 October 2008) as to whether the word "*thereto*" in the expression "*an amplifier (2) in cascade thereto*" referred to the switched-capacitor integrator as a whole or just to the switched-capacitor network. Specifically, this ambiguity was such that the amplifier "AMP1" depicted in Fig. 2 of D1 could be read onto the "*amplifier (2)*" in each of these claims, because that amplifier was cascaded to a switched-capacitor network (e.g. elements 56, C1 and 58 in that figure).

2.2 In the independent claims of both requests filed with the appellant's statement of grounds of appeal the ambiguous expression noted above has been replaced by "*in cascade to the switched-capacitor integrator*". This amendment excludes the interpretation of D1 indicated above, because in Fig. 2 of that document the amplifier "AMP1" forms part of the switched-capacitor integrator, so cannot be considered to be cascaded to it. Thus, this amendment overcomes the objection of lack of novelty which formed the basis of the decision under appeal with respect to claims 1 and 8.

3. Given the above conclusion, and given that the further arguments in the decision under appeal relating to dependent claims 2 to 4 are not concerned with this aspect of the disclosure of D1, the board concludes that it would have been appropriate for the examining division to have rectified its decision under Article 109(1) EPC. It is the established case law of the boards of appeal that in such circumstances the case should be remitted to the department of first instance for further prosecution (see for example the decisions cited in the Case Law of the Boards of Appeal at the European Patent Office, 6th Edition, section VII.E.13.1), in the present case in particular to address the issues raised in section III, "Additional Comments", at the end of the decision under appeal.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance for further prosecution.

The Registrar:

The Chairman:

U. Bultmann

M. Ruggiu