To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):
   1. Gyu-Bum KYUNG
   2. Hyun-Koo YANG
   3. Se-Ho MYUNG
   4. Hong-Sil JEONG
   5. Kyeong-Cheol YANG
   6. Dong-Seok PARK
   7. Jae-Yool KIM

Additional name(s) of conveying party(ies) attached? ☐ Yes ☑ No

3. Nature of conveyance:
   ☐ Assignment  ☐ Merger
   ☐ Security Agreement  ☐ Change of Name
   ☐ Other

Execution Date: 5/10/05

4. Application number(s) or patent number(s):
   If this document is being filed together with a new application, the execution date of the application is: 5/10/05
   A. Patent Application No.(s)
   B. Patent No.(s)

Additional numbers attached? ☐ Yes ☑ No

5. Name and address of party to whom correspondence concerning document should be mailed:
   Name: Paul J. Farrell, Esq.
   DILWORTH & BARRESE, LLP
   333 Earle Ovington Boulevard
   Uniondale, New York 11553
   U.S. PTO Customer No. 28249

6. Total number of applications and patents involved:

7. Total fee (37 CFR 3.41) $40.00
   ☐ Enclosed
   ☐ Authorized to be charged to deposit account

8. Deposit account number: 04-1121

   To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.
   Paul J. Farrell, Reg. No. 33,494
   Name of Person Signing
   Signature
   5/12/05
   Date
ASSIGNMENT

DOCKET NO. 678-2061 (P12948)

AS A BELOW NAMED INVENTOR, I, and each of us, individually hereby declare that: IN
CONSIDERATION of the sum of TEN ($10.00) dollars or the equivalent thereof, and other good and
valuable consideration, the receipt of which from the hereinafter named Assignee is hereby
acknowledged, I do hereby sell, assign and forever grant and convey unto:

ASSIGNEE: Samsung Electronics Co., Ltd.

ADDRESS: 416, Maedeon-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea

Who is my Assignee, and to the successors and assigns of my Assignee, all my right, title and
interest, in and for the United States of America and all other countries, including all rights of priority,
in and to the invention entitled:

TITLE: APPARATUS AND METHOD FOR ENCODING AND DECODING BLOCK LOW
DENSITY PARITY CHECK CODES WITH A VARIABLE CODING RATE

Invented by me (if only one inventor is named below) or us (if more than one inventor is named below)
and described in an application for a United States patent the specification of which is either attached
hereto or otherwise accompanies this Assignment or indicates an attorney docket no. 678-2061
(P12948), or is more particularly identified as:

[ ] executed on even date herewith, or
G Serial No. ____________ filed in the U.S. Patent & Trademark Office on ____________,
or
G executed on ____________

and in and to all United States patents which may be granted thereon and therefore, and in and to all
certificates of corrections, divisions, continuations, continuations-in-part, reissued and re-examined
patents, and to any extensions thereof, said interest being the entire ownership of the patent when
granted, to be held and enjoyed by said SAMSUNG ELECTRONICS CO., LTD., my Assignee, its
successors, assigns or other legal representatives, to the full end of the term, terms, or any extension
or renewal thereof, for which said patent or patents may be granted, as fully and entirely as the same
would have been held and enjoyed by me or us if this assignment, sale and conveyance had not been
made;

AND I hereby covenant and agree to sign and execute any further documents or instruments
which may from time-to-time be either necessary, lawful, proper or requested by the Assignee, in the
prosecution of the above-named application or in the preparation and prosecution of any certificate
of correction, division, continuation, continuation-in-part, reissue, re-examination, in any amendment,
extension, or interference proceeding, whether administrative or judicial, or otherwise, to secure the
title hereto in said Assignee:

AND I do hereby authorize and request the Commissioner of Patents and Trademarks to issue
said Patent or Patents to the Assignee, and I hereby appoint as my, or our attorney, and authorize and
request Peter G. Dilworth, Reg. No. 29,450 and Paul J. Farrell, Reg. No. 33,494, to insert on this
Assignment any further identification or to complete such identification which may be either necessary
or desirable in order to comply with the rules of the United States Patent and Trademark Office for
recording of this document.

And I further covenant that ASSIGNEE will, upon its request, be provided promptly with all
pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents
as may be known and accessible to ASSIGNOR and will testify as to the same in any interference,
litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal
representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, isue
and enforce said application, said invention and said Letters Patent and said equivalents thereof
which may be necessary or desirable to carry out the purposes thereof.
IN WITNESS WHEREOF, I and we have set our hands and seals on the dates written beside my and our respective names:

<table>
<thead>
<tr>
<th>INVENTOR(S)</th>
<th>Date Signed</th>
<th>Witness(es)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Gyu-Bum KYUNG</td>
<td>May 10, 2005</td>
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RECORDED: 05/12/2005