

Before the
Federal Communications Commission
Washington, D.C. 20054

In the Matter of)	
)	
Implementation of Section 304 of the Telecommunications Act of 1996)	CS Docket No. 97-80
)	
Commercial Availability of Navigation Devices)	
)	
Compatibility Between Cable Systems and Consumer Electronics Equipment)	PP Docket No. 00-67

**PETITION FOR RECONSIDERATION OF GENESIS MICROCHIP,
INC.**

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Summary

Genesis Microchip, Inc. (“Genesis”) is a leading supplier of display image processors used in LCD monitor displays, flat panel displays, CRT digital displays, DVD players, and set-top boxes. Genesis seeks reconsideration of that portion of the Second Report and Order in this proceeding which prohibits unidirectional digital cable television devices from being labeled or marketed as “digital cable ready” unless they employ a DVI or HDMI digital display interface.

The DVI and HDMI standards are private accords developed by closed industry groups. As a result, Genesis and other vendors are required to license these standards and the underlying patents from the private groups that control the standards. This puts Genesis and others at a potential competitive disadvantage in the market. It also raises the risk that such specifications – which are developed and maintained by a small private group of patentees – will be manipulated for anticompetitive gain. Indeed, Genesis has already been sued for patent infringement by one of the members of the DVI working group after Genesis began developing DVI-compliant products.

The Commission’s adoption of the DVI and HDMI standards violated Section 629 of the Communications Act, which requires the Commission to consult with “appropriate industry standards setting organizations” to adopt regulations to achieve the competitive availability of cable navigation devices. The law is clear that “appropriate standards setting organizations” include groups such as the IEEE and ANSI, which develop standards in open proceedings pursuant to rigorous policies of patent disclosure. Here, however, in its haste to facilitate the transition to digital television, the Commission blindly accepted private standards from two trade groups that did not have patent policies or license review procedures in place to protect industry competition.

In addition to violating the statutory mandate of Section 629, the Commission’s decision to accept technical standards from private organizations whose primary goal is to promote their members’ patented technology, is squarely at odds with past Commission precedent. Indeed, over the past 50 years, the Commission has *never* adopted a technical standard that was not the product of an accredited standards setting organization, the work of a federal advisory committee, or the result of an open proceeding in which the proposed standards were tested by the Commission staff and subjected to public scrutiny.

The Commission’s actions also violated the notice and comment provisions of the Administrative Procedures Act (“APA”). Although the Commission’s rules require the implementation of DVI and HDMI technology, never during the course of this proceeding did the Commission give notice of the specifications themselves. Moreover, the Commission never took appropriate action to incorporate the specifications into its rules by reference. As a result, the Commission cannot mandate the use of these specifications consistent with the APA.

Since the Commission ignored the mandate of Section 629, strayed from past precedent, and violated the requirements of the APA, it must now reconsider the requirement that digital cable ready products employ the DVI or HDMI interfaces. In this Petition for Reconsideration, Genesis seeks revision of Section 15.123 of the Commission's rules to permit the use of any digital display interface standard in a unidirectional digital cable television device for the purpose of marketing such device as a digital cable ready, provided the standard has been developed pursuant to a standards-making process that is open to the public and includes a patent licensing policy comparable to the ANSI patent policy. Genesis also seeks revision of Section 76.640 of the Commission's rules to remove the phrase "DVI or HDMI" as one of the output requirements for high definition set top boxes. In the alternative, Genesis seeks all of the following:

(1) Modification of the Second Report and Order in this proceeding to conditionally approve DVI and HDMI as acceptable display standards for unidirectional digital cable television products, provided a full public disclosure is made and approved by the Commission with respect to (a) all patents and pending patents which are required to implement these standards, (b) all "necessary claims" in such patents required to implement these standards, and (c) all licensing terms and conditions associated with such patents; and

(2) Modification of the Second Report and Order in this proceeding to conditionally approve DVI and HDMI as acceptable display standards for unidirectional digital cable television products, provided the maintenance and further development of these standards are turned over to an ANSI-accredited standards development organization; and

(3) Revision of Sections 15.123 and 76.640 of the Commission's rules to include the specification revision numbers for the DVI and HDMI standards with the understanding that any changes or amendments to such specifications will be required to undergo a notice and comment proceeding before adoption by the Commission.

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Commercial Availability of Navigation Devices)	
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Compatibility Between Cable Systems and Consumer Electronics Equipment)	PP Docket No. 00-67

PETITION FOR RECONSIDERATION

Genesis Microchip Inc. (“Genesis”), by its counsel, pursuant to Section 1.429 of the Commission’s rules, hereby submits this Petition for Reconsideration of the Second Report and Order in the above-captioned proceeding.¹ Genesis is a leading supplier of display image processors. Its customers include brand name manufacturers of LCD monitor displays, flat panel digital displays, CRT digital displays, DVD players and set-top boxes. Genesis will be directly affected by the outcome of this proceeding.

Genesis asks the Commission to reconsider only one portion of the Plug & Play Order, to wit, the requirement that unidirectional digital cable television devices may not be labeled or marketed as “digital cable ready” unless they employ a DVI or HDMI digital display interface.² As the record makes clear, the Commission adopted this requirement based solely on a private agreement (the “Memorandum of Understanding” or “MOU”) among certain members of the cable television and consumer electronics industries; moreover, the standards themselves are the private accords of closed industry groups

¹ Second Report and Order and Second Further Notice of Proposed Rulemaking in CS Docket No. 97-80 and PP Docket No. 00-67, *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices and Compatibility Between Cable Systems and Consumer Electronics Equipment*, Adopted September 10, 2003 (“Plug & Play Order”).

² 47 C.F.R. § 15.123(b)(6) (2003) (“Section 15.123”). In addition, 47 C.F.R. § 76.640(b)(4) (2003) (“Section 76.640”), must be reconsidered as it requires implementation of the DVI or HDMI standard by cable operators after July 1, 2006.

whose sole purpose is to maintain anticompetitive control of the industry. In its haste to codify the MOU, the Commission conducted no independent analysis of the DVI and HDMI standards, failed to ensure that the standards were subject to the formality of an “appropriate” standards setting organization as required by law, made no inquiry into the patent policies that have been or are being used to license these standards, sought no public consideration of alternative display standards, neglected to place the DVI and HDMI technical specifications on the public record,³ and failed even to properly incorporate them by reference in the rules. By acting in this fashion, the Commission failed to comply with Section 629 of the Communications Act,⁴ failed to give adequate notice and opportunity for comment in violation of the Federal Administrative Procedures Act, and failed to act in the public interest.

Accordingly, Genesis seeks the following specific relief upon reconsideration of the Plug & Play Order:

(1) Revision of Section 15.123 to permit the use of any digital display interface standard in a unidirectional digital cable television device for the purpose of marketing such device as “digital cable ready,” provided the standard has been developed pursuant to a standards-making process that is open to the public and includes a patent licensing policy comparable to the American National Standards Institute (“ANSI”) patent policy; and the revision of Section 76.640 to remove the phrase “DVI or HDMI” as one of the output requirements for high definition set top boxes;

In the alternative, Genesis seeks all of the following:

(1) Modification of the Plug & Play Order to conditionally approve DVI and HDMI as acceptable display standards for unidirectional digital cable television products, provided a full public disclosure is made and approved by the Commission with respect to (i) all patents and pending patents which are required to implement these standards, (ii) all “necessary claims” in such patents required to implement these standards, and (iii) all licensing terms and conditions⁵ associated with such patents;

³ In the case of HDMI, the Commission never saw, much less analyzed, this specification which costs \$15,000 to obtain.

⁴ 47 U.S.C. § 549 (“Section 629”).

⁵ The Commission has a history of requiring the disclosure of licensing terms and conditions when patents are involved in standards development. See *Advanced Television Systems and Their Impact Upon the*

(2) Modification of the Plug & Play Order to conditionally approve DVI and HDMI as acceptable display standards for unidirectional digital cable television products, provided the maintenance and further development of these standards are turned over to an ANSI-accredited standards development organization; and

(3) Revision of Sections 15.123 and 76.640 to identify the Specification revision numbers for the DVI and HDMI standards being adopted with the understanding that any changes or amendments to such Specifications will be required to undergo a notice and comment proceeding before adoption by the Commission.⁶

Background

Genesis is in the business of making, among other things, integrated circuits that receive and process digital video and graphic images. These circuits are typically located inside a display device and process incoming images for viewing. Genesis products target several major markets including flat-panel computer monitors, flat-panel displays, progressive scan cathode ray tubes and other high-volume display applications. Genesis products use sophisticated digital signal processing techniques to enhance picture quality and provide display features not generally available from most other manufacturers. For Genesis to successfully compete in the digital display markets, it must incorporate current industry standards, such as DVI and, in the future, HDMI, into its product lines. Because DVI and HDMI are privately developed standards, however, it is necessary for Genesis to license these specifications from the private working groups which control these standards. Significantly, certain members of these working groups actively assert patent infringement claims against products implementing these standards, thus the licenses obtained by Genesis must also include the authorization to use such patents.

A potential problem that arises under such licensing is that the DVI and HDMI patent holders compete directly against Genesis and other vendors of integrated receiver

Existing Television Broadcast Service, 11 FCC Rcd 17771, 17794 (1996) ("ATV"); see also Report and Order and Further Notice of Proposed Rulemaking in MB Docket 02-230, *Digital Broadcast Content Protection*, Adopted November 4, 2003 ("Broadcast Flag").

⁶ Inexplicably, the Commission's Play & Plug Order makes no reference to the DVI or HDMI specification number while the new Broadcast Flag rules specifically reference "DVI Rev 1.0 Specification."

components. Vendors, who must license their competitors' patents to implement the specifications, are at a potential competitive disadvantage in the market. Further, it raises the risk that such specifications, which are developed and maintained by a small, private group of patentees, will be manipulated for anti-competitive gain. For example, competition in the display receiver markets is harmed by a failure of the working groups to disclose in a timely manner (1) patents and pending patents which claim the specifications, (2) "necessary claims" in such patents that are required to implement the specification, and (3) the licensing terms and conditions for such patents. Such threats to competition are particularly troublesome when the industry standard is a *de facto* specification. When the specification is a *de jure* requirement approved by a government agency, the threats to competition are much greater.

Historically, standards organizations have protected against competitive abuses from patent holders by conducting all of their activities on an "open industry" basis and by enforcing a patent policy grounded on full disclosure of both issued and pending patents. In Reply comments filed in this proceeding, Genesis raised these concerns with the Commission, pointing out that neither the DVI nor HDMI working groups are open standards organizations and neither has a patent policy or license review procedure to protect industry competition.⁷ As a result, when Genesis began developing DVI-compliant products pursuant to a license ("DVI Adopters Agreement")⁸ issued by the DVI Digital Display Working Group ("DDWG"), it was "blind-sided" by an infringement suit brought by Silicon Image Inc. ("SII"), a key member of the DDWG and holder of certain DVI-based patents. SII waited until Genesis invested millions in developing DVI-compliant products before presenting its claims for patent infringement. Genesis believed it was fully licensed to make DVI-compliant products when it signed the DVI Adopter's Agreement only to find that it had walked into a litigation trap that, to date, has consumed millions in costs and fees. Genesis believes the entire industry should be anxious to avoid a repeat of SII's "standardize and sue" scheme -- a patent-based variation of the classic "bait and switch" scheme.

⁷ Reply Comments of Genesis (April 28, 2003) ("Reply Comments").

⁸ A copy of the DVI Adopters Agreement is contained in Attachment 1.

In the recent litigation, SII took the position that the DVI license (which the Commission described in the Plug & Play Order as being “freely available”) did not cover television and related consumer electronics products that receive DTV transmissions. SII disputed whether certain patent claims which neither SII nor the DDWG ever disclosed to DVI adopters were, in fact, needed to implement the DVI specification. With no patent disclosures on the record and no impartial standards group willing to intervene or mediate SII’s unreasonable claims, Genesis has, for the past two years, been at the mercy of the courts defending the very allegations which an open standards making process is designed to avoid.⁹

I. Reconsideration is Appropriate When Predicate Facts are in Error

Section 1.429 calls for the reconsideration of rules which are adopted based on factual error.¹⁰ In this instance, the Commission was either misinformed or unaware of certain material facts concerning the DVI and HDMI standards, which, had they been known, would not have resulted in their adoption.¹¹

In its Reply Comments, Genesis alerted the Commission to the dangers of a standards program that does not include the advance disclosure of patent information.¹² Genesis noted that by proposing to require standards which have not been developed under the safeguards of an accredited or open standards-setting body, a federal advisory committee, or at least the full scrutiny of notice and comment proceeding the Commission would be breaking from 40 years of past practice and would subject the public to unknown demands of private patent holders. The Commission gave these arguments short shrift, however, stating that the DVI and HDMI specifications are “widely available,” and that the adopter agreements for the technologies were “freely offered on non-discriminatory

⁹ The Commission’s belief that its 40 year old patent policy, coupled with an untested complaint process for resolving patent licensing abuses, is a substitute for open standards, *a priori* patent disclosure and license review represents the sad philosophy of closing the barn door after the horse has not only left, but trampled those in its path.

¹⁰ 47 C.F.R. § 1.429 (“Section 1.429”).

¹¹ Neither Genesis nor anyone else was in a position to disclose these facts previously to the Commission. Nothing in the Further Notice suggested that the Commission was considering the adoption of rules that would require manufacturers to execute anticompetitive agreements developed by private standards groups.

¹² Genesis Reply Comments.

terms.” Both of these statements were, and are if not factually incorrect, misleading and unresponsive to Genesis’ concerns.

A. The Commission has misconstrued the availability of DVI and HDMI technology.

The wide availability of a standard in the market may be a reason to permit industries to voluntarily use it, but has little bearing on whether it should be required by Commission rules. Nor is the presence of such technology an indication of how it became available and whether it will, in the future, be available on a reasonable and non-discriminatory basis. Moreover, market acceptance is hardly a justification for allowing a private standard to be free of the due process protection of an appropriate standards development organization. It is a fact that these technologies are available only under the terms and conditions that SII and its small group of partner companies arbitrarily dictate. Thus, the Commission’s assertion that the DVI (and HDMI) technology is “widely available” misses the point.¹³

There is no record evidence in this proceeding that the DVI specification is available for Plug & Play technologies based on a licensing agreement, much less a non-discriminatory licensing agreement. As Genesis explains in greater detail below, SII (and perhaps others of the DDWG) believes that the DVI Adopter’s Agreement extends only to computer product displays, not to television and consumer electronic products (hereafter collectively referred to as “CE”).¹⁴ Additionally, the Commission’s assertion that the HDMI specification is widely available is likewise in error. As explained below, the HDMI Adopter’s Agreement is carefully worded to permit companies like SII to extract arbitrary royalties from the industry after the HDMI standard is widely adopted.¹⁵ Moreover, the HDMI Adopter’s Agreement punishes any company that challenges the

¹³ While there does indeed seem to be a large number of devices with DVI connectors available in the market, the same is certainly not true in the case of HDMI. To date, or at least when the Commission’s report and order was adopted, Genesis was not aware of any products on the market with HDMI interfaces.

¹⁴ SII has proven its intention to arbitrarily restrict the availability of DVI through litigation.

¹⁵ A copy of the DVI Adopter’s Agreement is contained in Attachment 2. Note that the HDMI Adopter’s Agreement expressly prohibits manufacturers from being licensed to follow the examples provided in the specification. HDMI Adopter’s Agreement at 1.16 state “Necessary Claims shall not include, and no license shall apply to : (a) informative implementation examples provided in the Specification; ...”

patent rights of the HDMI founders, a provision that is facially anticompetitive and contrary to established law.¹⁶

B. There is no Evidence that the Adopters Agreements are “offered on non-discriminatory terms.”

It is not clear what formed the basis of the Commission’s assertion that the adopter agreements for the DVI and HDMI technologies are “freely offered” on non-discriminatory terms. Genesis never argued that one could not obtain the agreements, but rather that the Commission should require disclosure of such agreements on the record so that it might glean something about the reasonableness of the patent policies and the terms and conditions under which licenses are offered.

Genesis is not aware that the license for either specification has been placed in the record of this proceeding or that they have been analyzed by the Commission’s staff. Were that the case, the staff would have learned that the DVI Adopter’s Agreement provides no patent disclosure. Moreover, SII openly asserts in its litigation with Genesis that the DVI Adopter’s Agreement discriminates against all those wishing to license the DVI interface for use in television products. Under the Agreement, licensees are granted royalty-free permission to “make, have made, use ... products (hardware, software or combinations thereof) that implement and are Fully Compliant with the Digital Display Interfaces to provide an interface between a computer and a digital display.”¹⁷ According to SII, the term “computer” means only a PC and not other microprocessor-driven devices such as video game consoles; thus, the DVI Adopters Agreement applies only to PC’s and not to CE products. On its face, therefore, the DVI Adopters Agreement discriminates unfairly between computer and CE use.¹⁸

Particularly troubling to the industry is the fact that a display that is sold to consumers for use with a PC is identical in all respects to a display that is used as a television. SII’s

¹⁶ The perceived “wide availability” of HDMI is also belied by the fact that it costs \$15000 for anyone just to view the specification and an additional \$15000 annually thereafter.

¹⁷ DCI Adopter’s Agreement (emphasis added).

¹⁸ Research indicates that many consumer television products contain the DVI interface. Presumably the manufacturers bought the technology directly from Silicon Image since the DVI Adopters Agreement does not provide for a license for use in television products.

position is that licensees must somehow divine how their products will ultimately be used by consumers or face litigation. Previously, SII made a number of public statements inviting the industry to design DVI into CE systems pursuant to the DVI Adopters Agreement. If SII returns to that position now, it would be a welcome step toward an open standard, but it must do so publicly, on the record, and irrevocably.¹⁹

Similarly, had the Commission demanded that the HDMI Adopter's Agreement been placed on the record as Genesis urged, the staff would have learned, for instance, that the patents and claims subject to the license (the so-called "necessary claims,") are not spelled out anywhere in the Agreement. Indeed, the HDMI Adopters Agreement places the burden of proof as to what patent claims may be necessary to implement the specification, and thus licensed, squarely on the shoulders of the licensee. This invites a high stakes guessing game and presents an invitation to burdensome and anti-competitive patent infringement litigation. The careful wording of the HDMI Adopters Agreement permits HDMI founders to sue manufacturers for anything that is not strictly required by the standard. Because an interface like HDMI will require a number of essential technologies, HDMI founders are in a position to perpetrate the same "standardize and sue" scheme that SII has brought to the DVI case.²⁰

Further, should an HDMI licensee have the temerity to challenge the validity or enforceability of any "necessary claim" in court or in any other official action, the claim is automatically excluded from the licensing agreement.²¹ Under this provision, should a licensee come to the Commission seeking resolution of a patent dispute it will automatically lose its license to those claims. Not only is such a licensing provision against public policy and unenforceable as held the Supreme Court more than 30 years

¹⁹ If the DVI Adopters Agreement has been changed or expanded to permit the DVI license to extend to television products, such an Agreement has not been made part of the record of this proceeding.

²⁰ Moreover, the HDMI Adopters Agreement requires adopters to submit products for "certification" which is a euphemism for permitting the HDMI founders to evaluate infringement claims before competitive products are introduced into the market.

²¹ HDMI Adopters Agreement, *supra*.

²² See *Lear v. Adkins*, 395 U.S. 653 (1969). The court held that such a provision violates the strong federal policy favoring free competition for ideas that do not merit patent protection.

ago,²² but it runs counter to the Commission's enforcement mechanism to "consider any complaint that these technologies are not being licensed on reasonable and non-discriminating terms, or are unavailable due to outstanding patent claims."²³ There can be little doubt that a license which includes such unenforceable and anti-competitive language cannot, as a matter of law, be considered reasonable and non-discriminatory.

Finally, the HDMI Adopters Agreement provides that if an adopter has a patent of its own that it believes forms a necessary claim to the HDMI standard, it may not assert such claim against the HDMI Founders or other adopters.²⁴ By signing the HDMI agreement, a licensee forfeits the right to enforce its own patents against the HDMI Founders or anyone else who has signed the HDMI Adopters Agreement.²⁵ In this way, the HDMI Founders (who are the sole specifications developers) maintain control of all patent licensing for HDMI products.

The terms of these agreements are, if not illegal and unenforceable, certainly unreasonable and hardly the sorts of provisions that an accredited standards-organization would knowingly sanction. Since the Commission has made itself a surrogate for such an organization, the task of reaching judgments on whether the specification licenses are fair and reasonable have become its responsibility. The best time to address these issues to ensure that the DVI and HDMI standards will be licensed fairly and non-discriminatorily is during the rulemaking process, not in some contentious complaint process in the future. It is the Commission's responsibility, therefore, to address these issues now.²⁶

²³ Plug & Play Order at Para 25.

²⁴ HDMI Agreement, *supra*.

²⁵ This penalty continues to run for three years after an Adopter withdraws from the licensing agreement.

²⁶ Within the last six months the Federal Trade Commission has begun an investigation into the possibly anticompetitive nature of the DVI licensing process. This investigation is part of a larger effort by the FTC to investigate anticompetitive patent licensing in the technology sector, e.g., "the Rambus case". Under these circumstances, it seems even more important that the Commission perform its own analysis of the DVI and HDMI Adopters Agreements.

II. Adoption of DVI and HDMI Standards Violates Section 629 of the Communications Act.

The Commission violated its statutory mandate by blindly adopting the work of private organizations for the development of unidirectional digital cable standards. Under Section 629 of the Communications Act, the Commission is required to consult with “appropriate industry standards setting organizations” to adopt regulations to achieve the competitive availability of cable navigation devices.²⁷ If the Commission believes it has satisfied this requirement by accepting the privately-adopted DVI and HDMI standards merely because they may have been endorsed by two trade associations, the National Cable & Telecommunications Association (NCTA) and the Consumer Electronics Association (CEA), it is mistaken. When Congress specified the use of appropriate standard-setting organizations it did not intend that the Commission rubber-stamp the outcome of closed-door negotiations between exclusive or private organizations. And Congress left no doubt as to its intent. In the congressional history of Section 629, examples of “appropriate” organizations are specifically noted as the Institute of Electrical and Electronics Engineers (“IEEE”), the Digital Audio Video Council (“DAVIC”), the Moving Picture Experts Group (“MPEG”) and the American National Standards Institute (“ANSI”) – all organizations that develop standards in open proceedings pursuant to rigorous policies of patent disclosure, or develop open standards which are deployed without royalty payment.²⁸

In its first Report and Order in this proceeding, the Commission evidenced its understanding of the mandate of Section 629 by requiring that any standards adopted be based on the work of nationally accredited standards setting organizations.²⁹ In its discussion of a decoder interface standard (EIA-105) being endorsed and promoted by OpenCable and CableLabs, the Commission stated:

²⁷ Section 629, *supra* note 4.

²⁸ H.R. CONF. REP. 104-458, at 181 (1986). Some of these organizations are “accredited,” while others are accrediting bodies. Clearly the term “appropriate” means both. Just as clearly, it does not mean private groups.

²⁹ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 13 FCC Rcd 14775 (1998) (“Report and Order”).

What is important is for the device supplied by the service provider to be designed to connect to and function with other navigation devices through the use of a commonly used interface or through an interface that conforms to appropriate technical standards promulgated by a national standards organization.³⁰

The Commission went on to explain that:

Although neither OpenCable nor CableLabs are accredited standards organizations, they are attempting to use existing standards to the extent possible and to submit standards for consideration by official standards bodies. A number of the core standards involved, including such critical parts as the digital video compression and transmission standards for cable television, have been approved by accredited standards organizations already.³¹

Thus, the Commission was aware of its responsibilities under Section 629 to base its decisions on the product of accredited standards organizations as the Congressional history indicated.³² Even though, in the end, the Commission elected not to adopt a specific decoder interface standard, it reiterated the bedrock principle that any navigation device standard arrived at by the industry be one which is “promulgated by a national standards organization.”

On April 14, 2003, in a separate proceeding in this docket, the Commission dealt again with the issue of industry standards when it extended the deadline on the prohibition on integrated devices.³³ In its order, the Commission noted as one reason for the extension that the cable and consumer electronic industries “were in the midst of negotiations on specifications for bi-directional digital cable receivers and products which would permit the receipt of advanced cable television services by direct connection in the near term.”³⁴ Significantly, the Commission recounted its responsibility under Section 629:

³⁰ *Id.* at 14804 (emphasis added).

³¹ *Id.* at 14806 (emphasis added).

³² The Commission was so sensitive to the Congressional mandate that it consult with industry standard-setting groups, that it took pains to explain in footnote 111, “[w]e have consulted with what we consider the appropriate industry standard setting organizations given the stage of development of the standards.” Although the Commission was referring to CableLabs and the Consumer Electronics Manufacturers Association (“CEMA”), it is important to note that the standards under discussion were those promulgated by other, accredited, standards organizations.

³³ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 18 FCC Rcd 7924 (2003).

³⁴ *Id.* at 7925-26.

“Although the ongoing negotiations between the consumer electronics and cable industries are not being conducted under the auspices of a formal standards setting organization, any specifications resulting from such negotiations would be subject to subsequent review and adoption by an appropriate organization.”³⁵

Thus, the Commission made it clear, as recently as April 14, 2003, that any cable/consumer electronics industry standards for bi-directional digital cable receivers would not be adopted into law until they had undergone review and adoption by an appropriate standards organization.³⁶

Clearly, some time after the April 14, 2003, pronouncement in this docket, the Commission lost sight of its congressional mandate and instead, decided to pursue the easier path of simply accepting a private standards recommendation of the cable and consumer electronics industries. In its haste to resolve a controversy that threatened to delay the Commission’s long sought objective of transitioning to digital television, the Commission chose to ignore the law. Indeed, but for the obligatory reference in the ordering clauses, Section 629 of the Act is mentioned only at the very beginning of the Plug & Play Order and then only to fill in the docket’s background. There, the Commission actually quotes Section 629 as requiring the Commission to “... adopt regulations ...” but omits from the quote the all important introductory phrase, “[t]he Commission shall, in consultation with appropriate industry standard-setting organizations, ...”³⁷

Having ignored its statutory mandate, the Commission must now re-visit its requirement that unidirectional digital cable ready products employ the DVI or HDMI interfaces and, at the very least submit these standards to the scrutiny of an appropriate standards setting organization. Further, as we show below, the Commission should take the added step of insisting that these standards be submitted to an accredited standards setting organization

³⁵ *Id.* at 7929 n.11.

³⁶ The Commission has provided no justification, legal or otherwise, for distinguishing between the procedural treatment of bi-directional standards and the unidirectional standards that are the subject of the instant proceeding.

³⁷ Section 629, *supra* note 4.

for formal approval (just as it has promised to do with standards for bi-directional cable receivers) with all of the procedural safeguards that such an organization affords.

III. Past Commission Practice Dictates a Cautious Approach to Standards Adoption

A review of Commission proceedings over the last 50 years reveals that the Commission has never adopted a technical standard that was not the product of an accredited standards setting organization, the work of a federal advisory committee, or the result of an open Commission proceeding in which the proposed standards were tested by Commission staff and subjected to detailed scrutiny by the public. Certainly, until this proceeding, the Commission has never adopted privately developed standards solely on the basis of a voluntary agreement between industries.

In the rare instances where the Commission has adopted a standard that was not developed by an accredited standards setting organization, it has engaged in the laborious process of thoroughly examining competing standards with its own staff and offering the public the complete specifications of the standards it proposed to adopt. In the FM Stereo proceeding, for example, seven privately developed proposed standards were field-tested and analyzed by the National Stereophonic Radio Committee (NSRC), a committee established under the auspices of the Electronic Industries Alliance (EIA).³⁸ The results of the testing and analysis were submitted to the Commission as comments in Docket 13506 in 1960. A detailed description of each system was printed in the Federal Register, and comments were solicited on a comparison of the systems. Finally, because the proposed systems were not the product of an accredited standards setting organization, the Commission required each of the system proponents to supply “information concerning the identity of persons or organizations applying for or holding patents on FM stereophonic broadcast transmission and reception systems and apparatus,

³⁸ Docket No. 13506, *Amendment of Part 3 of the Commission's Rules and Regulations to Permit FM Broadcast Stations to Transmit Stereophonic Programs on a Multiplex Basis*, 25 Fed. Reg. 4257 (May 12, 1960) (“FM Stereo”).

and information with respect to the arrangements that will be employed for the licensing of patents for competitive distribution and use of such systems and apparatus.”³⁹

More recently, in 2000 Biennial Review of Part 68, the Commission established what might be considered a regulatory paradigm for the development of interoperability standards. There, the Commission was dealing with interconnection standards for the public switched telephone network and stated, “[w]e conclude that only standards development organizations that meet the due process requirements for ANSI accreditation for either Organizations or Standards Committees may develop technical criteria for submission” to the Administrative Council for Terminal Attachments (ACTA).⁴⁰ Thus, the Commission acknowledged that the public interest required the adoption of standards that are the product of appropriate standards-setting organizations. For reasons not explained in the instant proceeding, the Commission has chosen to abandon this approach.⁴¹

IV. The DVI and HDMI Standards Were Developed Privately Without the Safeguards of Accredited Standards-Setting Organizations

The DVI and HDMI standards were developed by private organizations whose primary goal is to promote their members’ patented technology. Neither group has a policy of including the views of those who might be affected by the standards they develop, and neither group has any type of policy respecting patent disclosure and the fair and non-discriminatory licensing of such patents.

The DVI and HDMI standards were recommended by two trade groups, the NCTA and CEA, to be a central feature of the MOU leading to the Plug & Play Order in this Docket. NCTA is not a standards-setting organization and while CEA is, in fact, an ANSI-

³⁹ *Id.*

⁴⁰ *In the Matter of 2000 Biennial Regulatory Review of Part 68 of the Commission’s Rules and Regulations*, 15 FCC Rcd. 24,944, 24,964 (2000).

⁴¹ In an apparent approach to rehabilitate the pedigree of the DVI and HDMI standards, the Commission explained in footnote 66 of the Plug & Play Order that they have been included as “normative references” in standards that have undergone the ANSI process. But a reference alone bestows no orthodoxy on the DVI and HDMI standards.

accredited standards-setting organization, CEA played no role in the development of the DVI and HDMI standards and made it clear to the industry that it would not get involved in any patent disputes as these were the responsibility of the organizations which developed the specifications. It should be noted that there is nothing inherently wrong with the activities of such groups. Private standards development occurs all the time, and certainly trade organizations are entitled to pick and choose among the standards that they believe will benefit their members. However, issues of non-discriminatory licensing, and open participation in the creation of standards become of paramount concern when the standards become the focus of government regulation.

By contrast, ANSI-accredited developers and most other open standards organizations have implemented extensive procedures to ensure due process throughout standards setting. The ANSI Policy, Section 1.1 states that:

“[p]articipation shall be open to all persons who are directly and materially affected by the activity in question. There shall be no undue financial barriers to participation. Voting membership on the consensus body shall not be conditional upon membership in any organization, nor unreasonably restricted on the basis of technical qualifications or other such requirements.”⁴²

In addition, ANSI procedures require early disclosure of any patents and pending patents that might bear on a standard under development.⁴³ It is the practice of ANSI working groups, for example, to enforce this policy and require written adherence by all group members at every meeting. Most importantly, the ANSI Policy also requires that any party to the development of a standard agree to license any patent it might hold on reasonable and non-discriminatory terms.⁴⁴

ANSI and similar organizations have internal procedures to enforce their patent policies to maintain the integrity of their standards development process. The ANSI policy states that an ANSI-accredited national standard shall be withdrawn if the ANSI patent policy is

⁴² ANSI Essential Requirements: Due Process Requirements for American National Standards (2003), available at <http://public.ansi.org/ansionline/Documents> (“ANSI Policy”).

⁴³ *Guidelines for Implementation of the ANSI Patent Policy: An Aid to More Efficient and Effective Standards Development in Fields that May Involve Patented Technology* (2003), available at <http://public.ansi.org/ansionline/Documents> (“ANSI Patent Policy”).

⁴⁴ ANSI Policy § 3.1.1.

violated.⁴⁵ A party that feels it has been aggrieved by improper patent licensing practice may bring an action before the ANSI Board of Standards Review (BSR) to have the standard withdrawn. If the BSR agrees, the standard will be withdrawn from ANSI accreditation and the party that acted improperly will lose the benefits of having their patented technology included in a national standard. These safeguards and practices are the main reason why the Commission has traditionally chosen to adopt open standards developed by accredited groups and why Congress insisted on a similar process for cable navigation standards. The alternative, as we have pointed out above, is for the Commission to entangle itself in the patent review process.

Under the Commission's patent policy, as described the ATV proceeding, if a patent underlying a chosen standard is not licensed on a reasonable and non-discriminatory basis, the Commission will take "appropriate action."⁴⁶ This means that the Commission must be prepared to adjudicate disputes concerning the scope of patents, the interpretation of what claims are "necessary" to implement a particular standard, whether undisclosed pending patents create unfair competition, and, of course, whether the terms and conditions of a license are reasonable and non-discriminating. Genesis submits this can only be done accurately, efficiently and legally through the notice and comment procedures of the Administration Procedure Act, on the public record. Accordingly, if the Commission is committed to adopting private standards such as DVI and HDMI, it must modify the Plug & Play Order to approve the DVI and HDMI standards only after full public disclosure and approval by the Commission of patents, pending patents, necessary claims and terms and conditions for licensing the patents.

V. Adequate Notice has not been Provided Under the APA

Although Commission rules require the implementation of DVI or HDMI technology, never during the course of this proceeding has the Commission given notice of the specifications themselves. They were not included in the MOU, the Notice of Proposed Rulemaking, or in the rules adopted by the Plug & Play Order. The record, however, reflects that the Commission staff requested NTCA to supply it with copies of all

⁴⁵ ANSI Policy § 4.2.1.3.4

⁴⁶ ATV, *supra* note 5.

standards referenced in the MOU.⁴⁷ These were dutifully supplied – all except copies of the DVI and HDMI standards, which were withheld without explanation. In the end, the Commission required that the standards be followed but never published them in its rules. Nor did the Commission seek properly to incorporate these standards into its rules “by reference.” Section 552 (a)(1) of the Administrative Procedure Act states that:

Except to the extent that a person has actual and timely notice of the terms thereof, a person may not in any manner be required to resort to, or be adversely affected by, a matter required to be published in the Federal Register and not so published. For the purpose of this paragraph, matter reasonably available to the class of persons affected thereby is deemed published in the Federal Register when incorporated by reference therein with the approval of the Director of the Federal Register.⁴⁸

Based on this provision, unless the Commission makes the standards available to the public or formally incorporates them by reference, there is no obligation for the rules to be followed.⁴⁹

It could be argued that with respect to the DVI standard, at least, the specifications, while not in the record, are nonetheless publicly available.⁵⁰ This is not the case, however, with respect to HDMI. As explained above, to obtain a copy of the HDMI specifications a licensee is required to pay \$15,000 up front and a commitment to pay \$15,000 a year thereafter.⁵¹ Under these circumstances, the HDMI specification clearly is not reasonably

⁴⁷ See letter of June 26, 2003 from John P. Wong to Neal Goldberg. As Mr. Wong points out, “[f]or any standards to be incorporated by reference into the FCC rules, we are required to provide copies to the Director of the Federal Register for approval and maintain copies for public inspection.”

⁴⁸ 5 U.S.C. § 552(a)(1).

⁴⁹ The Commission could not incorporate the standards by reference because pursuant to Title 1 C.F.R. Section 51.3(a)(3) incorporation requires a publication to be placed on file with the Federal Register. This, of course, the Commission did not do. Further, pursuant to Section 51.7(a)(4), the publication must be reasonably available to the class of persons affected. As noted above, the HDMI standards are not reasonably available.

⁵⁰ The Commission has neglected to specify which version of the standard it requires to be followed, and so the public is at the mercy of whatever changes to the standard its authors choose to make, without the protective shield of a notice and comment proceeding. (In the “Broadcast Flag” proceeding, the Commission has specified DVI 1.0). Neither has the Commission specified the version of the HDMI standard it demands the public to follow. Without this information, even had the Commission satisfied the other requirements for incorporation by reference it would not have been able to incorporate these standards (See Section 51.1(f)). Under these circumstances, without limiting its regulation to some specific version of the standard, the Commission can hardly argue that it has given the adequate notice required by Section 552 of the Administrative Procedure Act.

⁵¹ HDMI Licensing LLC will provide an “informational” version of the specifications to evaluate whether to license the full standard,” but the full production version - what the Commission has required be

available and the Commission could not have mandated its use consistent with the APA and administrative procedures.

Conclusion.

By requiring the use of the DVI and HDMI standards the Commission is taking a considerable risk, with the public, the potential loser. For unless the Commission can assure reasonable and non-discriminatory access to the DVI and HDMI standards consumers will have to bear the higher costs of television products. As we have shown, the Commission has acted without reviewing the DVI and HDMI adopters agreements, has not made the standards themselves available to the public, and has failed to follow the provisions of Section 629 of the Act. Under these circumstances it is not sufficient for the Commission to agree to hear complaints in the future. Now is the time to address these issues and protect the public.

For the reasons described above, Genesis urges the Commission to reconsider the portion of the Plug & Play Order requiring unidirectional digital cable television devices labeled or marketed as “digital cable ready” to employ a DVI or HDMI digital display interface.

Respectfully Submitted



Terry G. Mahn
Robert J. Ungar
Counsel for Genesis Microchip Inc.

December 29, 2003

followed -- can only be obtained by signing the license agreement and paying the \$15,000 and giving up any contract/licensing based defenses if the adopter is sued by the patent holder.

ATTACHMENT 1



DIGITAL VISUAL INTERFACE SPECIFICATION REVISION 1.0 ADOPTER'S AGREEMENT

Certain Promoters have developed a digital display interface specification based upon Silicon Image's technology. This is a patent license agreement among parties wishing to adopt the *Digital Visual Interface Specification Revision 1.0*

ADOPTER'S AGREEMENT

As used in this Agreement:

- The "Promoters" are Intel Corporation, Silicon Image, Inc., Compaq Computer Corporation, Fujitsu Limited, Hewlett-Packard Company, International Business Machines Corporation, and NEC Corporation and their Affiliates.
- "Adopter" is the entity named at the end of this Agreement and such entity's Affiliates, provided that during the Adoption Period such entity (1) has executed this Agreement, (2) had the same Agreement also executed by a Promoter, and then (3) had the fully executed Agreement received by the Secretary.
- "Adoption Period" for any given Adopter means any time prior to the later of (i) the date one (1) year after the public release date of the Licensed Specification or (ii) the date one (1) year after such Adopter first sells a product that includes a Compliant Portion.
- "Fellow Adopters" are the Promoters and all Adopters.
- "Affiliate" is an entity that directly or indirectly controls, is controlled by, or is under common control with another entity, so long as such control exists. "Control" means beneficial ownership of more than fifty percent of the voting stock or equity in an entity.
- "Compliant Portion" means portions of products (hardware, software or combinations thereof) that implement and are Fully Compliant with the Digital Display Interfaces to provide an interface between a computer and a digital display.
- "Digital Display Interfaces" means the electrical interfaces, mechanical interfaces, signals, signaling and coding protocols, and bus protocols disclosed in, and required by, the Licensed Specification, including described options for such interfaces in the Licensed Specification.
- "Necessary Claims" shall mean those claims of all patents, other than design patents and design registrations, throughout the world entitled to an effective filing date prior to January 1, 2003, which a Promoter or Adopter, as applicable, or its Affiliates has the right, at any time during the term of this Agreement, to grant licenses of the scope granted herein without such grant or the exercise of rights thereunder resulting in payment of royalties or other consideration to third parties (except for payments to Affiliates or to employees within the scope of their employment) and (i) which are necessarily infringed in order to implement and comply with the Digital Display Interfaces, where such infringement could not have been avoided by another commercially possible noninfringing implementation of such Digital Display Interfaces and licensee shall have the burden of proof to establish that a claim falls within the scope this clause (i), or (ii) for which infringement is based on an implementation of any example included in the body of the Licensed Specification. Necessary Claims shall not include, and no license shall apply to, (a) implementation examples included solely in any appendix, exhibit or other attachment to the Licensed Specification, (b) claims relating to semiconductor manufacturing technology, (c) claims not required to be infringed in implementing and complying with the Digital Display Interfaces even if in the same patent as Necessary Claims, or (d) claims relating to underlying operating system functionality not directly related to interfacing between a computer and a digital display.
- "Licensed Specification" means the document entitled *Digital Visual Interface Specification Revision 1.0* as finally adopted by the Promoters and authored and published by the Promoters.
- "Fully Compliant" means an implementation of all portions of the Digital Display Interfaces required for a specific type of product or component thereof.
- "Secretary" shall mean the Promoter chosen to administrate the Licensed Specification as the Promoters may determine from time to time. As of the effective date of this Agreement, the Secretary is Intel.

DIGITAL VISUAL INTERFACE SPECIFICATION REVISION 1.0 ADOPTER'S AGREEMENT

Licenses:

- **Grants of Licenses.** The following license has been granted by the Promoters to all Adopters. Upon Adopter's execution of this Agreement during the Adoption Period, the agreement to license is granted by Adopter to all Fellow Adopters (including the Promoters), and the grants of all Fellow Adopters shall extend to Adopter. In each case, the party (Promoter, Adopter, or Fellow Adopter) and its Affiliates granting the license is referred to as the "Licensor."

Upon agreement by the Promoters as to the final version of the text of the Licensed Specification, Licensor hereby grants to each Promoter and its Affiliates and to each Fellow Adopter and its Affiliates a nonexclusive, nontransferable, royalty-free, nonsublicenseable, worldwide, perpetual, irrevocable, reciprocal license under its Necessary Claims solely to make, have made, use, import, and directly and indirectly, offer to sell, lease, sell, promote and otherwise distribute Compliant Portions; provided that such license shall not extend to any part or function of a product in which a Compliant Portion is incorporated that is not itself part of the Compliant Portion.

- **Acceptance of Licenses.** Adopter hereby accepts the licenses granted by the Fellow Adopters.
- **Trademarks.** The Adopter and its Affiliates hereby agree not to assert against any Promoter or any Fellow Adopter any trademark or trade name rights they may have now or hereafter in any name or logo adopted by the Promoters for use in connection with such Licensed Specification provided that the Adopter and its Affiliates have not provided notice of rights as set forth below. Prior to adoption of a new name or logo, the Promoters shall transmit a proposed name or logo to Adopter. Adopter shall have 30 days to notify the Secretary in writing if it possesses any rights to such name or logo. Failure to respond within such 30 days will waive any rights of Adopter to such proposed name or logo. The Adopter and its Affiliates will not use the name or logo adopted by the Promoters except to refer to the Licensed Specification and to products which implement a Compliant Portion.

General

- **No Other Licenses.** Adopter neither grants nor receives any license to or right to use any trademark, tradename, copyright, or maskwork hereunder. Except for the rights expressly provided by this Agreement, Adopter neither grants nor receives, by implication, or estoppel, or otherwise, any rights under any patents or other intellectual property rights.
- **No Warranty.** Adopter acknowledges that the Licensed Specification is provided "AS IS" WITH NO WARRANTIES WHATSOEVER, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY WARRANTY OTHERWISE ARISING OUT OF ANY PROPOSAL, SPECIFICATION, OR SAMPLE.
- **Damages.** In no event will Promoters, Adopter or Fellow Adopters be liable to the other for any loss of profits, loss of use, incidental, consequential, indirect, or special damages arising out of this Agreement, whether or not such party had advance notice of the possibility of such damages.
- **Governing Law.** This Agreement shall be construed and controlled by the substantive laws of New York without reference to conflicts of laws principles. Any litigation arising out of this Agreement shall take place in New York, and all parties irrevocably consent to jurisdiction of the state and Federal courts there.
- **Not Partners.** Adopter understands that the Promoters are independent companies and are not partners or joint venturers with each other. While the Promoters may select an entity to handle certain administrative tasks for them, no party is authorized to make any commitment on behalf of all or any of them.
- **Promoters as Beneficiaries.** While only a single Promoter has executed this Agreement with Adopter, Adopter understands that all of the Promoters are beneficiaries of this Agreement and any Promoter is entitled to enforce its terms against Adopter.
- **Complete Agreement.** This Agreement sets forth the entire understanding of the agreement between the Adopters and the Promoters and supersedes all prior agreements and understandings relating hereto. No modifications or additions to or deletions from this Agreement shall be binding unless accepted in writing by an authorized representative of all parties.
- **Execution in Counterparts.** This Agreement may be executed in any number of counterparts, each of which when so executed and timely delivered shall be deemed an original, and such counterparts together shall constitute one instrument.



DIGITAL VISUAL INTERFACE SPECIFICATION REVISION 1.0 ADOPTER'S AGREEMENT

- **Effective Date.** This Agreement shall be legally binding when during the Adoption Period:
 - 1) the Promoter has signed the Agreement,
 - 2) the Adopter has signed the Agreement, and
 - 3) the Agreement has been received via overnight courier to the attention of the Secretary
- 4) **Notices:** All notices under this Agreement shall be sent to DDWG at:

Digital Display Working Group (DDWG)
 ATTN: DDWG Administrator
 5440 SW Westgate Drive
 Suite 217
 Portland, OR 97221

DDWG Adopters Contact Information:

Name: _____ Phone: _____
 Title: _____ Fax: _____
 Company Name: _____ Email: _____
 Address: _____

**AGREED:
ADOPTER**

Corp. Name: _____
 *Signed: _____
 Name: _____
 Title: _____
 Date: _____

PROMOTER

Corp. Name: _____
 Signed: _____
 Name: _____
 Title: _____
 Date: _____

* Please have this agreement signed by an officer who has authority to sign on behalf of your company with respect to its Intellectual property.

ATTACHMENT 2

**HDMI SPECIFICATION
ADOPTER AGREEMENT**

**High-Definition Multimedia Interface Specification Revision 1.0
ADOPTER AGREEMENT**

Certain Founders have developed a digital media interface specification: *High-Definition Multimedia Interface™ v. 1.0 (or "HDMI™")* and are offering a non-discriminatory license to implement HDMI. This is a license agreement among parties wishing to adopt the HDMI Specification v.1.0

This High-Definition Multimedia Interface Specification Revision 1.0 Adopter Agreement (the "Agreement") is made as of the Effective Date by and between the Agent and the Adopter as defined below.

Adopter Contact Information

Company Name:	
Contact Person:	
Title:	
Address:	
Phone:	
Email:	

1. Definitions.

1.1 **"Adopter"** means the entity named as "Adopter" above and at the end of this Agreement, and includes the Affiliates of such entity.

1.2 **"Affiliate"** means with respect to any person or entity, an entity that now or hereafter directly or indirectly controls, is controlled by, or is under common control with such person or entity. "Control" means beneficial ownership of more than fifty percent (50%) of the voting stock or equity in an entity. Such entity shall be considered an "Affiliate" only so long as such "control" exists.

1.3 **"Agent"** means the entity chosen to administrate the promotion and licensing of HDMI as the Founders may determine from time to time. As of the Effective Date of this Agreement, the Agent is HDMI Licensing, LLC.

1.4 **"Authorized Testing Center"** shall mean a testing center authorized by the Founders in writing for the testing of products or components thereof (whether a chip, subsystem, or end-user product) that claim conformance to the High-Definition Multimedia Interfaces or that bear any Adopted Trademarks.

1.5 **"Cable"** means a Fully Compliant cable.

1.6 **"Component"** means a device (whether hardware, software, or combination thereof) which implements a subset of the functionality required of a Sink, Source or Repeater. The Component supplier must reasonably indicate to its customers the HDMI functionality supported by the Component. Furthermore, it must be reasonably possible to design a Fully Compliant Sink, Source or Repeater utilizing the Component as indicated by the supplier.

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- 1.7 **“Connector”** means a Fully Compliant connector.
- 1.8 **“Effective Date”** shall mean the later date of the signatures set forth below.
- 1.9 **“Fellow Adopters”** means the Adopters who execute a copy of this Agreement and deliver it to the Agent, and includes the Affiliates of such Adopters.
- 1.10 **“Founders”** means Hitachi Ltd., a corporation of Japan, having a principal place of business in Tokyo, Japan, Matsushita Electric Industrial Co., Ltd., a corporation of Japan, having a principal place of business in Osaka, Japan, Philips Consumer Electronics International B.V., a corporation of The Netherlands, having a principal place of business in Amsterdam, The Netherlands, Silicon Image, Inc., a Delaware corporation having a principal place of business in Sunnyvale, California, USA, Sony Corporation, a corporation of Japan, having a principal place of business in Tokyo, Japan, Thomson multimedia S.A., a French corporation, having its principal place of business in Boulogne, France, and Toshiba Corporation, a corporation of Japan, having a principal place of business in Tokyo, Japan, and includes each of their Affiliates.
- 1.11 **“Fully Compliant”** means an implementation of all portions of the High-Definition Multimedia Interfaces required for a specific type of Licensed Product, and where such implementation has passed all applicable compliance testing procedures set forth in Section 6.
- 1.12 **“High-Definition Multimedia Interfaces”** means the electrical interfaces, mechanical interfaces, behavioral rules, signals, signaling and coding protocols, bus protocols, and any other items disclosed in, and required by, the Specification. For purposes of clarification, if a Fellow Adopter implements a portion of a Specification designated in such Specification as optional, then all electrical interfaces, mechanical interfaces, signals, behavioral rules, signaling and coding protocols, bus protocols, and any other related items disclosed in, and required by, such Specification for such option, shall be deemed High-Definition Multimedia Interfaces.
- 1.13 **“HDMI Compliance Test Specification”** means the testing policies, procedures and equipment specifications set forth by the Founders to assist Fellow Adopters in verifying compliance of Licensed Products with the Specification, and as may be modified in writing from time to time by the Founders.
- 1.14 **“Licensed Product”** means a Cable, Component, Connector, Repeater, Source or Sink.
- 1.15 **“Minor Update”** means an update or revision to the Specification published by the Founders that corrects, clarifies, or enhances the Specification without adding any significant new features or functionality to the High-Definition Multimedia Interfaces, and in no way reduces interoperability between and among any versions of the High-Definition Multimedia Interfaces. Minor Updates shall be indicated by a change in the version number digits to the right of the decimal point (e.g., revisions 1.1, 1.2 ... 1.9).
- 1.16 **“Necessary Claims”** means those claims of all patents, and patent applications to the extent such applications issue as patents, throughout the world entitled to an effective filing date prior to or during the term of this Agreement, which an entity or any of its Affiliates has the right, at any time during the term of this Agreement, to grant licenses of the scope granted herein, and which are necessarily infringed in order to implement and comply with the High-Definition Multimedia Interfaces, where such infringement could not have been avoided by another non-infringing implementation of such High-Definition Multimedia Interfaces (licensee shall have the burden of proof to establish that a claim falls within the scope this clause). Necessary Claims shall not include, and no license shall apply to: (a) informative implementation examples included in the Specification; (b) claims, which if licensed, would require the payment of royalties by the licensor to third parties (except for payments to Affiliates or to employees within

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the scope of their employment); (c) claims relating to semi-conductor materials, semi-conductor manufacturing apparatus, semi-conductor manufacturing methods and semiconductor circuit designs; (d) claims relating to copy-protection technology (e) claims necessarily infringed to implement non-HDMI industry standards (including, without limitation, HDCP, E-DDC, E-EDID, I2C, CEA861B and Project 50) referenced in a Publicly Licensed Specification, except to the extent that such claims are necessarily infringed to implement and comply with those portions of High-Definition Multimedia Interfaces on the Licensed Products which do not implement or comply with corresponding non-HDMI industry standards; or (f) claims not necessarily infringed in implementing and complying with the High-Definition Multimedia Interfaces even if in the same patent as Necessary Claims.

1.17 **"Repeater"** means a Fully Compliant digital electronic device adapted to receive a digital data signal representative of video and/or audio data from a Source or Repeater and to switch and/or retransmit such video and/or audio data to a Repeater or Sink, solely in accordance with the Specification.

1.18 **"Sink"** means a Fully Compliant digital electronic device adapted to receive and process, from a Source or Repeater, a digital data signal representative of video and/or audio data for rendering such digital data signal to a display (in the case of video data) and/or an audio rendering system (in the case of audio data), solely in accordance with the Specification.

1.19 **"Source"** means a Fully Compliant digital electronic device adapted to process a digital signal representative of video and/or audio data and, upon processing, to transmit the processed digital data signal or sub-set of such digital data signal to a Repeater or Sink for producing a visual image and/or audio sound as represented by the processed digital data signal, solely in accordance with the Specification.

1.20 **"Specification"** means the document entitled High-Definition Multimedia Interface Specification v.1.0, and associated HDMI Compliance Test Specification, authored and published by the Founders and Minor Updates thereto published by the Founders.

2. License to Necessary Claims.

Subject to the terms and conditions of this Agreement, including without limitation, the non-assertion set forth in Section 3, the compliance provisions set forth in Section 6, and the payment of royalty fees as set forth in Section 7, Agent hereby grants to Adopter, and Adopter hereby accepts, a nonexclusive, nontransferable (except to an acquirer as set forth in Section 9.15 below), nonsublicenseable, worldwide license under the Founders' Necessary Claims solely to make (including design and develop), have made (including have designed and have developed), use, import, and directly and indirectly, offer to sell, sell, lease, promote and otherwise distribute Licensed Products; provided that such license shall not extend to any part or function of a product in which a Licensed Product is incorporated that is not itself a Licensed Product. Adopter understands and agrees that it has no license to patent claims other than Founders' Necessary Claims.

3. Non-Assertion. Subject to the terms and conditions of this Agreement, Adopter and its Affiliates hereby agree not to bring, commence, maintain or prosecute any action or other proceeding based on any Necessary Claims that they may now or in the future own or control, or to otherwise assert any such Necessary Claims, worldwide, against any Founder or any Fellow Adopter, solely to enable Founders and Fellow Adopters to make (including design and develop), have made (including have designed and have developed), use, import, and directly and indirectly, offer to sell, sell, lease, promote and otherwise distribute Licensed Products;

**HDMI SPECIFICATION
ADOPTER AGREEMENT**

provided that such non-assertion agreement shall not extend to any part or function of a product in which a Licensed Product is incorporated that is not itself a Licensed Product.

4. Specification. Subject to the terms and conditions of this Agreement, including without limitation, the compliance provisions set forth in Section 6, the payment of royalty fees as set forth in Section 7, and the confidentiality provisions of Section 8, Agent hereby grants to Adopter, and Adopter hereby accepts, a nonexclusive, nontransferable (except to an acquirer as set forth in Section 9.15 below), nonsublicenseable, worldwide license to use the Specification solely to make (including design and develop), have made (including have designed and have developed), use, import, and directly and indirectly, offer to sell, sell, lease, promote and otherwise distribute Licensed Products. Adopter shall not use the Specification except as expressly set forth in this Agreement.

5. Trademarks. The Founders have created and adopted trademark(s) and logos (collectively the "Adopted Trademarks") and trademark and logo usage guidelines (the "Trademark and Logo Usage Guidelines") for the Specification and Licensed Products as set forth in Attachment A, as may be modified from time to time by the Founders. Subject to the terms and conditions of this Agreement, including without limitation, the compliance provisions set forth in Section 6, the payment of royalty fees as set forth in Section 7, and compliance with the Trademark and Logo Usage Guidelines then in effect, Agent hereby grants to Adopter, and Adopter hereby accepts, a nonexclusive, nontransferable (except to an acquirer as set forth in Section 9.15 below), worldwide license to use the Adopted Trademarks in connection with the promotion of the Specification and the High-Definition Multimedia Interfaces and the sale, lease, promotion and distribution of Licensed Products. Such license shall be sublicenseable solely to distributors and resellers of Licensed Products produced by, or on behalf of, such Adopter, solely for use in connection with the sale and promotion of such Licensed Products, and further provided that such distributors and resellers comply with the Trademark and Logo Usage Guidelines then in effect. All goodwill associated with the use of the Adopted Trademarks shall accrue to the Agent. Adopter shall not use the Adopted Trademarks except to refer to the Specification, HDMI and Licensed Products, and shall at all times comply with the Trademark and Logo Usage Guidelines then in effect.

6. Compliance Specification and Testing Procedure.

6.1 Compliance Test Specification. In order to foster interoperability among products from multiple vendors, the Founders shall jointly develop the HDMI Compliance Test Specification, as may be updated from time to time in writing by the Founders. The HDMI Compliance Test Specification represents the minimum compliance testing required for Licensed Products. Each Adopter is solely responsible for ensuring that its products comply with the High-Definition Multimedia Interfaces and interoperate with other products.

6.2 Testing Requirement. Prior to mass producing or distributing, or permitting any such mass production or distribution, of a product (whether a chip, subsystem, or end-user product), or component thereof, that claims conformance to the High-Definition Multimedia Interfaces or that bears any Adopted Trademarks, the Adopter shall reasonably test a representative sample of such product to establish compliance with the High-Definition Digital Multimedia Interfaces. At a minimum, this testing shall include successfully performing all testing required by the HDMI Compliance Test Specification. In addition, for the first Adopter product of each of the following Licensed Product types: first Adopter Source product, first Adopter Sink product, first Adopter Repeater product, and first Adopter Cable Product, Adopter must successfully perform the test procedures specified in the HDMI Compliance Test Specification on a representative sample of such Licensed Product at an Authorized Testing Center. Use of the HDMI Compliance Test

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Specification does not guarantee that any product will conform to the High-Definition Multimedia Interfaces, function correctly or interoperate with any other product. It is Adopter's sole responsibility to establish its own testing specifications, guides and reference designs to establish conformance with the High-Definition Multimedia Interfaces, correct functionality and interoperability. Adopter shall be solely responsible for all testing results. Each Adopter shall provide to the Agent a declaration certifying compliance with the terms of this Section 6.2 together with a copy of its test results in a form reasonably designated by Agent. Adopter shall be solely responsible for its expenses associated with such compliance testing. Upon any Founder's request, Adopter shall provide Agent with a sample of any product(s) purported to be a Licensed Product(s) for independent compliance testing, and Agent shall ask an Authorized Testing Center to conduct compliance testing on such product(s) based on the HDMI Compliance Test Specification. Adopter shall reasonably co-operate in all such testing. If the Authorized Test Center determines, in its reasonable discretion, that such product(s) do not in fact comply with the High-Definition Multimedia Interfaces, then Agent may require that Adopter promptly cease use of the Adopted Trademarks until such time as an Authorized Testing Center certifies that such product(s) do in fact comply with the High-Definition Multimedia Interfaces. Failure to provide such samples, reasonably cooperate in such testing, to make commercially reasonable efforts to cause such product to pass such compliance testing, or to promptly cease the use of the Adopted Marks when requested shall be a material breach of this Agreement.

6.3 Compliance with Specification Updates. Adopter shall comply with all Minor Updates to the Specification as follows: for Minor Updates that do not require material modifications to product designs or manufacturing processes, compliance must occur within ninety (90) days after written notice to Adopter specifying such Minor Update, and for all other Minor Updates, compliance must occur within eighteen (18) months after written notice to Adopter specifying such Minor Update.

7. Fees and Royalty Payments.

7.1 Annual Fees and Royalties. Adopter shall pay to the Agent the annual fees and royalties set forth in Attachment B.

7.2 Payment Timing and Method. Royalties shall be paid quarterly, within sixty (60) days after the end of each calendar quarter. Fees and royalties shall be paid via wire transfer in lawful money of the United States of America to the bank and account designated below, accompanied by a fax or e-mail transmittal of the reports below.

Payments shall be made via wire transfer to the following bank account:

Bank Name:	Comerica Bank – California
Bank Address:	333 West Santa Clara Street San Jose, Ca 95113-4339 USA
Bank Telephone:	+1 (408) 451-8570
Bank routing# or ABA#:	121137522
Bank account #:	1892019595
Bank account name:	HDMI Licensing, LLC

Reports should be faxed or e-mailed as follows:

e-mail: admin@hdmi.org
fax: +1 (408) 616-4199

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7.3 Records, Reports, and Audit Rights.

7.3.1 Adopter's Records. Adopter will maintain accurate and detailed books and records sufficient to ascertain the royalties payable hereunder. Such books and records shall be maintained for three (3) years from the end of each period when such royalties are payable.

7.3.2 Reports. Within thirty (30) days after the close of each calendar quarter, Adopter will deliver to the Agent a report showing Adopter's total amount of royalties due, together with reasonable supporting data as may be requested by Agent showing breakdowns by product type.

7.3.3 Audit. Not more than once per year, an independent certified public accountant selected by Agent may, upon prior written reasonable notice and during normal business hours, inspect and audit the records of Adopter on which such reports are based to determine whether the fees and royalties have been properly paid. Adopter shall reasonably cooperate with such independent accountant. Agent shall pay for the fees of such independent accountant. In the event that the fees and royalties have been underpaid, and the amount of the underpayment is greater than ten percent (10%) of the amount actually due for the period being audited, Adopter shall, in addition to paying the underpaid amounts, also pay for the cost of the audit.

7.3.4 Confidentiality. The Agent shall treat as confidential information of the Adopter the royalty reports and any information gained as the result of any audit of Adopter, and shall not utilize such information except for the purposes of ensuring compliance with this Agreement. The Agent shall establish an internal firewall such that Agent accounting personnel shall have sole access to competitively sensitive information, such as the sales volume of competing products. Such accounting personnel shall be bound by reasonable confidentiality agreements and shall be prohibited from disclosing such information to any third party (except for professionals, such as lawyers and accountants, retained in connection with the performance of Agent's duties and bound by a reasonable confidentiality agreement) or other Agent employee.

7.4 Late Payments. Any payment required hereunder that is made late (including unpaid portions of amounts due) shall bear interest, compounded monthly, at the lesser of ten percent (10%) per annum or the highest interest rate permitted to be charged by the Agent under applicable law. Any interest charged or paid in excess of the maximum rate permitted by applicable law shall be deemed the result of a mistake and such interest paid in excess of the maximum rate shall be promptly credited or refunded to Adopter.

7.5 Taxes. The payments set forth in this Agreement are exclusive of any taxes and each Adopter shall be responsible for any and all taxes, such as sales, excise, value added, use, import/export and similar taxes based on payments to be made hereunder (excluding taxes paid on Agent's net income). The Agent and Adopter shall reasonably co-operate to reduce and recover any such taxes. The Agent shall pass on to the Adopter any tax refunds received by the Agent with respect to the Adopter's previous payment or reimbursement of applicable taxes hereunder, if any. With respect to all royalties paid by Adopter to the Agent hereunder, Adopter may deduct from the payments such withholding taxes as imposed by its government, provided that such Adopter provides the Agent with official tax receipts certifying that such taxes have been paid.

7.6 Changes in Fees and Royalties. Upon providing ninety (90) days written notice to the Adopter, and not more than once yearly, the Agent may increase or decrease the annual fee and royalty rates. Any such increase shall not exceed the change in the United States Department of Labor Producer Price Index for the previous twelve (12) months.

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8. Confidentiality. Adopter will maintain the Specification, including the HDMI Compliance Test Specification, and any other information designated "confidential" by the Agent or Founders (collectively the "Confidential Information") in confidence with at least the same degree of care that it uses to protect its own confidential and proprietary information, but no less than a reasonable degree of care under the circumstances. No Adopter will use, disclose or copy the Confidential Information except as necessary for its employees, contractors (under obligation of confidentiality) and Fellow Adopters with a need to know solely for the purpose of implementing a product according to the Specification. A party will not, however, be liable for the disclosure of any information which is:

- i) Rightfully in the public domain other than by the recipient's breach of a duty;
- ii) Rightfully received from a third party without any obligation of confidentiality;
- iii) Rightfully known to the recipient without any limitation on use or disclosure prior to its receipt from the disclosing party;
- iv) Independently developed by employees of the recipient without using the disclosed information;
- v) Rightfully disclosed as required by law, and provided that the recipient provides prompt written notice to the other party of such legal requirement; or
- vi) Rightfully disclosed with the prior written consent of the disclosing party.

The party seeking to rely on one of the immediately foregoing six (6) exceptions shall bear the burden of proof for showing that such disclosure falls under any such exception.

9. General.

9.1 Adopter Withdrawal. Adopter may withdraw at any time by providing written notice to the Agent. The effect of such withdrawal is that, subject to the terms and conditions of this Agreement, the withdrawing Adopter's non-assertion granted with respect to the Specification and Minor Updates published by the Founders more than sixty (60) days prior to the date of withdrawal, shall continue in full force and shall extend to or be extended to entities who become Adopters and their Affiliates even after such withdrawal for a period of three (3) years after the date of withdrawal. Further, subject to the terms and conditions of this Agreement, the licenses and non-assertion granted to such withdrawing Adopter and its Affiliates shall continue to apply for a period of three (3) years after the date of withdrawal with respect to the Specification and any Minor Updates published by the Founders more than sixty (60) days prior to the date of withdrawal.

9.2 No Other Licenses. Except for the rights expressly provided by this Agreement, no party grants or receives, by implication, or estoppel, or otherwise, any rights under any patents, trademarks, copyrights or other intellectual property rights.

9.3 Waiver. No failure of any party to exercise or enforce any of its rights under this Agreement will act as a waiver of such rights. This Agreement shall not be construed to waive Agent's, Adopter's, or Founders' rights under law or any other agreement except as expressly set forth in this Agreement.

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9.4 No Warranty. The Agent and Founders make NO WARRANTIES EXPRESS OR IMPLIED. The Adopted Trademarks, Specifications, and any contributions thereto provided by the Agent or Founder(s), including without limitation the HDMI Compliance Test Specification, and the licenses granted under this Agreement, are provided "AS IS" WITH NO WARRANTIES WHATSOEVER, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY WARRANTY OTHERWISE ARISING OUT OF ANY PROPOSAL, SPECIFICATION, GUIDE, DESIGN OR SAMPLE. Adopter understands that the HDMI Compliance Test Specification does not guarantee that any product will conform to the High-Definition Multimedia Interfaces, function correctly or interoperate with any other product, and that it is Adopter's sole responsibility to establish its own testing specifications, guides and reference designs to establish conformance with the High-Definition Multimedia Interfaces, correct functionality and interoperability. AGENT AND EACH FOUNDER DISCLAIMS ALL WARRANTIES, RESPONSIBILITY AND LIABILITY FOR THE CONFORMANCE OF ANY PRODUCT TO THE HIGH-DEFINITION MULTIMEDIA INTERFACES, PRODUCT FUNCTIONALITY OR PRODUCT INTEROPERABILITY.

9.5 Damages. In no event will the Agent, Founders or Adopter be liable to each other or to any third party for any loss of profits, loss of use, incidental, consequential, indirect, or special damages arising out of, or related to, this Agreement, whether or not such party had advance notice of the possibility of such damages.

9.6 Governing Law: Venue. This Agreement shall be construed and controlled by the laws of the State of New York applicable to agreements made and to be performed entirely in such state. Any litigation arising out of this Agreement shall take place in Santa Clara County, California, and all parties irrevocably consent to jurisdiction of the state and Federal courts there.

9.7 Not Partners. The Adopter, Agent and Founders are independent companies and are not partners or joint venturers with each other. While the Founders may select an entity to handle certain administrative tasks for them, except as expressly set forth in this Agreement, no party is authorized to make any commitment on behalf of all or any of them.

9.8 Prior Agreements: Complete Agreement. This Agreement sets forth the entire understanding of the parties with respect to the subject matter hereof, and supersedes all prior agreements and understandings relating hereto. No modifications or additions to or deletions from this Agreement, or waiver of any right hereunder, shall be binding unless accepted in writing by an authorized representative of all parties.

9.9 Term. The term of this Agreement shall commence on the Effective Date and shall continue for an initial term of ten (10) years thereafter. The Agreement shall automatically renew for additional five (5) year terms, unless Adopter gives written notice of termination within sixty (60) days of the end of then current term.

9.10 Termination. Adopter may be terminated by written notice in the event that Adopter: (i) materially breaches any of its obligations hereunder, which breach is not cured, or not capable of cure, within thirty (30) days after written notice is given to the Adopter specifying the breach; or (ii) repeatedly breaches any of its obligations hereunder and fails to cure and cease committing such repeated breaches within thirty (30) days after being given written notice specifying the breaches. Such termination shall be treated as a withdrawal under Section 9.1 for the purposes of the rights and licenses granted under this Agreement.

9.11 Survival. In the event of the termination or withdrawal of any Adopter, this Agreement shall survive with respect to the remaining Adopters, and shall survive with respect to the

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withdrawing or terminated Adopter as set forth in Section 9.1. The confidentiality provisions of Section 8 shall survive for a period of ten (10) years after any expiration or termination of, or withdrawal from, this Agreement. The export control provision of Section 9.25 shall survive after any expiration or termination of, or withdrawal from, this Agreement.

9.12 **Execution in Counterparts.** This Agreement may be executed in any number of counterparts, each of which when so executed and timely delivered shall be deemed an original, and such counterparts together shall constitute one instrument.

9.13 **Severability.** If any provision of this Agreement is found invalid or unenforceable, that provision will be enforced to the maximum extent permissible in conformance with the intent of the parties, and the other provisions of this Agreement will remain in force.

9.14 **Nonexclusive Remedy.** The exercise by any party of any remedy under this Agreement will be without prejudice to its other remedies under this Agreement or otherwise.

9.15 **Assignment.** This Agreement will bind and inure to the benefit of the acquirer of all or substantially all of an Adopter's outstanding capital stock or assets and obligations. This Agreement shall further inure to the benefit of the successor of all or substantially all of a Founder's or Fellow Adopter's outstanding capital stock or assets and obligations. Any other attempt by Adopter to assign this Agreement without such consent will be null and void. Agent may freely assign its rights and obligations under this Agreement. This Agreement will bind and inure to the benefit of the acquirer of any or all of an Adopter's Necessary Claims (and Adopter shall take reasonable steps to ensure the enforceability of this provision).

9.16 **Currency.** All amounts herein are stated in United States dollars and shall be paid in such currency.

9.17 **English Language.** The parties have required that this Agreement and all documents relating thereto be drawn up in English. Les parties ont exigé que le présent contrat et tous les documents connexes soient rédigés en anglais.

9.18 **Third Party Beneficiaries.** While only the Agent has executed this Agreement with Adopter, Adopter understands that all of the Founders are beneficiaries of this Agreement and any Founder is entitled to enforce its terms against Adopter. Nothing in this Agreement shall be construed to give rise to any obligation on any party hereto for the benefit of a third party other than the Founders.

9.19 **Headings: Section References.** Section headings in this Agreement are for convenience only and shall not affect the interpretation of any provision of this Agreement. All references to section numbers in this Agreement shall refer to sections of this Agreement unless explicitly stated otherwise.

9.20 **Representation of Counsel.** Each party has been represented by counsel of its choice in entering into this Agreement. This Agreement shall therefore be deemed to have been entered into at arms length, with the advice and participation of counsel, and shall be interpreted in accordance with its terms without favor to any party.

9.21 **Freedom of Independent Development.** Nothing in this Agreement shall prohibit or restrict Adopter from independently developing competing technologies and standards and to license its patent rights to third parties, including without limitation, to enable competing technologies and standards.

9.22 **Licensing Options.**

9.22.1 **Patent License.** Adopter executes this Agreement based on the understanding that this Agreement is offered for the convenience of Adopters and each Founder is willing to provide

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separate patent licenses to any Necessary Claims owned by such Founder of the same scope and nature as offered herein to any person or entity on fair, reasonable and non-discriminatory terms and conditions. Any person or entity seeking such a separate license should contact the applicable Founder in writing.

9.22.2 Specification and Adopted Mark Licenses. Adopter executes this Agreement with the understanding that if any person or entity desires to license the Specification and Adopted Marks without obtaining a license to Necessary Claims, the Founders are willing to provide a separate license to the Specification and, to the extent permitted by law, the Adopted Trademarks of the same scope and nature as offered herein to any person or entity under fair, reasonable and non-discriminatory terms and conditions. Any person or entity seeking such a separate license should make a written request to the Agent.

9.23 Petitioning for Necessary Claims. Potential Adopter understands that if any Adopter, or third party, has a reasonable, good faith, belief that it is the owner of any Necessary Claim, then such person or entity shall inform the Agent and Founders, and may petition the Agent and Founders in writing for a share of future patent royalties collected under HDMI. The HDMI Founders shall make the final determination regarding a reasonable allocation of future royalties based on any claims determined to be Necessary Claims.

9.24 Challenges to Necessary Claims. If Adopter and/or Adopter's Affiliate(s) challenge the validity or enforceability of any Necessary Claims in any jurisdiction in a court, patent office or any other official action, such claims shall be excluded from the Necessary Claims licensed to Adopter and its Affiliates under this Agreement, and the patent holder may seek all remedies for the infringement of such claims by Adopter and/or Adopter's Affiliate(s), including injunctive relief, without reference to this Agreement.

9.25 Notices. All notices under this Agreement shall be sent to:

If to the Agent:

HDMI Licensing, LLC
1060 E. Arques Ave., Suite 100
Sunnyvale, CA 94085 USA

If to Adopter:

To the contact specified on the first page of this Agreement.

9.26 Export Control. The parties agree that no technical information, including software, furnished hereunder or any direct products thereof is intended to or will be exported, directly or indirectly, to any destination restricted or prohibited by export control regulations of the U.S.A., Japan, the Netherlands, France and or any other country and jurisdiction, as applicable, without prior written authorization from the appropriate governmental authorities.

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In witness of their agreement, the Adopter and Agent have executed this Agreement below:

ADOPTER

AGENT

Company name

HDMI Licensing, LLC

By: _____
Authorized Signatory

By: _____
Authorized Signatory

Name

Name

Title

Title

Date

Date

Attachment A

Adopted Trademarks and Trademark and Logo Usage Guidelines

These trademark and logo usage guidelines have been prepared to help you understand how to correctly use the HDMI trademark and the "HDMI Mark" (logo plus its underlying type). HDMI delivers the finest quality digital video and audio transmitted over a single cable and signifies interoperability among HDMI-labeled systems. Because the HDMI Mark represents this recognized quality and reliability in a digital interface, and is a valuable asset, it is important that the branding identity maintain the same qualities. Please review these guidelines carefully before you incorporate the HDMI Mark into your product or related support materials. *If you have any questions concerning your use of the HDMI Mark, please contact trademark@hdmi.org.*

The HDMI Mark

The HDMI Mark consists of the following logo and underlying type:



Use of the HDMI Mark

The HDMI Mark may be used only by authorized licensees who have entered into an Adopter Agreement with the HDMI Licensing Agent (as well as authorized distributors and resellers pursuant to the Adopter Agreement). Unless authorized in writing, you may only use the HDMI Mark as set forth in these guidelines and in the Adopter Agreement. You may only use the HDMI Mark in connection with the promotion of the HDMI Specification and the High-Definition Multimedia Interface, and on products that are Fully Compliant, as defined in the Adopter Agreement. Adopter's are not required to use the HDMI Mark. However, in order to encourage the use of the HDMI Mark, you will receive a discounted royalty rate under the Adopter Agreement if you reasonably incorporate the HDMI Mark on your HDMI products and related documentation and promotional materials.

Other than dropping the TM symbol and/or the underlying type, due to size limitations described under "Size" you may not alter the HDMI Mark (alteration includes outlining, rotating, skewing, stretching or reproducing the mark three-dimensionally). Except as expressly authorized herein, the logo and underlying type are always used together, with the mark elements holding the exact size and position relationships as shown in this example. Do not add a drop-shadow or texture fill to any element of the HDMI Mark.

Clear Space/Safe Zone

The HDMI Mark must always be positioned alone and apart from any other text or graphics. The minimum stand-alone space around the mark is the height of the letter "I" in that usage of the HDMI Mark.

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Colors

Acceptable colors for the HDMI Mark are White, Black and percentages of Black (that will appear as gray) that are in high contrast to the background. When used as labeling on an HDMI-compliant device, the HDMI Mark may be printed/silk-screened in metallic silver (the specified silver is Pantone metallic color 8420) or in the specific color in which all other third party or standards-based marks are printed on the device.

Size

When applied to a product, the HDMI Mark should not be less prominent than other 3rd-party technology marks or logos appearing on the product. The size of the HDMI Mark for typical applications should be 7mm tall or larger. In applications, such as silk-screening on HDMI-compliant devices, the HDMI Mark may need to be smaller than the size listed above. When smaller than 7mm tall, the ™ symbol as well as the underlying type should be dropped, as smaller sizes will cause the type to "fall apart". In these applications, the logo should not be scaled smaller than 3mm, except in the case of cables and connectors, where the logo may be scaled as small as 2mm.

When using the full mark, the type should never be scaled independently of the logo, both the logo and underlying type should always be scaled together.

Placement Guidelines

The following are specific placement guidelines:

Hardware

The HDMI Mark should be placed on the front- or rear-viewing plane of an HDMI-compliant product (i.e. television, set-top box, DVD player, projector, computer, or monitor) or on the top of a cable connector. Do not place the mark on the bottom, top or sides of the product or on any peripheral components. However, the HDMI Mark may be placed on HDMI-compliant connectors and cables. The HDMI Mark should never be obstructed by another label or sticker. The HDMI Mark should be printed directly onto the product using conventional methods such as silk-screening, pad printing or molded in, and not placed on the product using a label or sticker.

Packaging

Place the HDMI Mark on the front, rear, side or top-viewing panel of your package. It should never be obstructed by another label or sticker. The HDMI Mark should be printed directly onto packaging or placed securely on the package using a label or sticker.

Web Pages

The HDMI Mark may be used on Web pages next to Fully Compliant products, as set forth in the Adopter Agreement. On launch buttons, the minimum mark size is .66" or 200 pixels wide.

Advertisement, Direct Mail, Collateral and Documentation

The HDMI Mark may be used in any advertising, direct mail, collateral, or documentation for Fully Compliant products.

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Where Not to Use the HDMI Mark

The HDMI name and mark, or the words "High-Definition Multimedia Interface" or any potentially confusing variations may never be incorporated as part of the name of a product or service of your company.

The HDMI Mark may not appear on or in connection with any product that is not Fully Compliant, as set forth in the HDMI Adopter Agreement.

The mark may not appear on any materials that disparage any HDMI Founder or Founder products, that infringe upon any HDMI Founder's intellectual property or other rights, or that violate any state or federal law or regulation, or law or regulation of any country or jurisdiction internationally.

Referencing HDMI in Text

In text you may refer to the fact that your product incorporates HDMI technology by using phrases such as "incorporates HDMI™ [or High-Definition Multimedia Interface] technology." On all such materials, your company, or product, or service name must appear more prominently than that of the HDMI Mark and should be visually distinguished from the HDMI Mark by putting it in a different font or color or on a different line. This is important to avoid any implication that your product is manufactured or supported by the HDMI Licensing Agent or HDMI Founders.

Some usage examples follow:

Do say: "XYZ incorporates HDMI™ technology" or "XYZ incorporates High-Definition Multimedia Interface (HDMI™) technology"

Do not say: "XYZ HDMI™ product" or "XYZ High-Definition Multimedia Interface (HDMI™) Product"

Trademark Notices

Include the following notice on all marketing materials, such as brochures, manuals, advertising, product fliers...:

"HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC."

The "TM" symbol is part of the HDMI Mark artwork provided to you, and may be dropped when the Mark used is smaller than 7mm tall.

Other Terms and Conditions

Your license to use the HDMI Mark will terminate no later than the termination or expiration date of the Adopter Agreement with which you obtained the right to use the HDMI Mark.

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Notwithstanding any other termination provision, however, HDMI Licensing, LLC reserves the right at any time in its sole discretion to terminate or modify the permission granted herein to use the HDMI Mark. Nothing herein is intended to grant you any right in the HDMI Mark other than the right to use the mark in accordance with the requirements set forth herein. HDMI Licensing, LLC reserves the right to take action against any use that does not conform to these requirements, that infringes on any intellectual property or other right, or that violates other applicable laws.

HDMI LICENSING, LLC AND ALL HDMI FOUNDERS DISCLAIM ANY AND ALL WARRANTIES WHETHER EXPRESS OR IMPLIED BY LAW REGARDING THE USE OF THE HDMI MARK INCLUDING WITHOUT LIMITATION WARRANTIES AGAINST INFRINGEMENT.

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Attachment B

Fees and Royalties

Fees:

Upon execution of the Adopter Agreement, and upon each yearly anniversary of the effective date of each Adopter Agreement thereafter, each Adopter will pay Agent an annual fee of fifteen thousand dollars (\$15,000).

Alternative Fee Payment. Commencing upon the execution of the Adopter Agreement, and upon each yearly anniversary of the effective date of the Adopter Agreement, each Adopter who sells Licensed Products subject to a royalty under the Adopter Agreement may elect to not pay the fixed annual administrative fee set forth immediately above, and instead may elect to pay the administrative fee according to the following alternative formula: (i) upon execution of the Adopter Agreement, and upon each yearly anniversary of the effective date of the Adopter Agreement thereafter, such Adopter will pay Agent a fixed administrative fee of five thousand dollars (\$5,000); and (ii) Adopter will pay a variable administrative fee equal to one dollar (\$1.00) per unit for each end-user Licensed Product sold by Adopter and subject to a royalty under this Adopter Agreement. Such variable administrative fee shall be paid in quarterly installments. For clarification, Adopters will pay the royalties apart from the Administration Fee for Licensed Products as set forth in this Agreement. For the avoidance of doubt, Adopters who sell Licensed Products that are not subject to a royalty under the Adopter Agreement may not elect to pay the administrative fee under this Alternate Fee Payment provision. Notwithstanding any other provision of this Adopter Agreement, these Alternative Fee Payment provisions may be adjusted or rescinded by the Founders in their sole discretion after October 1, 2006.

Royalties:

All Adopters shall pay Agent a running royalty for each end-user Licensed Product sold by such Adopter. An end-user Licensed Product is defined as a product that is typically designed and sold for use by end-users, and where such products are not themselves incorporated into a royalty-bearing end-user Licensed Product. Examples of end-user Licensed Products include, but are not limited to, DVD players, set top boxes, Digital TVs, D-VHS players, A/V Receivers, and Personal Computers. Examples of devices that are not end-user Licensed Products include, but are not limited to Components such as ICs and printed circuit boards (except where such Components are sold directly to end-users for assembly into systems). The applicable royalty rates shall be determined as follows:

- (i) For each end-user Licensed Product that is sold by Adopter, the royalty is \$0.15 per unit sold. Manufacturers of Components, Cables and Connectors will pay no per unit royalty to the extent such Components, Cables and Connectors are incorporated into end-user Licensed Products subject to royalty hereunder. Components, Cables and Connectors sold otherwise shall be considered end-user Licensed Products subject to the payment of royalties.
- (ii) In order to encourage Adopters to make use of the Adopted Trademarks, Adopter shall pay a discounted rate of \$0.05 per unit sold if Adopter reasonably incorporates the Adopted Trademarks on its Licensed Products and related documentation and promotional materials.

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(iii) In the event Adopter licenses content protection technology for HDMI as recommended in the Specification (e.g., High-bandwidth Digital Content Protection, revision 1.10) and adds such content protection technology to the HDMI functionality of its Licensed Products in accordance with the terms of such content protection technology license agreement and the Specification, the royalty paid by Adopter shall be further reduced by \$0.01 per unit of end-user Licensed Product sold.