# Preface to the I3C Basic Specification

## 1 What is MIPI I3C Basic?

MIPI I3C Basic is a feature-reduced, lower-complexity version of the powerful, flexible, and efficient MIPI I3C interface *[MIPI02]*, suitable for a broad range of device interconnect applications including sensor and memory interfacing.

## 2 Motivation

MIPI Alliance considers I3C technology to have significant advantages over the widely adopted legacy interfaces currently used for similar applications, and wishes to see I3C technology broadly deployed in the industry. Being aware that some advanced I3C v1.x features are not needed for many common applications, and that some potential users might regard MIPI Alliance membership as a barrier, the MIPI Board of Directors decided to make the I3C Basic Specification freely available without requiring a MIPI Alliance membership, and to facilitate a royalty free licensing environment for all implementers, as described further below.

## 3 IPR Status

MIPI Alliance's regular intellectual property rights-related terms apply only by and among members. To address this issue, MIPI Alliance created a set of supplemental patent licensing terms for the current and future versions of the I3C Basic Specification, attached to this document as *Annex E*. MIPI required that all members participating in the development of the I3C Basic Specification agree to these additional terms. These terms include an obligation to license applicable patent claims to both member and non-member implementers, for uses both in mobile devices and otherwise, on "RAND-Z" terms: that is, under royalty free (the Z references zero royalty) and otherwise reasonable and non-discriminatory terms.

As described in *Annex E*, any implementer that wishes to benefit from the RAND-Z obligation must also commit to license other implementers under the same RAND-Z terms. This reciprocity requirement is intended to expand royalty free license obligations through the broader I3C Basic ecosystem.

The MIPI member companies that joined the I3C Basic Specification development effort and manifest agreement to the terms in *Annex E* are listed in *Annex F*. *Annex F* also notes if and when any party terminates their agreement to these terms (subject to certain ongoing license obligations, as described in the terms).

The I3C Basic IPR terms are intended to create a robust royalty free environment for implementers. However, no set of IPR terms can comprehensively address all potential risks. The terms apply only to those parties that agree to them, and the scope of application is limited to what is described in the terms. Implementers must ultimately make their own risk assessment, and the disclaimers described elsewhere in this document remain in full force and effect.

## 4 Relationship to MIPI I3C v1.x Specifications

The MIPI I3C Basic v1.1.1 Specification is a subset of the MIPI I3C v1.1.1 Specification. In the I3C Basic Specification, the terms "I3C," "I3C Device," and "I3C Bus" should be interpreted as referring to both I3C v1.1.1 and I3C Basic v1.1.1.

In addition, I3C Basic v1.1.1:

- Addresses all issues addressed by Errata 01 for I3C v1.1
- Includes numerous fixes, clarifications, and editorial improvements planned for inclusion in v1.1.1 of the MIPI I3C Specification. In general, these are not new feature additions, but represent the latest understanding and definition of I3C v1.1.1 features and capabilities.

### 4.1 I3C v1.1.1 Functions Not Included in I3C Basic

The following functions of the I3C v1.1.1 Specification have been removed from the I3C Basic v1.1.1 Specification. Companies interested in implementing these functions should join MIPI Alliance to enjoy member IPR licensing.

- Timing Control (*Section 5.1.8*), namely the portions addressing:
  - Synchronous Time Control
  - Asynchronous Time Control (Modes 1–3)
- Monitoring Device Early Termination Capability (*Section 5.1.12*)
- Device to Device(s) Tunneling (*Section 5.1.13*)
- HDR Ternary Modes (HDR-TSP and HDR-TSL) (*Section 5.2.3*)
- Multi-Lane support for SDR Mode, HDR-DDR Mode, and HDR-TSP Mode (*Section 5.3.2*)

### 4.2 Organization of This Specification

The structure of this Specification, i.e., the naming and numbering of Section headings, is consistent with the I3C v1.1.1 Specification. In order to preserve alignment with the I3C v1.1.1 Specification's structure, numerous references to I3C v1.1.1 functions and capabilities that were removed for I3C Basic v1.1.1 are retained. In many cases the associated section headings are retained with a note that the content is only available in the full I3C v1.1.1 Specification.

### 4.3 I3C Basic v1.1.1 as an Update of I3C Basic v1.0

I3C Basic v1.1.1 is an updated, clarified version of I3C Basic with a simpler relationship to the full I3C Specification.

While I3C Basic v1.0 represented a reduced set of the full I3C v1.0 Specification's features, it also included a number of additional functions not present in the full I3C v1.0. That is, I3C Basic v1.0 was not a strict subset of the full I3C v1.0.

In Version 1.1, the full I3C Specification incorporated all of these additional functions; further, all new features in I3C Basic v1.1.1 are also included in the full I3C v1.1.1 Specification. As a result, I3C Basic v1.1.1 is a strict subset of the full I3C v1.1.1 Specification.

## 5 How I3C Basic Devices Work with I3C v1.x Devices

MIPI I3C Basic Devices, whether Primary Controller, Secondary Controller, or Target, are intended to be interoperable with I3C v1.x Devices for the set of optional features that are mutually supported by the connected Devices. It is easiest to view I3C Basic as a subset of I3C, with a specific set of additional, optional features that are only offered to MIPI Alliance Members.

## Annex E  MIPI I3C Basic Specification Supplemental Patent Licensing Terms

7554 This agreement (the "Agreement") between MIPI Alliance Inc. ("MIPI") and each MIPI member or other
7555 party that has manifest agreement to these terms (each a "Licensor" and collectively the "Licensors") is
7556 effective as of the date the I3C Basic Specification (defined below) is first approved by the MIPI Board (the
7557 "Effective Date"). Capitalized terms used in this Agreement that are not expressly defined here have the
7558 meaning identified in the MIPI Membership Agreement or MIPI Bylaws, as applicable. For convenience,
7559 key definitions are reproduced in Attachment A. For the avoidance of doubt: (a) in connection with this
7560 Agreement, any reference to a "MIPI Specification" means the MIPI I3C Basic Specification as described in
7561 Section 2, and (b) any rights or obligations created under this Agreement are independent of any rights or
7562 obligations created under the MIPI Membership Agreement, Bylaws or any other agreements, and nothing in
7563 this Agreement is intended to alter rights or obligations established elsewhere.

7564 **1.**      **Background.** Typically, MIPI specifications are implemented only by MIPI members. MIPI
7565 members make certain intellectual property licensing commitments to other members under the MIPI
7566 Membership Agreement, with different rules applying to "Mobile Terminals" and "Accessories," in contrast
7567 to other types of implementations. The MIPI Board intends to make the MIPI I3C Basic Specification
7568 available for implementation by parties who are non-members of MIPI, however. Further, both MIPI
7569 members and non-members may use this specification inside and outside of Mobile Terminals or Accessories.
7570 The Licensors contributed to the development of the MIPI I3C Basic Specification, and desire to see it widely
7571 used. MIPI and the Licensors believe that making licenses available (as set forth in this Agreement) to both
7572 member and non-member implementers, for all types of implementations, will facilitate widespread adoption
7573 of the MIPI I3C Basic Specification, to the benefit of MIPI, the Licensors, and the broader community that
7574 MIPI serves.

7575 **2.**      **MIPI I3C Basic Specification**. "MIPI I3C Basic Specification" means the specification titled "I3C
7576 Basic 1.0" as approved by the MIPI Board, and all subsequent versions of such specification approved by the
7577 MIPI Board after the Effective Date. Any party implementing the MIPI I3C Basic Specification, whether or
7578 not a MIPI member, is an "Implementer." For the avoidance of doubt: the MIPI I3C Basic Specification is
7579 distinct from the MIPI I3C Specification version 1.0 approved by the MIPI Board on Dec. 31, 2016. The
7580 terms of this Agreement apply exclusively to the MIPI I3C Basic Specification.

7581 **3.**      **License commitment.**

7582 a.   *RAND-Z license obligation.* For the MIPI I3C Basic Specification only, Licensor hereby
7583 agrees to grant, and to cause its Affiliates to grant, to any requesting Implementer a worldwide,
7584 non-exclusive, non-sublicensable license under the Necessary Claims of Licensor or its Affiliates,
7585 with zero royalties or other compensation, under terms and conditions that are reasonable and
7586 nondiscriminatory, to make, have made, use, import, offer to sell, lease, sell, promote and
7587 otherwise distribute Compliant Portions. Licensor shall not be obligated to license any part or
7588 function of a product in which a Compliant Portion is incorporated that is not itself a Compliant
7589 Portion.

7590 b.   *Reciprocity; defensive suspension*. Licensor shall not be obligated to license any Implementer
7591 if that Implementer does not agree to make patent licenses available under any Necessary Claims
7592 of that Implementer and its Affiliates to Licensors and all other Implementers under terms
7593 substantially identical to the terms described in this Agreement. Further, a Licensor may suspend
7594 any license granted under this Agreement to any Implementer if that Implementer or its Affiliate
7595 initiates against any party litigation that alleges infringement of a Necessary Claim of Implementer
7596 or its Affiliate in connection with the MIPI I3C Basic Specification. Additionally, subject to
7597 Section 3.1(f) of the MIPI Membership Agreement as between MIPI Members, a Licensor may
7598 terminate, ab initio, any license granted pursuant to this Agreement to any Implementer that
7599 initiates litigation against the Licensor alleging infringement of any patent claim of the
7600 Implementer or its Affiliate. For the purposes of this Agreement, a party that files a suit which is

defensive based on a patent infringement claim or suit by another party will not be deemed to have initiated litigation.

*c.   Circumvention or transfer.* Licensor agrees that it has not transferred and will not transfer any patent having Necessary Claims solely for the purpose of circumventing the obligations described in this Agreement. In addition, Licensor agrees that any transfers by Licensor to a third party of a patent having relevant Necessary Claims, whether or not recognized as Necessary Claims at the time of transfer, shall be subject to (i) the terms and conditions of this Agreement, and (ii) the agreement that the third party shall grant licenses under said Necessary Claims to Implementers pursuant to the terms of this Agreement in like manner and to the same extent as the third party would be required to do if it had executed this Agreement. A transfer of ownership in a business entity which owns or has the right to license a patent having Necessary Claims shall be considered a transfer of such patent.

**4.    Termination of obligation to license future versions.** Each Licensor may terminate its participation in this Agreement at any time by providing written notice to the MIPI Managing Director; termination will be effective 30 days after such notice is actually received, subject to the survival points below. Promptly upon receipt of such notice, the MIPI Managing Director will alert the MIPI Board and will use reasonable efforts to notify all Licensors of such termination. After termination, the agreement to grant a license as provided in Section 3 shall survive in full force and effect only: (a) for versions of the MIPI I3C Basic Specification which the Board had approved before the effective date of termination; (b) for Necessary Claims relating to any version of the MIPI I3C Basic Specification approved after the effective date of termination that are used in a substantially similar manner and to a substantially similar extent with a substantially similar result as the Necessary Claims that were used in a prior version for which the Licensor is obligated to grant licenses under this Agreement; and (c) for those Necessary Claims that directly result from inclusion of Licensor-provided material in the draft version of the specification that existed immediately prior to Licensor's withdrawal. Termination of this Agreement by one Licensor does not impact the Agreement among MIPI or the other Licensors, not does it not impact Licensor's MIPI Membership Agreement, which will remain in full force and effect.

**5.    Third party beneficiaries.** All Implementers, whether or not they are MIPI members, are intended third party beneficiaries of this Agreement.

**6.    Counterparts; additional Licensors.** This Agreement may be signed in any number of counterparts. If additional parties manifest agreement to terms substantially identical to this Agreement, those parties will be deemed Licensors under this Agreement.

## Attachment A

1.3. **"Compliant Portions"** means only those specific portions of products (hardware, software or combinations thereof) that: (i) both implement and are compliant with the relevant portions of the MIPI Specification, (ii) are qualified pursuant to the MIPI qualification process (if available), (iii) meet the requirements set forth in any compliance requirements set forth by the Corporation, applied to all Members on a nondiscriminatory basis, and (iv) are within the bounds of the Scope of IPR (defined below).

1.5 **"Interface"** means the protocols, signaling characteristics, commands, clocking signals, register models, application program interfaces and data structures to the extent they enable interoperation, interconnection or communication between integrated circuits (even if located on the same die).

1.7. **"Necessary Claims"** mean those claims of all patents and patent applications, other than design patents and design registrations, throughout the world which (i) a Member or its Affiliates has the right, at any time during the term of this Agreement, to grant licenses of the nature granted or agreed to be granted herein without such grant 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); (ii) are within the Scope of IPR; and (iii) are necessarily infringed by an implementation of a MIPI Specification, wherein such infringement could not have been avoided by another commercially reasonable non-infringing implementation of such MIPI Specification. Necessary Claims do not include (i) any claims other than those set forth above even if contained in the same patent as Necessary Claims, or (ii) any claims that read on any implementation of the Specification to the extent that such implementation is not within the bounds of the MIPI Specification.

1.8 **"Scope of IPR"** means Interfaces, solely to the extent disclosed with particularity in a MIPI Specification, where the purpose and sole licensed (under this agreement) use of such disclosure is to define, implement, and utilize an interface that enables interoperation, interconnection or communication in accordance with a MIPI Specification. Notwithstanding the foregoing, the Scope of IPR shall not include (i) any enabling technologies that may be necessary to make or use any product or portion thereof that complies with a MIPI Specification, but are not themselves expressly set forth in a MIPI Specification; (ii) semiconductor manufacturing technology, DSP architecture, processor architecture/microarchitecture, wireless communication technology, compiler technology, integrated circuit packaging technology, security technology, internal architectures of integrated circuits, applications which run on integrated circuits, audio coding technology, video coding technology or basic operating system technology; (iii) SDO Standards, whether in whole or significant part, not developed by or for the Corporation, but referred to or incorporated in a MIPI Specification, or (iv) any portions of any product and any combination except for that portion or portions which are required solely in order to achieve an interface that is compliant with a MIPI specification; (v) any methods or processes practiced, in whole or in part, over an Interface that are not expressly set forth in a MIPI Specification.

"Affiliate," means any corporation, partnership, or other entity that, directly or indirectly, owns, is owned by, or is under common ownership with, such Member hereto, for so long as such ownership exists. For the purposes of the foregoing, "own," "owned," or "ownership" shall mean ownership of more than fifty (50%) of the stock or other equity interests entitled to vote for the election of directors or an equivalent governing body of an entity that is directly or indirectly controlled by, under common control with or that controls the subject party.

"Board" means the Board of Directors of MIPI.