Skyworks Supplier Quality Manual
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## Revision History

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<th>Name</th>
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<tr>
<td>1</td>
<td>Carole Rosenberger</td>
<td>Initial Release</td>
<td>3/10/2003</td>
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<tr>
<td>2</td>
<td>Carole Rosenberger</td>
<td>Added definition of Team in Section 6.2, Process Objectives in Sec. 3.0, and updated Sec. 6.4.1 – 6.4.5 to add specific details of supplier monitoring.</td>
<td>5/1/2003</td>
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<tr>
<td>3</td>
<td>Carole Rosenberger</td>
<td>Updated Section 6.3.6 to add further reference to service qualification, added site document numbers in Section 4.0 and Section 6.4.</td>
<td>6/4/2003</td>
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<tr>
<td>4</td>
<td>Carole Rosenberger</td>
<td>Added Level 3 (site) documents in Section 4.0, Internal Applicable Documents</td>
<td>3/19/2004</td>
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<tr>
<td>5</td>
<td>Daniel Le Saux</td>
<td>Added reference to WB-W0082 – Supplier / Subcontractor Cost Of Quality (SC0Q) Program. Added Approved Supplier List, Supplier Audit Reports and Supplier Corrective Action Requests to Quality records section.</td>
<td>6/17/2004</td>
</tr>
<tr>
<td>6</td>
<td>Indi Jeyarajah</td>
<td>Complete rewrite. Removed supplier qualification section.</td>
<td>8/18/2005</td>
</tr>
<tr>
<td>7</td>
<td>Daniel Le Saux</td>
<td>Renumbered sections 5.10 through 5.17. Section 5.11 - corrected reference to Supplier Self Audit Assessment Survey from SQ04-0070 to SQ04-005. Section 5.9.1 - modified supplier quality system requirements to specify mandatory registration to ISO 9001:2000. Sections 3 and 5.9.2 - added reference to SQ03-0145 Measurement System Analysis and use of the ANOVA method for such studies. Deleted reference to TL 9000. Added reference to SQ03-0133 Generating a Process Failure Mode Effects Analysis. Section 1.2 - modified scope to include reliability. Added reference to the AIAG PPAP manual. Changed supplier survey frequency to every three years or more frequent if so requested. Deleted RPN threshold.</td>
<td>8/24/2006</td>
</tr>
<tr>
<td>8</td>
<td>Daniel Le Saux</td>
<td>Removed reference to corporate supplier quality department. Removed requirement to have supplier provide a copy of the quality plan to supplier quality engineer for review and approval. Changed supplier corrective action containment time to 72 hours and submission of 8D to 30 days.</td>
<td>01/26/2007</td>
</tr>
<tr>
<td>9</td>
<td>Daniel Le Saux</td>
<td>Changed language in section 5.9.6 Maverick lot program.</td>
<td>02/13/2007</td>
</tr>
<tr>
<td>10</td>
<td>Daniel Le Saux</td>
<td>Added requirement in section 5.10 Reports to provide certificate of analysis and/or certificate of conformance with all shipments. Added definition for certificate of analysis and certificate of conformance</td>
<td>03/30/2007</td>
</tr>
<tr>
<td>11</td>
<td>Daniel Le Saux</td>
<td>Modified section 5.12 to increase Cpk requirement from 1.5 to 1.67. Added section 5.13 Control of Skyworks Owned Product or Equipment. Added references to SQ03-0041, SQ03-0044, SQ03-0047, SQ03-0050. Replaced SQ03-0133 and SQ03-0145 with AIAG FMEA and MSA manuals. Added requirements in 5.9.5 for formalized 8D process and associated training. Added section 5.9.9 addressing work environment.</td>
<td>06/28/2007</td>
</tr>
<tr>
<td>12</td>
<td>Fernanda Barraza / Daniel Le Saux</td>
<td>Modified section 3 Associated Documents to include the supplier portal for process related documents. SCAR timelines in Section 5.9.5 Corrective Actions and Failure analysis were updated to align Skyworks practices with customer expectations. Added section 5.10.1 for calibration reporting expectations.</td>
<td>12/10/2007</td>
</tr>
<tr>
<td>13</td>
<td>Daniel Le Saux</td>
<td>Updated environmental and social accountability requirements in sections 5.3.1 and 5.4</td>
<td>04/17/2008</td>
</tr>
<tr>
<td>14</td>
<td>Daniel Le Saux</td>
<td>Removed requirement for recurring supplier survey.</td>
<td>11/26/2008</td>
</tr>
<tr>
<td>16</td>
<td>Daniel Le Saux</td>
<td>Added SQ03-0038 Wafer Acceptance Criteria and SQ03-0314 Silicon Diode Wafer Acceptance Criteria for Sub-Cons in section 3.0. Also added language confirming incorporation of referenced documents into the contractual agreement. Added requirement to adhere to referenced workmanship standard in section 5.9.2. Added section 5.9.3 Purchasing. Renumbered all other sections accordingly. Added Sub Tier Supplier in section 2 Acronyms / Terminology and Description / Definition. Section 5.9.1: Replaced reference to ISO9001:2000 with ISO 9001.</td>
<td>06/11/2009</td>
</tr>
<tr>
<td>17</td>
<td>Fernanda Barraza</td>
<td>Added SQ03-0319 Mounting Broken Wafer for Scribe at Sub-Contractors, SQ03-0268 Using SkyDocs System by External Partners and link to SkyDocs for external partners in section 3.0.</td>
<td>07/02/2009</td>
</tr>
<tr>
<td>18</td>
<td>Daniel Le Saux</td>
<td>Added requirement in section 5.9.1 Quality System to ensure suppliers notify Skyworks of any change in status of their Quality management system.</td>
<td>07/09/2009</td>
</tr>
<tr>
<td>19</td>
<td>Daniel Le Saux</td>
<td>Added section 4.1 to describe Supplier Performance Monitoring protocol. Added section 5.9 Reliability. Renumbered all other sections accordingly. Added definition Fitness For Use in section 2.0. Added requirement for accreditation mark in section 5.9.1. Corrected grammar in first paragraph of section 5.13.</td>
<td>02/11/2010</td>
</tr>
<tr>
<td>20</td>
<td>Daniel Le Saux</td>
<td>Replaced section 5.3 Green Procurement Supplier Specification with 5.3 Sustainability. Removed sections 5.3.1 Environmental Management, 5.4 Social Accountability and safety requirements from 5.9.11 Work Environment (i.e. all sustainability requirements are now stated in SQ03-0337). Added SQ03-0337 Skyworks Supplier Sustainability Specification to section 3.0 Associated Documents. Added section 5.3.1 Banned and Restricted Substances and added SQ03-0132 to list of applicable documents.</td>
<td>02/16/2010</td>
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<tr>
<td>21</td>
<td>Daniel Le Saux</td>
<td>Added reference to SQ03-0120 Skyworks Customer Labeling Requirements in section 3.0 Associated Documents and 5.6 Product Identification. Added reference to JESD-46 for product / process change notification criteria.</td>
<td>05/21/2010</td>
</tr>
<tr>
<td>22</td>
<td>Daniel Le Saux</td>
<td>Added reference to SQ03-0353 Component Supplier Reliability Requirements in section 3.0 Associated Documents as well as 5.8.5 Reliability. Also added reference to SQ04-0174 Process Control Optimization Checklist in section 3.0 Associated Documents as well as 5.8 Quality Plan.</td>
<td>11/04/2010</td>
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<td>23</td>
<td>Daniel Le Saux</td>
<td>Reformatted section 3.0 Associated documents. Referenced SQ04-0019 General Terms and Conditions in section 4.0 Supplier Qualification. Added SQ04-0019 General Terms and Conditions to section 3.0 Associated documents.</td>
<td>02/10/2011</td>
</tr>
<tr>
<td>24</td>
<td>Daniel Le Saux</td>
<td>Modified section 5.8.1 Quality System to add language regarding ISO/IEC 17025 accreditation scope.</td>
<td>03/10/2011</td>
</tr>
<tr>
<td>25</td>
<td>Daniel Le Saux</td>
<td>Modified section 5.4 Risk Management Policy to add “upon request, the supplier shall provide evidence that second sources for critical supplies, materials and components have been identified”. Modified section 3.0 Associated Documents to change title of SQ03-0120 Skyworks Customer Labeling Requirements to Skyworks Labeling Requirements. Corrected double negative in section 5.5.1 Non-Conforming Product.</td>
<td>07/26/2011</td>
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<tr>
<td>26</td>
<td>Daniel Le Saux  / Fernanda Lares</td>
<td>Corrected specification title 5.6 Product Identification. Revised section 5.8.1 to cover ANSI/ESD S.20.20 certification requirements. Added SQ03-0379 Wafer Labeling Requirement to section 3.0 Associated Documents. Removed following document references: SQ03-0044 and SQ03-0047, JESD-46. Modified 5.5.2 Product / Process Changes to require supplier to provide an As Is / To Be process map when submitting a Process Change Notification. Replaced reference to JESD46 with Skyworks work instruction SQ03-0393. Updated section 3.0 to incorporate reference to SQ03-0393 Supplier Product/Process Change Notification Requirements under Skyworks Documents applicable to all suppliers. Reiterated confidentiality expectations in section 5.1.1.</td>
<td>03/21/2012</td>
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<tr>
<td>27</td>
<td>Daniel Le Saux</td>
<td>Added section 5.5.1.1 Deviations and Waivers. Also added corresponding reference document SQ04-0211 in section 3.0. Added liability language in section 5.5.2 5.5.2 Product / Process Changes. Added sample size reference in section 5.8.5 Reliability. Added additional Maverick lot requirements in section 5.8.8.</td>
<td>12/16/2013</td>
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<tr>
<td>28</td>
<td>Mostafa Gorgzadeh</td>
<td>Updated section 5.9.1 Calibration Reports, to include revisions following engineering changes to cover ISO/TS 16949 standard (2009-06-15)</td>
<td>2/20/2014</td>
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<tr>
<td>29</td>
<td>Mostafa Gorgzadeh</td>
<td>Made correction to revision number in the footer</td>
<td>3/3/2014</td>
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<tr>
<td>30</td>
<td>Fernanda Lares</td>
<td>Added reference to document SQ03-0472 Supplier Production Part Approval Process to sections 3 Associated Documents, 5.8.6 Production Part Approval as a result of WB-CAR-1835</td>
<td>4/10/2014</td>
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<tr>
<td>31</td>
<td>Bonnie Mizuma</td>
<td>Added document SQ03-0467 as associated document in section 3. Footer Revision didn’t get updated on the previous change. Corrected footer revision.</td>
<td>4/16/14</td>
</tr>
<tr>
<td>32</td>
<td>Mark Maier</td>
<td>Modified 5.5.1, Non-Conforming Product, to address a Continental finding. Corrected document links as it was requested by approvers. Updated list of approvers to reflect organizational changes. Fixed revision number in document attachment from 31 to 32.</td>
<td>5/15/15</td>
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<td>33</td>
<td>Michael Goh</td>
<td>Modified 5.8.4 (FMEA) to ensure FMEA items with severity of 9 or 10 must be acted upon immediately and continuous improvement on top three highest risk items.</td>
<td>7/7/2016</td>
<td></td>
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<tr>
<td>34</td>
<td>Mark Maier</td>
<td>Corrected DocSys link in Section 3. Corrected reference in section 5.8.2 (from 5.12 to 5.11).</td>
<td>3/17/17</td>
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<tr>
<td>35</td>
<td>Carolene Hugue- nin</td>
<td>Demoted section 5.8.11 Work Environment to section 5.8.11.2. Renamed 5.8.11 as Resource Management. Added section 5.8.11.1 Human Resources, which explicitly requires suppliers to assess employee competence.</td>
<td>10/16/2017</td>
<td></td>
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<td>36</td>
<td>Carolene Hugue- nin</td>
<td>Updated terminology per ISO9001:2015 throughout. Reorganized section 4 to explicitly call out: qualification, monitoring and development activities referencing the corresponding SOPs. Fixed typo in 5.5.2. Added reference to IATF16949 in 5.8.1. Added explicit reference to ISO9001:2015 quality management principles to 5.8.1.</td>
<td>3/26/2018</td>
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<td>37</td>
<td>Carolene Hugue- nin</td>
<td>5.5.1. Added requirement for approval 'prior to shipment' of nonconforming material to SWKS. 5.5.2. Added requirements for manufacturing validation activities to be coordinated through SWKS TRBs and referenced additional Risk Assessment requirements for foundry supplier processes.</td>
<td>9/12/2018</td>
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<td>38</td>
<td>Bonnie Mizuma / Lawrence O Manzano</td>
<td>Updated Associated Documents Section by: Added SQ03-0590, SQ04-0092 and removed SQ03-0041 Added Ref to Agile System Removed Refer to SQ03-0268 Using SkyDos System by External Partners Update approvers: Replace Jaydutt Joshi with Anuruddha Joshi</td>
<td>10/03/2019</td>
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<td>39</td>
<td>Lawrence Manzano</td>
<td>Updated approver list</td>
<td>03/12/2021</td>
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<tr>
<td>40</td>
<td>Lawrence Manzano</td>
<td>Remove PCO reference from section 3, 4.3. Update section 5.8.1 to comply with IATF 16949 certification as a long-term goal. Update section 5.8.7 to add drill deep and wide Update section 5.11 to add Cpk &gt;3</td>
<td>04/12/2021</td>
<td></td>
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<tr>
<td>41</td>
<td>Daniel LeSaux</td>
<td>Update section <strong>5.9.1 Calibration Reports</strong> to require reports to include a statement indicating that standards used to perform calibration are traceable to a national standard or if one doesn’t exist, the methodology used to establish that standard.</td>
<td>04/21/2021</td>
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<tr>
<td>42</td>
<td>Ramon Santies- teban-Flores, Monica Morales Jumbo Tseng and Daniel Murphy</td>
<td>Added a new section 5.4 to cover Customer Specific Requirements applicable to suppliers. Also modified the header for section 5.2 to Regulatory and Statutory requirements Updated section 5.6, 5.9.7 adding section 5.14 for Process change notification, waivers and supplier alerts and 5.15 for Second Party Audits Updated section 5.5 for contingency plan requirements. Added section 5.16 for Cyber Attack Response Plan. Added Section 5.10.1.1 Tamper-Proof Seals</td>
<td>03/14/2022</td>
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1 Purpose and Scope

1.1 Purpose
The purpose of this manual is to define the basic quality systems and business procedures required of external providers who currently or potentially manufacture and/or supply production material and/or services to Skyworks.

This manual also defines quality requirements, business practices and applicable documents for these external providers, in order to maintain their status as an approved supplier.

This manual, the Commercial Agreement, the Nondisclosure Agreement, and the Skyworks purchase orders are intended as the agreement on all the terms and provisions. This manual supersedes any prior written or oral agreements concerning any of the subject matter of this manual.

1.2 Scope
This procedure applies to Skyworks' external providers of Level 1 materials and Level 4 services that directly affect the form, fit, function, quality or reliability of the finished product.

2 Acronyms / Terminology and Description / Definition

Approved
The supplier status such that Skyworks' Sourcing may buy qualified products from that supplier.

ASL
Approved Supplier List housed in the Lotus Notes “SWKS Supplier Management” database.

Certificate of Analysis (CoA)
Signed document that provides quantitative data for the items being delivered that certifies that the product conforms to all purchase order requirements and reference specifications.

Certificate of Conformance (CoC)
Signed document certifying that delivered products conforms to all purchase order requirements and reference specifications.

Disqualified
Supplier status such that no further orders may be placed.

eCoC or eCoA
Electronic form of CoC or CoA.

Fitness for Use
Product or service that fits Skyworks’ defined purpose, under anticipated or specified operational conditions (e.g. JEDEC or other industry standards).

Level 1 Material
Goods used in the manufacture of finished product that directly affect the form, fit, function or reliability of the finished product.

Level 4 Service
Service provided by an external provider that directly affects the form, fit, function or reliability of the finished product.

MPS
Material Purchasing Specs is a controlled document that provides requirements and specifications of purchased material.
**QML**
Qualified Material List provides the list of critical materials that shall follow this procedure. QML provides the material qualification status by source and by Skyworks plant.

**Remaining Shelf Life**
The material lifetime prior to reach material expiration date at the time of delivery.

**RMA**
Returned Material Authorization, typically a requirement for returning nonconforming products to the supplier.

**SCAR**
Supplier Corrective Action Request, a formal request for improvement issued to an external provider.

**Shelf Life or Shelf Life Duration**
Guaranteed material lifetime as defined by the material manufacturer. The manufacturer guarantees that all specified parameters remain within the limits specified in the MPS throughout the material shelf life.

**SQE**
Supplier Quality Engineer.

**Camline SQM**
Supplier Quality Management is a new system being deployed for the management of eCoC or eCOA data, including an SPC engine (SPACE) that controls conformance to specification and control limits as applicable.

**Sub Tier Suppliers**
Suppliers used by an external provider to Skyworks, i.e., the supplier’s supplier.

**Supplier**
An external provider of goods or services to an organization.

**8D**
Problem Solving Methodology based on the eight disciplines.

### 3 Associated Documents

Access to generic Skyworks documentation is provided via our Supplier Web Site. Access to product related documents is enabled through SkyDocs (for chemical suppliers ONLY) or Agile system (for all other suppliers) with Login required.

The documents listed below contain requirements that become part of the contractual agreement between the supplier and Skyworks.

**Skyworks Documents**

*Referenced in this document and applicable to all suppliers:*

- SQ03-0132 Green Procurement Supplier Specification
- SQ03-0138 Supplier Qualification and Monitoring
- SQ03-0268 Using SkyDocs System by External Partners
- SQ03-0337 Skyworks Supplier Sustainability Specification
- SQ03-0353 Component Supplier Reliability Requirements
- SQ03-0159 Drill Deep and Wide
| SQ03-0393 | Supplier Product / Process Change Notification Requirements |
| SQ03-0472 | Supplier Production Part Approval Process |
| SQ04-0005 | Supplier Survey and Audit Questionnaire |
| SQ04-0019 | General Terms and Conditions |
| SQ04-0099 | Process FMEA Template |
| SQ04-0070 | Skyworks Notification Form |
| SQ04-0308 | Foundry TRB Change / Deviation Risk Analysis Form |
| SQ03-0467 | Skyworks General Manufacturing Requirements for SMT Placed Components |
| SQ03-0590 | Supplier Event Notification |
| SQ04-0092 | Drill Deep / Read Across Worksheet |

**Applicable to wafer foundries and assembly suppliers:**

| SQ03-0038 | Wafer Acceptance Criteria GaAs (pHEMT and HBT) and Silicon CMOS Wafers |
| SQ03-0314 | Silicon Diode Wafer Acceptance Criteria for Sub-Cons Silicon Diode Wafers |
| SQ03-0319 | Mounting Broken Wafers for Scribe at Sub-Contractor |

**Applicable to probe and test suppliers:**

| SQ03-0050 | Test Transfer Correlation Procedure |
| SQ03-0120 | Skyworks Labeling Requirements |
| SQ03-0379 | Wafer Labeling Requirement |

**National and International Standards**

*Referenced in this document and applicable to all suppliers:*

- **ANSI/ESD S.20.20**: Development of an Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment.
- **IATF 16949**: Quality Management System Standard for the Automotive industry
- **APQP**: AIAG Advanced Product Quality Planning and Control Plan Manual
- **FMEA**: AIAG Failure Mode Effects Analysis Manual
- **ISO 9001**: Quality Management Systems – Requirements
- **ISO/IEC 17025**: General Requirements for the Competence of Testing and Calibration Laboratories
- **JESD-50**: Special Requirements for Maverick Product Elimination
- **MSA**: AIAG Measurement Systems Analysis Manual
- **PPAP**: AIAG Production Part Approval Process Manual
4 External Provider Management

Supplier terms and condition of purchase are outlined in SQ04-0019 General Terms and Conditions. Additional supplier quality expectations are included in Section 5 of this document. Conformance to these requirements is verified by means of supplier surveys, requested self-appraisals, and on-site assessments performed by Skyworks or a third party. All requirements in each applicable element shall be fulfilled for an external provider to be considered qualified to provide materials or services to Skyworks.

4.1 Supplier Qualification

Detailed work instructions regarding the assessment and qualification of external providers are contained in SQ03-0138 Supplier Qualification and Monitoring.

4.2 Supplier Monitoring

The procedures and requirements of the performance monitoring function for external suppliers are captured in SQ03-0138 Supplier Qualification and Monitoring. Supplier performance is monitored monthly based on a demerit system that gives equal weight to quality and delivery. Suppliers that fall below criteria specified in SQ03-0138 are placed on probation and improvement actions are formally requested; suppliers that fail to show improvement may be disqualified.

4.3 Supplier Development

Development of Skyworks’ external providers is achieved by multiple means guided by the principles of engagement, customer focus, continuous improvement, and data driven decision-making. These tenets drive for quality improvements in all aspects of the supplier-customer relationship from delivery, cost, performance, to customer satisfaction. In addition to the sustaining relationships that drive improvement within the context of on-going qualification and monitoring activities, further development of external providers is actively targeted by Skyworks. The identification of risks and opportunities associated with external providers, as well as action plans to address these issues are fundamental to the supplier development function. Supplier development is further supported by the active use of the following tools:

Supplier Development Reviews per SQ03-0037 Supplier Development Review
Surveillance audits performed per SQ03-0218 Supplier Audit Protocol

5 External Provider Expectations

5.1 Corporate Policies and Objectives

It is the policy of Skyworks that materials and services used in the design and production of Skyworks products be procured in a professional and ethical manner that results in achieving the lowest total cost of ownership for Skyworks and for our customers. Further, all purchased materials and services must be in compliance with agreed upon requirements, be delivered on time, and have competitive lead times and prices

5.1.1 Confidentiality

Confidentiality shall be strictly maintained in accordance with supplier terms and condition of purchase outlined in SQ04-0019 General Terms and Conditions.

5.2 Regulatory and Statutory Requirement Compliance

It is the supplier’s responsibility to ensure that their product is in compliance with all applicable regulatory, statutory, and product safety requirements and claims including those stated in supplier published product advertising, catalogues and data sheets. The supplier must be prepared at all times to substantiate compliance by providing copies of test reports and making records available for review if requested.
5.3 Sustainability
All requirements set forth in **SQ03-0337 Skyworks Supplier Sustainability Specification** apply.

5.3.1 Banned and Restricted Substances
Refer to **SQ03-0132 Green Procurement Supplier Specification** for all materials restrictions and reference to Skyworks’ banned and restricted substances.

5.4 Customer Specific Requirements
Supplier shall cascade all applicable statutory and regulatory requirements, and special product and process characteristics down the supply chain to the point of manufacture.

The same quality system requirements shall apply to sub-suppliers, and the supplier is responsible for the compliance of all of their sub-suppliers. Also refer to CQI-19 Sub-Tier Supplier Management Process Guidelines.

5.5 Risk Management Policy
The supplier shall have an up-to-date documented Risk Management Policy ensuring that in the event of disaster or inability to perform, the supplier has plans to take necessary action in order to minimize and or eliminate such risk, from Skyworks. The supplier is to

- Identify and evaluate internal and external risks to all manufacturing processes and infrastructure equipment essential to maintain production output.
- Define contingency plans according to risk and impact to customers, including key equipment failures; interruption from externally provided products, processes, or services;
- Include a notification process for the extent and duration of any situation impacting customer operations.
- Periodically test and multidisciplinary review the contingency plan for effectiveness.
- Document the contingency plan and retain documented information describing any revisions, including persons authorizing the changes.
- Include the development and implementation of appropriate employee training and awareness.
- Include provision to validate that the manufactured product continues to meet customer specifications after the re-start of production following an emergency.

This needs to be provided with completion of **SQ04-0005 Supplier Survey and Audit Questionnaire**. Upon request, the supplier shall provide evidence that second sources for critical supplies, materials and components have been identified.

5.6 Notification of Product Quality or Delivery Issues
In the event a supplier causes a quality or delivery concern, they will be issued a Supplier Corrective Action Request by Skyworks staff member initiating the concern. This format may also be used to notify external providers of other types of failures such as warranty concerns, customer complaints due a supplier issue, field failures due a supplier issue or other required documents rejection for the automotive industry.

The SCAR will define the concern and details regarding the quantity of parts identified with the concern. There are several concern classifications:

**Formal Concern**: Any concern that is formally documented by Skyworks and where formal corrective action is requested in the 8D Format. See 5.9.7 for Corrective Action Requirements.
Formal Critical Concern: Some formal concerns are considered critical when an impact or risk are identified and related to product safety, specification sheet requirements, reliability, design, environment, and or field action.

Informal Concern: A potential concern voiced by Skyworks that is not formally documented, but must be addressed to drive preventive actions and continuous improvements by the supplier. The Supplier will be notified of an informal concern via email or telephone, in case of a repeat issue will likely result in a formal concern.

Delivery Concern: Occurs when the supplier doesn’t have the required quantity at Skyworks’ facility on the target date it is due. This can be under ship, over ship, late, or early shipments.

Warranty Concern: Occurs when there is evidence a field issue exists and is determined via product and data analysis to be caused by Skyworks’ supplier.

5.6.1 Supplier Charge Back
All cost incurred by Skyworks that are due to a supplier not adhering to Skyworks quality and delivery requirements may be charge back to the responsible supplier. This include but not limited to customer issues, scrap, other in process waste, warranty, and any other process fall-out.

5.7 Product Identification
The Supplier shall have a manufacturing control system such as a route card, run card, control software, etc. used for the identification of products with regard to type, lot or serial number, and their status during all stages of production and test.

Shipments originating from any assembly and/or test location, including subcontractor shipments that are sent directly to customers shall be labeled in accordance with SQ03-0120 Skyworks Labeling Requirements.

5.8 Product Traceability
The external provider shall have a system for ensuring finished product traceability back to the subassembly, component and raw materials. Traceability shall be achieved by means of date code, lot and/or serial number.

5.9 Quality Plan
Skyworks being a leader in the wireless industry will continuously strive to improve Quality and provide world-class products to our customers. To ensure we are able to meet and maintain this objective, Skyworks expects the elements in this section to be present with its suppliers. In the event the supplier does not have an element of this plan, Skyworks will at its discretion, decide if we want to work and assist the supplier to develop the missing element. The Quality plan may be reviewed by the Skyworks Supplier Quality Engineer prior to a supplier being qualified. For existing suppliers, Skyworks Quality Engineers may work with supplier to document and/or develop an acceptable Quality Plan.

The requirement of the Quality Plan is one of the most critical steps in becoming an approved supplier to Skyworks. Skyworks’ intent is to purchase material from suppliers on a Ship to Stock Program. This is a process where Skyworks receives parts and materials from suppliers and uses them with a minimum of internal inspection and test costs or losses resulting from the supplier’s fault non-conformances. Skyworks will not accept the cost of excessive testing and poor quality, and will not pay the cost of our suppliers doing extensive testing or the resulting poor yields and escapes.

The intent is to emphasize process capability improvement and controls and/or monitoring that will have the greatest impact on quality and reliability and ultimately zero defects, zero repeat issues and low cost of ownership goals. Skyworks has adopted a new process audit standard VDA6.3, see Section 5.15 for details.

The Quality Plan will normally consist of the following elements as a minimum; additional requirements may be requested by Skyworks as detailed in the following sub-sections:
5.9.1 **Quality System**

Suppliers are expected to have an effective quality system in place that assures consistent on-time delivery of conforming product. Registration by an accredited third-party certification body is required as follows:

- **ISO 9001** certification is required with **IATF 16949** certification as the long-term goal.
- **ISO/IEC 17025** is required for calibration and testing laboratories. The parameter and/or equipment applicable to the laboratory service being provided must be within the scope of accreditation.
- **ANSI/ESD S.20.20** certification is required for all assembly and/or test suppliers.

**Note:** All third-party certificates must include a valid certification body accreditation mark.

Given the ISO9001 certification requirement, Skyworks’ external providers shall have Quality management systems that support the principles of:

- Customer focus
- Leadership
- Engagement of people
- Process approach
- Improvement
- Evidence-based decision making
- Relationship management

External providers shall notify Skyworks of any change in status of their Quality management system (e.g. change of scope, registrar, standard, etc.) in accordance with section 5.5.2. This requirement shall apply to **ISO 9001, IATF 16949** and/or **ISO/IEC 17025**.

5.9.2 **Process Controls**

The supplier shall plan and carry out manufacturing processes under controlled conditions that shall include:

- The use and development of control plans as outlined in the **AIAG Advanced Product Quality Planning and Control Plan (APQP)** manual.
- The use of documented work instructions available at point of use.
- The use of suitable equipment supported by a preventive maintenance program for key process equipment.
- The use of equipment for test, inspection and measurement of Skyworks product. This equipment shall require Gage reproducibility and repeatability (R&R) studies to demonstrate the capability of the equipment and measuring process. These studies shall be performed using the ANOVA method outlined in the **AIAG Measurement System Analysis (MSA)** manual. All such equipment with > 10% error needs to be reported to Skyworks and documented improvement plans shall be made available to Skyworks upon request.
- Adherence to Skyworks workmanship standards listed in section 3.0.
- The use of statistical tools such as Statistical Process Control (SPC) and capability studies (see section 5.11). The supplier shall initiate a reaction plan for characteristics that become incapable or unstable.
- A production scheduling system that supports Skyworks’ delivery expectations.

5.9.3 **Purchasing**

The external provider shall have a defined process for their purchasing process that includes:

- The use of approved sub tier suppliers for the procurement of materials and/or services that directly affect the form, fit, function or reliability of Skyworks products.
- A supplier development program that emphasizes the flow-down of the requirements set forth in this manual to sub tier suppliers.
• The generation of purchasing information that clearly describes the product being purchased.
• The implementation of verification activities to ensure that incoming product meets specified purchase requirements.
• Sub-tier supplier performance monitoring.

5.9.4 Failure Mode and Effect Analysis (FMEA)

It is strongly recommended that the supplier develop a Process or Product FMEA and use those results to determine the appropriate test and inspection points as well as appropriate control methods. FMEA items with severity ranking of 9 or 10 must be acted upon immediately. Other than that, actions must be taken on the top three highest ranked risk items. In the case where 2 or more risk items have the same RPN, priority should be given to those with highest severity. Additional information can be found in the AIAG FMEA manual. The supplier may also use SQ04-0099 Process FMEA Template.

5.9.5 Reliability

Suppliers shall have a qualification process for their products, processes and/or components that ensure quality, reliability and fitness for use (see section 2.0 for definition). This process must be followed for new products as well as product or process changes (see section 5.14). This process must also include on-going (quarterly at a minimum) reliability testing that gathers and monitors reliability data on qualified production products and processes.

Component suppliers (e.g. capacitors, resistors, filters, etc.) are required to forward on-going reliability reports to Skyworks FA/Reliability department on a quarterly basis. This and other requirements are outlined in SQ03-0353 Component Supplier Reliability Requirements. Internal supplier qualification shall meet sample size requirements outlined in SQ03-0353 Component Supplier Reliability Requirements where applicable.

Other suppliers may be requested to provide these reports on an as-needed basis.

5.9.6 Production Part Approval

Skyworks may request suppliers to conform to the production part approval process as outlined in SQ03-0472 Supplier Production Part Approval Process.

5.9.7 Corrective Action and Failure Analysis

Skyworks will use a Supplier Corrective Action Request (SCAR) as the trigger to engage the supplier for a request for containment, root cause analysis, corrective action and verification. All responses from supplier need to be in an 8D format, you may use form SQ04-0372 Supplier 8D.

The supplier should have a formal, 8D process with evidence that key personnel have been trained. Failure Analysis capabilities and support needs to be identified in the Quality Plan.

For a thorough root cause analysis, suppliers may use Drill Deep/Read Across also called 3x5 Why Root Cause Analysis per SQ03-0159 Drill Deep and Wide, 5 why’s, Fishbone, Is / Is not, etc.

The initial response (3D) needs to be provided within 1 business day of the receipt of samples. The root cause analysis and corrective action plan (5D) shall be provided within 10 business days of the receipt of samples. The actual deployment and verification of corrective actions (6D through 8D) may take longer based on the complexity of the problem.

5.9.8 Maverick Lot Program

Skyworks encourages suppliers to have a Maverick lot program in the spirit of JESD-50. Where applicable, supplier shall use statistical methodology to set Maverick limits. Supplier shall notify and seek Skyworks Supplier Quality Engineering’s approval prior to shipping any Maverick lots.
5.9.9 **Document Control System**

Skyworks requires suppliers to have a Document control system in place. Suppliers must ensure that the latest Skyworks specifications, work instructions, and other related documents are maintained in this system.

5.9.10 **Internal Quality Audits**

Suppliers shall perform internal quality audits in accordance with documented procedures and control plans. The supplier shall also review audit results, plan corrective action and perform follow-up verification of corrective action effectiveness.

The supplier will publish the frequency of internal audits performed in the supplier facility in the Quality Plan. Periodically, the supplier may be requested to share details of the internal audits and follow-up items with Skyworks Supplier Quality Engineer.

5.9.11 **Resource Management**

5.9.11.1 **Human Resources**

External providers shall ensure that personnel performing work affecting product quality or the quality management system are competent on the basis of appropriate education, training, skills, and experience. External providers shall determine competency requirements, assess employee competence, and maintain associated records as evidence.

5.9.11.2 **Work Environment**

External providers shall determine and manage the aspects of the work environment necessary to achieve conformity to product requirements. Examples of aspects may include, but are not limited to: temperature, humidity, cleanliness and electrostatic discharge protection.

External providers who handle ESD sensitive parts are expected to establish and maintain an ESD management system in accordance with ANSI/ESD S20.20 (see section 5.8.1).

5.9.12 **Problem Resolution, Escalation and Key Contacts**

The external provider shall define who has authority for resolving quality, technical and supply issues and the escalation process to the next level of management in the event that a decision can’t be reached at any level.

The external provider is expected to designate a key contact person and furnish their name, daytime phone number, pager/mobile number, and email address. This individual will be the owner for taking action on quality alerts and ensuring all reports and corrective action request are rendered to Skyworks in a timely fashion. The external provider will be responsible for assuring the availability of this individual or an available back-up to Skyworks at all times.

5.10 **Reports**

All shipments must be accompanied by a certificate of conformance and/or certificate of analysis traceable back to the items being delivered.

The external provider may be requested to provide periodic reports or summary reports of inspection or test results. The Skyworks Supplier Quality Engineer may review the metrics and reporting formats and frequency. Additionally the supplier may be requested by Skyworks Supplier Quality Engineer to provide periodic summary reports of FA and evaluation results on SCARs / RMAs. These will need to be in the format prescribed by the Skyworks Supplier Quality Engineer.

5.10.1 **Calibration Reports**

For calibration service providers, calibration reports must include evidence of conformance to requirements. Calibration shall be performed in accordance with manufacturer’s specifications unless otherwise noted on the purchase order. The calibration report shall include - as a minimum - the following information:

- Equipment identification, including the measurement standard against which the equipment is calibrated traceable to international or national measurement standards. When no such standards exist, the basis used for calibration or verification shall be indicated.
• Any out-of-specification readings as received for calibration/verification.
• A statement of conformity to specification after calibration/verification.
• Revisions following engineering changes.

5.10.1.1 Tamper-Proof Seals
For Calibration Providers, if tamper-proof seals need to broken to calibrate equipment or replace batteries, seals must be replaced upon return from calibration.

5.11 External Provider Self-Assessment Survey
SQ04-0005 Supplier Survey and Audit Questionnaire shall be completed by the supplier during the initial supplier qualification and will be kept on file by Skyworks. This form will also be used as the template for on-site audits performed by Skyworks. An updated survey may be requested by the Skyworks Supplier Quality Engineer if deemed necessary.

5.12 Capability Indices
The supplier shall establish a procedure to assure that critical Cpks are $\geq 1.67$ but less than 3.0. This procedure may be reviewed by the Skyworks Supplier Quality Engineer. For those critical Cpks which are $< 1.67$ and $>3.0$ for three consecutive months, documented improvement plans shall be made available to Skyworks upon request.

5.13 Control of Skyworks Owned Product or Equipment
Secondary materials (such as carrier tape, trays, packaging, etc.) and consigned material provided or specified by Skyworks shall be verified to meet Skyworks requirements and fitness for use before being accepted.

Custom-owned equipment and/or tooling purchased by Skyworks shall remain the property of Skyworks. All Skyworks-owned equipment and tools will be marked with Skyworks' control numbers prior to shipment to an external provider.

Skyworks-owned equipment, tools, test correlation parts, secondary materials or consigned material shall be controlled, stored, handled and maintained in a manner that protects against loss and damage.

5.14 Supplier Initiated Notifications

5.14.1 Product / Process Changes
The Supplier shall have a process to manage and track changes in accordance with SQ03-0393 Supplier Product / Process Change, Waiver and Supplier Alert Notification Requirements.

When submitting a Process Change Notice, the supplier shall complete the SQ04-0070 Skyworks Notification Form and provide a process map that clearly highlights the process changes that are being proposed.

Manufacturing validation activities for new process qualifications must be coordinated in alignment with Skyworks’ Technical Review Board processes.

In case of non-conformance to Skyworks PCN process, the external provider will be responsible for all costs incurred by Skyworks (or its subcontractors) related to such non-conformance.

5.14.2 Waivers or Alerts
Delivery of product to Skyworks not meeting supplier's internal manufacturing specifications for measurements as identified on the control plan, acceptance criteria, outlier limits, Maverick limits or Skyworks specifications should be prevented.
Supplier to review suspect non-conforming material or product through a cross functional Material Review Board (MRB) to determine acceptability of shipping material to Skyworks. **No material found to be non-conforming should ever be shipped to Skyworks.**

Suppliers shall generate a waiver request to the Skyworks’ Supplier Quality Engineer specifying nature of the deviation, associated, MRB data and why the supplier believes the deviation will not impact Skyworks’ product performance, quality, safety, reliability, or yield.

For deviations detected after material/product has already been shipped to Skyworks, the generation of an Alert is required. This applies to all deviations, even if the initial assessment is that such a deviation may not impact conformity (specs).

Supplier may generate a waiver or an alert request in accordance with Form SQ04-0070 Skyworks Notification Form

### 5.15 Second Party Audits

Second Party Audits can be conducted on site or remotely at the direction of Skyworks. Suppliers must ensure access to virtual auditing tools when needed to facility Remote Audits Requests.

Skyworks audit types can be but not limited to Process Audits, Product Audits, Quality Systems Audits, etc. The Lead Auditor will define the type, scope, dates, and agenda of the Audit.

Audits shall be performed, recorded, and tracked in accordance with **SQ03-0218 Supplier Audit Protocol** and the Supplier must close all Action Items identified during the Audit in less than 90 days.

Skyworks is using VDA 6.3 as a tool for the process audits and the checklist is documented in **SQ04-0338 – VDA6.3 Checklist.**

### 5.16 Cyber Attack Response Plan

In the event of an incident involving Skyworks data or systems, the Supplier shall perform the following steps:

1. Gather and provide the following information noted in the table below:

<table>
<thead>
<tr>
<th>Information</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timing of Incident</td>
<td>Date of the incident or date it was first discovered</td>
</tr>
<tr>
<td>Type of Incident</td>
<td>DDoS, ransomware, malware, unauthorized access or disclosure, data exfiltration, etc.;</td>
</tr>
<tr>
<td>Nature of incident</td>
<td>Description of the incident and how it relates to Skyworks. If data has been exfiltrated, please provide details on the type of data that was exposed and how it occurred.</td>
</tr>
<tr>
<td>Source of incident information</td>
<td>Source of the incident. Was it reported by a user, through another third party or sub-provider, an audit/assessment, etc.</td>
</tr>
<tr>
<td>Investigation details</td>
<td>Actions taken to confirm potential scope and impact of the incident</td>
</tr>
<tr>
<td>Remediation Activities</td>
<td>Mitigation activities to reduce the effects from the incident. What action has the supplier taken to contain and remediate the incident? Has the vendor engaged a 3rd party? Involved law enforcement or informed regulatory authorities?</td>
</tr>
</tbody>
</table>
Impact Analysis | Process used to determine that Skyworks information resources (data/systems) were affected? Please provide audit logs as it relates to Skyworks data.

2. Notify Skyworks of the incident within 48 hours of discovery by emailing cybersecurity@skyworksinc.com and providing the above information to Skyworks.

3. Reach out to your Sourcing Contact to schedule a call with Skyworks’ Cybersecurity department to provide further details on the incident and determine next steps.

4. Based on the nature and severity of the incident, Skyworks may implement risk mitigation activities that may include:
   - Revoking all supplier access to all Skyworks’ systems and resources.
   - Isolating network access or disabling certain services.
   - Shifting to an alternate supplier.
   - Activating Skyworks’ business continuity plan.