

A WORLD OF BEST PRACTICES

FOR THE ELECTRONIC
COMPONENTS INDUSTRY



Electronic Components Industry Association

A large graphic on the right side of the slide depicting a globe. The globe is composed of a network of blue dots connected by thin blue lines, creating a mesh-like structure that represents global connectivity or a network. The dots vary in size and are distributed across the surface of the sphere.

GIPEC

ECIA Publication

Paperless Manufacturer Certificate of Compliance
(Digital transfer of COC documents between manufacturer and distributor)

EIGP 116.2020

May 2020

Electronic Components Industry
Association

Industry Best Practices, Guidelines, Areas
for Consideration

Global Industry Practices Committee (GIPC)

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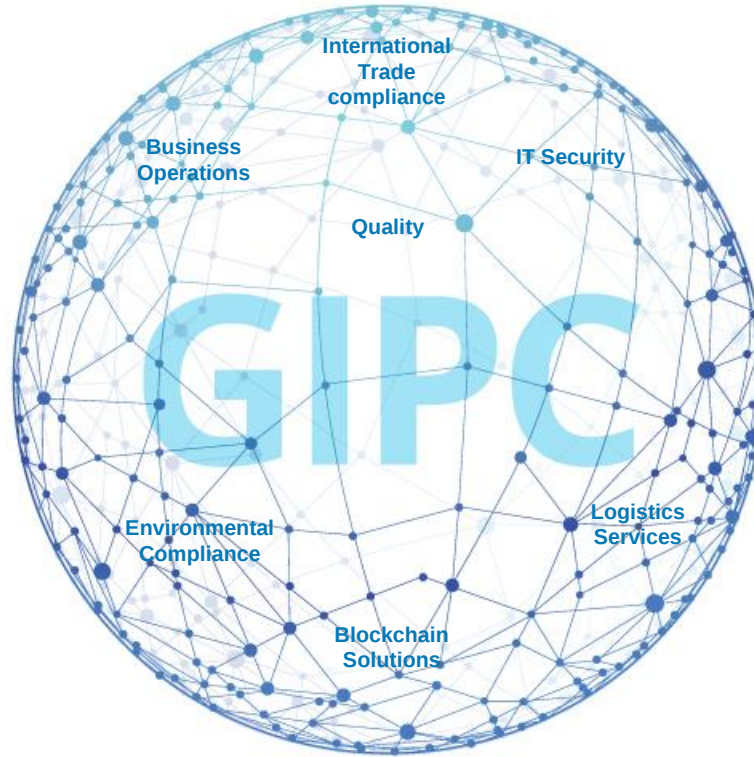
ELECTRONIC COMPONENTS INDUSTRY ASSOCIATION

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Digital Transfer of Manufacturer Certificate of Compliance



A Paperless Process

Industry Benefits:

- Create a streamlined process to digitally exchange compliance documentation such as manufacturers certificate of compliance. The industry benefits will be improved efficiency for the exchange of documents, reduction in costs associated with the current manual, paper driven process and improved visibility and availability of information.

Goal:

- Organize a working group comprised of 2 manufacturers, 2 distributors.
- Design architecture to embed compliance documentation into a 2D barcode: process flow to start with manufacture – to – distributor – to – customer.
- Implement pilot with working group participants.
- Create final process documents for industry release.

Key Outputs/Metrics:

- Final process documents for industry publication and use.
- Pilot results for publication when completed.
- ROI examples and/or estimates for industry publication.

Financial Considerations:

- ROI impact for Manufacturer (TBD)
- ROI impact for Distributor (TBD)

Problem Statement:

- There is only a manual, paper driven process today for the transfer and exchange of compliance documentation in the electronic component supply chain. This drives unnecessary administration costs with manufacturers, distributors and customers and service dissatisfaction through-out the supply chain.

Assignment Scope:

- Start with the manufacturers certificate of compliance.
- Consider other compliance documents that would enhance the offering, but would not complicate or slow down the initial target of embedding manufacturers CoC into 2D labeling process flow.
- Phase 1 = 1 Manufacturer Documents to 1 Distributor
- Phase 2 = Multiple Manufacturers and Distributors Implemented
- Phase 3 = Distributors Internalize Documents for Delivery to End Customers

Project Team:

- Sponsors – Phil Fraser, ADI and Pete Shopp, Mouser Electronics
- Leaders – Selinna Chen and Glenda Faelden, Co-Leaders, ADI and Kendra White, Mouser Electronics
- Contributor – Andy Verb, Brien Fennell, Bar Code Graphics, Inc.

Project Timeline:

- 2019 – 2021

Paperless Manufacturer Certificate of Compliance

Contributions by Bar Code Graphics, Inc.

Concept Proposed
by ECIA's GIPC

ADI, Littelfuse, Digi-Key, Mouser
Solution Development IT Project Teams Assigned

2019

Q1

Q2

Q3

Q4

Embed COC in 2D Bar Code

Digital Transfer of COC with Linkage to Shipment

2020

Distributors-to-Customers

ADI

ADI, Mouser

Process Development

Adds Distributors

Testing, Implementation

Process Development

Q4

Q3

Q2

Q1

Roadmap

2019-2021
3 Year Plan

2021

Additional Manufacturers, Distributors

Continued Industry Implementation

CPI

Continuous Process Improvement – Next Generation

Q1

Q2

Q3

Q4

2022

Global

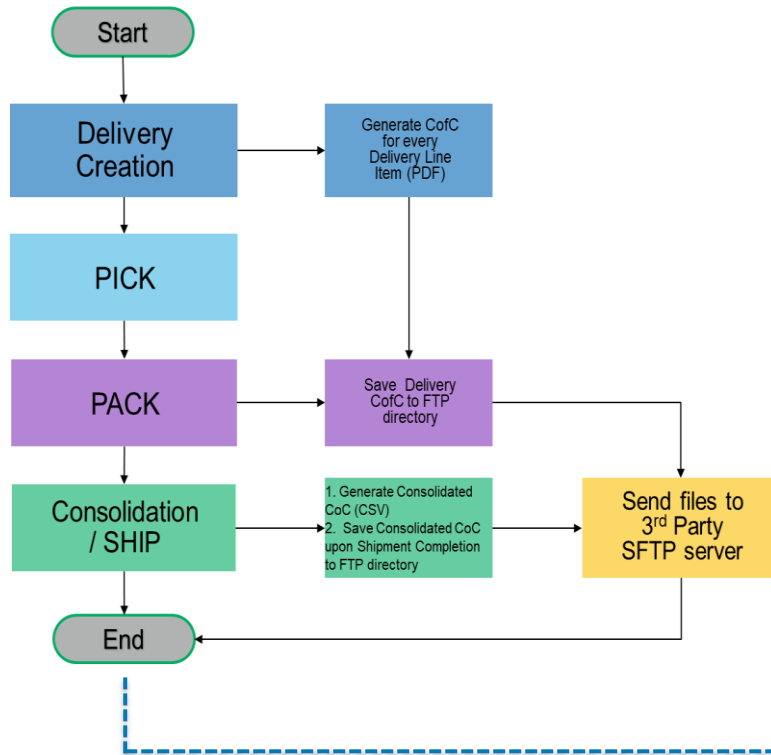
Global Industry Implementation

Best Practices

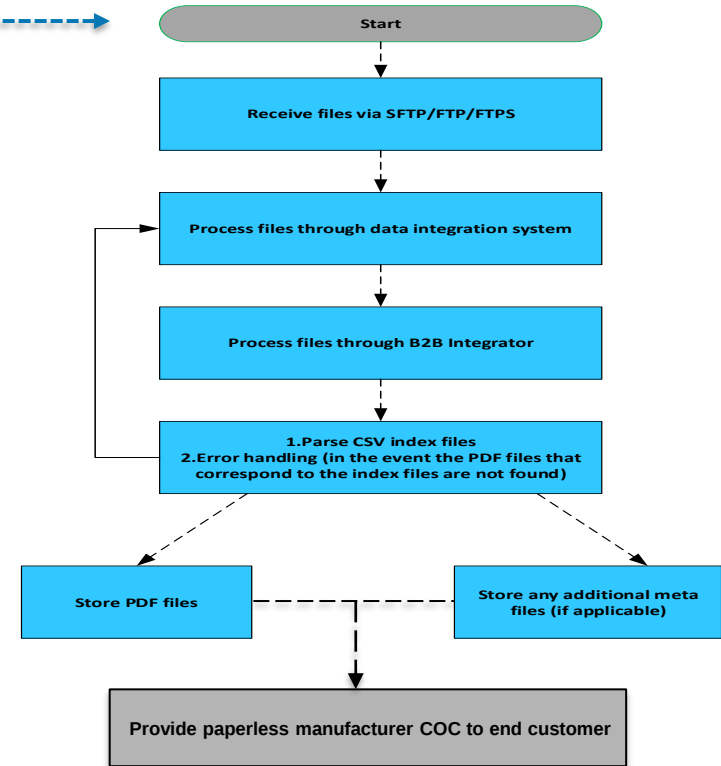
Benchmark Data

Process Flow

ADI

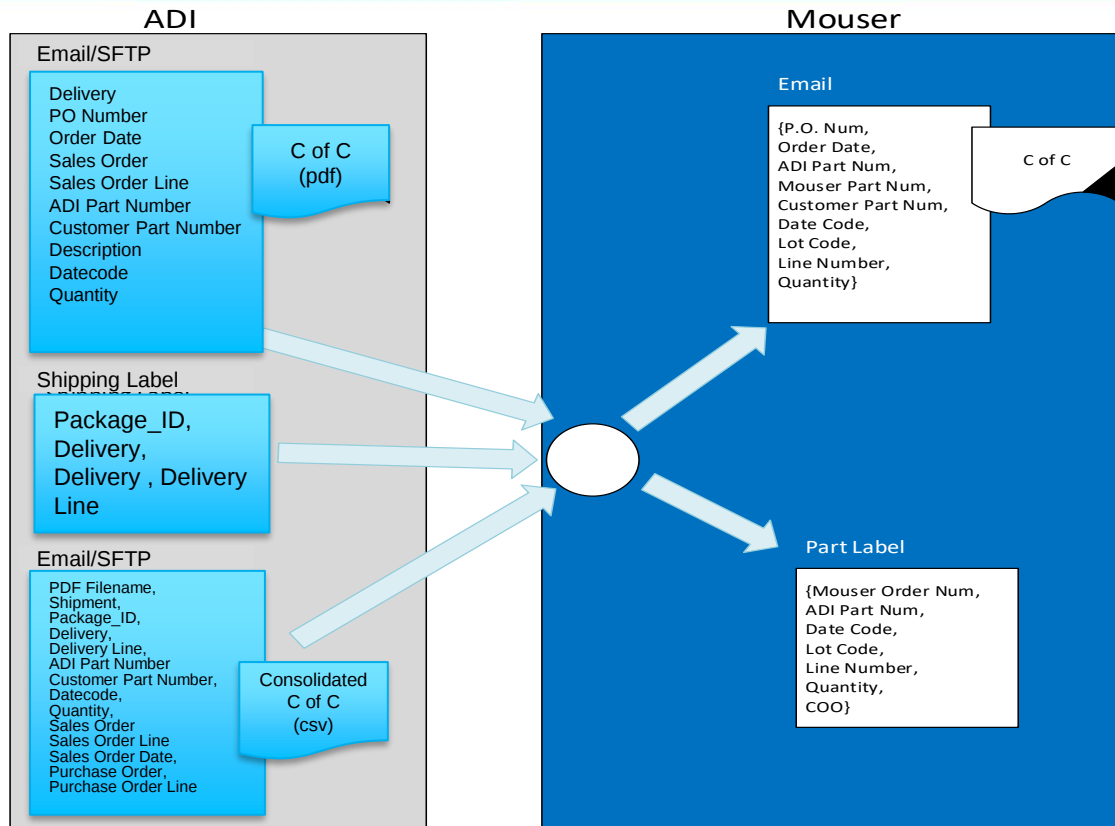


Mouser



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Data Elements



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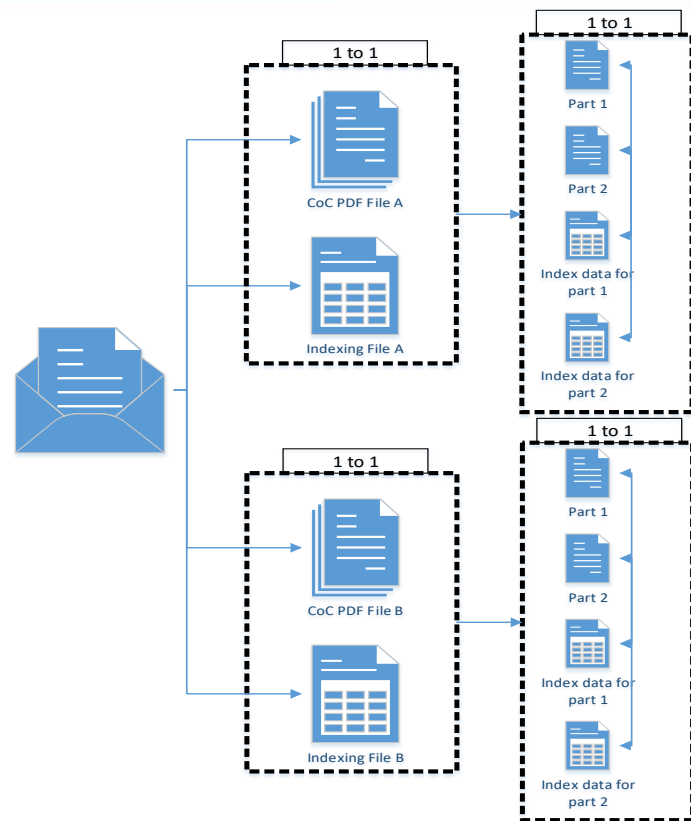
Approach

1. Minimize/eliminate human touch points.
2. Provide C of C Document via email at the time of shipment.
3. Provide C of C indexing data in order to retrieve Document easily.
4. Provide scan enabled shipping labels and part labels to link physical shipments to indexing data.

Document Relationships

- Email contains ≥ 1 CoC Pdf file
- Email contains Indexing file = number of CoC Pdf files
- CoC Pdf file contains ≥ 1 part CoC
- Indexing file contains data sets = number of part CoCs

Email -> CoC pdf	1 to many
CoC pdf -> Indexing file	1 to 1
CoC pdf -> Part CoC	1 to many



What if scenarios... (Same Part Number)

S/N	Scenarios	Shipping Label (Data Matrix)	Index File (.csv) with prefix MSR SFTP	PDF file with prefix MSR SFTP	Receiving by Mouser
1	Delivery Note Single Line – 1 box	[]> <RS> 06 <GS> 4J8956617 <GS> 16K8000602054+0001 <RS> <EOT> HU Delivery + DNLine	MSR_8000602054+0001 1959217 8956617 8000602054 1 LTC2804CGN-1#PBF 584-LTC2804CGN-1#P 1850 200 Delivery + DNLine HU	MSR_8000602054+0001.pdf	
2	Delivery Note Single Line – multiple boxes same date code	[]> <RS> 06 <GS> 4J8956617 <GS> 16K8000602054+0001 <RS> <EOT> []> <RS> 06 <GS> 4J8956618 <GS> 16K8000602054+0001 <RS> <EOT>	MSR_8000602054+0001 1959217 8956617 8000602054 1 LTC2804CGN-1#PBF 584-LTC2804CGN-1#P 1850 100 MSR_8000602054+0001 1959217 8956618 8000602054 1 LTC2804CGN-1#PBF 584-LTC2804CGN-1#P 1850 100	MSR_8000602054+0001.pdf	
3	Delivery Note Single Line – multiple boxes different date code	[]> <RS> 06 <GS> 4J8956617 <GS> 16K8000602054+0001 <RS> <EOT> []> <RS> 06 <GS> 4J8956618 <GS> 16K8000602054+0001 <RS> <EOT> []> <RS> 06 <GS> 4J8956619 <GS> 16K8000602054+0001 <RS> <EOT>	MSR_8000602054+0001 1959217 8956617 8000602054 1 LTC2804CGN-1#PBF 584-LTC2804CGN-1#P 1850 100 MSR_8000602054+0001 1959217 8956618 8000602054 1 LTC2804CGN-1#PBF 584-LTC2804CGN-1#P 1851 50 MSR_8000602054+0001 1959217 8956619 8000602054 1 LTC2804CGN-1#PBF 584-LTC2804CGN-1#P 1852 50	MSR_8000602054+0001.pdf	

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Specimen of Labels, COC and CSV

MSR_8000601992+0001.pdf

MSR_1959217_20191118020258.csv

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MSR_8000601992+0001	1959217	8956057	8000601992	1	LTC4357IDCBTRMPBF	584-C4357IDCBTRMPB	1849	500	EA	1000482783	2	20181120 029-NU736	2

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(1P) MFG PN: LTC4357IDCB/TRMPBF 		Telephone: 817-804-3808 Customer Contact: JESSE LAWRENCE	
(K) CUST PO: 029-NU736 		Package Count 1 of 1	
(P) CUST PROD ID: 584-C4357IDCBTRMPBF 		Ship Via: SF / Spec Instr: Truck Package Weight LBS: 1.125 Package Weight KGS: 0.510 Order Type: TA Payment terms: N30N Incoterms: FCA ADI SOURCE WAREHOUSE	
IF UNDELIVERED RETURN TO: 8956057  LINEAR TECHNOLOGY PTE LTD O/B ANALOG DEVICES INTERNATIONAL U.C. 507/509 YISHUN INDUSTRIAL PARK A 766734 SINGAPORE			
Enclosed products may have been assembled in one of the following: Philippines, Hong Kong, South Korea, Singapore, Indonesia, Malaysia, Taiwan, Ireland, Thailand.			

[>] <RS> 06 <GS> 4J8956057 <GS> 16K8000601992+0001 <RS> <EOT>

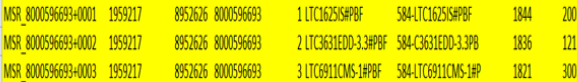
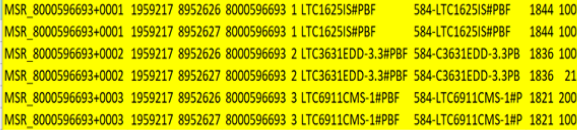
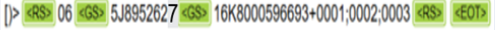
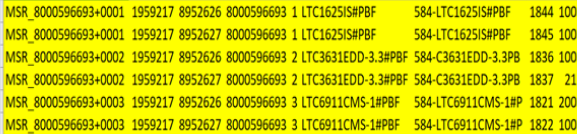
 Certificate of Conformance 																			
Three Technology Way P.O. Box 9106 Norwood, Massachusetts 02062-9106 USA Tel: 781/329-4700 www.analog.com Fax: 781/461-4482																			
Shipping Warehouse: LINEAR TECHNOLOGY PTE LTD O/B Analog Devices International U.C. 507/509 Yishun Industrial Park A 766734	220088 SAP TEST : MOUSER ELECTRONICS SAP TEST : ATTN: INVOICE DATA ENTRY DEPARTMENT SAP TEST : 1000 N MAIN ST MANSFIELD TX 76063 UNITED STATES																		
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Special Notes :	Customer Purchase Order 029-NU736 Date of Order 11/20/2018 Print Date 11/18/2019 Sales Order Number 1000482783 Delivery Note Number 8000601992 Transfer Order Number 4006855707																		
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002	LTC4357IDCBTRMPBF	584-C4357IDCBTRMPBF	Pos Hb V Ideal Diode Cnt	1849	500														
Analog Devices certify that the devices in this shipment have been 100% tested and inspected, and are in compliance with the requirement of the purchase order, applicable government and other specifications to the extent specified and as agreed upon. This does not include samples, unreleased product, or evaluation boards. Military devices, if included in this shipment, are in conformance with the applicable military specifications, MIL-PRF-38535, MIL-PRF-38534, MIL-STD-883 and modifications, if any, as approved by the Analog Devices Technical Review Board (TRB) per QML provisions. Mike McCullar, Analog Devices, Vice President of Quality																			

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What if scenarios... (Different Part Number)

S/N	Scenarios	Shipping Label (Data Matrix)	Index File (.csv) with prefix MSR SFTP	PDF file with prefix MSR SFTP	Receiving by Mouser
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6	Delivery Note Multiple lines – multiple boxes per line different date codes	 		MSR_8000596693+0001.pdf MSR_8000596693+0002.pdf MSR_8000596693+0003.pdf	

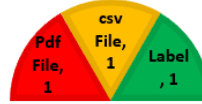
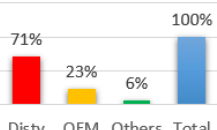
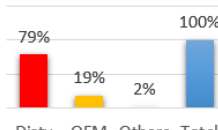
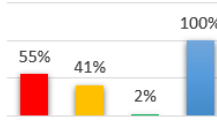
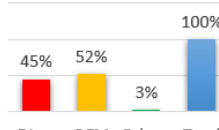
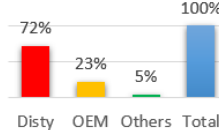
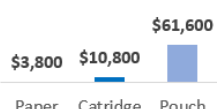
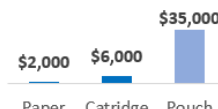
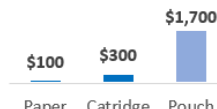
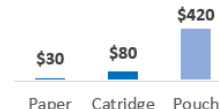
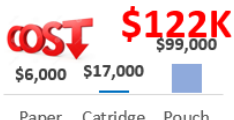
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ROI: Manufacturer End State...

Manufacturer-to-Distributor

Projects ROI (End State)	S1 Warehouse	S2 Warehouse	M Warehouse	CH Warehouse	All Warehouses
Volume (<i>Distributors</i>)	45% ↓	25% ↓	2% ↓	1% ↓	72% ↓
Standardization (3 categories)					
Sustainability (Save Trees)	 Save 70 trees (600,000 paper sheets)	 Save 40 trees (340,000 paper sheets)	 Save 2 trees (26,000 paper sheets)	 Save 1 tree (5,000 paper sheets)	
Operation Efficiency (<i>Distributors</i>)					
Cost Reduction (Annual)					

Distributor

Estimated Labor Savings at Distributor:

\$2.5K to \$5K per Manufacturer

* Additional ROI to be determined...

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