MATERI TRAINING SMART CARD

CARD QUALITY MANAGEMENT (CQM)

Prepared by : HADI & MUHTAROM ASIDIQ (PRODUCTION TRAINING)

PENGERTIAN CQM

CQM (Card Quality Management)adalah bagian dari Proses Persetujuan MasterCard .

Sebuah MasterCard «Sertifikasi» dikeluarkan untuk chip kartu atau vendor perangkat untuk setiap kartu chip atau perangkat yang telah berhasil menyelesaikan semua hal berikut:

1. Pengujian Aplikasi (IAT)
2. Penilaian Kepatuhan dan Pengujian Keamanan (CAST)
3. Kartu Manajemen Mutu (CQM).

PENGERTIAN CQM

1.CQM itu similar / Mirip dengan ISO9001

jika bicara ISO9001 (Dokumentasi) mudahnya adalah apa-apa yang sudah dilakukan saat ini baik secara administrative ataupun diproses pembuatan produk.

Contoh Aplikasi di pekerjaan :

a.Kerja mengikuti WPI/Prosedur yang sudah ada,
b.Memberikan identifikasi pada proses pembuatan produk misalknya lot sheet dll,
c.Proses Spesifik sesuai apa yang diminta untuk produk SmartCard.

PENGERTIAN CQM

2.CQM itu similar / Mirip dengan TS16949

mudahnya misalnya :

a.kerja mengikuti Control Plan atau PCC,

b.melakukan analisa dengan FMEA (engineering),

c.ada control terhadap Critical Point product atau proses misalnya dengan SPC.

3.Adanya physical control

Mudahnya misalnya :

a. Zero Balance

Jumlah material antara Data dan aktual harus sama dan cocok

PENGERTIAN CQM

4.Pembatasan Akses

Pembatasan dan pendataan akses pekerja,hanya orang-orang tertentu dan teregistrasi yang bisa masuk atau melakukan proses produksi.

5.Competency terkait Qualifikasi

Pekerja / operator memiliki Qualifikasi untuk melakukan proses Material

6.Pemenuhan spesifikasi-spesifikasi produk sesuai standard SmartCard product.

Produk yang dibuat dan dihasilkan harus sesuai dengan Spesifikasi yang telah ditetapkan untuk material Smart Card

Contoh Dokumen

1.WPI (Work Point Intruction)

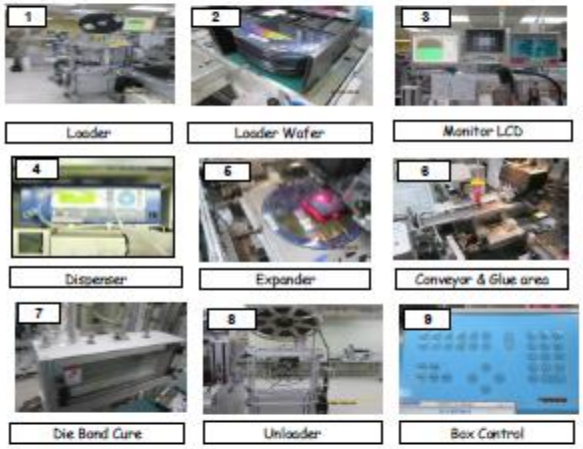
Work Point Instruction (Cover)	[Pekerjaan Berbahaya ?] Ya / Tidak	Persetujuan	Nama	Jabatan/Fungsi	Halaman
		Dibuat	Dodik Bintoro	Prod. Leader	1/24
		Diperiksa	Henry Roneldo	Prod SPV	
		Disetujui	Nugroho SP	Prod Manager	
		Konfirmasi Form	Fitri Liana Sari	Docon Staff	
		Konfirmasi Export Control	Iping Aripin	ECC Komite	
	Nomor Dok. (ID) : G12Ec8-002B Revision Number : 01	Diketahui	Stephany Herry	Sr. QC SPV	
			Molas Sewerto	MR	

[Proses]	[Mesin Yang Digunakan]	[Nama/nomor prosedur/standard yang berhubungan]	[Kesalahan Yang Mungkin Terjadi]
DIE BOND SMART CARD	ESEC-2008	WPI Ganti syringe / G12EC1 - 033B WPI Pengecheckan wafer mapping / WPI Pengecheckan release agent /	1. Wrong orientasi substrate 2. Wrong orientasi wafer 3. Wrong process diffusi wafer
[Judul] PROSEDUR PENGOPERASIAN MESIN DIE BONDING ESEC-2008	[Maker] ESEC ESA CHAM MACHINERY INC.		

[Gambar atau Foto]

Gambaran Umum

Gambaran Umum



Definisi:

Proses penempelan chip wafer pada Lead frame dengan menggunakan Glue

1. LOADER
Tempat memasang dan meletakkan reel material Substrate sebelum proses.

2. LOADER WAFER
Tempat untuk meletakkan magazine cassete & wafer sebelum proses Die Bonding

3. Monitor LCD
Sebagai panduan untuk melakukan Control pergerakan secara manual dari mesin dengan bantuan Mouse.

4. DISPENSER
Alat untuk mengeluarkan Glue dari syringe ,untuk proses pembondingan Glue pada Die pad.

5. EXPANDER
Tempat merenggangkan material yang masih menempel di UV Sheet

6. CONVEYOR & GLUE AREA
Jalur yang dilewati material dari mesin menuju Die Bond Cure & tempat holder syringe.

7. DIE BOND CURE
Tempat pemanasan material untuk mendapatkan kerekatan Glue yang maximal(kuat).

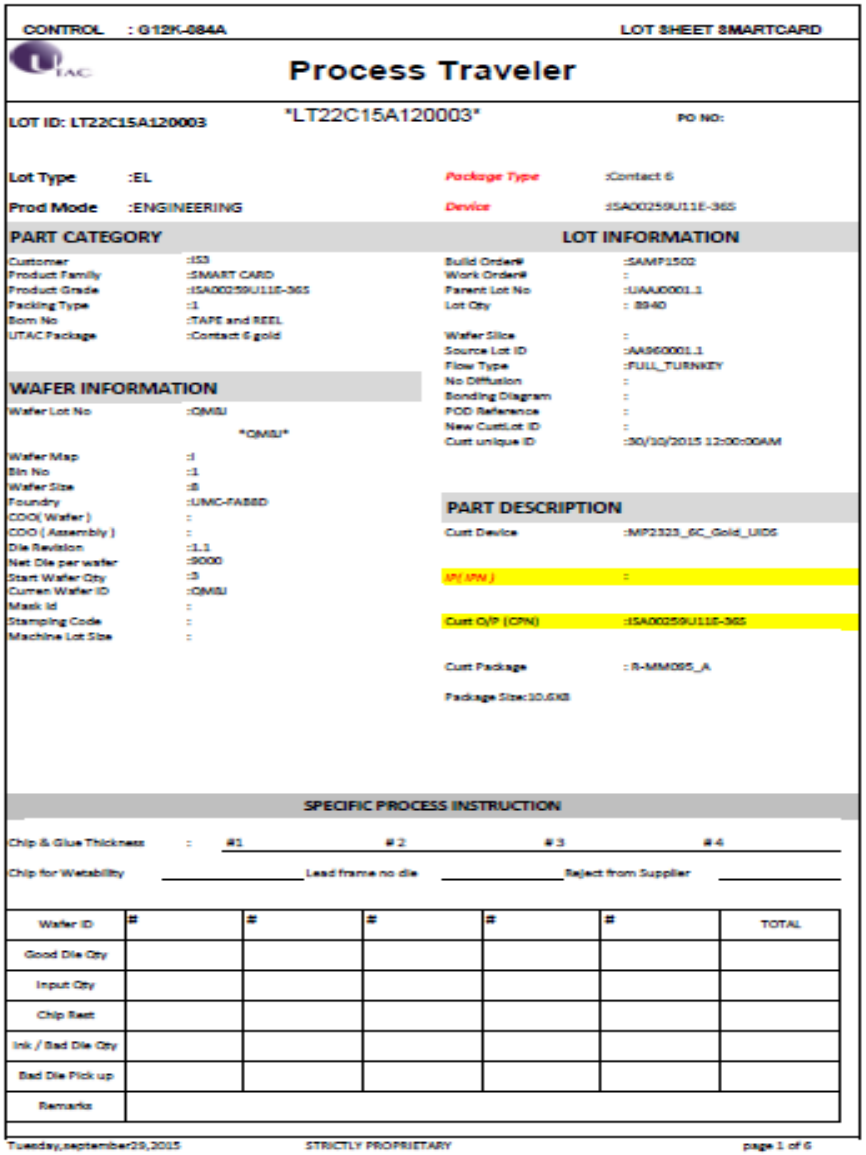
8. UNLOADER
Tempat menggulung material setelah proses ke reel after proses. Cure

9. TOMBOL CONTROL MESIN
Tombol-tombol yang berfungsi sebagai pusat pengontrolan mesin dalam proses manual (second hand).

[Lingkungan Kerja] (e.g. DI water, Power supply or N2 gas etc.)]	[Jig]	[Material]	[Peralatan Pelindung (MKSL)]
Power supply : 220 Volt	1. Reel Aluminium	1. Substrate 2. Glue 3. Protector tape	N/A

Contoh Dokumen

2.Lotsheet



CONTROL : G12K-084A LOT SHEET SMARTCARD

Process Traveler

LOT ID: LT22C15A120003 "LT22C15A120003" PO NO:

Lot Type :EL
Prod Mode :ENGINEERING
Package Type :Contact 6
Device :SA00259U11E-365

PART CATEGORY

Customer :153
Product Family :SMART CARD
Product Grade :SA00259U11E-365
Packing Type :1
Born No :TAPE and REEL
UTAC Package :Contact 6 gold

LOT INFORMATION

Build Order# :SAMP1502
Work Order# :
Parent Lot No :UAAU0001.1
Lot Qty : 8940

Wafer Slice :
Source Lot ID :AA960001.1
Flow Type :FULL_TURNKEY
No Diffusion :
Bonding Diagram :
POD Reference :
New CustLot ID :
Cust unique ID :30/10/2015 12:00:00AM

WAFER INFORMATION

Wafer Lot No :OMSU
OMSU
Wafer Map :1
Bin No :1
Wafer Size :8
Foundry :UMC-FAB8D
COO(Wafer) :
COO (Assembly) :
Die Revision :1.1
Net Die per wafer :9000
Start Wafer Qty :5
Curren Wafer ID :OMSU
Mask Id :
Stamping Code :
Machine Lot Size :

PART DESCRIPTION

Cust Device :MP2323_6C_Gold_UIDS
UTAC (PN) :
Cust C/P (CPN) :SA00259U11E-365
Cust Package : 8-MM095_A
Package Size:10.6X8

SPECIFIC PROCESS INSTRUCTION

Chip & Glue Thickness : #1 #2 #3 #4
Chip for Wetability Lead frame no die Reject from Supplier

Wafer ID	#	#	#	#	#	TOTAL
Good Die Qty						
Input Qty						
Chip Rest						
Ink / Bad Die Qty						
Bad Die Pick up						
Remarks						

Tuesday,september29,2015 STRICTLY PROPRIETARY page 1 of 6

Contoh Dokumen

2.Control Plan

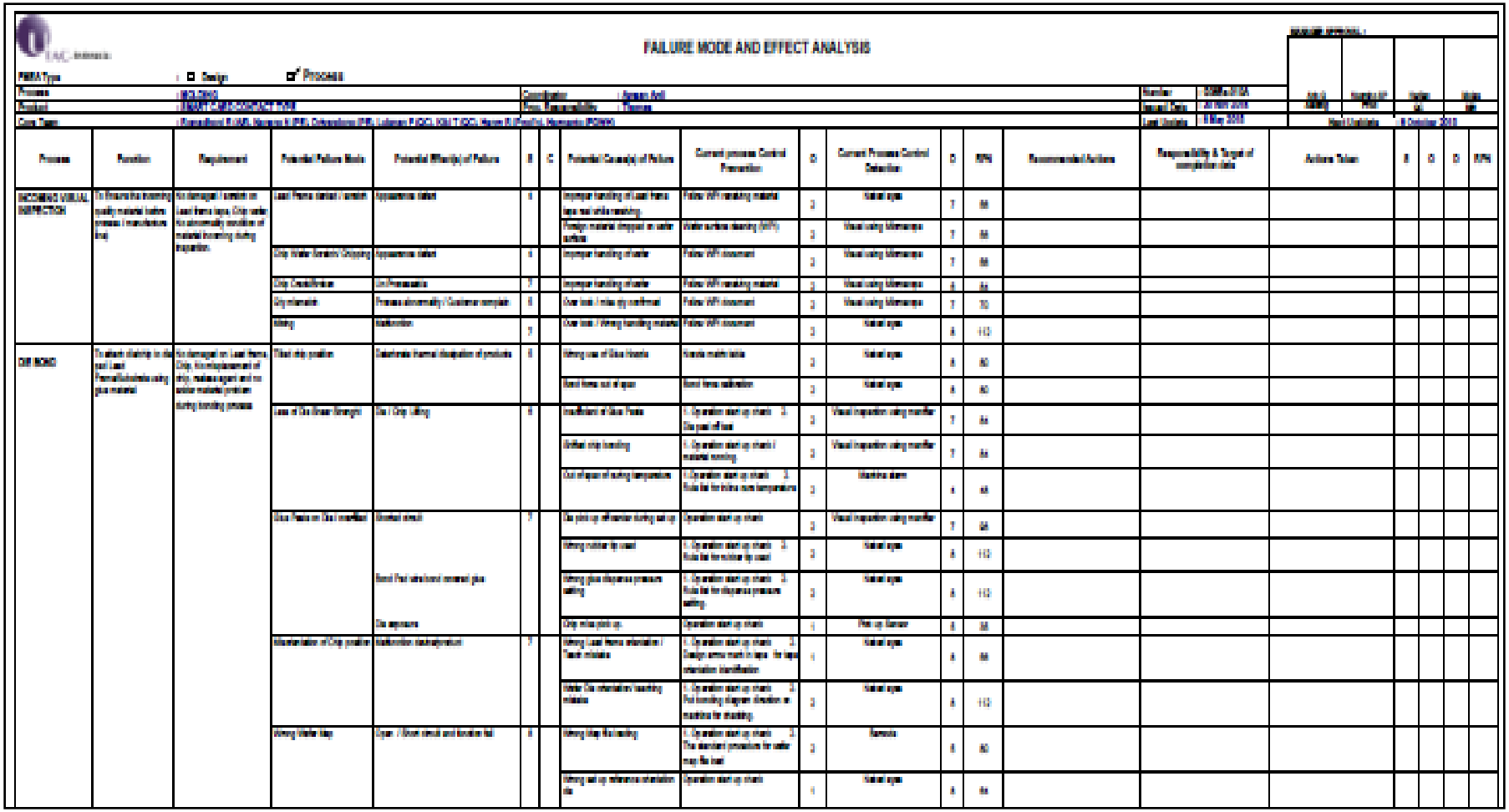
PT UTAC MANUFACTURING SERVICES INDONESIA

CONTROL PLAN

Plant Process Number	Process Name/ Operation Description	Process Flow: Material	Process Flow: Process	Process Flow: NG Segregation	Machine, Device, Jig/Tools for	No	Characteristics: Product	Characteristics: Process	Special Char. Class	Methods: Product Process Specification/Tolerance	Methods: Evaluation/ Measurement Technique	Methods: Sample: Size	Methods: Sample: Freq	Plan	Control Method	Reaction Plan
1	INCOMING VISUAL INSPECTION				Human Work	1	Wafer Packing Appearance			Refer to Incoming Wafer reject Criteria	Naked eyes	All box packing	Every shipment	Material WH	Record Sheet	Follow Abnormality Handling Procedure
						2	Wafer Appearance			Refer to Incoming Wafer reject Criteria	1. Naked eyes 2. Microscope	1. 100% 2. 10 points/Wafer and/or X axis : 2.5mm Y axis : 2.5mm	Every shipment	PC	Checksheet (Standard Incoming)	Follow Abnormality Handling Procedure
						3	Lead frame Tape Packing Appearance			Refer to Incoming Wafer reject Criteria	Naked eyes	All box section	Every shipment	Material WH	Record Sheet	Follow Abnormality Handling Procedure
						4	Top Lead frame Tape Appearance			Refer to Incoming Wafer reject Criteria	Visual Microscope	200pcs/600-300pcs	Every shipment	PC	Checksheet (Standard Incoming)	Follow Abnormality Handling Procedure
						5	Rim Lead frame Tape Appearance			Refer to Incoming Wafer reject Criteria	Visual Microscope	200pcs/600-300pcs	Every shipment	PC	Checksheet (Standard Incoming)	Follow Abnormality Handling Procedure
2	DIE BOND				RBEC-2004 or low outlay system	1	Glue Coverage			>70 % glue welding rate	Pool off tester	3 positi	Every starting new lot	Operator	Lot Sheet (Lotsheet Standard)	Call SM to repair
						2	Die+Glue Thickness			Spec 50-300 µm	Spherical micrometer screw	4 positi	Every starting new lot	Operator	Lot Sheet (Lotsheet Standard)	Call SM to repair
						3	Die Bonding Appearance			Refer to Die Bonding Reject Criteria	Visual Magnifier	8 positi top and bottom side	3x / lot	Operator	Checksheet (MPQ Spec)	Follow DCAP
							Release agent Condition			No stifled position, no over or insufficient width	Jig	4 positi	Every starting new lot	Operator	Checksheet (MPQ Spec)	Follow DCAP
						4		Wafer Mapping Loading		Refer to WPI Pengendalian Wafer Mapping	Naked eyes	All Wafer	Every beginning process	Operator	Checksheet (MPQ Spec)	Re-load the mapping file with the correct one
						5		In Line Cure Temperature Setting		180 ± 10 °C	ReFlow Thermometer	3 points / machine	Every Month or Start up machine	PC	Checksheet (MPQ Spec)	Call SM to re-setting the Temperature
										According to Die Bond Parameter table	Machine Display	3 points / machine	Every starting new lot (SIC Display)	Operator	Checksheet (MPQ Spec)	Call SM to re-setting the Temperature
						6		Die Bond Parameter Setting		According to Die Bond Parameter table	Machine Display	Each machine	1x / shift or after conversion set up.	Operator	Checksheet (MPQ Spec)	Call SM to re-setting the Parameter
						7		Lead frame Rail Cleanliness		No remained foreign material	Naked eyes	Each machine	Every starting new lot	Operator	Checksheet (MPQ Spec)	Clean rail
						8		Glue Nozzle and Rubber tip Cleanliness		No clogged, no bent and No remained foreign material	Naked eyes	All Nozzle and Rubber tip installed	Every starting new lot	Operator	Checksheet (MPQ Spec)	Clean nozzle and rubber
						9		Bond Force		According to Die Bond Parameter table	Dial gauge Check	1 reading/ machine	1 time / day	PC	Checksheet (MPQ Spec)	Call SM to re-setting the Parameter
3	WIRE BOND				RWEC-3AM RWEC-3AMP	1	Wire Loop Height		*	Loop Height 1 (Spec = 80 µm Loop Height 2 (Spec = 60 µm	Measurement Microscope	6 wires from 2 positi	Every starting new lot / after conversion set up	Operator	Lot Sheet (Lotsheet Standard)	Call SM to repair
						2	Wire Pull Strength Test		*	Refer to Wire Bond reject Criteria Spec : 8.0 gF	Wire Pull tester	6 wires from 2 positi	Every starting new lot / after conversion set up	Operator	Lot Sheet (Lotsheet Standard)	Call SM to repair
						3	Ball Shear Strength Test		*	Refer to Wire Bond reject Criteria Spec : 25 gF	Ball Shear tester	6 wires from 2 positi	Every starting new lot / after conversion set up	Operator	Lot Sheet (Lotsheet Standard)	Call SM to repair
						4	Wire Bond Appearance			Refer to Wire Bond Reject Criteria	Monitor	20 positi top and bottom side	Every starting new lot / after conversion set up	Operator	Checksheet (MPQ Spec)	Follow DCAP
						5		Bond Heater Temperature		180±10	Machine Display	3 points / Each machine	Every Lot (SIC Display)	Operator	Checksheet (MPQ Spec)	Call SM to re-setting the Temperature
										180±10	ReFlow Thermometer	3 points / Each machine	1 time / day	PC	Checksheet (MPQ Spec)	Call SM to re-setting the Temperature
						6		Wire Bond Parameter Setting		According to Wire Bond Parameter table	Machine Display	Each machine	1x / shift or after conversion set up.	Operator	Checksheet (MPQ Spec)	Call SM to re-setting the Parameter
						7		Downholder Cleanliness		No dirty and No remained foreign material	Naked eyes	Each machine	Every starting new lot / after conversion set up	Operator	Checksheet (MPQ Spec)	Clean Down holder
						8		Capillary Limit counter		400K	Machine Display	Each machine	1x / shift or after capillary changing	Operator	Checksheet (MPQ Spec)	Change Capillary

Contoh Dokumen

2.FMEA (Failure Mode and Effect Analysis)



FAILURE MODE AND EFFECT ANALYSIS

FMEA Type : ☐ Design ☑ Process

Process																								
Product																								
Core Team																								
Process	Function	Requirement	Potential Failure Mode	Potential Effect(s) of Failure	S	C	Potential Cause(s) of Failure	Current process Control Prevention	O	Current Process Control Detection	D	RPN	Recommended Actions	Responsibility & Target of completion date	Actions Taken	S	O	D	RPN
INCOMING VISUAL INSPECTION	To Ensure the incoming quality material before process / manufacture line	No damaged / scratch on Lead frame tape, Chip wafer no abnormality condition of material incoming during inspection.	Lead Frame contact / scratch	Appearance reject	4		Improper handling of Lead frame tape reel while receiving	Follow WPI receiving material	3	Visual eyes	7	84							
							Foreign material dropped on wafer surface	Wafer surface cleaning (WPI)	3	Visual using Microscope	7	84							
			Chip Wafer Scratch / Chipping	Appearance reject	4		Improper handling of wafer	Follow WPI movement	3	Visual using Microscope	7	84							
			Chip Contamination	Un Performance	7		Improper handling of wafer	Follow WPI receiving material	3	Visual using Microscope	4	84							
			Dirty materials	Process abnormality / Customer complain	5		Over look / miss qty confirmed	Follow WPI movement	3	Visual using Microscope	7	70							
			Mixing	Misfunction	7		Over look / Wrong handling material	Follow WPI movement	3	Visual eyes	8	112							
DIE BOND	To attach chip/die in the part Lead Frame/Substrate using glue material	No damaged on Lead frame, Chip, No misplacement of chip, moisture agent and no solder material problem during bonding process	Tilted chip position	Deteriorate thermal dissipation of products	8		Wrong use of Glue Volume	Volume matrix table	3	Visual eyes	8	80							
							Bond force out of spec	Bond force calibration	3	Visual eyes	8	80							
			Loss of Die Shear Strength	Die / Chip Lifting	8		Insufficient of Glue Press	1. Operation start up check 2. Die pull off test	3	Visual inspection using monitor	7	84							
							Drifted chip bonding	1. Operation start up check / material moving	3	Visual inspection using monitor	7	84							
							Out of spec of curing temperature	1. Operation start up check 2. Route list for indoor room temperature	3	Machine alarm	4	48							
			Glue Flows on Die / overflow	Shorted circuit Bond Pad wire bond / material glue Die exposure	7		Die pick up / transfer during set up	Operation start up check	3	Visual inspection using monitor	7	84							
							Wrong nozzle tip used	1. Operation start up check 2. Route list for nozzle tip used	3	Visual eyes	8	112							
							Wrong glue dispense pressure setting	1. Operation start up check 2. Route list for dispense pressure setting	3	Visual eyes	8	112							
							Chip miss pick up	Operation start up check	1	Pick up Sensor	8	56							
			Misorientation of Chip position	Misfunction / misshipment	7		Wrong Lead frame orientation / Tweak mistake	1. Operation start up check 2. Design arrow mark in tape for tape orientation identification	1	Visual eyes	8	56							
							Wafer Die orientation / teaching mistake	1. Operation start up check 2. Pick bonding diagram direction on machine for checking	3	Visual eyes	8	112							
			Wrong Wafer map	Open / Short circuit and location fail	8		Wrong chip file loading	1. Operation start up check 2. The standard procedure for wafer map file load	3	Sensors	8	80							
							Wrong set up reference orientation die	Operation start up check	1	Visual eyes	8	56							