

PM 工作流程

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PM's work process

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EVT/DVT/PVT

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Pilot Run

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EVT&DVT&PVT定义 Definition

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EVT: Engineering Verification Test 的简称，意为 工程验证测试，产品开发初期的设计验证。设计者对设计出来的样品做初期的测试验证，包括一般功能测试和安规测试，一般由**RD**对样品各项功能进行全面验证，因是样品，问题可能较多，测试可能会做几次。

At this stage, a number of product samples are prepared and subjected to the most critical tests from the relevant standards and customer requirements set out in the Design Brief. Producing and testing a number of samples at this stage helps give RD more information about product performance, the manufacturing processes and steps likely to be required. Test data is reviewed to ensure that the required performance is achieved. Successful completion of the EVT stage enables RD to release the product to manufacture in agreement with the customer.

EVT&DVT&PVT定义 Definition

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DVT: Design Verification Test的简称，意为设计验证测试，是硬件生产中不可缺少的一个检测环节，包括模具测试、电子性能、外观测试等等。解决样品在**EVT**阶段的问题后进行，对所有信号的电平和时序进行测试，完成安规测试，此时产品基本定型。

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DVT focuses on perfecting tools and techniques for a consistent run and ensures products meet cosmetic and environmental requirements using both mass production tools and parts. With a build of 50-200, units are put through rigorous tests such as burning, dropping from certain heights, submerging in water as well as extensive battery testing. This step is also crucial for products needing regulatory certifications such as FCC or UL. This is the final step before making units that are suitable for sale. At the end of DVT, you should be highly confident that any issues causing unacceptable yields have been corrected.

EVT&DVT&PVT定义 Definition

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PVT:Process Verification Test的简称，意为小批量过程验证测试，验证新机型的各功能实现状况并进行稳定性及可靠性测试，此产品为出货完成品

PVT (production validation testing) is the first official production run, often 5-10% of the first run, where teams verify that the product can be made at the volumes needed for the target cost. Ideally, these units will be suitable to sell and will become part of volume ramp. It's important to note that in PVT, your QA (quality assurance) and QC (quality control) procedures are developed which will allow the CM to check for any failures throughout the manufacturing process. As products come off the line, it's the last opportunity for adjustments to tools to be made. Once performance and quality have been verified and signed off, it's onto mass production!

1. Build up team list

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(一) DVT/PVT試產流程 Process

1.TW PM提出試產需求,開案,根據信息建立Team List (例如)

1. Build up team list

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WVDB-145 KS Team Member			
Title	Name	E-mail	Ext
PM	Jenny_Liu 劉娜	jenny_liu@ks.gemteks.com	32814
PE	Allen_Zhang 張祥	allen_zhang@ks.gemteks.com	32426
PC	Bing_Shen 沈兵	bing_shen@ks.gemteks.com	32312
PC(MP)	Andy_Sun 孫祥	Andy_sun@ks.gemteks.com	32362
MC	Alary_Luo 羅艷	alary_luo@ks.gemteks.com	32367
SMT-ME	Kun_Fang 方坤	kun_fang@ks.gemteks.com	32623
DIP-ME	Sea_liu 劉海	sea_liu@ks.gemteks.com	32681
TEST-IE	Tingting_Tang 唐亭亭	tingting_tang@ks.gemteks.com	32441
TEST-ME	Bo_Wan 萬波	bo_wan@ks.gemteks.com	32667
CE(包材)	Fanny_Jia 賈巧芬	fanny_jia@ks.gemteks.com	32967
CE(機構)	Simon_Li 李能榮	simon_li@ks.gemteks.com	32066
PQE	Jatin_Fung 馮鵬飛	jatin_fung@ks.gemteks.com	32512
TQE	Xiaohuan_Wang 王曉歡	xiaohuan_wang@ks.gemteks.com	32512
IE (線體規劃)	Yuting_Zhang 張瑜婷	yuting_zhang@ks.gemteks.com	32658

2. Received the P/R application

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2.TW PM 開立DVT試產單 (例:PRTR00008881),KS PM收試產單之後根據單號在PLM系統中查詢相關信息 (PVT試產單依同樣的方式查詢)

2. After received the P/R application, check related info in PLM
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The screenshot shows a web-based search interface for a PLM system. The 'Select Search Criteria' section includes fields for Name, Number (with a red box around 'PRTR00008881'), Last Modified, and Created On. Below this, the 'Search Results (1 of 1 total object)' section displays a table with the following data:

Format Icon	Number	Content	Name	Actions	Version	State	Last Modified
	PRTR00008881	Production Pilot Run	WMTK-193ACN DVT F ...	Actions	1.1	Completed	2019-01-06

(0 objects selected)

2-1 Example

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*DVT試產PRTR00008881相關查詢資料如下：

*For example: Number/ Part number/ on line date/ Qty/ 97L, 98L P/N

Context	Production Pilot Run
Name	WMTK-193ACN DVT Production Pilot Run
Number	PRTR00008881 試產單號
Location	/Production Pilot Run / F
Revision	1
Team	DMS_Pilot_Run_GMK_Team
Life Cycle Template	DMS_Production_Pilot_Run_LC
State	Initial - in Process - Completed - Reject - Obsolete - Canceled
Created On	2018-12-27 14:09 CST
Created By	Isabelle Lu-陸岳群
Last Modified	2019-01-06 16:31 CST
Modified By	Isabelle Lu-陸岳群
Pilot Run Number	PRTR00008881
Part Number	98C-111-0161R 料號
Request Date	2018-12-27 14:09 CST
Applicant	Isabelle Lu-陸岳群 (+611) 421
Model Name	WMTK-193ACN
PCB Name(勿標示版本)	WMTK-193ACN
PCB Version	V00
PCB Provider	資材提供
Project for Sales Division	BG1_SD2
97 階備料	由資材備
Expected On-Line Date	2019-01-14 00:00 CST 上線時間
Sample Request form number	201812-0034
Samples Request Quantity	470
Pilot Run Quantity	50
Total Quantity	520 數量
Distribution For 120,509 Warehouse	
Pilot Run Sample Distribution :	
...1. Sample Others Quantity	20
...2. Sample PE Quantity	5
...3. Sample RD Test Quantity	5
...4. Sample Regulatory Quantity	5
...5. Sample Reliability Quantity	5
...6. Sample Customer Quantity	5
...7. Sample QA Quantity	5
MAC Provider (MAC來源)	Customer
MAC Numbering Type (跳號原則)	連續
MAC Numbering Description (MAC跳號說明：若跳號原則選"其他"時此欄必填，否則請保持空白)	
MAC Tail Code (尾碼限制)	無限制
VID_PID	None
VIDPID Number	N/A
Main Board :	
97 Part Number	97C-110-0218R
98 Part Number	98C-111-0161R 料號
99 Part Number	

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3. Routing set up / 4. Material checking

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3. 根據試產單信息,發郵件給IE提供試產Routing,并通知PC開立試產工單

3. Routing set up, PM provide production flow Doc. number In PLM to IE--- Owner IE
And inform PC to issue WO ---- Owner PC

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4. 依試產單信息,建立表格,并確認SCM是否已經OK,發郵件給物料(MC)確認料況,需要在工線日前齊料(如料未齊,需要更改上線時間)例如:

4. Material: checking what date will receive all materials---- Owner MC

*如試產工單開立后,有發DCR變更bom,需要通知MC變更工單中的用料,避免生產時與文件不符

*After received pilot run application, if there's change in BOM, need to receive DCR and inform MC to change material in issued WO, to avoid discrepancy.

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DCR- Design Change Request

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* DCR查詢方式如下：(例如:DCR-00032059)

在PLM系統中輸入DCR單號,然後點開,點擊”General”,選擇”Attributes and Content”



點擊”Excel表格”,表格內容就是DCR的變更資料,

*Checking DCR in PLM (If DCR is not done IN TIME to change BOM, then there will be a Manufacturing Notice issued by TW PM)

(如)

Select Search Criteria

Name: Number:

Last Modified: From: To:

Created On: From: To:

Save

Search Results (1 of 1 total object)

Format Icon	Number	Context	Name	Actions
	DCR-00032059	0-Design Change Reql	VRTQ	點開

Design Change Request - DCR-00032059

Name: WRTQ-336ACN BOM update

Complexity:

Description: Add PCB PN into BOM

Created By: [kyle_du-杜志輝](#)

[More Attributes](#)

General | Related Objects | History | Collaboration

Attributes and Content | Notebook

選擇

Attachments (1 object)

Label or File Name	formatIcon	Format	Attachment D
CR Change List_20180726.xls		Excel	點擊

5. Preview meeting

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5.召開試產 前會議,通知相關負責人員參加,討論試產生產狀況,并匯總成會議記錄,并作保存,發郵件告知會議討論結果,例如:



Document

5. Preview meeting---Owner/ PM

*依據料號在WebISO系統中查詢Gember文件,提供單號給SMT ME,ME根據單號在PLM系統中下載文件開立鋼板,并在試產上線前完成 (如沒有單號,請RD提供相關文件資料)

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WebISO文件管理系統

姓名:邵成發工號:14442531 群組:USER 廠別:正鵬

WebISO > PLM工程文件

文件編號 料號 機種名稱 文件分類

發行日期

Search Export

文件編號	文件分類	料號	機種名稱	文件名稱	文件版本	發行日期	工程人員	DCN/ECN	PIVersion	PCB名稱
SMT00003941	工程資料	null	WMTK-193ACN	WMTK-193ACN V00 ESX-X14-8300R SMT	T01	2016-09-12	孫慧蘭			WMTK-193ACN V00
SMT00004075	工程資料	null	WMTK-193ACN	WMTK-193ACN V00 19X-X14-8100R SMT	V2	2017-02-14	孫慧蘭			WMTK-193ACN V00

Previous Next 第 2 共 2 頁 共 22 筆

6. Set up production line

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6. 通知PE架站, TW PE提供設備清單,請設備部門準備設備,并確認 在上線前完成

例如：

6. Inform PE to set up the line, normally is one week before 97L online date

-----Owner PE/TE

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*Document and fixture/equip etc.: checking

機種移轉清單查檢表 bảng kiểm tra danh sách model chuyển sang

*生產前確認相關文件部份: (如PLM系統中未DCC,需要TW發聯絡單作業)

97階：Gerber文件+零件位置圖

98階：韌體版本通知書+機構組力圖+QC Check Item

99階：SOP (包裝)

*試產前需要與TW PM要Sample板,以便產線做治具 (SMT+DIP+Test)

例如：1 Panl PCB光板+2PCS PCBA裸板+2PCS組裝OK,功能OK的半成品

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Reference

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例如：97階在PLM系統中用單號查詢Gerber文件和零件位置圖

Search only in contexts in my organization

Search For: Part, Problem Report, Workgroup Manager CAD Document, Change Notice, Change Request, Document [Customize...](#)

Select Search Criteria

Name: Number:

Last Modified: ☐ -- Select -- ☐ From: To:
yyyy-mm-dd yyyy-mm-dd

Created On: ☐ -- Select -- ☐ From: To:
yyyy-mm-dd yyyy-mm-dd

[Save This Search](#) [Clear](#)

Search Results (1 of 1 total objects)

File	Edit	Format Icon	Number	Context	Name	Actions	Version	State	Last Modified
<input type="checkbox"/>	<input type="checkbox"/>		SMT00004075	ECAD SMT Preliminar	WMTK-193ACN V00 1	Actions	2.2	DCC Released	201

(0 objects selected)

Attachments (4 total objects)

<input type="checkbox"/>	Label or File Name	formatIcon	Format	Attachment Description	Last Modified
<input type="checkbox"/>	SMT-WMTK-193ACN_V00-1.docx		Microsoft Word 2007	* SMT Preliminary Works Manual	2017-01-18 10:20 CST
<input type="checkbox"/>	SMT-WMTK-193ACN_V00_0214.7z		7zip	* SMT Preliminary Works Data	2017-02-14 11:10 CST
<input type="checkbox"/>	SMT-WMTK-193ACN_V00_0214.pdf		PDF	* SMT Preliminary Works Data PDF	2017-02-14 11:11 CST
<input type="checkbox"/>	SMT00004075_AttsReviewHistory.csv		Microsoft Excel	Document Attributes and Review History	2017-02-15 08:08 CST

Reference

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例如：98階在PLM系統中用98料號查詢軟體版本通知書+QC check Item機構組力圖
機種組力圖

select Search Criteria

Name: *98C-111-0161R* Number:

Last Modified: -- Select -- From: yyyy-mm-dd To: yyyy-mm-dd

Created On: -- Select -- From: yyyy-mm-dd To: yyyy-mm-dd

Save This Search Clear

Search Results (6 of 6 total objects)

File	Edit	Icon	Name	Start	Star
			DCC-00003822	Design Change Request	Preserved
			ACAD000002410	MCAD Products	DCC Released
			ET-MC-000002410	ET-MC-193ACN ACAD	DCC Released
			ET-MC-000002410	ET-MC-193ACN ACAD	Temp Released
			QWIK-001007-0111	Production SOP	DCC Released
			DCC-000031475	Design Change Request	Preserved

Primary Content (1 object)

Label or File Name	formatIcon	Format	Attachment Description	Last Modified
98C-111-0161R_assembly_V1.dwg		DWG		2018-12-28 17

Attachments (2 total objects)

Label or File Name	formatIcon	Format	Attachment Description
98C-111-0161R ASSEMBLY_V1.pdf		PDF	
ACAD000002410_AttsReviewHistory.csv		Microsoft Excel	Document Attributes and Review History

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例如：韌體版本通知書+QC check Item

Search Results (6 of 6 total objects)

File Edit

	Format Icon	Number	Context	Name	Actions	Version	State
<input type="checkbox"/>		DCR-00033822	0-Design Change Request	Change Description 98...	Actions		Resolved
<input type="checkbox"/>		ETOM00006511	1-PartBOM Request Form	WMTK-193ACN-98C-1	Actions	1.1	DCC Released
<input type="checkbox"/>		ACAD00000240	2-CAD Products	WMTK-193ACN-ACAD	Actions	1.1	DCC Released
<input type="checkbox"/>		98FW00003235	3-Final Firmware	WMTK-193ACN-Final	Actions	T01.6	Temp Released
<input type="checkbox"/>		QWK0901-07-01119	4-Production SOP	98C-111-0161R PACKI	Actions	1.2	DCC Released

Primary Content (1 object)

Label or File Name	formatIcon	Format	Attachment Description	Last Modified
98C-111-0161R_T01.docx		Microsoft Word 2007	表單主檔 韌體版本通知書	2019-01-25 20:0

Attachments (7 total objects)

	Label or File Name	formatIcon	Format	Attachment Description	L
<input type="checkbox"/>	LB-058_98C-111-0161R.zip		Zip	Final Firmware Attachment	20
<input type="checkbox"/>	PL-022_98C-111-0161R.zip		Zip	Final Firmware Attachment	20
<input type="checkbox"/>	FN-190_98C-111-0161R_V2.8.zip		Zip	Wire/Final/FQC test ini	20
<input type="checkbox"/>	98C-111-0161R QC Check Item_20190121.pdf		PDF	QC check list QC Check Item	20
<input type="checkbox"/>	update_20180326.img		Unknown	預燒FW	20
<input type="checkbox"/>	pd-1000slx-hdd_init20181217.zip		Zip	check HDD 容量或格式化工具	20
<input type="checkbox"/>	update_20180326.zip		Zip	FW	20

Reference

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例如：99階在PLM系統中用99料號查詢SOP,點擊SOP,打開之後就是作業內容

Search For: Part, Problem Report, Workgroup Manager CAD Document, Change Notice, Change Request, Document [Customize...](#)

Select Search Criteria

Name: Number:

Last Modified: From: To:
Created On: From: To:

[Save This Search](#)

Search Results (3 of 3 total objects)

File	Edit	Format icon	Number	Context	Name	Actions	Version
<input type="checkbox"/>	<input type="checkbox"/>		ETOM00006512	1-Part BOM Request Form	WMTK-193ACN 99C-1	Actions	1.1
<input type="checkbox"/>	<input type="checkbox"/>		99C-111-0140R-P3-V1.0.pdf	Production SOP	99C-111-0140R WMTK	Actions	1.4
<input type="checkbox"/>	<input type="checkbox"/>		99C-111-0140R-P4-V1.0.pdf	Production SOP	99C-111-0140R WMTK	Actions	1.1

Attachments (8 total objects)

<input type="checkbox"/>	Label or File Name	formatIcon	Format	Attachment Description	Last Modified	Mod
<input type="checkbox"/>	99C-111-0140R-P3-V1.0.pdf		PDF		2019-02-18 09:32 CST	lisa
<input type="checkbox"/>	99C-111-0140R-P1-V1.0.pdf		PDF		2019-02-18 09:32 CST	lisa
<input type="checkbox"/>	99C-111-0140R-P2-V1.0.pdf		PDF		2019-02-18 09:32 CST	lisa
<input type="checkbox"/>	99C-111-0140R-P4-V1.0.pdf		PDF		2019-02-18 09:32 CST	lisa
<input type="checkbox"/>	99C-111-0140R.rar		RAR File		2019-02-20 08:29 CST	lisa
<input type="checkbox"/>	99C-111-0140R-G1-V1.0.pdf		PDF		2019-02-18 09:32 CST	lisa
<input type="checkbox"/>	99C-111-0140R-P0-V1.pdf		PDF		2019-02-20 08:30 CST	lisa
<input type="checkbox"/>	99SP00003328 AttsReviewHistory.csv		Microsoft Excel	Document Attributes and Review History	2019-02-25 12:22 CST	wca

7. Production 8. Tracking 9. Report 10. Review

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7.發郵件給**IE**(線體規劃人員),確認此機種的生產線別,以便**PC**安排排程

7. Inform IE to confirm which line is available, so PC can arrange production schedule

8.料況**OK**后,安排上線生產,追蹤試產進度,處理試產異常問題

8. Once material get ready , the pilot run can be started. And PM do the production tracking, assist to handle abnormal during production

9.試產完成后,讓**PE**提供試產報告,并給出試產結果**Pass**或者**Fail**

9. After pilot run, PE need to provide pilot report, define pass/fail.

10.根據試產報告,召開產后會議,并匯總成會議記錄,發郵件告知,并追蹤試產問題點的處理進度

10. Once PM has PE's report, hold the review meeting and summarize to review meeting minutes and track the open items

11. Upload preview/ review meeting minutes

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11.試產單簽核到時,需要在PLM系統中上傳產前會議記錄和產後會議記錄 (同樣的操作方式)例如 :

11. Upload preview/ review meeting minutes in PLM

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Search within my work:

Assignments (20 of 20 total objects)

Assignment Name	Actions	Subject of Assignment	Number	State
Pilot Run Status Review Meeting Minutes	Actions ▼	WMTK-193ACN PVT GMK Pilot Run Status	PRTS00008891	Review Meeting
Packing SOP PM Approve	Actions ▼	WMTK-305ACN Packaging SOP 99C-404-0584R	99SP00003348	Under Review

Name **Value**

Review Meeting :

...Review Meeting Date 2019-03-11 yyyy-mm-dd

...Yield Rate 97.47%

...Pilot Run Pass or Fail Pass ▼

...Pilot Run Fail Explanation

Attachments (4 total objects)

Label or File Name	format/icon	Format	Attachment Description
History summary_WMTK-193ACN_PRTR00008891.xlsx		Microsoft Excel 2007	* History Summary
WMTK-193 PRTR00008891 PVT open Meeting .doc		Microsoft Word	* Pre-View Meeting Minutes
WMTK-193ACN_98C-111-0161R_PVT_PRTR00008891 Report .docx		Microsoft Word 2007	* PE Pilot Run Report or Issue Re
WMTK-193 PRTR00008881(DVT)&PRTR00008891(PVT) Close Meeting .doc		Microsoft Word	* Review Meeting Minutes

ent:

* Review Meeting Minutes : [WMTK-193 PRTR00008881\(DVT\)&PRTR00008891\(PVT\) Close Meeting .doc](#)

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12. PVT

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12. PVT試產依據**DVT**同樣的作業流程作業,

PVT試產單開立后,通知**PC**開立試產工單, **MC**(物控) 確認料況,爭取在上線日之前齊料,安排上線,追蹤試產進度,試產完成之後,**PE**會將結果體現在試產報告中,召開產後會議 (一般**DVT&PVT**試產問題點產後會議一起討論), 匯總成會議記錄(同16點)

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注：**PVT**試產板子一般也會挪用**DVT Pass** 的板子作**PVT**包裝試產,

不一定會安排重新打件

12. PVT has the same process as DVT