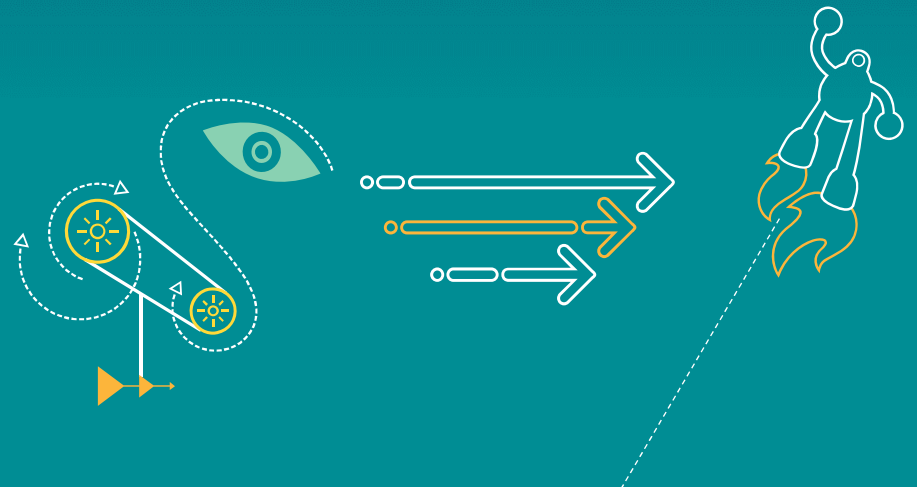

高通硬件基带技术期刊2016-2-4



Qualcomm Technologies, Inc.

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Qualcomm Technologies, Inc. 5775 Morehouse Drive San Diego, CA 92121 U.S.A.
高通技术股份有限公司，美国加利福尼亚州圣地亚哥市莫豪斯路 5775 号，邮编 92121

Revision History

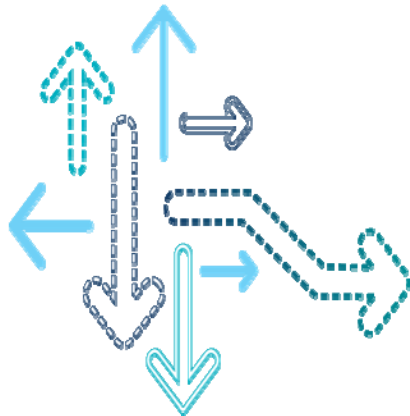
Revision	Date	Description
A	Feb 2016	Initial release

Note: There is no Rev. I, O, Q, S, X, or Z per Mil. standards.

Contents

- Baseband
- audio
- PMIC and SMB

Baseband



MSM8996 RF unused pin handle method update

- 适用平台：MSM8996
- Only four VDD_A2 pin change, no change for other signals

Terminating Unused RF Interface Signals (1 of 2)

I/F	MSM device specification name ¹	Unused pin state
TXDAC0	TX_DAC0_IP/M	Ground
	TX_DAC0_QP/M	Ground
	TX_DAC0_VREF	Ground
	VDD_A2 (pin AE47)	VREG_L15A_1P8
TXDAC1	TX_DAC1_IP/M	Ground
	TX_DAC1_QP/M	Ground
	TX_DAC1_VREF	Ground
	VDD_A2 (pin AB48)	VREG_L15A_1P8
ETDAC0	ET_DAC0_M/P	Ground
	ET_DAC0_VREF	Ground
	VDD_A2 (pin AC47)	VREG_L15A_1P8
ETDAC1	ET_DAC1_M/P	Ground
	ET_DAC1_VREF	Ground
	VDD_A2 (pin V46)	VREG_L15A_1P8

1. The names are from the *MSM8996 Device Specification* (80-NT204-1).

MSM8953 不使用DSI1时连接

- 适用平台：MSM8953
- 推荐：参考80-P2472-5B

Handling Unused Pins (2 of 6)

I/F	Signal	Unused pin state	Comments
MIPI DSI1	MIPI_DSI1_CLK_N/P	Float	
	MIPI_DSI1_LANE0_N/P	Float	
	MIPI_DSI1_LANE1_N/P	Float	
	MIPI_DSI1_LANE2_N/P	Float	
	MIPI_DSI1_LANE3_N/P	Float	
	MIPI_DSI1_REXT	Float	
	VDDA_MIPI_DSI1(VDD_DSI_CSI)	VSS (AE11 Pin number only)	
	VDDA_MIPI_DSI1_PLL (VDD_DSI_HV_PLL)	VSS (AE9 Pin number only)	
	VCCA_MIPI_DSI1_PLL (VDD_DSI_LV_PLL)	VSS (AF10 Pin number only)	

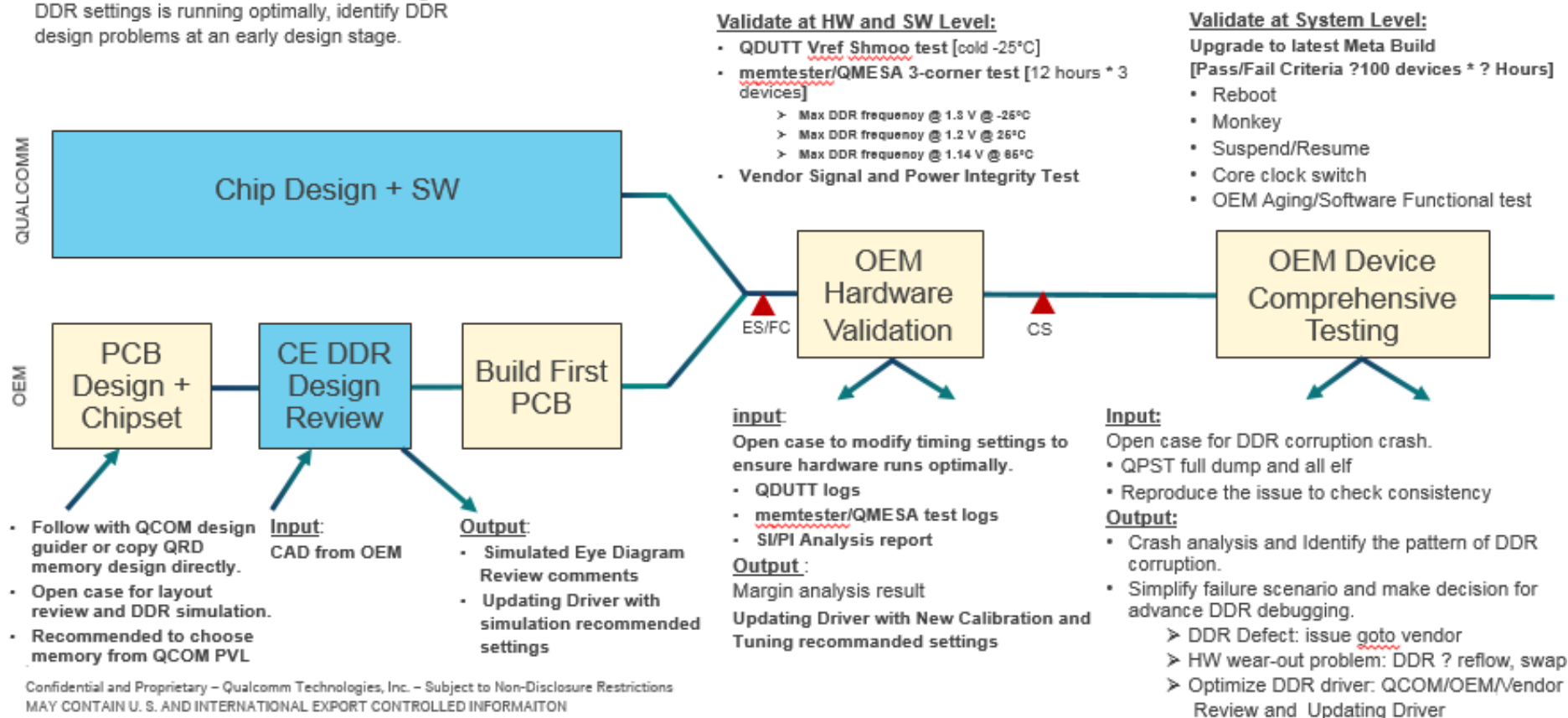
- 该改动将会更新到下一个版本参考原理图

DDR 开发流程

- 适用平台：MSM8909/MSM8952/MSM8937/MSM8953

Proposed OEM DDR Workflow

Run tools to check that the OEM board using the DDR settings is running optimally, identify DDR design problems at an early design stage.



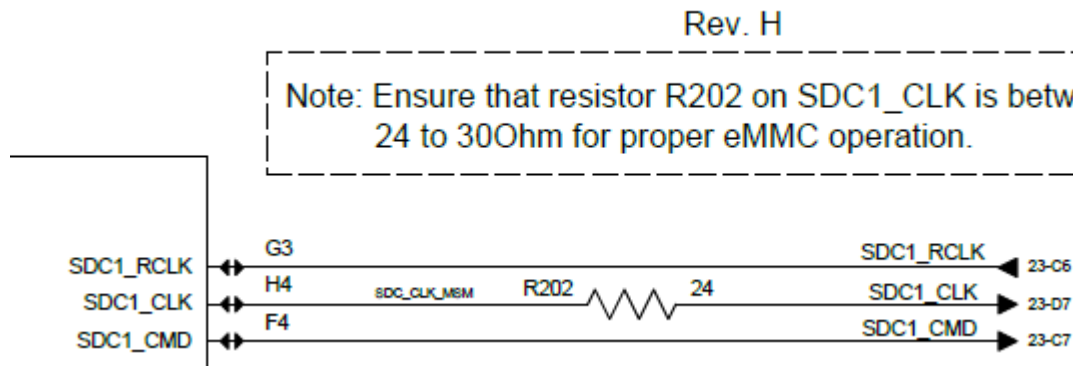
MSM8953 指纹识别SPI

- 适用平台：MSM8953
- 问题描述：请尽量参考高通最新参考设计(rev.B)。高通默认代码使用BLSP7 (GPIO135-GPIO138) 做为指纹识别SPI，BSLP6 (GPIO20-23) 预留给ADSP的SPI Sensors。
- 如果想使用其他端口请提软件case进行评估

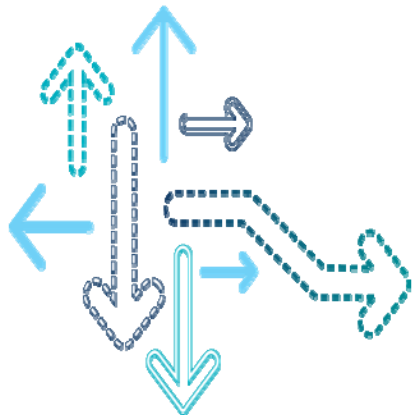
GPIO_135	BA45	FP_SPI_CLK	37-C3
GPIO_136	BC47	FP_SPI_CS_N	37-C3
GPIO_137	BB46	FP_SPI_MOSI	37-C3
GPIO_138	AW41	FP_SPI_MISO	37-C3
GPIO_139	AV40	USB_SS_SWITCH_SEL	34-P0

MSM8952 SDC1_CLK串联电阻

- 适用平台：MSM8952
- 问题描述：请尽量参考高通最新参考设计，QCOM eMMC研发部分建议改成24 ohm-30 ohm。QRD之前的设计是0 ohm，后面也会做相应的更新。
- 如果客户的硬件已经定板，实际测试没有问题，也可以不改。



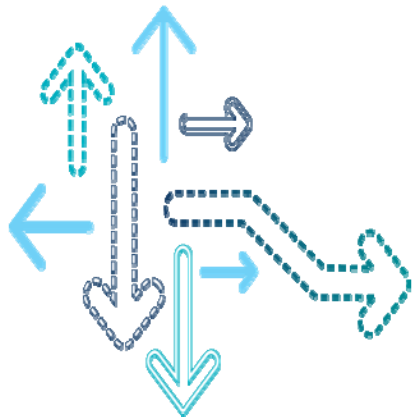
Audio



PM8956/PM8952/PM8937/PM8953

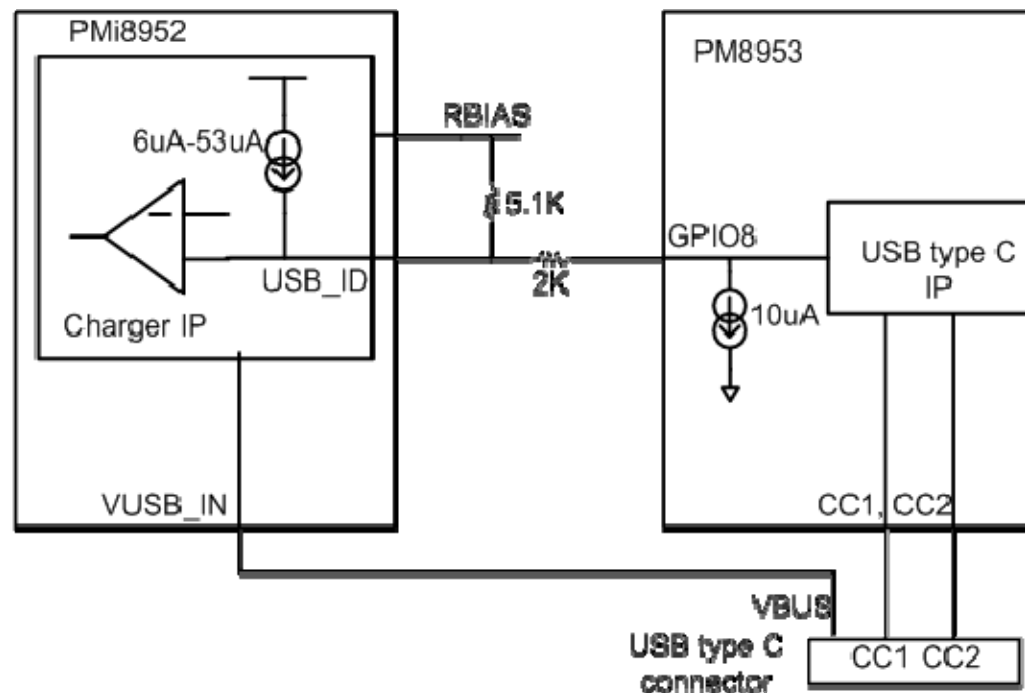
- 适用平台：MSM8956/MSM8952/MSM8973/MSM8953
- 对比PM8916，PM8956/PM8952/PM8937/PM8953 mic1增加了差分走线，但是某些版本的寄存器仍然和PM8916一样，在这种情况下，如果客户把上行算法bypass后会发现有TDMA noise。
- 将寄存器F145改成0x02 来enable mic1的差分走线，F143改成0x09 将mic1_M连接到TX1_GND上面，这种情况下可以有效的降低noise,次方法主要用来debug，如果确认问题，请联系高通软件正式release patch。
- 我们有专门针对与外部micbias和内部micbias的patch。

PMIC



PM8953: Type C SDP/DCP/HVDCP 检测问题

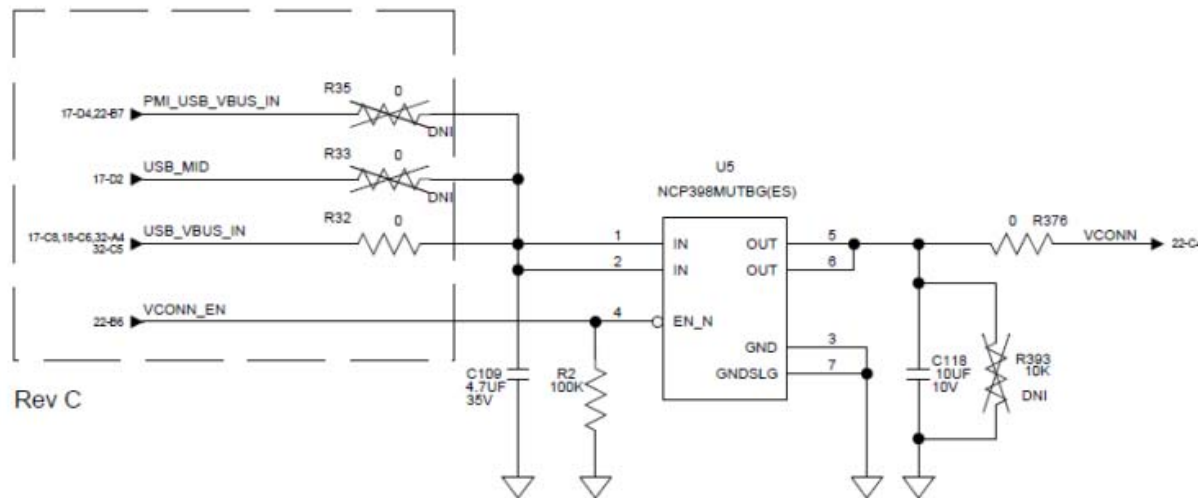
- 适用平台：PM8953
- 问题描述：由于pmi8952 usb_id 里边的RID检测开启时，由于GPIO8 内部默认10uA下拉，会导致USB_ID 上电压<1V，导致后续SDP/DCP/HVDCP检测出问题。从而ICL不能被设置成500mA（SDP）或者HVDCP不能被检测到。
- 推荐：usb_id外部加入5.1K上拉到RBIAS，并在GPIO8与usb_id间串联2k电阻



- 该改动将会更新到下一个版本参考原理图

PM8953: Type C VCONN 软启动电流限制不准确

- 适用平台：PM8953
- 问题描述：由于PM8953内部软启动限流模块不准，会导致在插入有源电缆（电缆内电容 $>4.7\mu\text{F}$ ）时,会导致触发VBUS ocp事件
- 推荐 1) 使用Onsemi OVIC NCP398，适用于 $10\mu\text{F}$ 以下的有源电缆



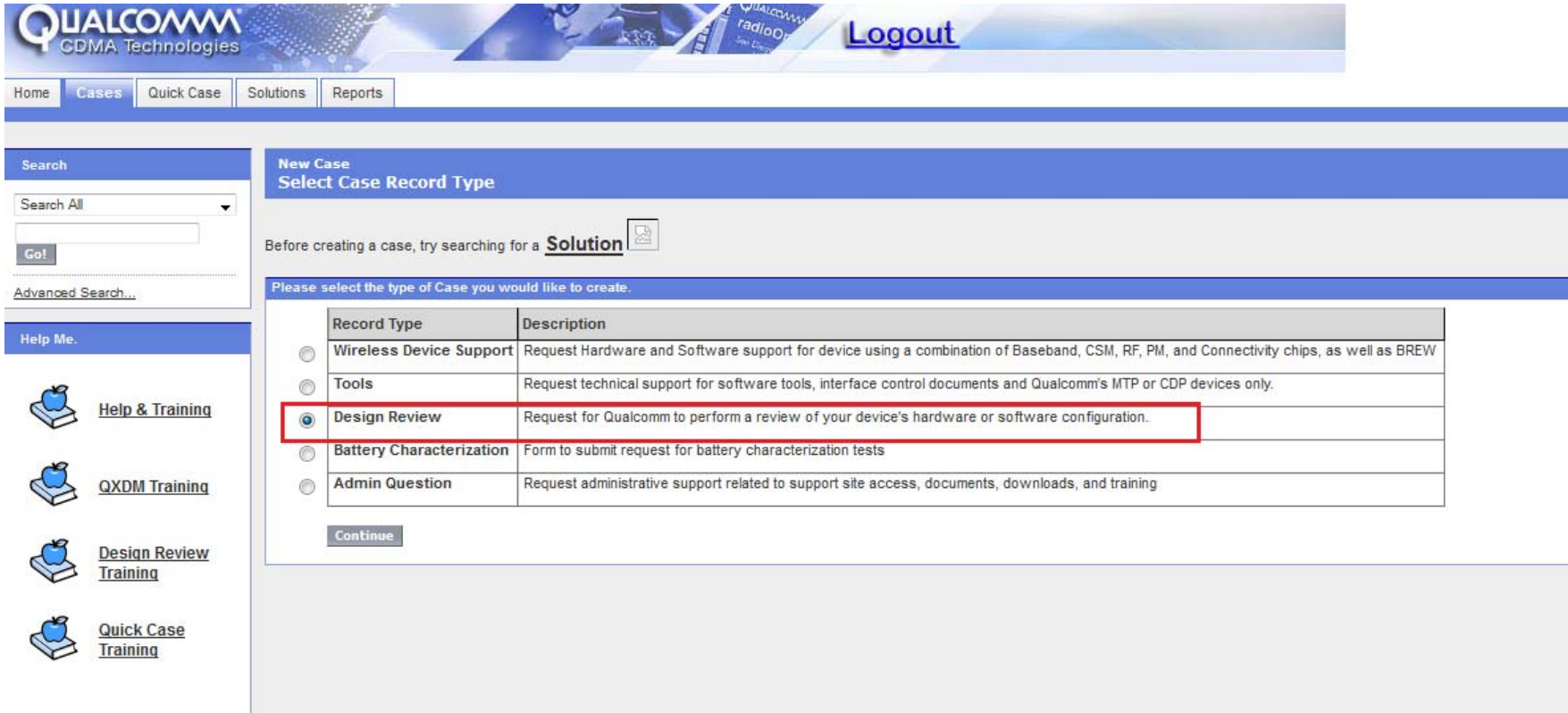
Rev C Note: Mount R33 and DNI R32 if Willsemi part WS3208D56-8/TR is used.
Note: Use Willsemi part WS3208D56-8/TR with no modification, If the active cable capacitance is less than $4.7\mu\text{F}$

- 2) 使用WS3208D56-8/TR,适用于 $4.7\mu\text{F}$ 以下的有源电缆

该改动将会更新到下一个版本参考原理图

How to open PDN case-step1

- Select **design review** as case type



The screenshot shows the Qualcomm CDMA Technologies website. The top navigation bar includes links for Home, Cases, Quick Case, Solutions, and Reports. A 'Logout' link is also present. On the left, there is a search bar and a 'Help Me.' section with links to Help & Training, QXDM Training, Design Review Training, and Quick Case Training. The main content area is titled 'New Case' and 'Select Case Record Type'. It includes a提示 to search for a solution before creating a case. Below this, a table lists the available case record types, with 'Design Review' highlighted by a red box.





Search

Search All


Go!

Advanced Search...

Help Me.

-  [Help & Training](#)
-  [QXDM Training](#)
-  [Design Review Training](#)
-  [Quick Case Training](#)

New Case
Select Case Record Type

Before creating a case, try searching for a [Solution](#) 

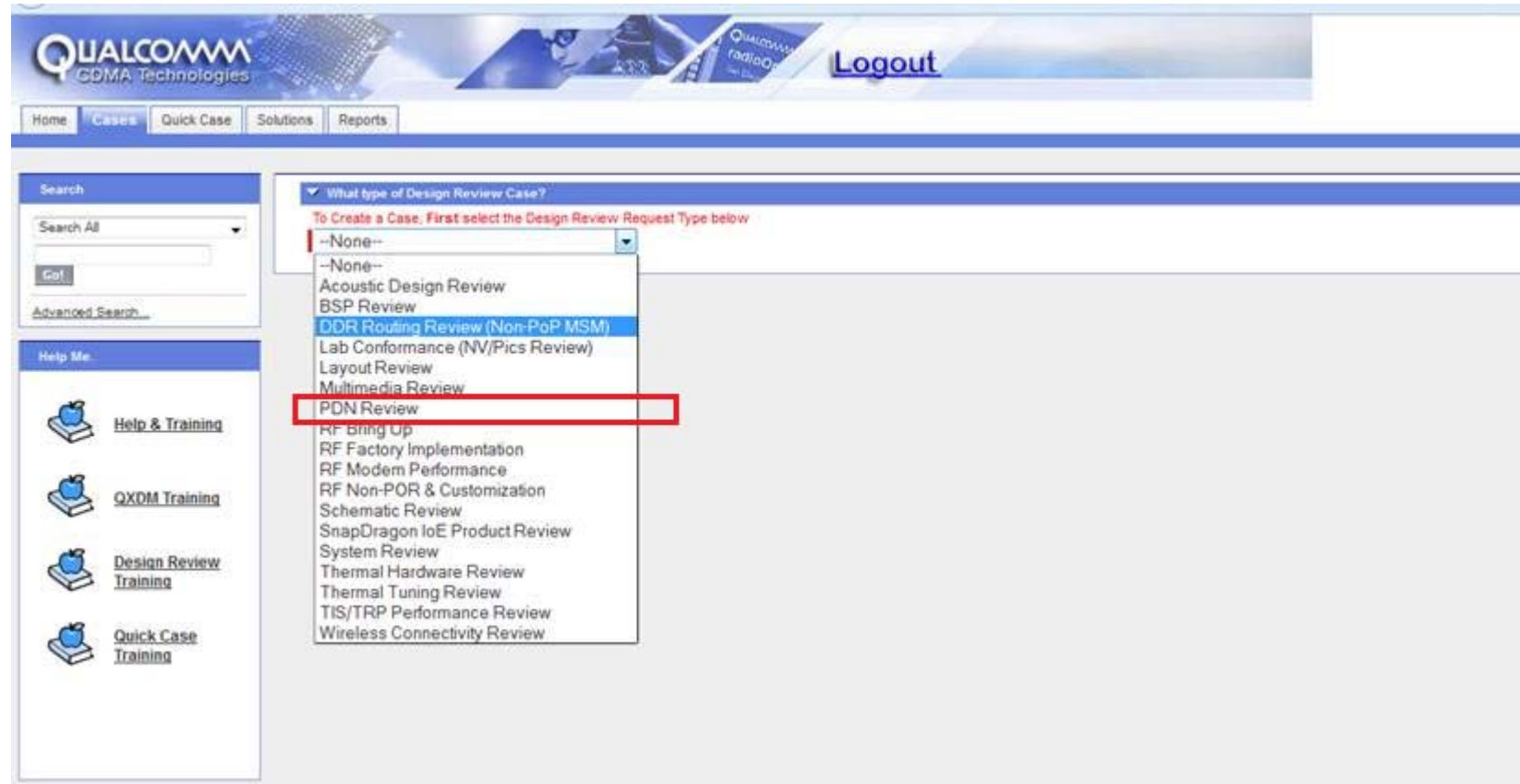
Please select the type of Case you would like to create.

Record Type	Description
<input type="radio"/> Wireless Device Support	Request Hardware and Software support for device using a combination of Baseband, CSM, RF, PM, and Connectivity chips, as well as BREW
<input type="radio"/> Tools	Request technical support for software tools, interface control documents and Qualcomm's MTP or CDP devices only.
<input checked="" type="radio"/> Design Review	Request for Qualcomm to perform a review of your device's hardware or software configuration.
<input type="radio"/> Battery Characterization	Form to submit request for battery characterization tests
<input type="radio"/> Admin Question	Request administrative support related to support site access, documents, downloads, and training

[Continue](#)

How to open PDN case-step2

- Select **PDN review** as design review type



How to open PDN case-step3

- Please DO select **customer project** before summit case.

QUALCOMM CDMA Technologies Logout

Home Cases Quick Case Solutions Reports

Search
Search All
Go! Advanced Search...

Help Me:
Help & Training
QXDM Training
Design Review Training
Quick Case Training

Useful Links:
Log a Case for customer support
Manage My Case Teams
View Solutions
View Combined Solution and Document Search
Install Flash

Case New Case

Case Edit Submit Cancel

Case Information Required Information

Case Number
Contact
Account Qiku Internet Network Scientific (Shenzhen) Co., Ltd
Status Open
Expected Tapeout Date 11/20/2015
Priority 4 - Low
Important to me

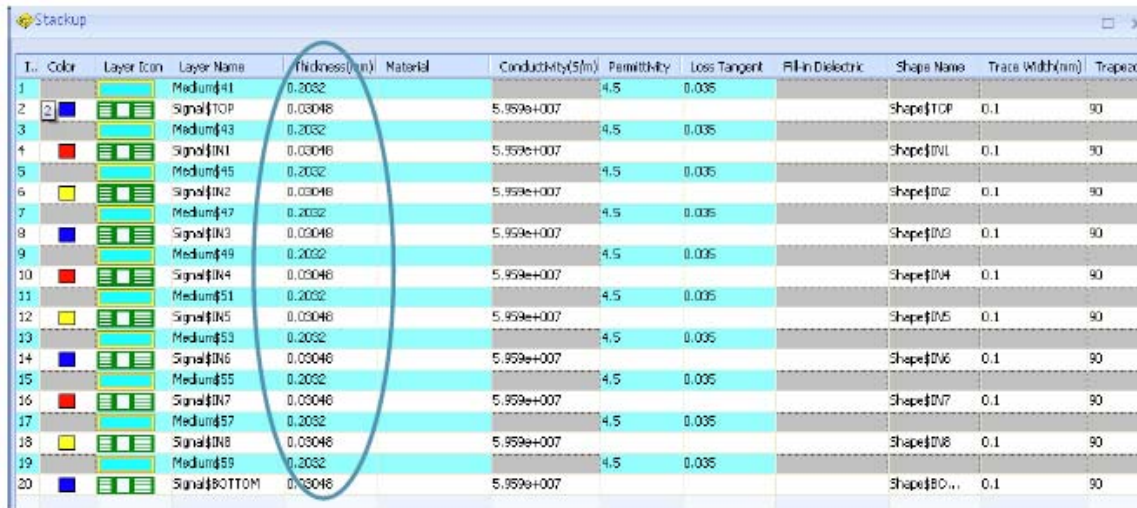
TAM Comments
External TAM Comments

Customer Project or Hardware Configuration
Select a Customer Project, or Chipset with appropriate RF and PM values, or a CSM. An entry in at least one of these fields is required to save this case.

Customer Project --None--
Chipset --None--
PM IC Available Chosen
Other
Other PM IC
RF IC Available Chosen
Other
Reconfigurable Impedance Matching IC Available Chosen
Other
RF (Ant Switch) Available Chosen
Other
Power AMP Integrated Front-End IC Available Chosen
PA Power Management IC Available Chosen
Other RF IC
802.11ad (60GHz) IC/Module --None--

How to open PDN case-step4

- Upload files for simulation.
 1. Schematic.
 2. Stack up file like below, thickness information must be provided.

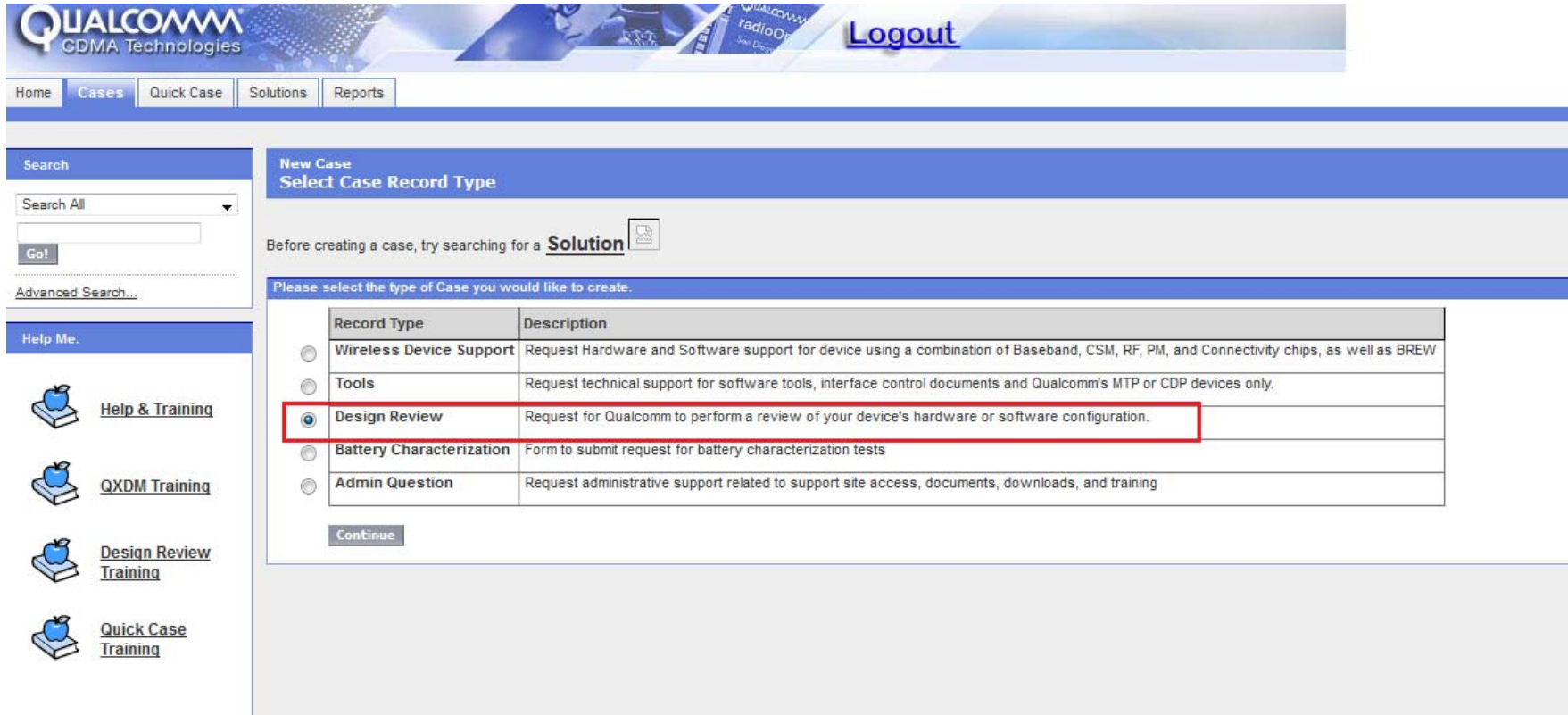


T.	Color	Layer Icon	Layer Name	Thickness (mm)	Material	Conductivity (S/m)	Permittivity	Loss Tangent	Fill-in Dielectric	Shape Name	Trace Width (mm)	Trapezoid
1			Medium#41	0.2032								
2	Blue		Signal#TOP	0.03048		5.959e+007	4.5	0.035		Shape#TOP	0.1	90
3			Medium#43	0.2032			4.5	0.035				
4	Red		Signal#IN1	0.03048		5.959e+007				Shape#IN1	0.1	90
5			Medium#45	0.2032			4.5	0.035				
6	Yellow		Signal#IN2	0.03048		5.959e+007				Shape#IN2	0.1	90
7			Medium#47	0.2032			4.5	0.035				
8	Blue		Signal#IN3	0.03048		5.959e+007				Shape#IN3	0.1	90
9			Medium#49	0.2032			4.5	0.035				
10	Red		Signal#IN4	0.03048		5.959e+007				Shape#IN4	0.1	90
11			Medium#51	0.2032			4.5	0.035				
12	Yellow		Signal#IN5	0.03048		5.959e+007				Shape#IN5	0.1	90
13			Medium#53	0.2032			4.5	0.035				
14	Blue		Signal#IN6	0.03048		5.959e+007				Shape#IN6	0.1	90
15			Medium#55	0.2032			4.5	0.035				
16	Red		Signal#IN7	0.03048		5.959e+007				Shape#IN7	0.1	90
17			Medium#57	0.2032			4.5	0.035				
18	Yellow		Signal#IN8	0.03048		5.959e+007				Shape#IN8	0.1	90
19			Medium#59	0.2032			4.5	0.035				
20	Blue		Signal#BOTTOM	0.03048		5.959e+007				Shape#BO...	0.1	90

3. Layout file
 - Cadence Allegro → .brd
 - OrCAD → .dsn
 - Mentor Graphics –PADS → .pcb and .asc
 - Mentor Graphics → Board Station → pcb folder
 - ODB++ file –Make sure that the signal names are preserved when exported from CAD tools.

How to open DDR simulation case-step1

- Select **design review** as case type



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Search

Search All

Go!

Advanced Search...

Help Me.

-  [Help & Training](#)
-  [QXDM Training](#)
-  [Design Review Training](#)
-  [Quick Case Training](#)

New Case
Select Case Record Type

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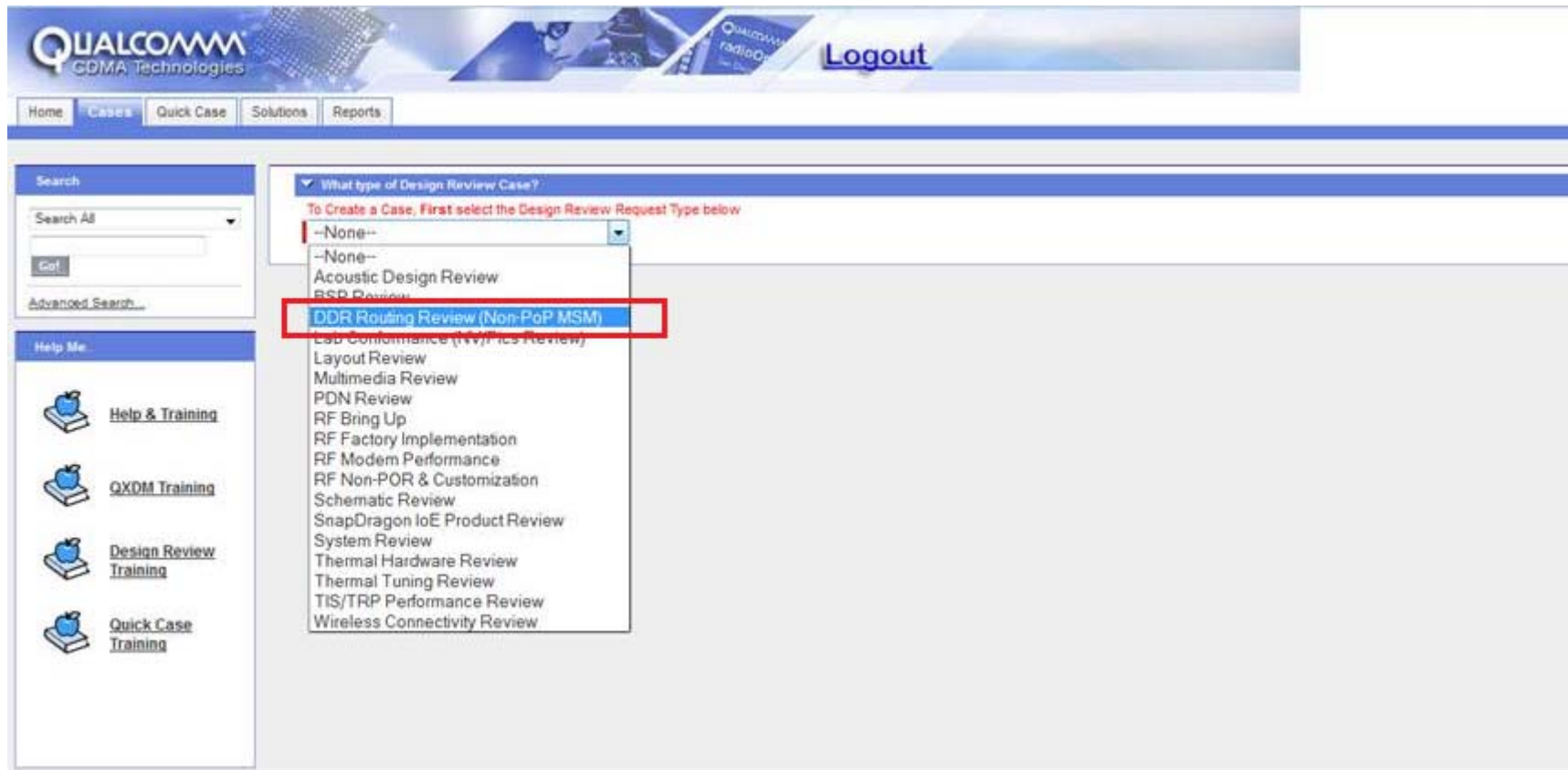
Please select the type of Case you would like to create.

Record Type	Description
<input type="radio"/> Wireless Device Support	Request Hardware and Software support for device using a combination of Baseband, CSM, RF, PM, and Connectivity chips, as well as BREW
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<input checked="" type="radio"/> Design Review	Request for Qualcomm to perform a review of your device's hardware or software configuration.
<input type="radio"/> Battery Characterization	Form to submit request for battery characterization tests
<input type="radio"/> Admin Question	Request administrative support related to support site access, documents, downloads, and training

[Continue](#)

How to open DDR simulation case-step2

- Select **DDR Routing Review(Non-PoP MSM)** as design review type



How to open DDR simulation case-step3

- Please DO select **customer project** before submit case.

QUALCOMM CDMA Technologies

Logout

Home Cases Quick Case Solutions Reports

Search

Search All

Go!

Advanced Search...

Help Me.

Help & Training

QXDM Training

Design Review Training

Quick Case Training

Useful Links.

Log a Case for customer support

Manage My Case Teams

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View Combined Solution and Document Search

Install Flash

Case New Case

Case Edit

Submit Cancel

Case Information

Case Number

Contact

Account Qiku Internet Network Scientific (Shenzhen) Co., Ltd

Status Open

Expected Tapeout Date 11/20/2015

Priority 4 - Low

Important to me

TAM Comments

External TAM Comments

Customer Project or Hardware Configuration

Select a Customer Project, or Chipset with appropriate RF and PM values, or a CSM. An entry in at least one of these fields is required to save this case.

Customer Project --None--

Chipset --None--

PM IC Available Chosen

Other PM IC Available Chosen

RF IC Available Chosen

Reconfigurable Impedance Matching IC Available Chosen

RF (Ant Switch) Available Chosen

Power AMP Integrated Front-End IC Available Chosen

PA Power Management IC Available Chosen

Other RF IC

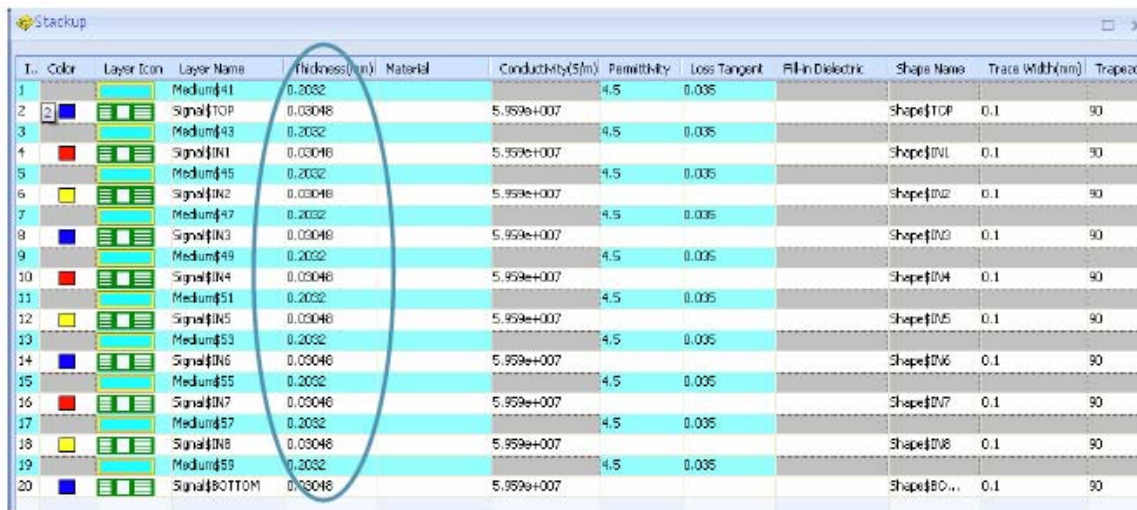
Link to Customer Project

Application Processor Speed

802.11ad (60GHz) IC/Module --None--

How to open DDR simulation case-step4

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T.	Color	Layer Icon	Layer Name	Thickness (mm)	Material	Conductivity (S/m)	Permittivity	Loss Tangent	Fill-in Dielectric	Shape Name	Trace Width (mm)	Trapezoid
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4	Red		Signal#IN1	0.03048		5.959e+007				Shape#IN1	0.1	90
5			Medium#45	0.2032			4.5	0.035				
6	Yellow		Signal#IN2	0.03048		5.959e+007				Shape#IN2	0.1	90
7			Medium#47	0.2032			4.5	0.035				
8	Blue		Signal#IN3	0.03048		5.959e+007				Shape#IN3	0.1	90
9			Medium#49	0.2032			4.5	0.035				
10	Red		Signal#IN4	0.03048		5.959e+007				Shape#IN4	0.1	90
11			Medium#51	0.2032			4.5	0.035				
12	Yellow		Signal#IN5	0.03048		5.959e+007				Shape#IN5	0.1	90
13			Medium#53	0.2032			4.5	0.035				
14	Blue		Signal#IN6	0.03048		5.959e+007				Shape#IN6	0.1	90
15			Medium#55	0.2032			4.5	0.035				
16	Red		Signal#IN7	0.03048		5.959e+007				Shape#IN7	0.1	90
17			Medium#57	0.2032			4.5	0.035				
18	Yellow		Signal#IN8	0.03048		5.959e+007				Shape#IN8	0.1	90
19			Medium#59	0.2032			4.5	0.035				
20	Blue		Signal#BOTTOM	0.03048		5.959e+007				Shape#BO...	0.1	90

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