



Compte Rendu de la réunion du Comité d'Entreprise du 28 septembre 2015

La composition de l'assemblée était la suivante :

Représentants de la Direction	
<b>Yolande De Busschop, Présidente</b>	<b>Sophie Baquié, Administration Ressources Humaines</b>
<b>Carolina De Landsheer, Directrice des Ressources Humaines EMEA</b>	
Représentants du Personnel	
Titulaires	Suppléants
<b>Thierry Sutto, Trésorier (excusé)</b>	<b>Aurore Weiss, Trésorier adjointe</b>
<b>Carl Van Baelen</b>	<b>Fabien Foulon (excusé)</b>
<b>Olivier Martinez, Secrétaire adjoint</b>	<b>Philippe Andre</b>
<b>Pascal Tournier, Secrétaire</b>	<b>Julie Athanassiadis</b>
<b>Thierry Viard</b>	
Délégués Syndicaux	
<b>Olivier Martinez, CFE-CGC</b>	<b>Myriam Combes, CFDT</b>

Ordre du jour :

**1- approbation du compte rendu du 2 septembre 2015**

**2 -apprentissage dans l'entreprise – information & consultation**

**3-conditions de mise en œuvre des contrats et des périodes de  
professionnalisation, mise en œuvre du droit individuel à la formation -  
information & consultation**

**4-conditions d'accueil en stage des jeunes en première formation technologique  
ou professionnelle – information**

**5-conditions d'accueil et les conditions de mise en œuvre de la formation reçue  
par les élèves pour les périodes obligatoires en entreprise prévues dans les  
programmes des diplômes de l'enseignement technologique ou professionnel –  
information & consultation**

**6-présentation des résultats du Mérite – information**



**7-évolution générale des commandes et de la situation financière, exécution des programmes de production – information**



## **Approbation du compte rendu du 2 septembre 2015**

Le compte rendu est approuvé à l'unanimité.

### **Apprentissage dans l'entreprise – information & consultation**

La direction ne présente pas de support. Il n'y a pas eu d'apprenti ces dernières années. Le dernier était Yann Vaquette.

L'arrivée d'un apprenti était prévue en octobre 2015. Dans la BU concernée, il a finalement été décidé de ne pas embaucher cette personne. Des restrictions de budget ont conduit à un arbitrage qui s'est traduit par la décision de ne pas valider cette embauche.

Le CE mentionne qu'il est vraiment dommage d'avoir enclenché le processus de recrutement jusqu'à la désignation d'une personne. Cette dernière a prévu toute la logistique pour entamer sa formation à ON Semiconductor Toulouse avant de voir son embauche non confirmée. Cela est dommage pour la personne mais également pour l'image de la société vis-à-vis du monde extérieur.

Le CE souhaite que cet exemple serve à modifier le processus d'embauche pour ce type de salarié et à ne pas attendre le mois de septembre pour passer à la phase finale alors que la demande n'a pas encore été approuvée.

La direction mentionne qu'une demande d'embauche est questionnée au bout de 120 jours si elle n'est pas attribuée. Dans ce cas-là, il faudrait donc que la demande soit approuvée assez tôt.

Le CE reporte son avis.

### **Conditions de mise en œuvre des contrats et des périodes de professionnalisation, mise en œuvre du droit individuel à la formation - information & consultation**

Il n'y a pas de contrat de professionnalisation.

Le droit individuel à la formation est remplacé par le compte personnel de formation. Tout ce qui est relatif à la formation sera présenté à la fin de l'année.

L'avis CE sera rendu à l'issue de la présentation sur le droit individuel à la formation



### **Conditions d'accueil en stage des jeunes en première formation technologique ou professionnelle – information**

Le document « Statut des stagiaires\_stages 2015 » est présenté par Sophie Baquie. Cela regroupe également le point 5.

Comme tous les autres types d'embauche, il n'y a pas d'instruction corporate de geler les demandes à l'heure actuelle. Cependant, comme c'est dans le cas dans les ventes, les demandes sont suspendues sauf cas de nécessité absolue.

Les 2 seules demandes concernant le site de Toulouse sont en attente dans le système au niveau de la Finance. Il s'agit d'un poste de remplacement dans l'équipe design PI ainsi que d'une création de poste dans l'équipe applications PI. Par contre il a été confirmé au CE qu'aucune demande de remplacement ne serait faite dans le cadre du départ de Thierry Sutto dans l'équipe PG.

Les nouvelles embauches de l'année à Vélizy ne viennent pas compenser les éventuels départs.

Pas d'autre commentaire spécifique du CE sur les stagiaires.

### **Conditions d'accueil et les conditions de mise en œuvre de la formation reçue par les élèves pour les périodes obligatoires en entreprise prévues dans les programmes des diplômes de l'enseignement technologique ou professionnel – information & consultation**

Cf point précédent

Avis du CE reporté.

### **Présentation des résultats du Mérite – information**

Le document « Presentation Resultats du Merite 2015\_CE du 28092015.pptx » est présenté par Sophie Baquié.

Le CE fait remarquer que les augmentations pour le grade 7 ne sont pas forcément en ligne avec la philosophie de la 9 box.

Les documents demandés l'année dernière ont été présentés cette année (slide n°5 en particulier)

Le document « promotions de 2011 à 2015 avec %.pdf » est également fourni suite à la demande du mois de juin.



Avis du CE reporté au prochain CE.

**Evolution générale des commandes et de la situation financière, exécution des programmes de production – information**

Présentation du PLBP de la BU PI par Christophe Warin. Pas de commentaire particulier.

Toulouse le 27 juillet 2015,

**Yolande De Busschop**

**Présidente**

A handwritten signature in blue ink, appearing to be 'Yolande De Busschop', with a long horizontal stroke extending to the left.

**Pascal Tournier**

**Secrétaire**

A handwritten signature in blue ink, appearing to be 'Pascal Tournier', with a long horizontal stroke extending to the left.



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# Résultats du Mérite

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2015



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# Résultats du Mérite 2015

- ❖ Sur un effectif de 106 personnes au 30 juin 2015:
  - 96 salariés sont éligibles au Mérite
  - 10 salariés ne sont pas éligibles pour les motifs suivants :
    - Salariés embauchés après le 30 septembre 2014 : 3
    - Salarié en préavis de licenciement pour motif économique : 6
    - Un CDD contrat CIFRE
  
- ❖ Le pourcentage des augmentations et des primes attribuées au titre du Mérite représente 2.85 % de la masse salariale :
  - Moyenne des augmentations du salaire de base : 2.65%
  - Moyenne des Primes (Lump Sum) : 0.20%
  
- ❖ 9 salariés ont reçu une **promotion** (changement de grade) avec une augmentation de salaire moyenne de **4.63%**. Ces 9 salariés ont également reçu une augmentation dans le cadre du Mérite.



# RESULTATS DU MERITE PAR POSITION

Position	Moyenne des augmentations en %- Femmes	Effectifs	Moyenne des augmentations en % - Hommes	Effectifs	Total moyenne des augmentations en %	Effectifs H/F
270			3		3	1
335	3.17		3		3.13	4
2A -100	2.00		3.55		3.03	3
2A-108	2.50		2.00		2.25	2
2B-114	2.88		4.13		3.71	6
2B-120	2.69		2.81		2.72	4
2B-125	2.50		2.50		2.50	3
2C-130	2.69		3.31		3.24	8
2C-135	2.81		2.78		2.79	33
3A-135	3.30		2.48		2.61	19
3B-180	3.00		2.78		2.81	8
3C-240	5.00		2.36		2.89	5
Grand Total	2.95	23	2.83	73	2.85	96



# RESULTATS DU MERITE PAR DEPARTEMENT

GROUPES	Moyenne des augmentations en %	Effectifs
Applications et Project leaders	2.86	12
Applications PG	3.23	7
Building services	3.67	3
Customer Service	3.50	3
Design	2.81	34
Dpts avec un salarié *	2.99	10
Finance	3.26	4
Test	2.66	7
Ventes	2.40	16
<b>Grand Total</b>	<b>2.85</b>	<b>96</b>

\* Départements inclus : 6051-7141-7142-7188-7204-7225-7283-8217-8501-9326



# Résultats du Mérite par rapport à la performance et à la situation dans l'échelle des salaires

Rating	Moyenne des augmentations en % - Above Midpoint	Effectifs	Moyenne des augmentations en % - Below Midpoint	Effectifs	Moyenne des augmentations en % - Total	Effectifs Total
1			5.50	1	5.50	1
2	3.14	8	3.46	4	3.24	12
3	3.00	1	3.34	4	3.27	5
4	3.65	5	2.85	4	3.29	9
5	2.78	16	3.00	28	2.92	44
6	2.38	9	2.54	10	2.47	19
7	2.15	2	2.00	2	2.08	4
8	0.00	2			0.00	2
<b>Grand Total</b>	<b>2.71</b>	<b>43</b>	<b>2.97</b>	<b>53</b>	<b>2.85</b>	<b>96</b>



# Résultats du Mérite par âge et par sexe

Age	Moyenne des augmentation en % - Femmes	Moyenne des augmentation en % - Hommes	Grand Total
	< 30 ans		
< 35 ans	2.6	3.8	3.1
< 40 ans	2.5	3.0	3.0
< 45 ans	3.2	3.1	3.1
< 50 ans	3.4	2.8	3.0
< 55 ans	3.5	2.5	2.6
< 60 ans	2.3	2.0	2.0
< 65 ans		2.3	2.3
Grand Total	2.95	2.83	2.85



PROMOTIONS - CHANGEMENT DE GRADE CLASSIFICATION INTERNE

	nombre total de collaborateurs	nombre hommes	nombre femmes	Promotions Hommes	Promotions Femmes	% promotions hommes	% promotions femmes
2011	121	91	30	4	0	4.40%	0%
2012	117	90	27	1	1	1.11%	4%
2013	110	87	23	8	2	9.20%	9%
2014	107	84	23	6	0	7.14%	0%
2015	106	82	24	7	2	8.54%	8%
Total				26	5	6.08%	4%

# Les conditions d'accueil et de périodes de formation des stagiaires

- ✓ Tous les stagiaires font l'objet d'une convention de stage: convention entre l'école, le stagiaire et la société qui fixe les conditions du stage.
- ✓ Le stagiaire n'a pas de statut salarié et n'est pas comptabilisé dans les effectifs ( disposition légale)
- ✓ Temps de travail de 35 heures par semaine - Pas de RTT ni de congés mais des autorisations d'absence non rémunérées peuvent être accordées par le Manager.
- ✓ Le stagiaire est soumis au Règlement Intérieur et aux horaires en vigueur dans la société

# Les conditions d'accueil et de périodes de formation des stagiaires

- ✓ La durée des stages est de 6 mois maximum (légal)
- ✓ Un tuteur est désigné au sein de la société
- ✓ Le stagiaire reçoit une gratification variable en fonction de l'école et de l'année d'étude avec un minimum de 750 € pour les stages d'une durée supérieure à 2 mois - exonération de charges sur 546 € environ par mois .
  - Les textes légaux prévoient un montant minimal de gratification pour les stages de plus de 2 mois de 3.60 € par heure soit 546€ environ par mois (15% du plafond de sécurité sociale) pour les stages conclus à compter du 1<sup>er</sup> septembre 2015 – Loi du 10 juillet 2014

# Les conditions d'accueil et de périodes de formation des stagiaires

- ✓ Le stagiaire a accès au restaurant d'entreprise dans les mêmes conditions que les collaborateurs
- ✓ La prise en charge des frais de transport s'effectue dans les mêmes conditions que pour les collaborateurs ( remboursement de 50% des frais de transport)
- ✓ Le stagiaire peut bénéficier d'un accompagnement du CIL pour trouver un logement
- ✓ Une nouvelle obligation résulte de la loi du 10 juillet 2014 : l'employeur doit inscrire dans une partie spécifique du registre du personnel les noms et prénoms des stagiaires.

# Les stagiaires en 2015

- Un stagiaire dans le département IT Systems: durée du stage: moins de 2 mois
- Un stagiaire dans le département Applications : durée du stage : 6 mois

# Les écoles

- Lycée des Métiers Eugène Montel - Colomiers
- Université Paul Sabatier - Toulouse



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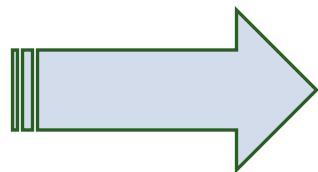
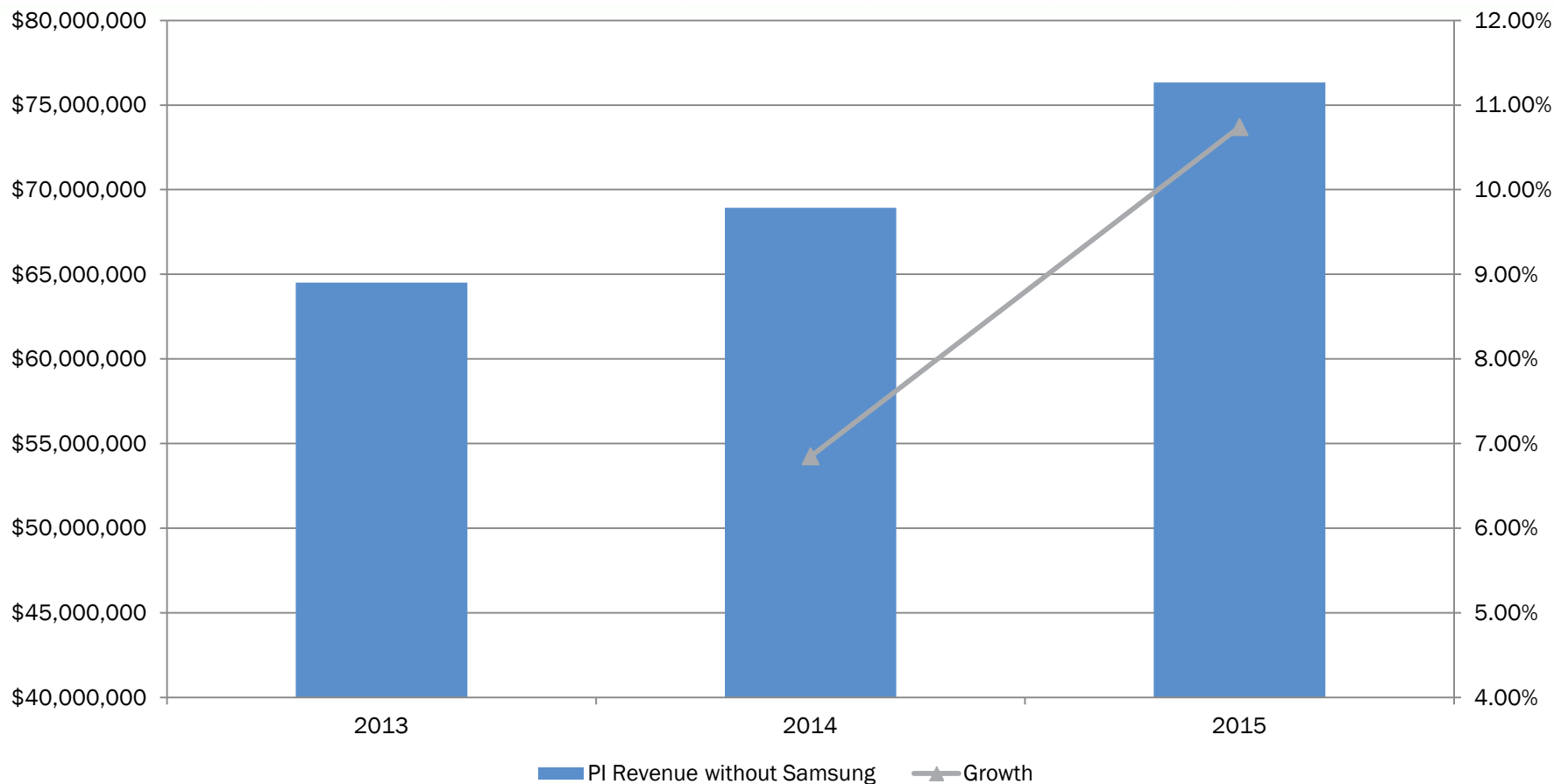
# Interface and Power Business Unit

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2015 ~ 2018 Product Line Business Plan



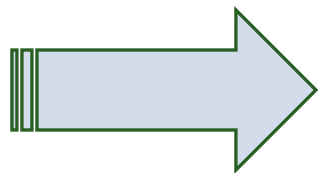
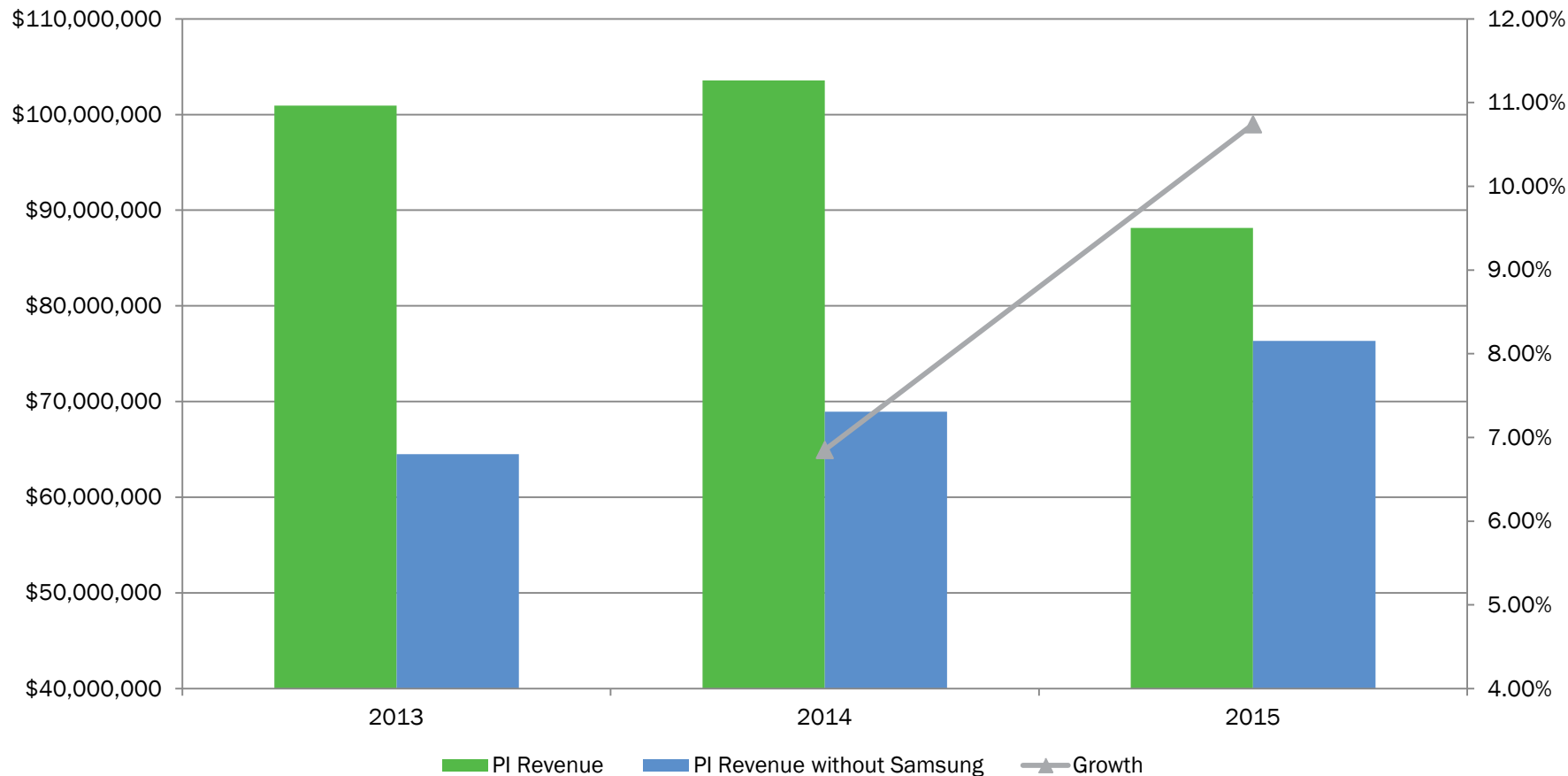
# PI 2015 without Samsung



We grew ~11%



# PI 2015 with Samsung



Need to move the needle



# In 2015 a lot happened

- Many IPs developed, to be leveraged in 2016
  - More derivatives
  - Integration into PMICs
- Customers base:
  - Too Qualcomm centric and Samsung dependent
  - Samsung dropped by \$22M
  - Who is going to win in China?
- Wireless charging: slow adoption
- Single phase DC/DC market shrinking
- Too many quality issues: I2C, timer, manufacturing
- Execution delay



# Executive Summary

## 2015 Progress

- Engaged with Huawei on several DC/DCs and SBC
- Released IPs: boost bypass, buck boost, hysteretic
- Continue to expand in wireless charging: wearable
- Moved to Tower

- 2015 Load Switch revenue out performing 2015 Plan
- Secured first USB-PD load switch design at Microsoft
- Gross Margin / Reserves

Engagement @ key players

- Focus on the big chipset makers: Qualcomm , Mediatek, Hi-Silicon
- Diversify, grow our revenues in China (Huawei, Xiaomi)
- Engaged on multiples fronts @ Huawei: SBC, multi-phase
- Back at Samsung with PMIC: NCP6911

Expand SAM

- More derivatives, less new IPs:
  - PMIC
  - Boost
  - Buck/boost
  - USB-PD switches

Improve Bottom line

- Move to Tower for devices with HV low R<sub>dson</sub> Mosfets
- Cost savings:
  - Continuous Yield Improvement

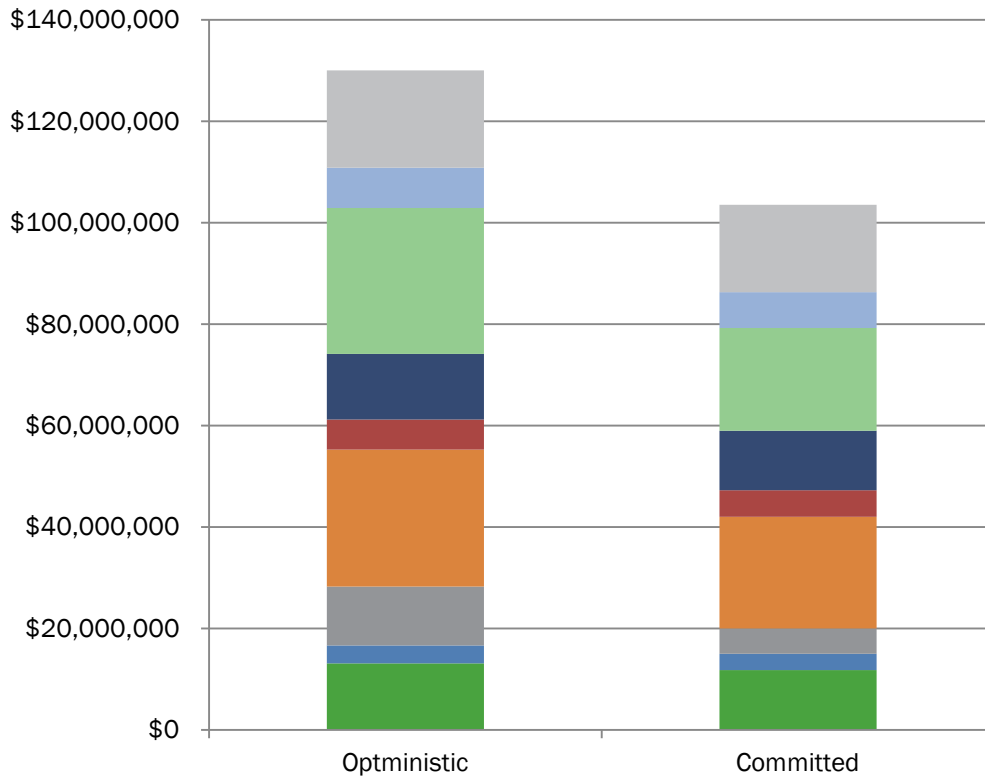
## Hinge factors

- Wireless charging ramp-up and adoption.
- Ability to convince Qualcomm to let us Re-use IPs
- DC/DC SAM
- NCP1864 execution
- NCP63516 project execution versus opportunity at Huawei.

- Samsung NCP6911 ramp-up



# 2016 Revenue Confidence Chart



**2016 revenue commitment: \$103.5**

## Committed vs. Optimistic View :

- Buck DC-DC:
  - SAM reduction
  - Quad-Phase NCP63516 at risk @ Huawei
- Boost / Buck Boost:
  - Slower ramp-up
  - Limited share and/or delay @ Huawei
- PMIC:
  - 30% derating on Wireless Charging PMIC adoption



# Revenue Plan

## 2015(E)

- Revenue: \$88.1M
- Gross Margin: 32.3%
- R&D Spend: \$12.4M
- EBIT: 1.8%

- Samsung down by \$22M
- DC/DC SAM shrunk
- Little to none wireless charging
- NCP63XX Still being selected at ODM level for use on legacy Qualcomm Chip Sets

## 2016(E)

- Revenue: \$103.5M
- Gross Margin: 43.7%
- R&D spend: \$11.7M
- EBIT: 15.3%

### Growth Drivers

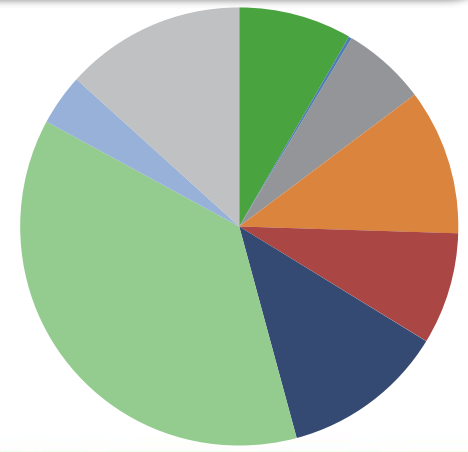
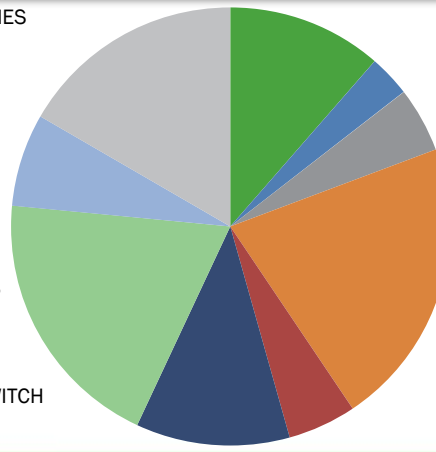
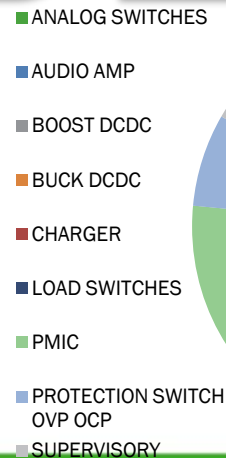
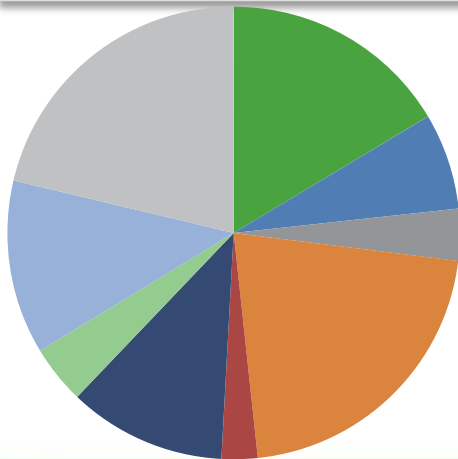
- PMIC Wireless charging / LG
- Chargers
- Boost and Buck/Boost
- Multiphase Buck

## 2018(E)

- Revenue: 145.2M
- Gross Margin: 42.3%
- R&D Spend: \$14M
- EBIT: 20.1%

### Growth Drivers:

- Wireless charging PMIC
- 2<sup>nd</sup> Gen Chargers
- 2<sup>nd</sup> Gen Multiphase Buck
- USB-PD Focused Load Switches



# Lead Engagements: Chipset makers



Pepper 2 RX Wearable

NCP398: USB-Type C

NCP6356: Automotive Infotainment



USB Type-C



NCP6353: LPDDR 4 Power

NCP6356: Core Supply

NCP1854/55/64 : Chargers



NCP63516 Next Gen: Core Supply

R&D project for 50Mhz 10-Phase

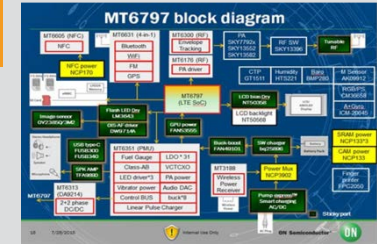
Buck for Core Supply



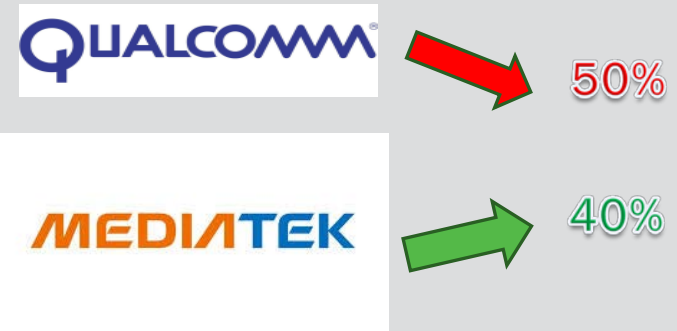
# Qualcomm down and Mediatek up

- QCOM totally missed the MSM8994 & MSM8992 design IN window and lost major market share in High End Smart-phone segment @ Samsung (G6) and then Xiaomi and HTC. Running behind on MSM8996. Stringer gaining market share in Smart-phone.
- AP Winners for 2015-2016 are Stringer, Exynox SS LSI, Mediatek and Hisilicon.
- QCOM maintains a leading market share in Mid End Smart-phone but Mediatek, Hisilicon @ Huawei are gaining traction.

Cust	Forecast 2015 (Mu)	Qualcomm	Mediatek	Intel	Spreadtrum	Hisilicon	Samsung	Marvel	Leadcore
Huawei	100	45%	15%			40%			
ZTE	40	70%	30%						
Lenovo	70	36%	57%	7%					
Coolpad	50	50%	40%		9%			1%	
Gionee	30	43%	57%						
Xiaomi	70	65%	15%						20%
TCL	60	50%	42%		8%				
Oppo	45	55%	45%						
BBK	45	55%	45%						
Hisense	8	90%						10%	
KONKA	4		100%						
Meizu	20		90%				10%		



- 50% of all Smartphone are shipped in China (550Mu).
- AP Market share in China :



# Lead Engagements: Phone makers



SCY1751 A4WP on Hisilicon Chipset  
NCP186x 3/6A Dual Path Charger  
NCP63516 Quad Phase DC-DC Buck  
R&D project for 50Mhz 10-Phases Buck for Core Supply



NCP6925 Camera Module on G5-H1  
NCP6924 for R1 Wearable Opportunity  
A4WP lead project embedded G4+ phone



NCP6911 UFS Memory Supply management Buck-Boost  
Considering A4WP



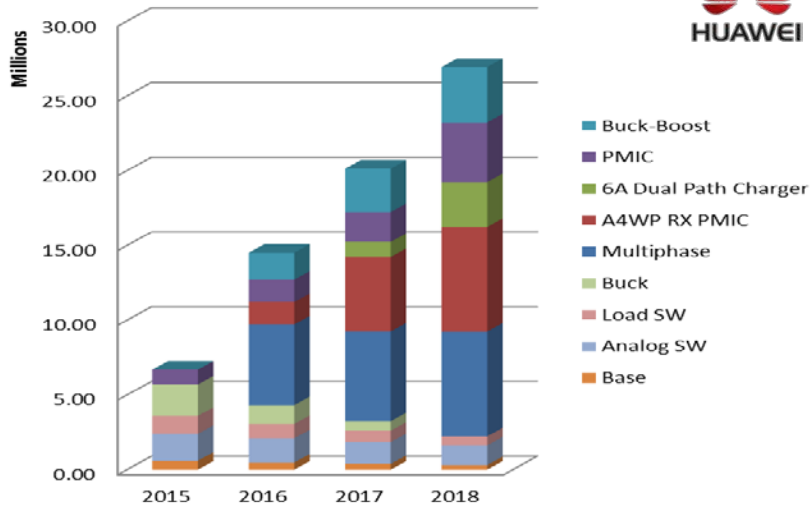
NCP6868 in new design concept  
NCP335 Next Gen Set Top Box  
NCP451 Next Gen Powerbook



## STRATEGY

- Growth Huawei business and relationship in supporting existing stand alone Analog and Load SW, Buck, Buck-Boost business
- Become lead supplier for advanced Integrated solution for Camera Module PMIC, Multi-Phase Buck , Charger and A4WP solutions.
- **Quad-Phase NCP63516 revenues forecast at risk for 2016 due to Project plan versus Kirin 950 design Win Window.**

Huawei Revenue projection



Product Line	Products	Status	2016 Forecast	2017 Opp
Buck-Boost	NCP6968	Production	\$1.8M	\$2.9M
Camera Module PMIC	NCP6925 NCP69xx	Production Definition	\$1.5M	\$2.0M
Dual Path 3-6A Charger	NCP186x	Definition	2017	\$1.0M
A4WP RX Wireless Charging	SCY1751	Production	\$1.5M	\$5.0M
Multiphase Buck	NCP63516 HF/16A 10 Phases Buck	Design Definition	<i>\$5.4M</i>	\$6.0M
Analog SW Load SW Base	NCxxxx	Production	\$4.3M	\$3.4M
<b>Total Projected Revenue</b>			<b>\$14.5M</b>	<b>\$20M</b>



# W. Charging 2015 - 2018 Outlook

## 2015, What has happened ?

- Lack of integrated PTU and metal back solution delayed infrastructure build up & OEMs continued with existing Qi solution (Stringer, Samsung) resulting in little to no Ramp-up

## 2016, What is happening ?

- QCOM** announced metal cover support.
- Samsung** and **Stringer** are now considering **A4WP**.
- Samsung** is interested Multimode IC Co-development with **ON Semi**.
- Ramping-up at **LG, Huawei, Xiaomi**.
- Many ODM development for PTUs on going will generate infrastructure build-up for Charging PADS and more OEM adoptions.
- Initial engagement with Automotive ODM, **Gill, Lear, Chemtronics, Hosiden ODM**.
- 2016 Forecast \$12.9M

## 2016-2018 Outlook

- Infrastructure build up will drive TX numbers up for the next 3 years.**
- Volume Adoption in Smart-phone will start ramping up H2-2016 at LG, Huawei, Xiaomi and possibly Samsung.
- 2018 revenue estimate \$40M**



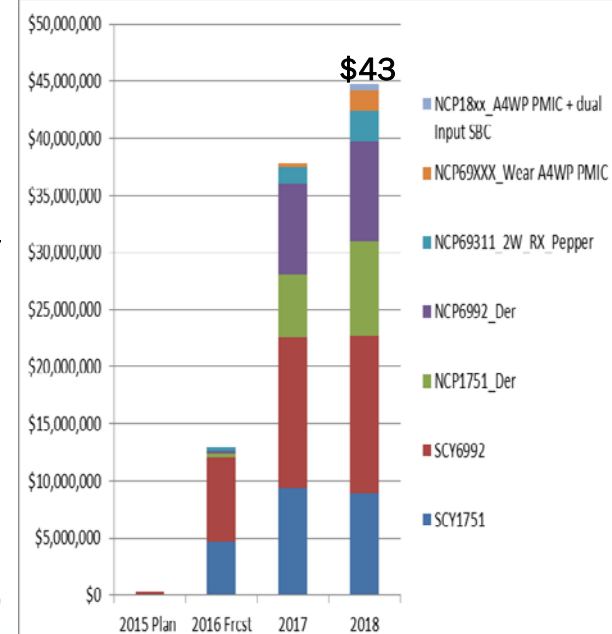
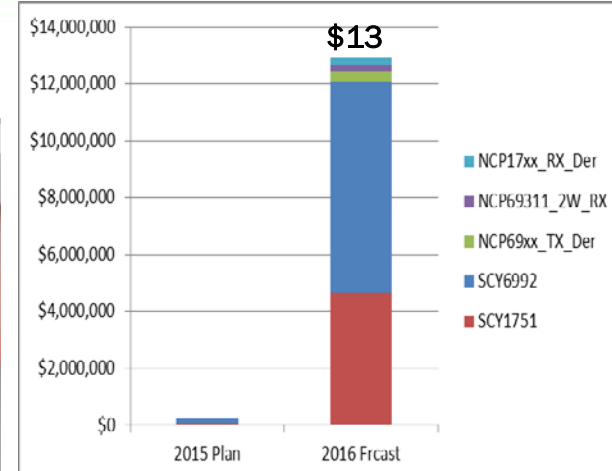
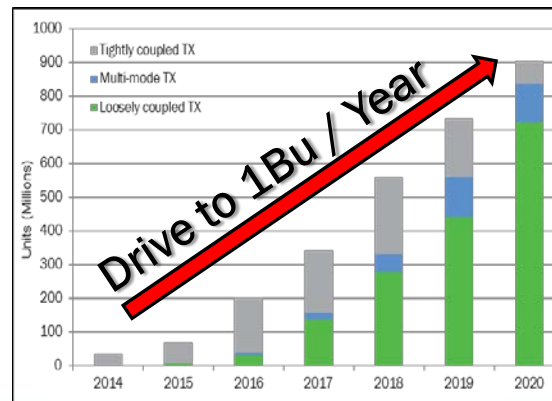
## ...Even Devices with Metal Bodies



...even devices with metal bodies



## Charging Pad infrastructure build up is key



# Wireless Charging – Market & Strategy

## Strategy

- Develop Wireless charging ASICs referenced in QCOM MSM chipset for High-end and Mid-End Smart-phones leading A4WP deployment.
- Create derivatives to stay ahead of the competition in both RX and TX space. Explore derivatives and multimode RX/TX for Smart-phone, Consumer and Automotive markets with lead OEMs and Module ODMs.

## 2015 Progress

- **SCY1751 to be MCM mid September.**
- **SCY6992 First silicon was sampled to QCOM in April'15.**
- **Convenient Power promoting to major OEMs**
- **Many ODM engagements on TX including Gill, CP**
- **Finalizing IP re-use agreement with QCOM**
- **Ramp-up will start Q4 2015.**

## Competition

- IDT, TI, NXP, BRCM, MTK

## RX Smart Phone OEMs Customer Engagement

- LG, Huawei, Xiaomi, ZTE, Samsung, Futjitsu, Sirin Mobile.

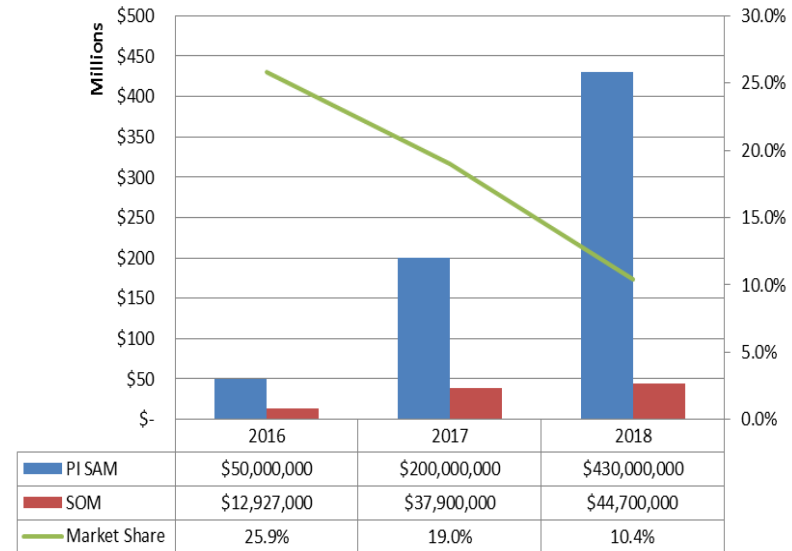
## TX Module ODM Customer Engagement

- Convenient Power, Chemtronics, Heesung, Gill, Lear, Funai, Iccriound, Koma-Tech, Microtips, Hoseiden

## New Customers we need to penetrate:

- Stringer, Samsung, Lenovo, Sony, other chinese OEMs Oppo/BBK

WiPower PMIC SAM/SOM



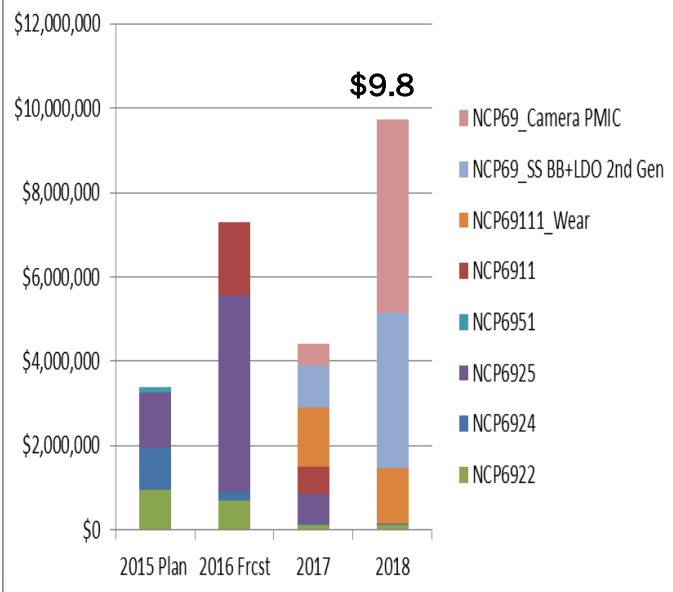
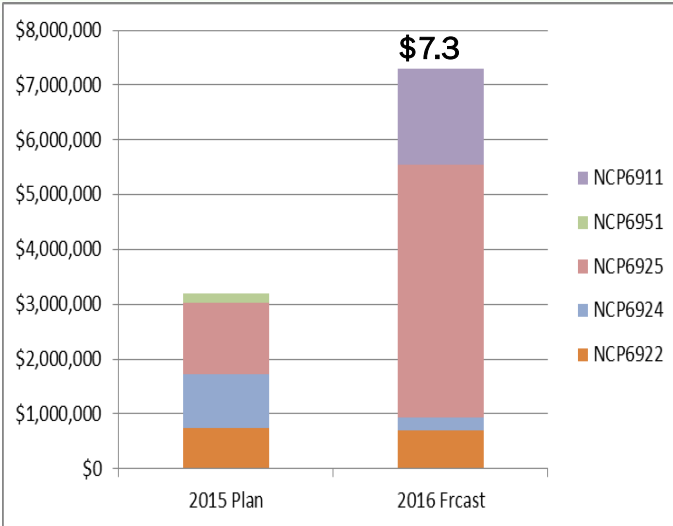
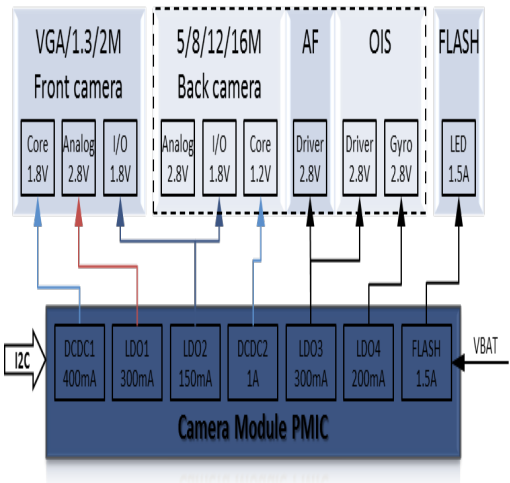
## Hinge Factors

1. Lack of system knowledge
2. TX time to market now becoming critical for early Q4'15 ramp-up.
3. Resources to support 50+ customers and multiple derivatives developments.



# PMIC 2015 – 2018 Growth & Outlook

- 2015, What has happened ?**
  - I2C issues in PMICs have slowed design Win & production ramp-up at HTC. (NCP6951)
  - PMIC - 2015 Plan \$3.4M
- 2016, What is happening ?**
  - Camera Module Design Wins based on existing NCP6924/25 at Huawei and LG (impact \$M4.5 in 2016)
  - IP Re-use for the NCP6911 (Buck-Boost +LDO)
  - Starting design IN in Wearable applications at LG, Xiaomi, Sony.
  - PMIC -2016 Forecast \$7.3M
- 2016-2018 Outlook**
  - Growth based on Dual 3D Camera Module IP re-use PMIC and addressing the Wearable market with NCP69311.



# Chargers 2015 – 2018 Growth & Outlook

## 2015 What has happened

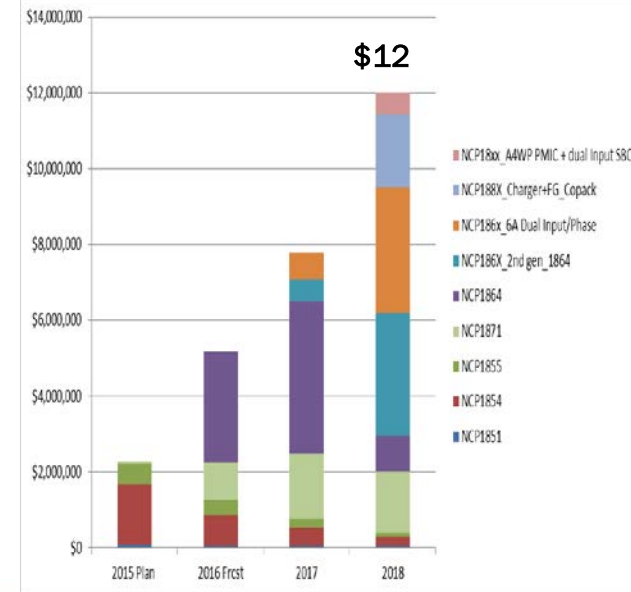
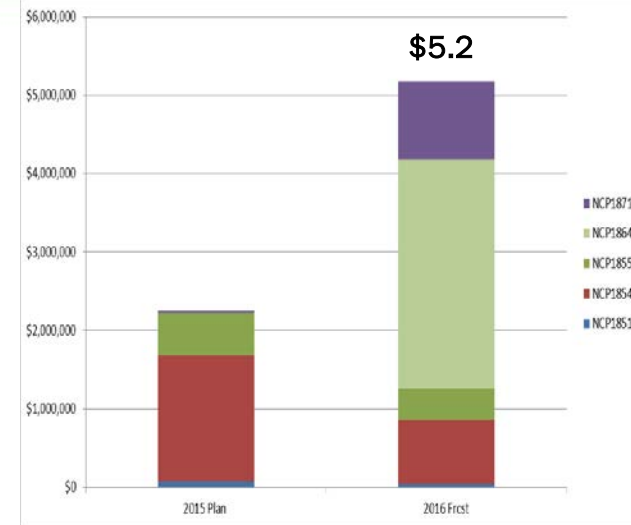
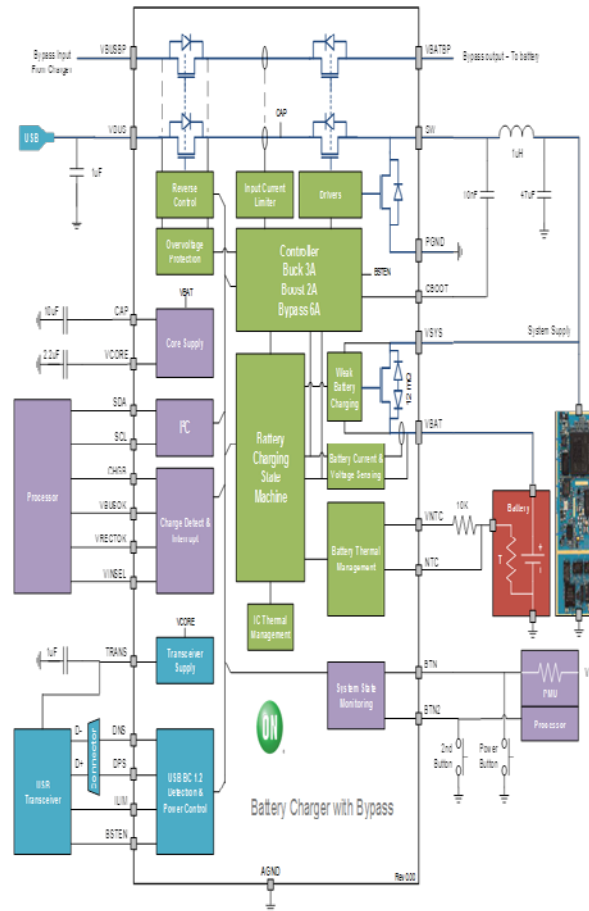
- Delay in the NCP1864 slowed our Charger design IN/Win process at MTK, Huawei.
- 2015 Plan \$2.3M

## 2016 What is happening

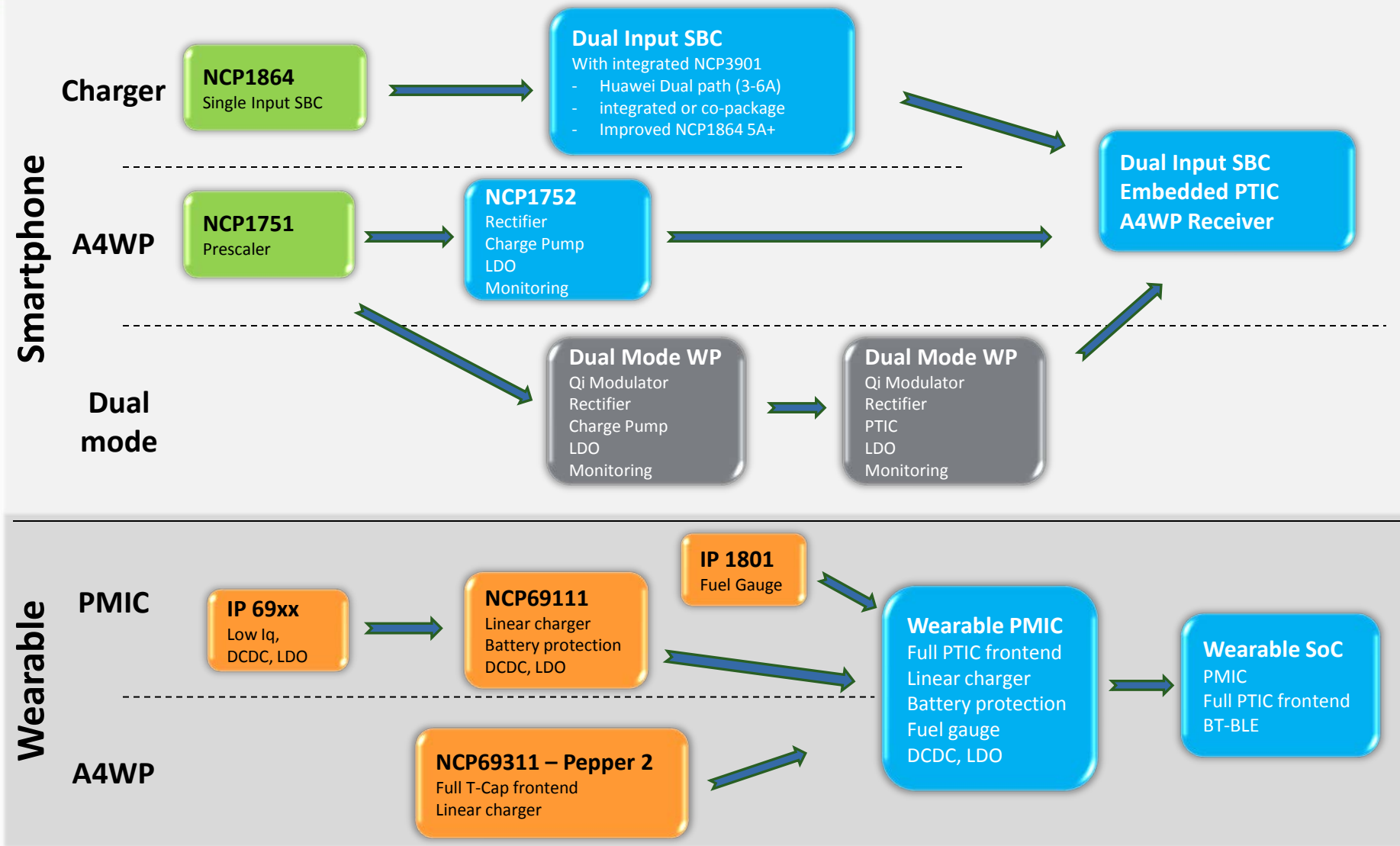
- Need for High Current Quick Charging capability is driving adoption of High Current capable chargers like NCP1864 at Huawei.
- 2016 Forecast \$5.8M

## 2016-2018 Outlook

- Standalone Charger Market share growth will depend on NCP1864 success and Huawei 6A dual path opportunity.
- Charger roadmap includes A4WP front-end in 2018



# Wireless Power Rx Roadmap



# Power Management – IP Investment

*What we have*

*What we do and preparing for*

	<i>What we have</i>	<i>What we do and preparing for</i>	
Core DCDC	Single Phase DCDC, 2A - 6A	Up to 6A Fast Transient DCDC	16A Quad Phase Fast Transient DCDC
PMIC Boost Switches	4ch to 6ch PMIC	6ch PMIC with Flash	4ch PMIC with 1k EEPROM
	7ch PMIC with ADC	Ultra low Iq DCDC and LDO	Ultra-Low Iq PMIC
	PA Envelope Tracking DCDC	Boost bypass	Ultra-Low Iq Buck-Boost
	> 0.75V Load Switches	Buck boost	USB Power Delivery Switches
Charging Protection	1 Cell Switching Battery Charger (SBC) 1.5A - 2.5A	2-4 Cells 4A-8A SBC	1 Cell Dual Phase 6A SBC
	< 3A OCP	1 Cell 4.5A SBC	Fuel Gauge integration with Charger
	5V - 30V OVP 65mohm	16W 2 Cell to 1 Cell Converter	Tx Wireless Charging PMIC
	100V IEC OVP 35mohm	10W Rx Wireless Charging PMIC	Wearable Wireless Charging PMIC
		Charger Input Mux, 100V IEC	Dual Input SBC

Production
Samples
Development
Concept

June 2015



# DC/DC – Market & Strategy

## Strategy

- Continue to develop single phase, multiphase and boost/buck-boost DC-DC for chipset makers: Qualcomm, MTK and expand at Huawei Hisilicon
- Continue to pursue DC-DC opportunities outside of the Mobile Handset field of play
- Execute quick derivatives of current single phase and boost/buck-boost portfolio
- Execute next generation of Multiphase Topologies
- Continue to add more AEC-Q100 qualified products in DFN and QFN packages to service the Automotive Infotainment and ADAS Camera requirement.

## 2015 Progress

- NCP6353D selected by MTK for LPDDR4 power
- NCP6356B selected by MTK for Core Power
- NCP63516 selected by Huawei to provide core power for Kirin 950 chipset
- NCP6868 selected by Sony for MSM8956 chipset
- NCP6868 looking very promising at Stringer for Smartphone Accessory
- NCP6878 still under consideration at Huawei

## Competition

- Single Phase: FCS, TI, Richtek, Halo Electronics
- Multi-Phase: TI, Maxim, Dialog, Intersil
- Boost and Buck-Boost: Intersil, TI, FCS

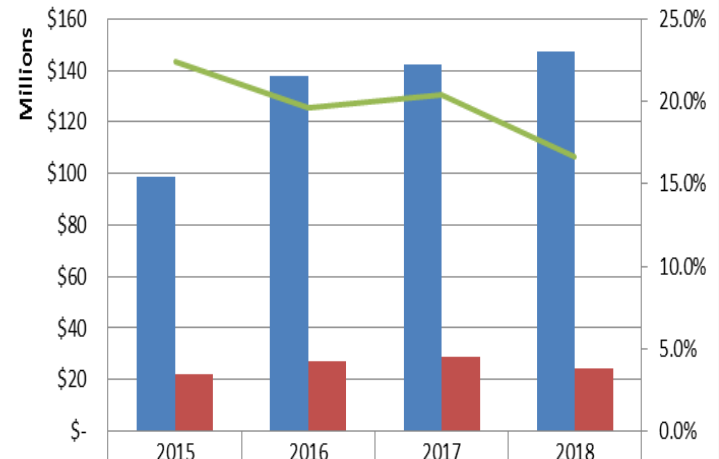
## Customer Engagement (Top Customers Today):

- Asustek, BBK, Lenovo, ZTE, Huawei, Sony

## Critical products and Technology Needed:

- Multiphase for load >16A

Buck DC-DC + Boost / Buck Boost



SAM	\$98,500,000	\$138,000,000	\$142,500,000	\$147,500,000
SOM	\$22,040,464	\$27,011,009	\$29,061,364	\$24,574,488
Share	22.4%	19.6%	20.4%	16.7%

## Hinge Factors

1. Executing and delivering Qualcomm, MTK and Huawei reference design requirements
2. Product Lead time



# Load Switch and Protection – Market & Strategy

## Strategy

- Expand market penetration further into Notebook Computing and Automotive Infotainment Systems
- Further penetrate USB-PD Type C applications in the Hand Held, Notebook and Desktop Computing, also expand USB-PD Type C market penetration to the Home Entertainment, Set Top Box and Gaming segments
- Continue to execute quick derivatives of current Load Switch and Protection portfolio at Chipset Makers and ODM's

## 2015 Progress

- Charging: NCP3901 Power Mux for Wireless Charging (WPC and A4WP).
- USB Type C:
  - NCP465 currently in design for Microsoft USB-PD application
  - NCP398 new design at Qualcomm for USB Type-C protection
  - NCP3902: 3A version of the NCP3901
- NCP335 Selected by Stringer for next generation Set Top Box
- NCP451 Selected by Stringer next generation Powerbook (Struggling for billings due to Quanta favoring TI equivalent over ON)

## Competition

- Load Switch - TI, FCS, Kinetic, NXP
- Protection – TI, FCS, Maxim, ETK

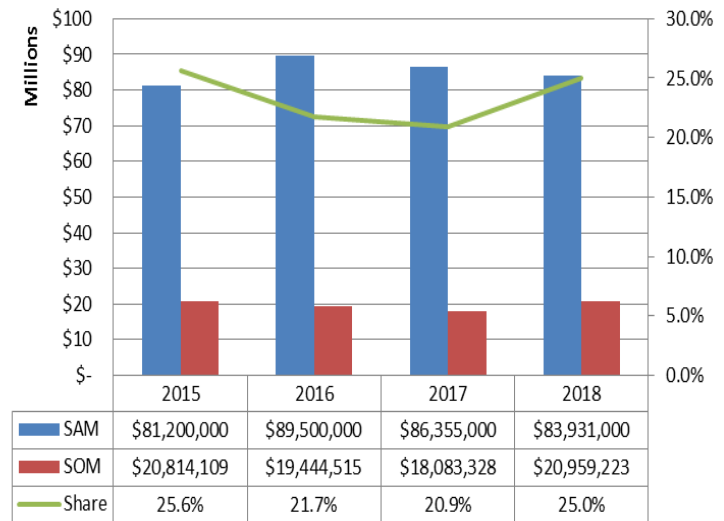
## Customer Engagement (Today's Top Customers):

- Load Switch - Stringer, Huawei, Samsung
- Protection – Panasonic, Sony, Samsung

## New Customers we need to increase penetration activities:

- AMD, Intel, Stringer, Continental AG, Bose, Sirius/XM, Delphi, Autoliv, Denso, Magna

Load Switch + Protection OVP/OCP

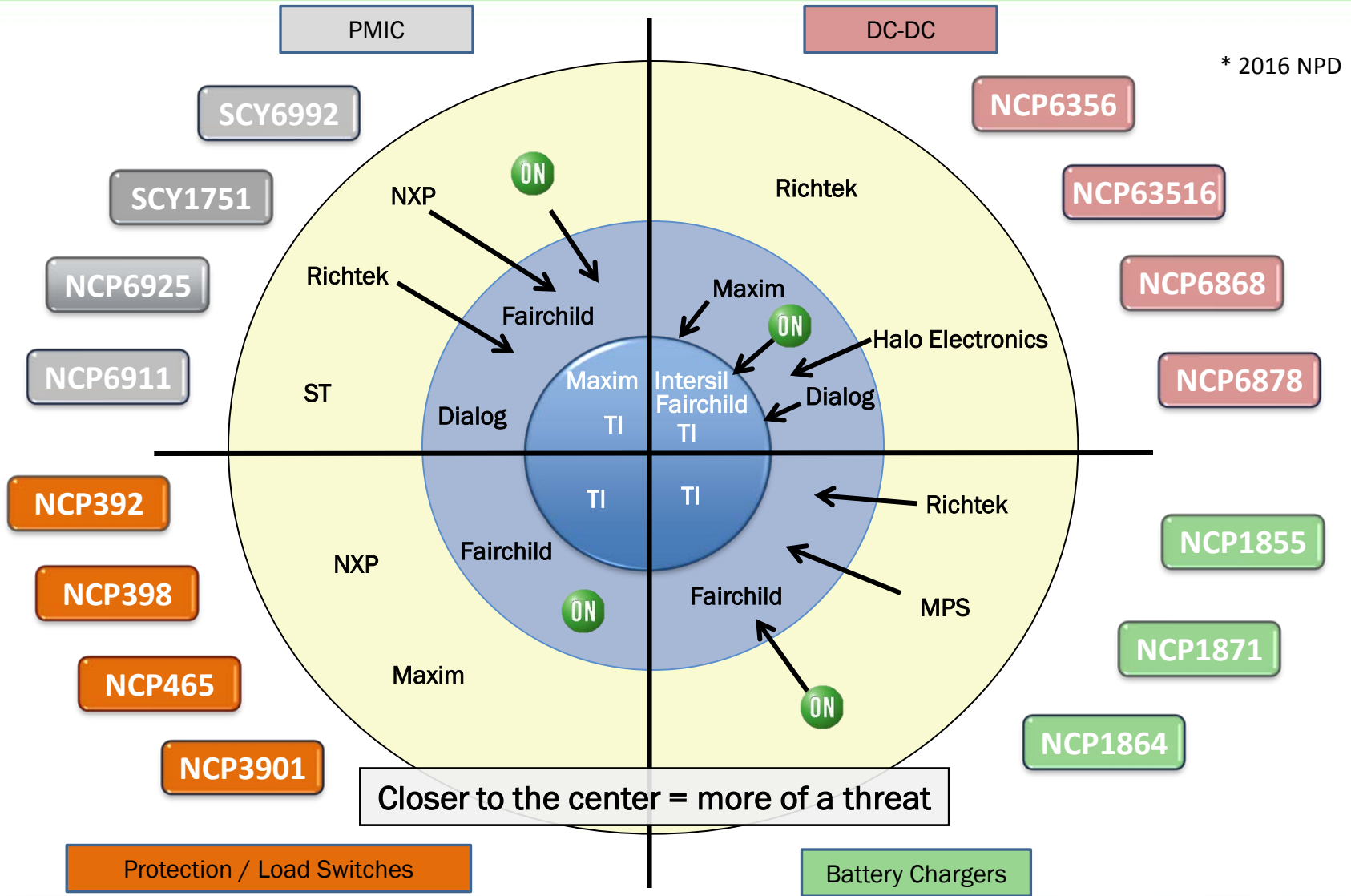


## Hinge Factors

1. Meeting aggressive design schedules and market dynamics
2. Identifying and defining quick turn derivatives early in the design cycle
3. AECQ-100 Grade 1 Qualification in DFN packaging



# Competition Radar – Product Families



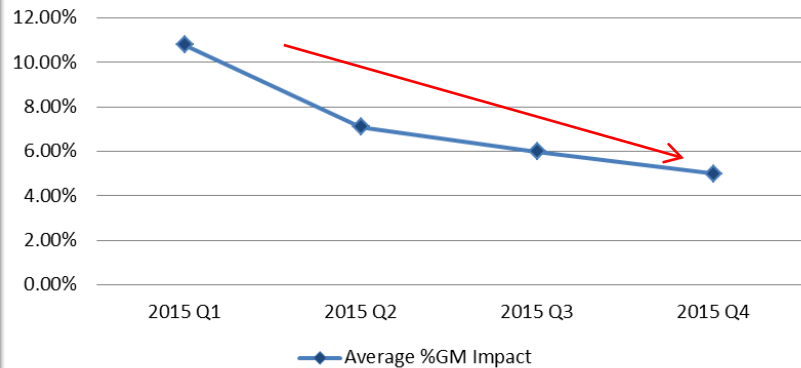
# 2015 Cost savings achievements

- **Scrap improvements:**
  - 2014 Average Scrap = 11% GM
  - 2015 Average Scrap = 8% GM
  - Savings = 3% GM, or \$3.3M
- **Copper wire conversion (\$1M/year savings)**
  - NCP380 = \$100k
- **FCI to Niigata**
  - NCP2811 and NCP2817 = \$150k/year (start Q4 2015)
- **Total Cost Savings Realized in 2015 (vs. 2014) = \$3.4M**



# 2016 Cost Savings & Scrap Improv.

PI Average %GM Impact of Scrap



## Executive summary:

- PI gross margin has been severely impacted throughout 2015 by poor scrap performance.
- However, scrap performance is clearly and significantly improving.
- Impact in H1 2015 = 7-11%; down to 6% in Q3.
- Main contributors (all have been corrected):
  - SBN Die Sales (bump T&R): 5-6% GM impact
    - Die cracking/wafer saw
    - T&R Pick & Place Yield
    - Non-MPQ Reel Scrap
- Demonstrated and consistent yield improvement since Q2 2015 in all above areas.
- SBN Die Sales scrap now accounts for <2% GM impact.
- Final Test and Probe yields are at all-time record highs of >95%.
- Goal is sustained overall PI Scrap GM impact of 5%.
- Based on current scrap performance, expect to reach that level in Q4 2015.
- **Resulting 2016 cost savings vs. 2015 due to improved scrap performance = \$2.1M.**



# Technology Roadmap

## Products Cost Optimization

- HEI isolation enables cost down of TS18PM for 5V DCDCs, aligning on ONC25 cost.
- ONC25 can have up to 10% fluctuation

## Improve Technology / features

- TS18PM offers higher HV power density
  - ✓ 7V-14V & 17-30V ranges
- TS18PM offers competitive EEPROM
- Stack MIM & very high poly resistor are a must have for wearable design.

## Remove Gresham capacity limitation

- Most of our new product developments would be done @ Tower.
- Must fix manufacturing priorities/cycle time

## Packages

- CSP for small footprint & low cost solution
- QFN for Pwr dissipation or Adjacent market
- Fanout technology can enable multi chip in package: Transcap + NCP69311 controller

Front end

Back end

2014

2015

2016

2017

0.25um - ONC25, 5V - 30V (24 & 40V BCD)

0.18um - TS18PM, 5V - HV 7V to 30V

0.18um - ONC18, 5V \*

(\*) ONC18 TGO 1.8/5/18V for Trans capacitor for A4WP

TSOP5, SC70, WDFN, TDFN, TLLGA

CSP 0.4 mm p, WLCSP, uDFN, XDFN

Cu bonding up to 2mils, Ultra thick RDL \*

CSP pitch 0.35 , 0.3 mm, Fanout

(\*) High performance DCDC converters



# CAPEX Needs

Dept	Item	Description	Quarter Needed	Q1 PI	Q2 PI	Q3 PI	Q4 PI	Cost(\$)	Justification
Test	3	SPU2112			40000			40000	Upgrade to PI config 2nd Sector
Eval	8	LeCroy HDO8000		35000				35000	Jitter Measurement Capability
Apps	11	Keithley nA multimeter		15000				15000	Ultra low IQ, shared with charac lab
			Total	50000	40000				

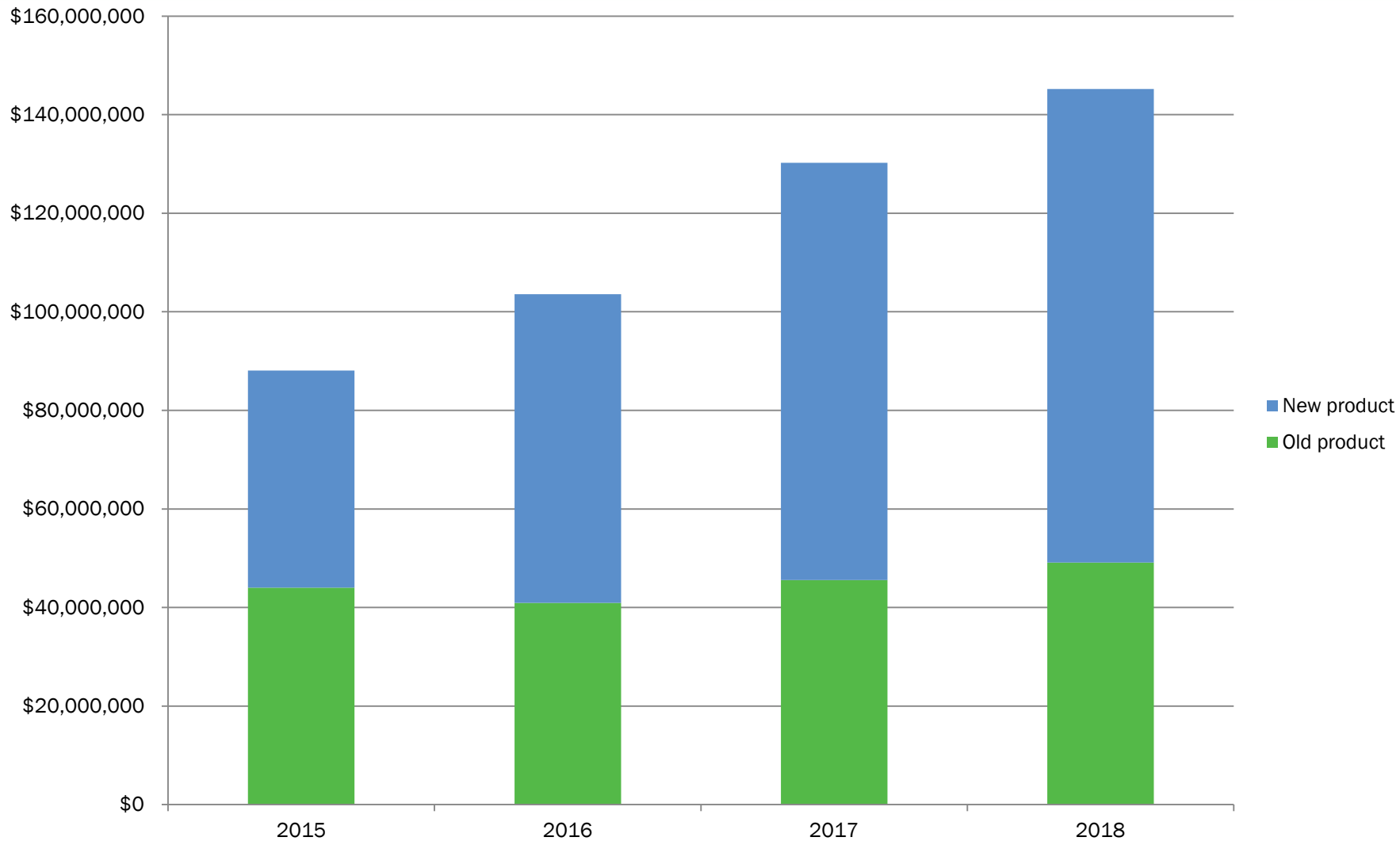


# P&L Outlook

IN M\$	1Q15A	2Q15A	3Q15F	4Q15F	1Q16F	2Q16F	3Q16F	4Q16F	←----- 2015 PLBP Forecast -					15F-18F CAGR%
									2014A	2015F	2016F	2017F	2018F	
<b>REVENUE \$</b>	<b>22.1</b>	<b>21.1</b>	<b>22.9</b>	<b>22.0</b>	<b>22.3</b>	<b>24.2</b>	<b>27.1</b>	<b>29.9</b>	<b>103.6</b>	<b>88.1</b>	<b>103.5</b>	<b>135.2</b>	<b>145.2</b>	<b>18.1%</b>
New	8.5	7.6	8.5	9.5	8.8	14.1	18.3	21.3	49.9	34.1	62.5	84.7	96.1	41.2%
Mature	13.6	13.5	14.4	12.5	13.5	10.1	8.8	8.6	53.6	54.0	41.0	50.5	49.1	-3.1%
% New	38.3%	36.1%	37.1%	43.2%	39.5%	58.3%	67.5%	71.2%	48.2%	38.7%	60.4%	62.6%	66.2%	
<b>GROSS MARGIN \$</b>	<b>6.6</b>	<b>7.1</b>	<b>7.3</b>	<b>7.5</b>	<b>7.8</b>	<b>9.2</b>	<b>11.2</b>	<b>13.6</b>	<b>32.6</b>	<b>28.5</b>	<b>41.8</b>	<b>57.7</b>	<b>61.4</b>	<b>29.1%</b>
<b>GROSS MARGIN %</b>	<b>29.6%</b>	<b>33.8%</b>	<b>32.0%</b>	<b>34.0%</b>	<b>35.2%</b>	<b>37.8%</b>	<b>41.4%</b>	<b>45.4%</b>	<b>31.5%</b>	<b>32.3%</b>	<b>40.4%</b>	<b>42.7%</b>	<b>42.3%</b>	
<b>TOTAL R&amp;D</b>	<b>4.1</b>	<b>3.4</b>	<b>3.7</b>	<b>3.4</b>	<b>3.5</b>	<b>3.5</b>	<b>3.6</b>	<b>3.6</b>	<b>12.0</b>	<b>14.6</b>	<b>14.1</b>	<b>15.3</b>	<b>16.5</b>	<b>4.1%</b>
<b>TOTAL S&amp;M</b>	<b>1.6</b>	<b>1.4</b>	<b>1.6</b>	<b>1.6</b>	<b>1.5</b>	<b>1.5</b>	<b>1.6</b>	<b>1.6</b>	<b>6.7</b>	<b>6.3</b>	<b>6.2</b>	<b>7.9</b>	<b>8.3</b>	<b>10.0%</b>
<b>TOTAL G&amp;A</b>	<b>1.5</b>	<b>1.3</b>	<b>1.5</b>	<b>1.6</b>	<b>1.4</b>	<b>1.4</b>	<b>1.4</b>	<b>1.4</b>	<b>6.5</b>	<b>5.9</b>	<b>5.6</b>	<b>7.1</b>	<b>7.4</b>	<b>7.6%</b>
<b>TOTAL OTHER</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	
<b>TOTAL OPER EXP</b>	<b>7.3</b>	<b>6.2</b>	<b>6.8</b>	<b>6.6</b>	<b>6.4</b>	<b>6.4</b>	<b>6.6</b>	<b>6.6</b>	<b>25.2</b>	<b>26.9</b>	<b>26.0</b>	<b>30.2</b>	<b>32.3</b>	<b>6.3%</b>
R&D %	18.5%	16.0%	16.4%	15.6%	15.6%	14.4%	13.2%	12.0%	11.6%	16.6%	13.6%	11.3%	11.4%	
S&M %	7.4%	6.8%	7.1%	7.1%	6.9%	6.3%	5.8%	5.2%	6.4%	7.1%	6.0%	5.8%	5.7%	
G&A %	7.0%	6.4%	6.4%	7.1%	6.3%	5.8%	5.3%	4.8%	6.2%	6.7%	5.5%	5.2%	5.1%	
<b>EBIT \$</b>	<b>-0.7</b>	<b>1.0</b>	<b>0.5</b>	<b>0.9</b>	<b>1.4</b>	<b>2.7</b>	<b>4.6</b>	<b>7.0</b>	<b>7.4</b>	<b>1.6</b>	<b>15.8</b>	<b>27.5</b>	<b>29.1</b>	<b>162.0%</b>
<b>EBIT %</b>	<b>-3.4%</b>	<b>4.5%</b>	<b>2.1%</b>	<b>4.2%</b>	<b>6.4%</b>	<b>11.3%</b>	<b>17.2%</b>	<b>23.4%</b>	<b>7.2%</b>	<b>1.8%</b>	<b>15.3%</b>	<b>20.3%</b>	<b>20.1%</b>	
<b>EBITDA \$</b>	<b>0.7</b>	<b>2.4</b>	<b>1.9</b>	<b>2.4</b>	<b>3.0</b>	<b>4.3</b>	<b>6.2</b>	<b>8.6</b>	<b>15.1</b>	<b>7.4</b>	<b>22.1</b>	<b>34.0</b>	<b>36.0</b>	<b>69.3%</b>
<b>EBITDA %</b>	<b>3.2%</b>	<b>11.3%</b>	<b>8.4%</b>	<b>10.8%</b>	<b>13.4%</b>	<b>17.7%</b>	<b>23.1%</b>	<b>28.8%</b>	<b>14.6%</b>	<b>8.4%</b>	<b>21.4%</b>	<b>25.1%</b>	<b>24.8%</b>	



# New Product Revenue



# Summary

- Learned from 2015
- Wireless Charging is the way to grow, leverage on synergies between W. Charging, PMIC and chargers
- Secure Samsung, Grow Chinese OEMs, focus on Huawei
- Continue investing in IPs
- Expand the SAM





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# Back-up

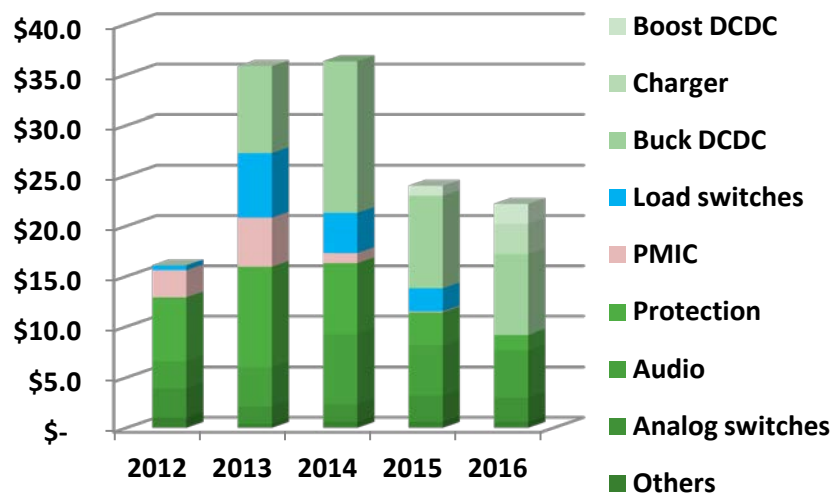
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## Product Line Business Plan



## STRATEGY

- Continue to promote current load switch portfolio along with USB-PD focused switches
- Continue to promote PMIC portfolio
- Be prepared to do quick DC-DC Buck or Boost derivatives in short design cycle.
- Selectively play in legacy portfolio (Audio, OCP, A/S) to maintain / prolong revenue stream.



Product Line	Products	Status	2016 Opportunity
Buck DCDC	NCP6335B	Production	\$0.360M
PMIC	NCP6911	In Design	Need Forecast
Protection	NCP347	Production	\$0.063M
	NCP367O	Production	\$0.075M
Load Switch	NCP330	Production	\$0.198M
Analog Switch	NCP338	Production	\$1.65M
	NLAS5123	Production	\$0.269M
Audio	NCP2811	Production	\$2.1M
	NCP2817	Production	\$1.3M



# PI (PIM, PIC) New Product Strategy

## summary

- **Short Term Opportunity For growth (2016). Estimates.**
  - SCY1751 QCOM Ref Design (LG, HTC, Fujitsu, ZTE, Huawei and Xiaomi) 10Mu, \$4.8M
  - SCY6992 (Chemtronics, Samsung DM, Heesung, Icirround) 7Mu, \$7.4M
  - NCP6925 PMIC Derivatives for Camera Modules, LG-G5 10Mu, \$4M
  - NCP6911 – Buck-Boost + LDO for UFS memory Gal-S7 10Mu, \$1.5M
  - NCP1871 Ultra Book NVDC Charger 3Mu, \$1.5M
  - NCP1864 4.5A SBC Charger for High End Smart-Phone and Tablets 5Mu, \$3M
- **Mid-term opportunity for growth (2017-2019)**
  - Relationship / Reference designs with key customers like QCOM, Huawei / Hisilicon, MTK.
  - Derivatives of W. Charging PMICs (dual Mode, Rectifier integration, PTIC)
  - Next Generation Chargers NCP1864+, Dual Path SBC Huawei, Dual Phase, Integrated with Wireless charging front-end.
  - Expand into Wearable PMIC NCP69111 & pepper 2, then add fuel gauge.
  - Next Generation Camera Module PMIC (Dual Camera)
  - Multiple Rails PMIC for Automotive applications (3 or more DC-DC Buck)

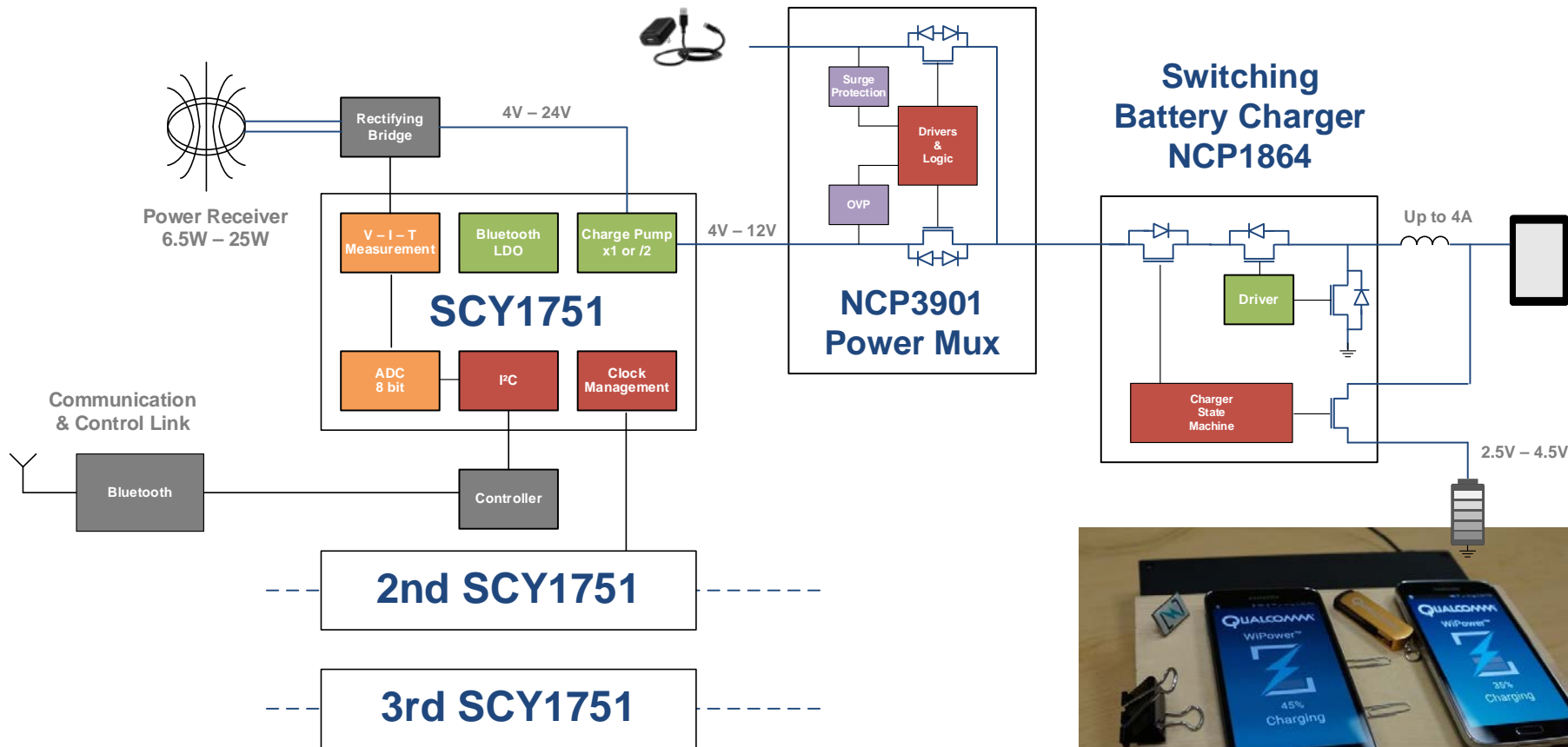


# Wireless PMIC Market Trend

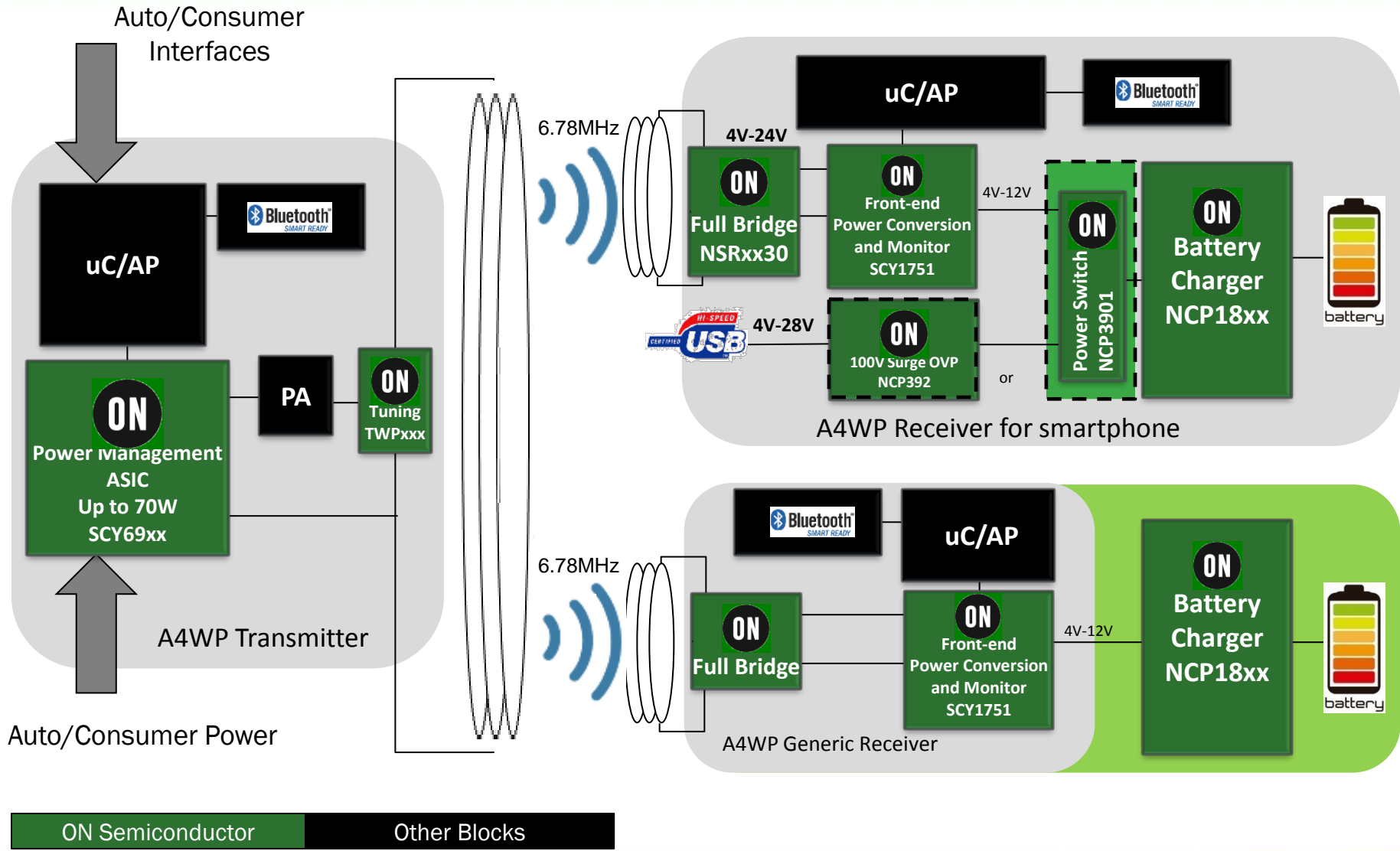
- Smart-Phone SubPMIC : High End Smart-phones and Tablets require more and more Power and this drives the need for more specialized Power Management solutions.
  - RX Wireless Power, Supply Voltage Pre-Scaler.
  - Camera modules
  - Buck-Boost-LDO supply for MMC memories like UFS.
  - Multi-Phase Buck for Application processor supply
  - Display modules
  - RF/PA (envelop Tracking)
  - BT-Wifi-FM-GPS-NFC connectivity combos
- Wireless Power TX PMIC
  - A4WP Multi-Device Charging infrastructure not yet available.
  - Dual Mode will be required until Multi-Device charging Infrastructure is deployed.
- Wearable System PMIC
  - Multiple opportunities for PMIC, Chargers and Wireless Charging.



# Wireless Power Rx Power delivery



# A4WP Wireless Power System



# PMIC, W. Charging, Charger Product trend

PMIC

Buck & Boost

BUCK-BOOST

LDO

Load Switches

Sub PMIC

- Camera modules
- New generation of BT-Wifi-FM combos
- Buck-Boost-LDO supply for MMC memories like UFS.
- Wireless Power RX, TX
- Multi-Phase Buck for Application processor supply
- Wearable PMIC

CHARGER

OVP / OCP

Power MUX

A4WP RX

CHARGER

- Charger with 5-6A Quick charge capability
- Dual input USB-PD, Wireless Charging front-end & Fuel Gauge for Wearable



# Charger Market Trends

## Use more pictures, merge 24, 25, 26, 27

- Chipset Suppliers are integrating Chargers in PMIC but requirement for Fast charge exceed the Chip-Set based charger capability for High End Smart-phones and Tablets
  - OEMs require standard 3A charger + 5-6A Quick charge capability for High End SmartPhones and Tablets.
  - Dual input USB-PD / QC3.0
  - 28V max rating input
  - Wireless Charging input
- Most Tablet platforms remain powered with 1 cell Li-ion or 2 parallel cells.
- There is a synergy between Charger, Fuel Gauge, PMIC and Wireless charging Receiver in Wearable applications.



# A4WP PMIC / QCOM Assumptions

- **Numbers Source & assumptions :**
  - Corporate Smart-phone Forecast by OEM.
  - Corporate Smart-phone category share forecast.
  - QCOM High-end Smart-Phone Chipset Market Share 20% in 2016
  - QCOM Mid-end Smart-Phone Chipset Market Share about 60%
  - I.H.S W. Charging Forecast report.
- **2016 A4WP opportunity Assumptions**
  - Forecast is using a bottom up approach for both RX and TX
  - A4WP as a new feature will be first integrated in High-End Smart-phone based on QCOM Chipset (MSM8994, MSM8992, MSM8996)
    - Few customers have committed to conduct product trials end of 2015/Q1-2016: LG, ZTE, Fujitsu
    - Next wave should occur H2-2016 with more LG products, Xiaomi and Huawei. Samsung is currently reviewing A4WP.
- **2017-2019 A4WP opportunity Assumptions**
  - Forecast estimate is using a top down approach both for RX and TX
  - High End Smartphone attachment rate increases to about 45% of QCOM premium Chipset by 2018.
  - Mid-End smartphone attachment rate up to 25% by 2018.
  - Top down approach I.H.S based TX

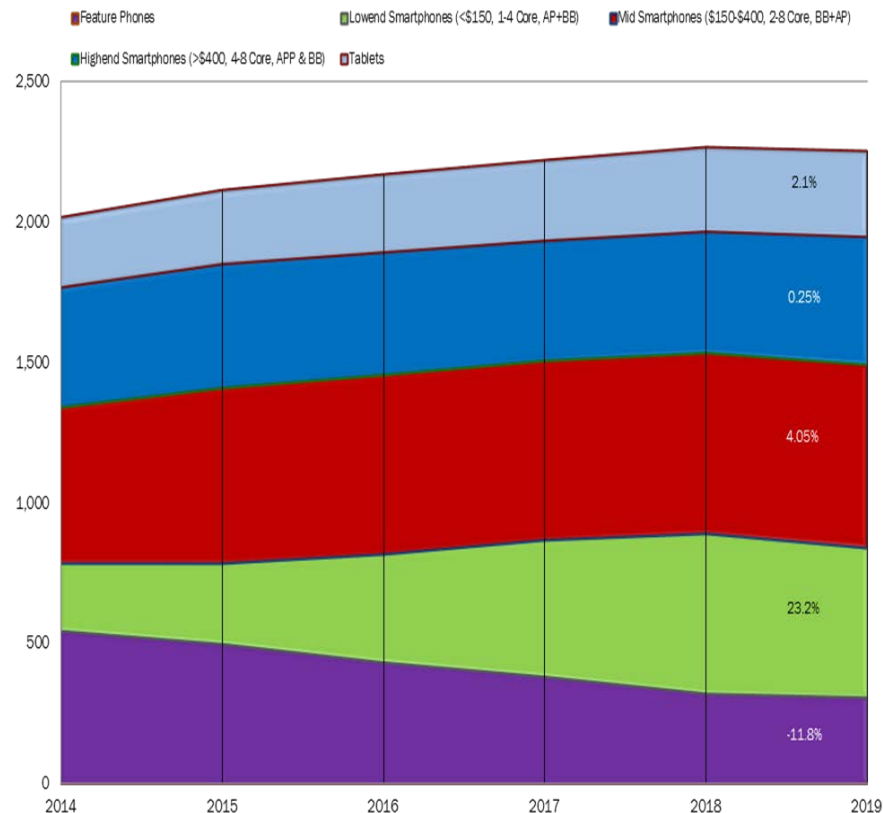


Microsoft Excel  
Worksheet



# Smart-Phone TAM

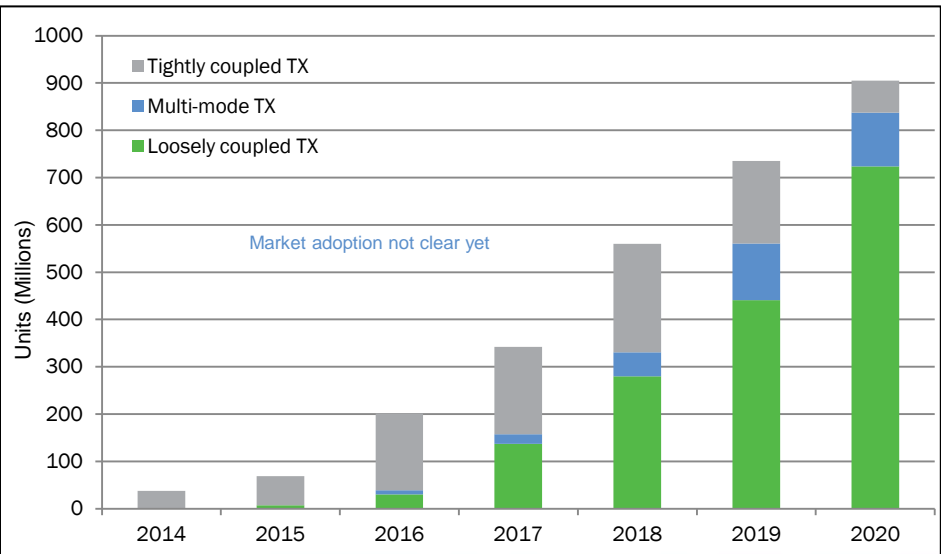
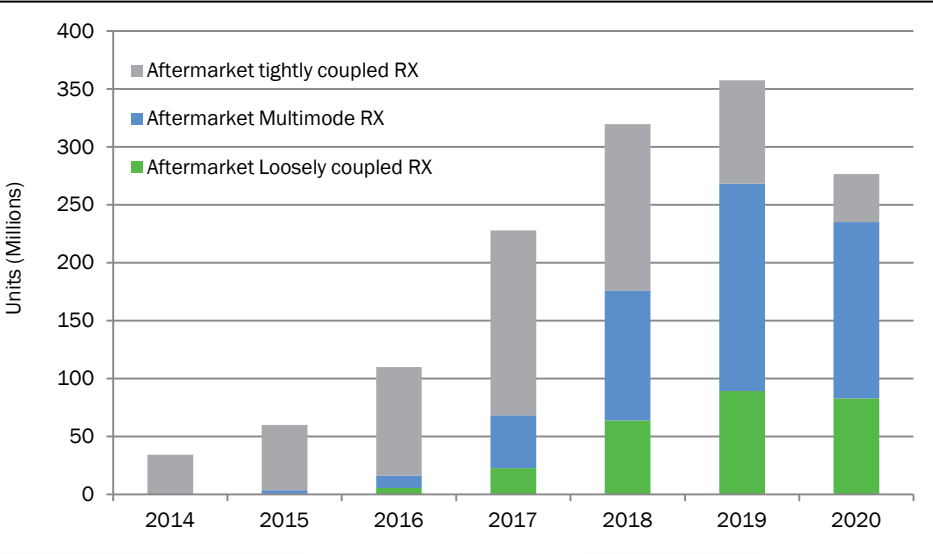
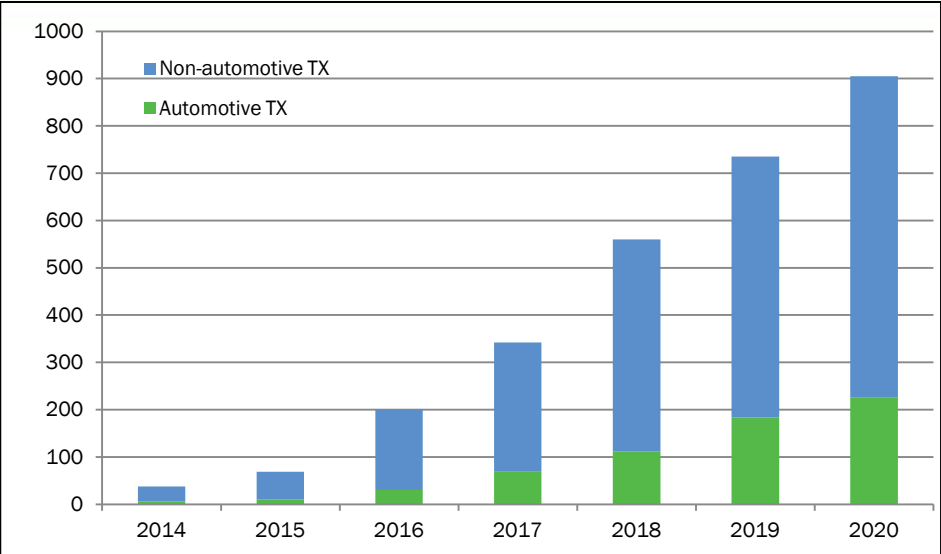
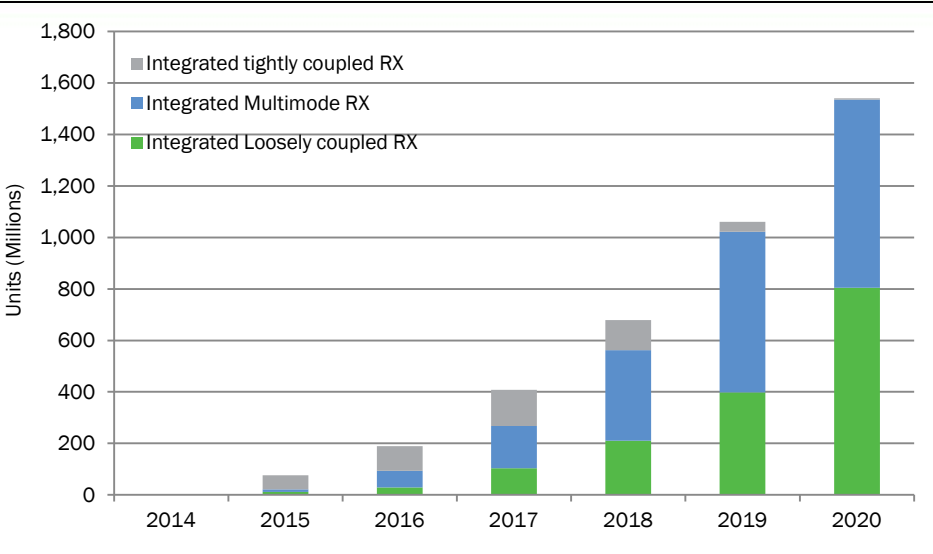
Wireless Devices, CAGR (2014-2019)



	2015E	2016E	2017E	2018E	2019E	2020
Samsung	313	301	300	300	310	315.0
Apple	214	210	211	225	245	255.0
Nokia	50	57	66	79	85	90
BB	6	8	9.5	10.5	11	12
HTC	20	24	24	25	27	30
Motorola						
Sony	63	67	76	83	87	95
LG	71	75	82	88	90	100.0
Huawei	92	102	110	117	120	125.0
ZTE	57	69.0	75.0	80.0	85.0	90.0
Lenovo	105	117.0	127.0	135.0	140.0	146.0
Yulong	57	69.0	78.0	84.0	90.0	95.0
Xiaomi	75	90.0	102.0	112.0	118.0	122.0
others	251	271.0	283.0	298.0	302.0	320.0
<b>Total</b>	<b>1374.0</b>	<b>1460.0</b>	<b>1543.5</b>	<b>1636.5</b>	<b>1710.0</b>	<b>1795.0</b>



# Wireless Charging IC Forecast



# TX W. Charging Product Proposals

PRU Category	Max Output Power	Example
Category 1	TBD	BT Headset
Category 2	3.5 W	Feature Phone
Category 3	6.5 W	Smart Phone
Category 4	13* W	Tablet
Category 5	25* W	Small Laptop
Category 6	37.5* W	Laptop
Category 7	50* W	

PTU Class	Output Power	Minimum PRUs
Class 1	2* W	1
Class 2	10 W	1
Class 3	16 W	2
Class 4	33* W	3
Class 5	50* W	4
Class 6	70* W	5

**Quad PA Drv up to 50W  
Dual Antenna  
And maybe 2x SCY6992  
Multi-RX**

**Diff PA Drv 25 W  
Charge up to 1 tablet or 2-3 Smart-phones Rcv  
A4WP 1.3 SW Stack  
SCY6992 Optimum usage**

**Mono Drv PA up to 10W  
Charge Single Rcv  
A4WP 1.2 SW Stack**

**SCY6992**

**NCP6993**  
2 x Design

50W

**NCP699x**  
OEM/ODM  
Co Design

25W  
3x cat 1/2/3  
1x cat 4

**NCP699x**  
**Derivatives**

16W  
2x cat 1/2/3  
1x cat 4

**NCP6991**  
Mono RX  
Bundled with  
Phone

10W  
1x cat 1/2/3

**NCP6990**  
Mono RX Bundled  
with Wearable

2W  
1x cat 1

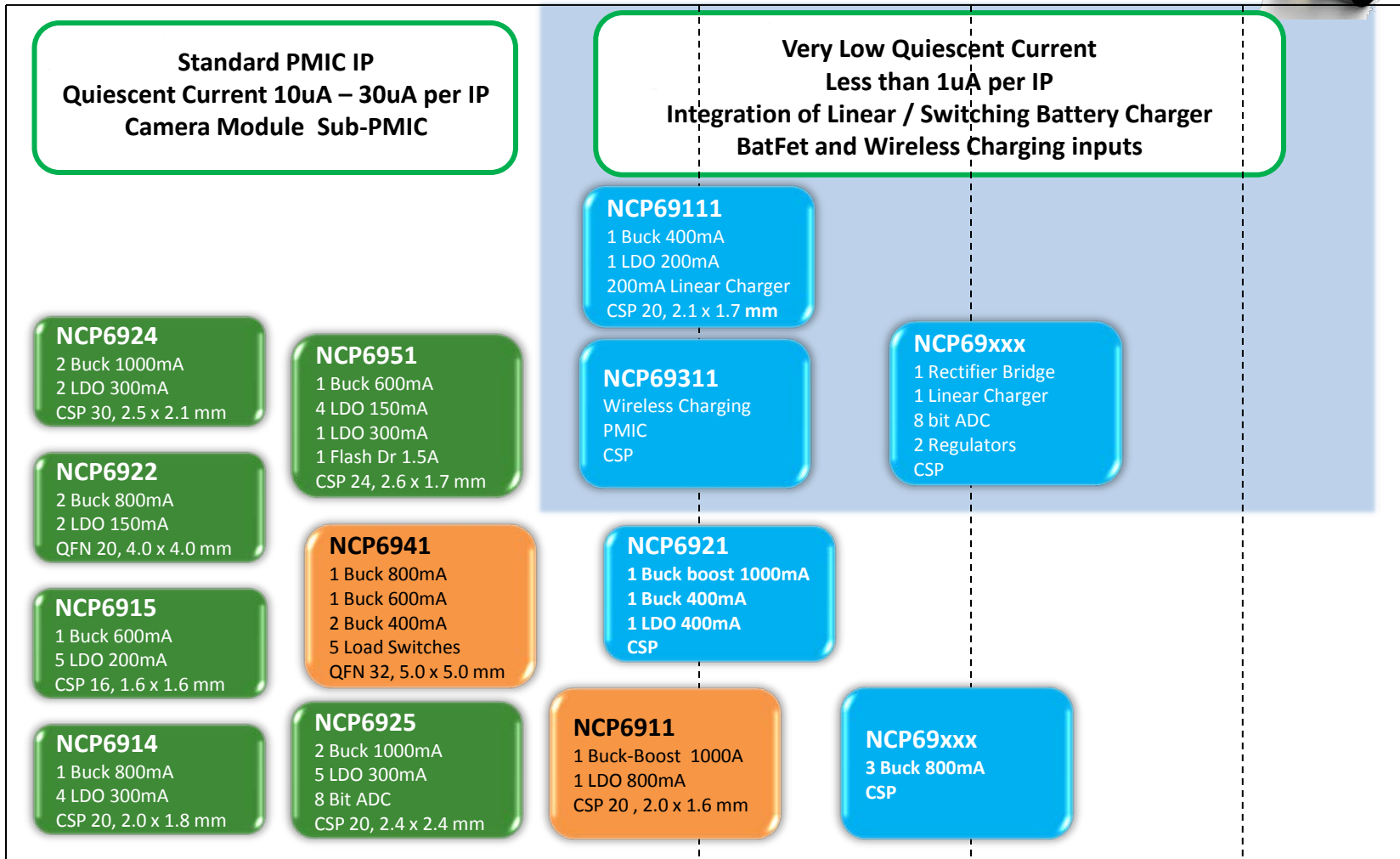


# Sub PMIC Portfolio and Roadmap



What we have

What we are doing



PMIC Portfolio

2016

2017

June 2015

Production

Samples

Development

Concept



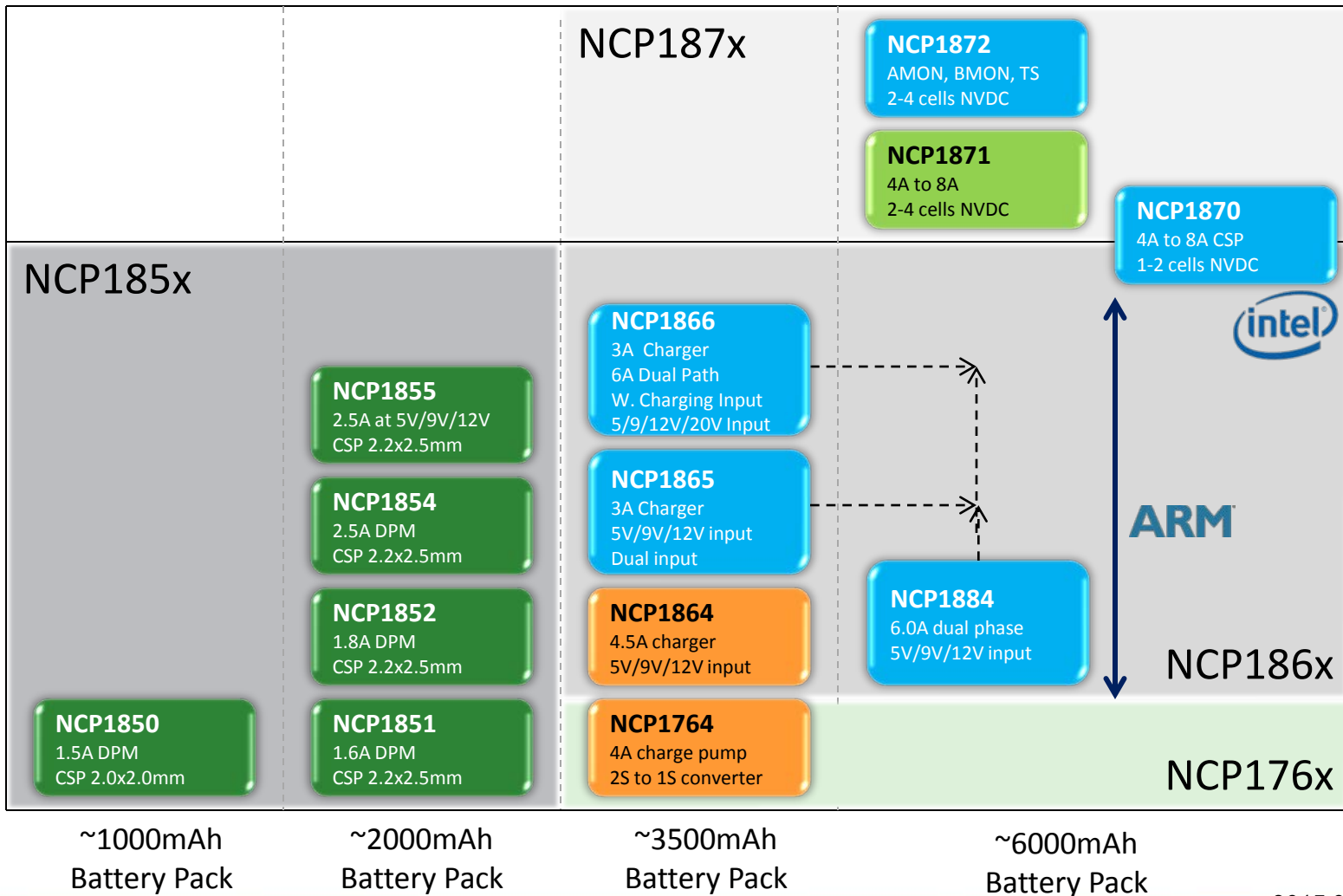
# Switching Battery Charger – Roadmaps

What do we have

What do we do

2-4 Cell  
12-20V Input  
Wall Charger  
USB PD

1 Cell  
5-12V Input  
Wall Charger  
USBx  
Wireless Charging



2015-03-31





# SWOT ANALYSIS

## STRENGTHS

- **Recognized financial progresses with MTK (+95%) and primary innovation partner with QCOM Wireless Charging**
- 1st win at Stringer for custom PMIC (\$4M/year)
- Improve our cost structure by 30% designing on 4ML, migrating to DECA, implementing dual site testing and migrating HV designs to Tower

## OPPORTUNITIES

- **Market size (~1Bu) and growth >10% require multi-sourcing solutions to secure customer supply**
- **High power requirements in charger, CPU and GPU increase the need of smart, high perf and multi-phase devices which couldn't thermally resist in a single PMU**
- Leverage and obtain more share from our reference designs engagement at Chinese customers
- Always new content (Features / Wearables, etc)

## WEAKNESSES

- **Samsung losing market share against China , rapid ASP erosion and weaker position / engagement**
- Supply chain lead time disconnected from wireless market ramp-up and down, require to take high risk in early starts and product mix
- Competitors 2 years ahead on multi-phase, chargers and boost and buck boost.
- Wafer cost are flat while price erosion requirements are -12% year on year

## THREATS

- Chipset maker dependence requires to be agile and flexible in IP development
- DCDC is becoming commoditized / China Inc
- **MTK gaining market share in low to mid end segments with lower SAM opportunity than QCOM. MTK sees Onsemi as an opportunistic partner.**



# DC-DC Market Trend

- Smartphones, Tablets and Phablets - Chipset makers are starting the slow migration of DC-DC into PMIC, but there still remains plenty of business to capture in the short term.
- Especially quick turn derivatives at the ODM level
- Target applications are...
  - LPDDR3 and LPDDR4 Memory Power
  - Single Phase Application Processor Power
  - Multiphase Application Processor Power
  - Display Module Power
- Automotive Applications – This market focus presents itself as a strong long term SAM expansion vehicle.
- Automotive ODM's strongly prefer POL solutions over PMIC
- Target applications are...
  - Digital Signal Processor Power (Infotainment Systems)
  - LPDDR4 Memory Power (Infotainment Systems)
  - Image Sensor Power (ADAS Camera)
  - Gage Cluster (Analog Gage and VFD Power)

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# DC-DC 2015 – 2016 Growth

- What was missed in 2015
  - We were late on the introduction of the NCP6356 and NCP6353 due to unforeseen technical issues.
  - Additionally Qualcomm was also late on the execution of the MSM8992, MSM8994 reference designs. This resulted in a \$1.2M revenue loss for 2015
  - Samsung demand fell more than 50% due substantial loss of their share in the China and India markets
  - MTK delayed their use of the NCP6356 until Q1 2016. This resulted in a loss of \$3.5M for 2015
  - MTK never followed through with the NCP6358 concept. This resulted in a loss of \$3.4M for 2015

BUCK DCDC PA DCDC



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# DC-DC New Product Strategy

- **Short Term Growth (2016)**

- NCP6353 - Targeting MSM8992 and MSM8994 LPDDR4 power opportunities at the ODM Level (LG, Xiaomi, Oppo, Lenovo, Lab123, HTC, ZTE, Meizu).  
\$4.2M
- NCP6353/NCP6356 - MTK LPDDR4 Memory Power and Core Power. \$4.8M
- NCP63516 – Huawei Flagship Smartphone (Core Power for the Kirin 950)  
\$5.4M

- **Mid-Term Growth and Long Term Outlook (2017 – 2019)**

- NCP63516 – Continued growth through 2017
- NCV635X ADAS Camera Variant – Target customers Mando, Delphi, Autoliv, Denso, Hella, Magna, Continental, Nvidia, TRW, Valeo and Mobileye
- NCV6356B Automotive Infotainment LPDDR4 and DSP Power - Lead customer is Qualcomm, Target customers are Magnetti Marelli, Pioneer, Alpine, Panasonic, Bose, Blaupunkt, Denso, Continental and Nvidia
- NCP1764 Charge Pump Divider – Target customers are Sony, Lenovo, Lab123, Google

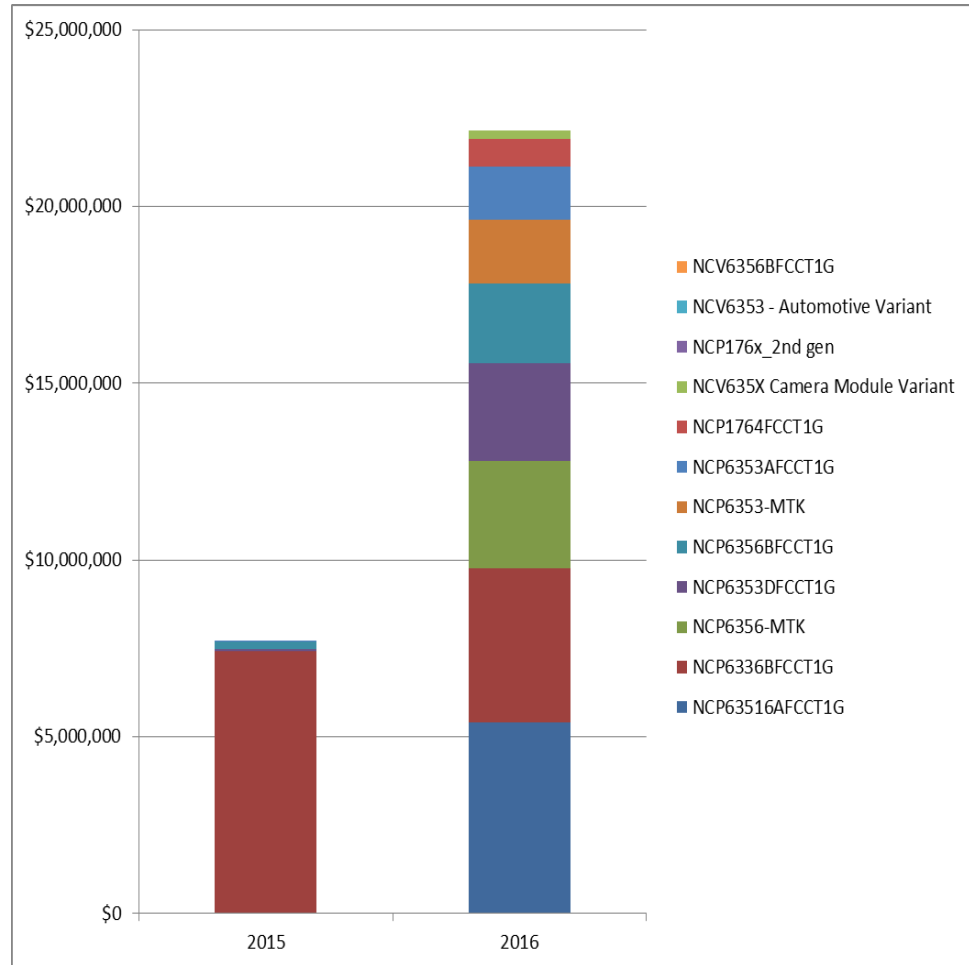


# DC-DC 2015 – 2016 Growth

Device	2015	2016
NCP63516AFCCT1G	\$0	\$5,395,370
NCP6336BFCCT1G	\$7,416,173	\$4,366,896
NCP6356-MTK	\$0	\$3,037,500
NCP6353DFCCT1G	\$70,542	\$2,756,514
NCP6356BFCCT1G	\$189,981	\$2,269,936
NCP6353-MTK	\$0	\$1,800,000
NCP6353AFCCT1G	\$52,778	\$1,487,700
NCP1764FCCT1G	\$0	\$786,240
NCV635X Camera Module Variant	\$0	\$250,000
NCP176x_2nd gen	\$0	\$0
NCV6353 - Automotive Variant	\$0	\$0
NCV6356BFCCT1G	\$0	\$0
NCP635xxx_2nd gen_Multiphase	\$0	\$0

- **Biggest Growth Engines in 2016**

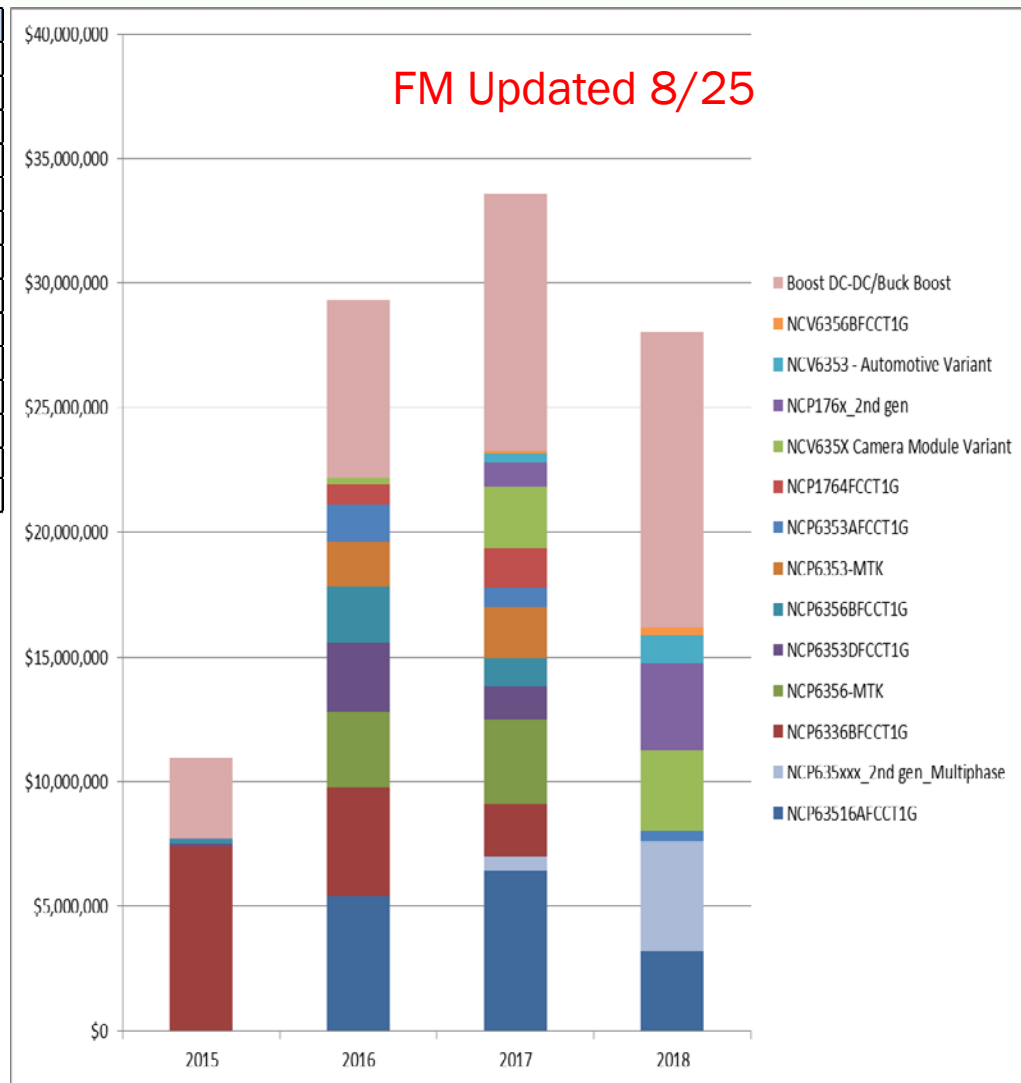
- NCP63516
- NCP6356B
- NCP6353D
- NCP1764



# Mid-Term Growth & Long Term Outlook

Device	2015	2016	2017	2018
NCP63516AFCCT1G	\$0	\$5,395,370	\$6,394,000	\$3,197,000
NCP6336BFCCT1G	\$7,416,173	\$4,366,896	\$2,125,090	\$0
NCP6356-MTK	\$0	\$3,037,500	\$3,375,000	\$0
NCP6353DFCCT1G	\$70,542	\$2,756,514	\$1,316,137	\$0
NCP6356BFCCT1G	\$189,981	\$2,269,936	\$1,169,017	\$0
NCP6353-MTK	\$0	\$1,800,000	\$2,000,000	\$0
NCP6353AFCCT1G	\$52,778	\$1,487,700	\$789,150	\$394,575
NCP1764FCCT1G	\$0	\$786,240	\$1,560,000	\$0
NCV635X Camera Module Variant	\$0	\$250,000	\$2,500,000	\$3,250,000
NCP176x_2nd gen	\$0	\$0	\$1,000,000	\$3,500,000
NCV6353 - Automotive Variant	\$0	\$0	\$352,000	\$1,100,000
NCV6356BFCCT1G	\$0	\$0	\$75,000	\$330,000
NCP635xxx_2nd gen_Multiphase	\$0	\$0	\$600,000	\$4,416,000
Boost DC-DC/Buck Boost	\$3,245,644	\$7,175,599	\$10,321,581	\$11,855,962

- We see a step decline in our baseline product offering revenue in 2018
- This is primarily due to...
  - The phasing out of Qualcomm and MTK last generation chipsets and their proposed move to PMIC solutions for the next generation chipsets.
- To counteract this decline we will continue our focus on Multiphase and next Generation Multiphase designs .
- Continue to execute quick derivatives of current single phase and boost/buck-boost portfolio for wireless and automotive ODM's
- We recover in 2019 with forecasted revenue of \$34,931,291



# Load Switch Market Trend

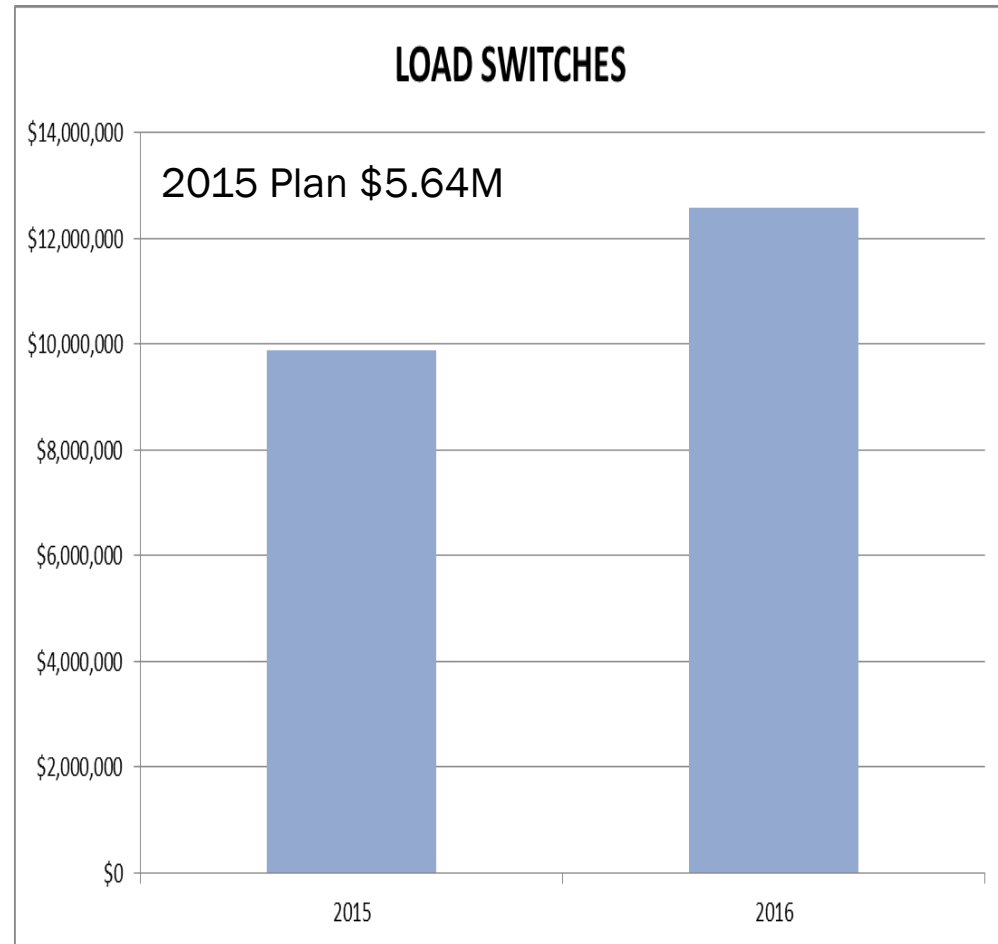
- **Smartphones, Tablets and Phablets**
  - Battery Power Management
  - USB-PD Type-C Power Management
- **Notebook Computing**
  - Battery Power Management
  - USB-PD Type-C Power Management
- **Automotive Applications**
  - DSP Power Management (Infotainment Systems)
  - VFD Power Management (Gage Cluster)



# Load Switch 2015 – 2016 Growth

- Outperformed 2015 Plan!
  - Gained new opportunities and un-forecasted upsides
    - NCP435 Huawei \$2.1M
    - NCP451 Stringer \$1.8M
    - NCP335 Stringer, Lenovo \$3.4M
    - NCP333 HTC 371K
  - NCP390X biggest growth opportunity for 2016

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# Load Switch New Product Strategy

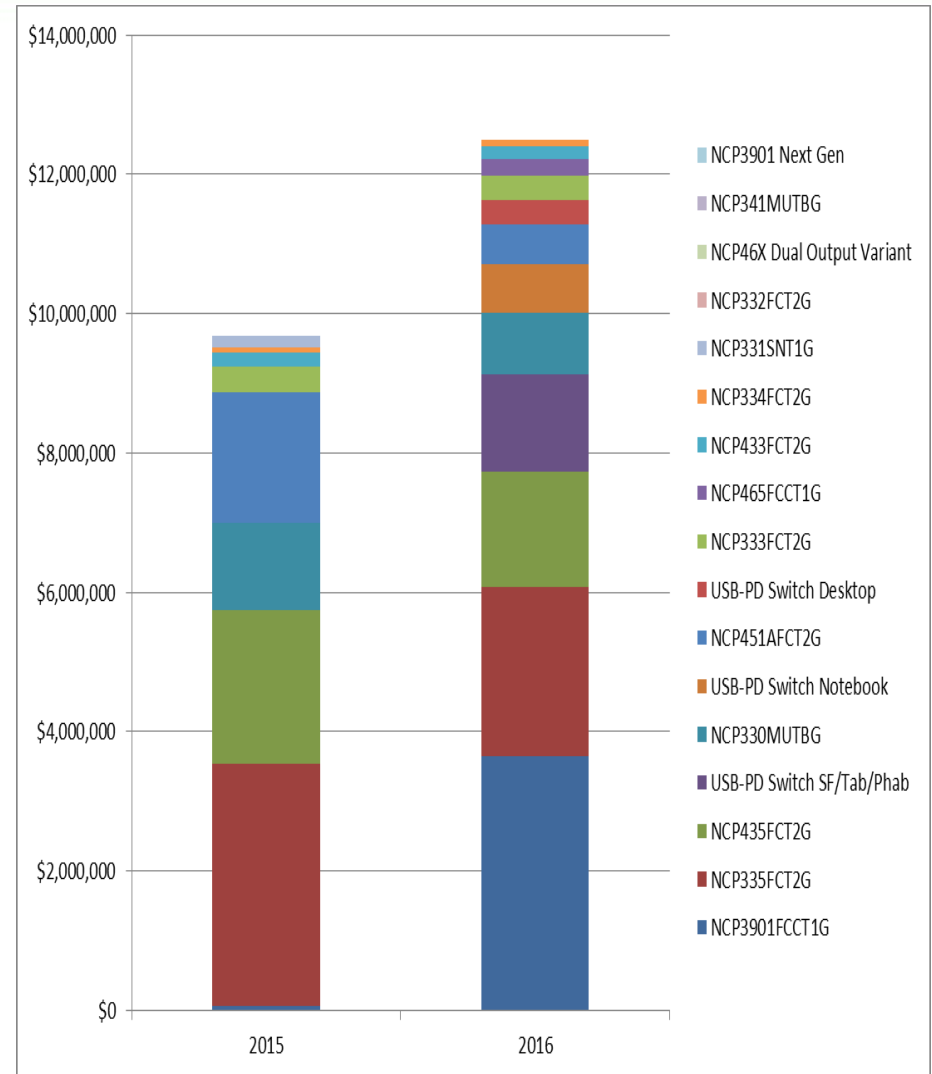
- **Short Term Growth (2016)**
  - NCP3901 (3A) NCP3902 (2A) Battery Charging Power Mux – Qualcomm MSM8953 and MS8976 chipset. Target Customers - Asus, Kyocera, ZTE, TCL and Lenovo. \$3.6M
- **Mid-Term Growth and Long Term Outlook (2017 – 2019)**
  - USB-PD Switch Smartphone, Tablet, Phablet – Target customers - Samsung, Lenovo, Nokia, Lab123, Xiaomi, Oppo, Vivo, Huawei, HTC, ZTE, Meizu.
  - USB-PD Switch Notebook – Target Customers – Asus, Sony, Stringer, HP, Lenovo, Acer, Haier and Dell
  - USB-PD Switch Desktop - Target Customers – Asus, Sony, Stringer, HP, Lenovo, Acer, Haier and Dell
  - NXP3901 Next Generation – Target Customers – Samsung, Qualcomm, MTK, Kyocera, Asus, ZTE, TCL and Lenovo



# Load Switch 2015 – 2016 Growth

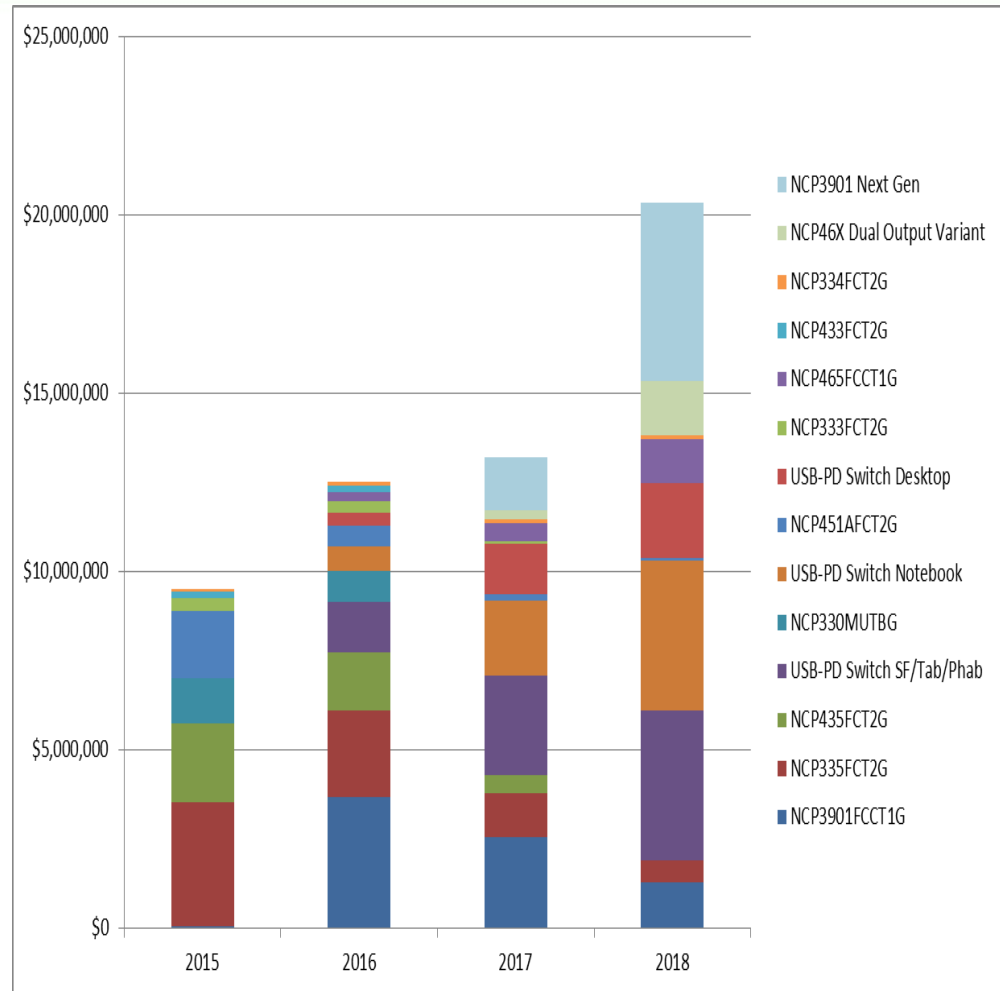
Device	2015	2016
NCP3901FCCT1G	\$58,000	\$3,656,900
NCP335FCT2G	\$3,484,930	\$2,428,602
NCP435FCT2G	\$2,212,325	\$1,647,800
USB-PD Switch SF/Tab/Phab	\$0	\$1,400,000
NCP330MUTBG	\$1,237,694	\$879,113
USB-PD Switch Notebook	\$0	\$700,000
NCP451AFCT2G	\$1,884,136	\$566,932
USB-PD Switch Desktop	\$0	\$350,000
NCP333FCT2G	\$371,380	\$348,744
NCP465FCCT1G	\$0	\$249,000
NCP433FCT2G	\$191,784	\$168,605
NCP334FCT2G	\$79,016	\$100,698

- **Biggest Growth Engine in 2016**
  - NCP3901 and NCP3902



# Mid-Term and Long Term Growth

Device	2015	2016	2017	2018
NCP3901FCCT1G	\$58,000	\$3,656,900	\$2,559,830	\$1,279,915
NCP335FCT2G	\$3,484,930	\$2,428,602	\$1,214,454	\$607,227
NCP435FCT2G	\$2,212,325	\$1,647,800	\$509,170	\$0
USB-PD Switch SF/Tab/Phab	\$0	\$1,400,000	\$2,800,000	\$4,200,000
NCP330MUTBG	\$1,237,694	\$879,113	\$0	\$0
USB-PD Switch Notebook	\$0	\$700,000	\$2,100,000	\$4,200,000
NCP451AFCT2G	\$1,884,136	\$566,932	\$175,315	\$87,657
USB-PD Switch Desktop	\$0	\$350,000	\$1,400,000	\$2,100,000
NCP333FCT2G	\$371,380	\$348,744	\$89,779	\$0
NCP465FCCT1G	\$0	\$249,000	\$498,000	\$1,245,000
NCP433FCT2G	\$191,784	\$168,605	\$0	\$0
NCP334FCT2G	\$79,016	\$100,698	\$100,698	\$100,698
NCP46X Dual Output Variant	\$0	\$0	\$250,000	\$1,500,000
NCP3901 Next Gen	\$0	\$0	\$1,500,000	\$5,000,000



- **Biggest Growth Engine 2015 - 2019**
  - NCP3901 next gen
  - USB-PD Switch SF/Tab/Phab
  - USB-PD Switch Notebook
  - USB-PD Switch Desktop
  - NCP46X Dual Output Variant
- USB-PD Type-C will be adopted in 100% of computing applications and at least 60% of the High End Smartphones by 2018.

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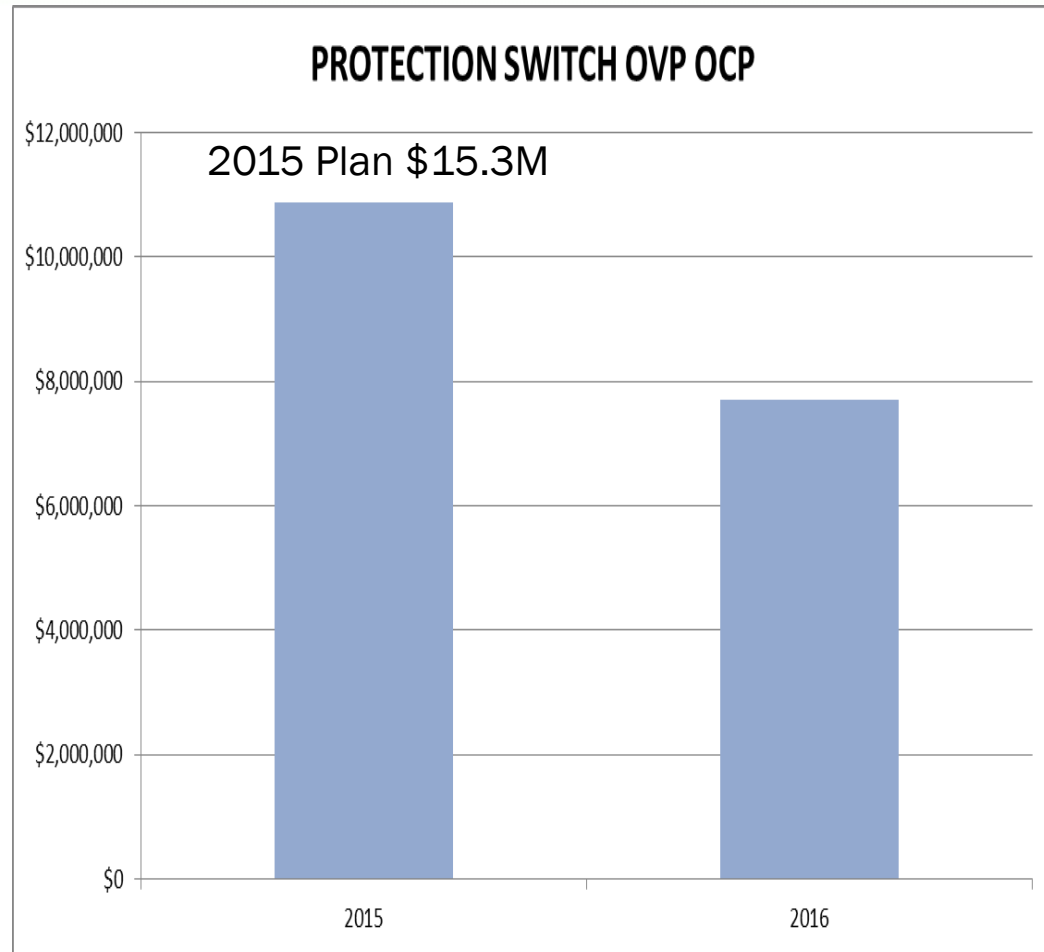
# OVP/OCP Market Trend

- **Smartphones, Tablets and Phablets**
  - Battery Power Over Voltage / Over Current Protection
  - USB-PD Type-C Over Voltage Protection / Over Current Protection
- **Notebook Computing**
  - USB-PD Type-C Over Voltage / Over Current Protection



# OVP / OCP 2015 – 2016 Outlook

- Where we missed in 2015
  - Samsung never took delivery of the NCP392BR or the NCP391
  - HTC did not take delivery of NCP394E. This was due to the perceived quality issues with NCP6951 and HTC would not consider another new device.
  - Did not achieve market penetration success with the lower cost NCP394 family.
    - Samsung pulled the OVP function into their PMIC
    - Huawei already qualified the NCP392D and did not want to do an additional qualification on the NCP394D
    - The China market in general did not see the value in the NCP394 over the NCP392 family



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# OVP / OCP New Product Strategy

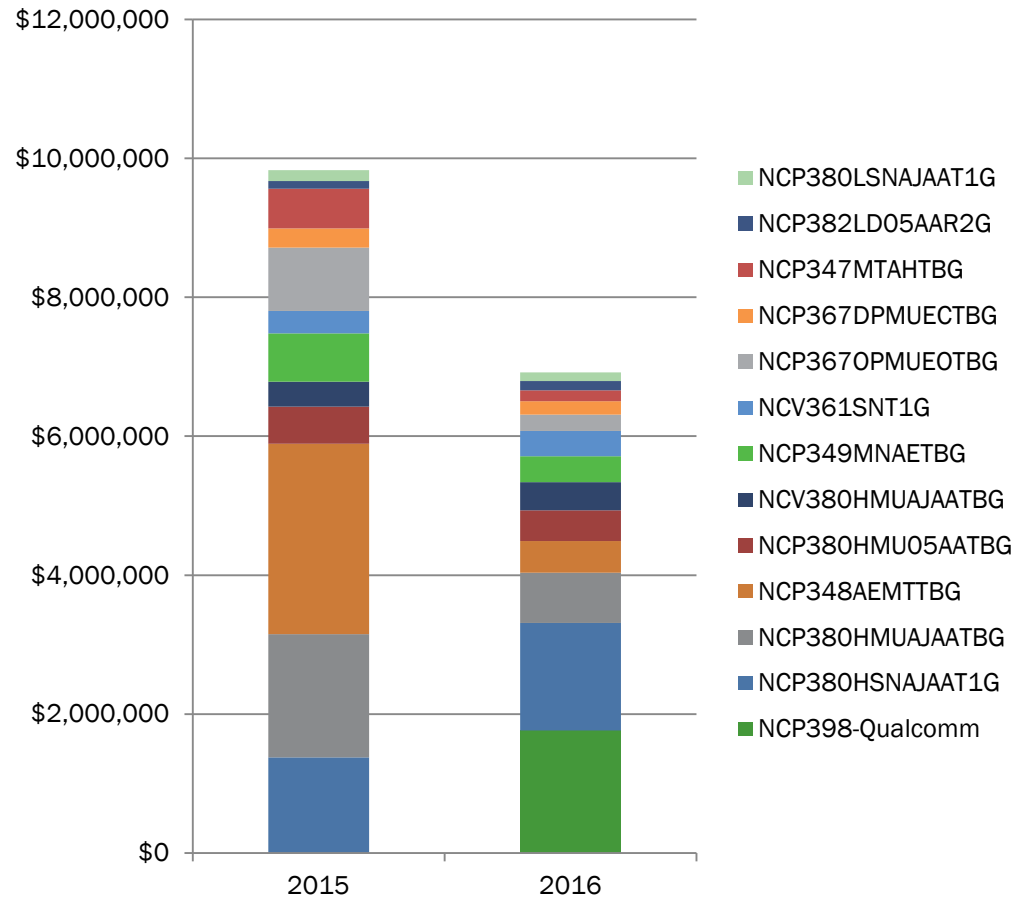
- Short Term and Long Term Outlook
  - Due to the major wireless chipset manufactures (Qualcomm, MTK, Hisilicon) pulling in the OVP/OCP functionality into the PMIC, the demand has diminished exponentially for the existing portfolio and only one strong request for a new IP. Where is it integrated, show an example, **can we benefit from that in PMIC, show a move of the TAM/SAM**
  - We currently see no evident signs of recovery in the wireless market segment
  - We are looking outside of the box for new Markets, Applications and IP's **what markets?**



# OVP / OCP 2015 – 2016 Outlook

Device	2015	2016
NCP398-Qualcomm	\$0	\$1,766,100
NCP380HSNAJAAT1G	\$1,376,739	\$1,545,997
NCP380HMUAJAATBG	\$1,776,372	\$721,709
NCP348AEMTTBG	\$2,739,715	\$459,881
NCP380HMU05AATBG	\$531,469	\$438,930
NCV380HMUAJAATBG	\$361,826	\$407,853
NCP349MNAETBG	\$692,882	\$370,064
NCV361SNT1G	\$324,715	\$364,745
NCP367OPMUEOTBG	\$910,317	\$235,440
NCP367DPMUECTBG	\$278,805	\$194,701
NCP347MTAHTBG	\$569,882	\$153,164
NCP382LD05AAR2G	\$111,344	\$137,213
NCP380LSNAJAAT1G	\$154,836	\$122,608

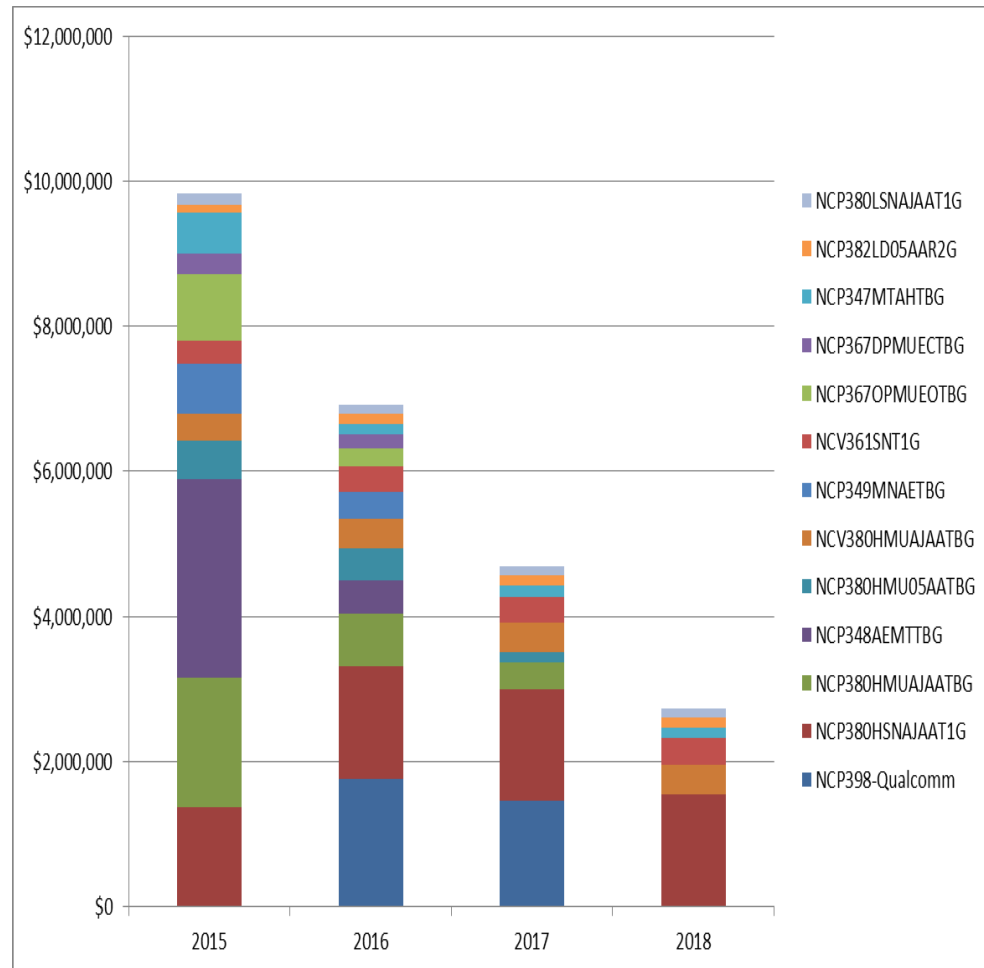
- **Biggest Growth Engine in 2016**
  - NCP398 for Qualcomm
  - NCP380HS



# Mid-Term and Long Term Outlook

Device	2015	2016	2017	2018
NCP398-Qualcomm	\$0	\$1,766,100	\$1,450,000	\$0
NCP380HSNAJAAT1G	\$1,376,739	\$1,545,997	\$1,545,997	\$1,545,997
NCP380HMUAJAATBG	\$1,776,372	\$721,709	\$367,401	\$0
NCP348AEMTTBG	\$2,739,715	\$459,881	\$0	\$0
NCP380HMU05AATBG	\$531,469	\$438,930	\$135,629	\$0
NCV380HMUAJAATBG	\$361,826	\$407,853	\$407,853	\$407,853
NCP349MNAETBG	\$692,882	\$370,064	\$0	\$0
NCV361SNT1G	\$324,715	\$364,745	\$364,745	\$364,745
NCP367OPMUEOTBG	\$910,317	\$235,440	\$0	\$0
NCP367DPMUECTBG	\$278,805	\$194,701	\$0	\$0
NCP347MTAHTBG	\$569,882	\$153,164	\$153,164	\$153,164
NCP382LD05AAR2G	\$111,344	\$137,213	\$137,213	\$137,213
NCP380LSNAJAAT1G	\$154,836	\$122,608	\$122,608	\$122,608

- **No Growth 2016 - 2018**
  - NCP398 for Qualcomm declines and phases out in 2018
  - NCP380HS stays flat



# COST REDUCTIONS

2014

2015

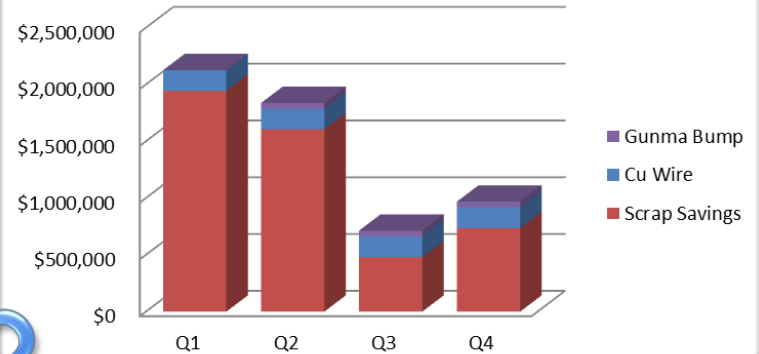
Scrap Savings (\$4.8M)

COPPER WIRE CONVERSION (\$725k)

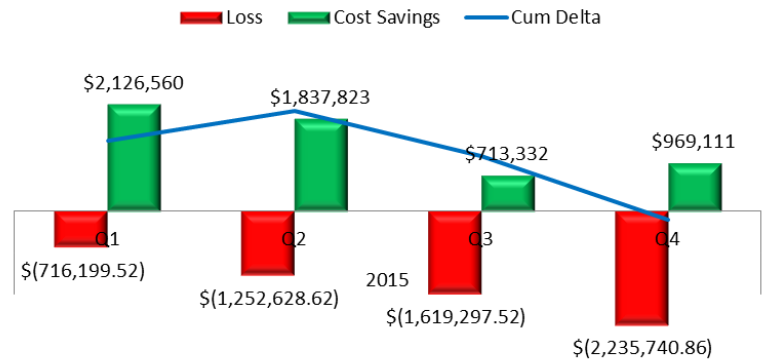
Gunma Bump Qual (\$150k)

WIP

PI Cost Reductions by Quarter - 2015



2015 Planned Cost Savings vs. ASP Erosion

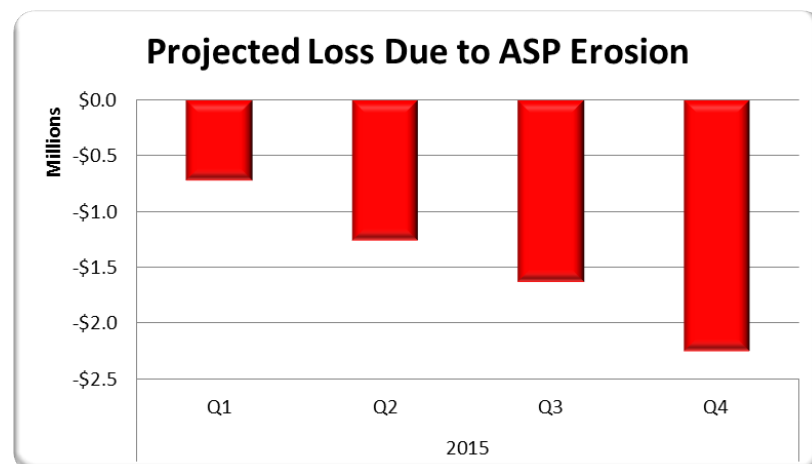


**\$5.7M COST SAVINGS IN 2015**



# ASP Erosion

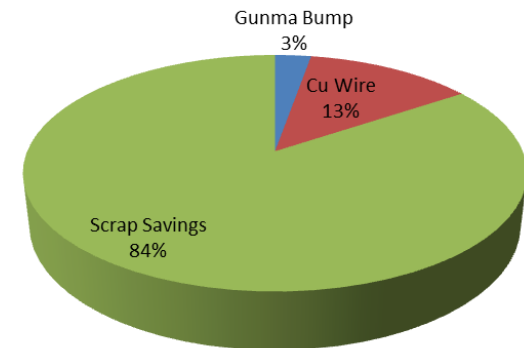
- Cost reductions necessary to offset predicted ASP erosions have been calculated based on the following assumptions:
  - Unit volume from 2015 forecast
  - Forecasted revenue is impacted by ASP erosion by:
    - Q1 = 2%
    - Q2 = 3%
    - Q3 = 4%
    - Q4 = 5%
- Total predicted revenue loss due to ASP erosion in 2015 is \$5.7M.
- Cost reductions to offset this predicted revenue loss have been identified and are detailed on the following slides.



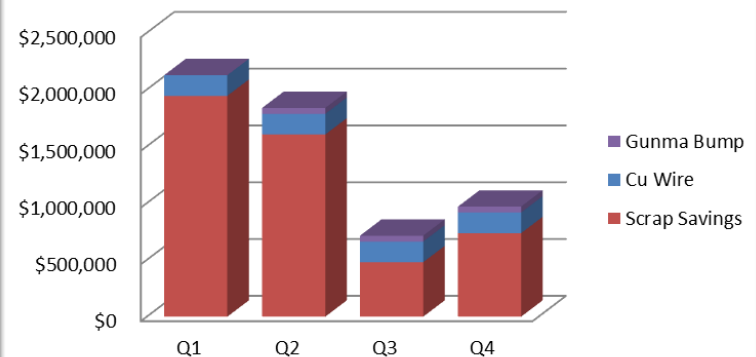
# Planned Cost Reductions - 2015

- \$5.7M of cost reductions planned for 2015
- Key cost reductions include:
  - Cost savings from recently improved scrap performance:
    - \$4.7M savings
  - Cu Wire Implementation
    - NCP330 - \$160k / quarter
    - NCP380 - \$22k / quarter
  - Continuous Yield Improvement
    - \$150k to \$300k / quarter
  - Gunma Bump Qual
    - \$52k / quarter

PI Planned Cost Reductions by Type - 2015



PI Cost Reductions by Quarter - 2015



# Planned Cost Reductions - 2015

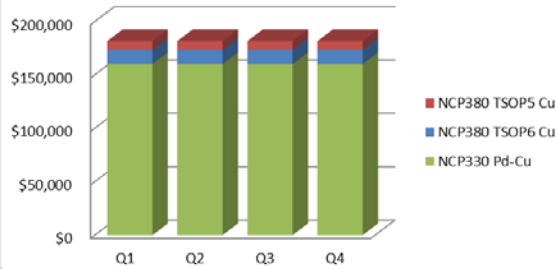
PTI	Cu Wire				Scrap Savings					Gunma Bump Qual					
	Activity	Impact				Activity	Impact				Activity	Impact			
		Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4
PI	NCP380 TSOP6 Cu	\$13,455	\$13,455	\$13,455	\$13,455	Maintain Current Scrap Savings	\$ 1,801,480.54	\$ 1,390,556.95	\$ 194,315.70	\$ 424,790.76	NCP2811 Bump to Gunma	\$0	\$38,000	\$38,000	\$38,000
	NCP380 TSOP5 Cu	\$8,160	\$8,160	\$8,160	\$8,160	NCP6335 Probe	\$36,500	\$36,500	\$36,500	\$36,500	NCP2817 Bump to Gunma	\$0	\$14,000	\$14,000	\$14,000
	NCP330 Pd- Cu	\$160,000	\$160,000	\$160,000	\$160,000	NCP6924 Probe	\$7,171	\$14,341	\$21,512	\$28,682					
						All Bump Die Sales	\$17,780	\$62,230	\$106,680	\$106,680					
						NCP367 FT	\$26,387	\$31,099	\$35,811	\$40,523					
						NCP6334 FT	\$0	\$3,358	\$6,715	\$10,072					
						NCP380 FT	\$14,248	\$17,810	\$21,372	\$24,934					
						NCP6922 FT	\$9,538	\$11,445	\$13,353	\$14,307					
						NCP348 FT	\$3,985	\$7,970	\$11,955	\$15,940					
						NCP349 FT	\$12,911	\$12,911	\$12,911	\$12,911					
						NL7WB66 FT	\$7,825	\$8,248	\$9,305	\$9,940					
						NS5S1153 FT	\$7,121	\$7,740	\$9,288	\$10,217					
<b>PI Total: \$7M</b>	<b>Cu Wire</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Scrap Savings</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Gunma Bump</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
	\$726,460	\$181,615	\$181,615	\$181,615	\$181,615	\$4,764,367	\$1,944,945	\$1,604,208	\$479,717	\$735,496	\$156,000	\$0	\$52,000	\$52,000	\$52,000

**Total: \$5.7M**



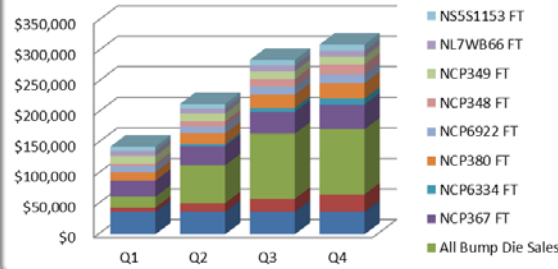
# Planned Cost Reductions - 2015

PI Cu Wire Savings - 2015



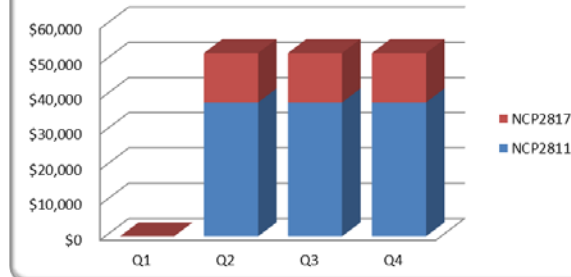
+

PI Yield Optimization Savings - 2015

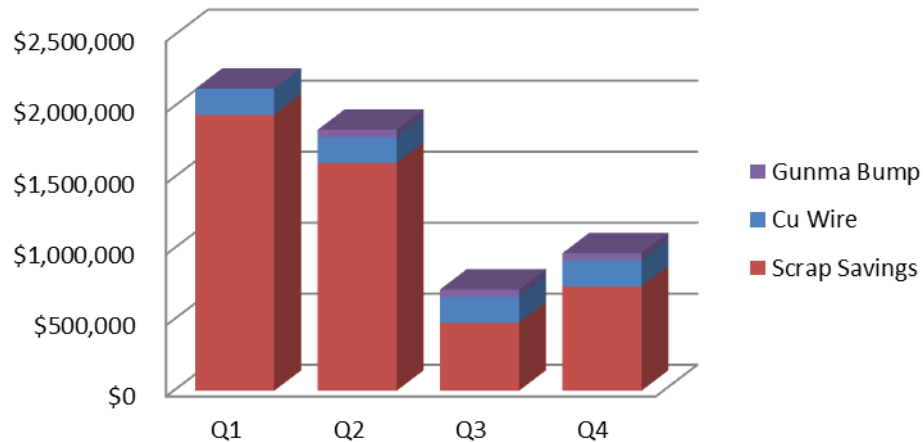


+

PI Gunma Bump Qual Savings - 2015



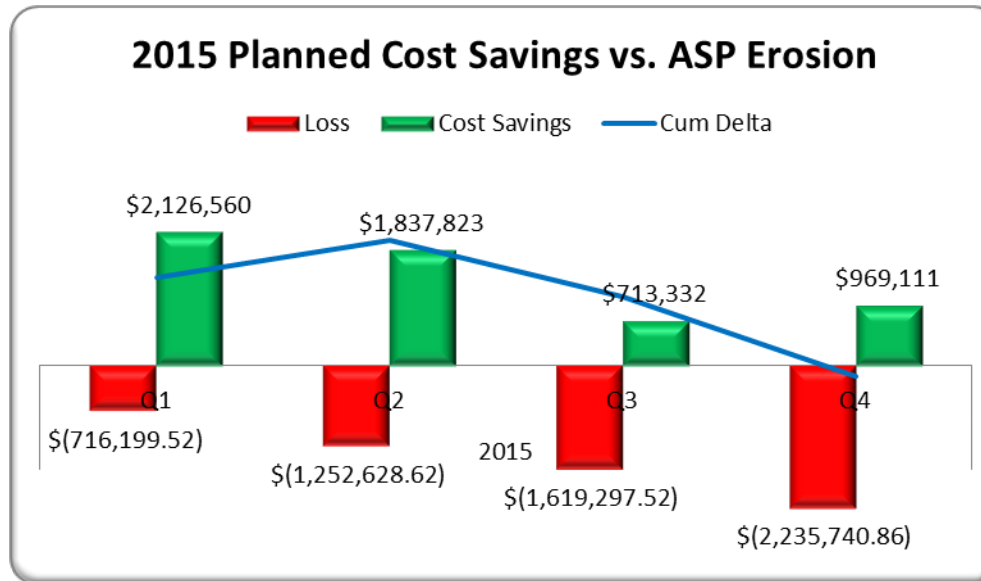
PI Cost Reductions by Quarter - 2015



**Total:  
\$5.7M**



# Cost Savings vs. ASP Erosion



- ASP erosion is expected to result in up to \$5.7M of revenue erosion.
- Cost savings of \$5.7M offset the expected ASP erosion.



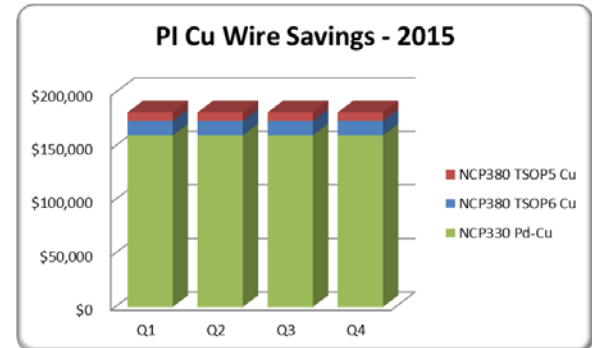
# Copper Wire Quals

## Executive summary:

- NCP380 TSOP5 and TSOP6 converting from Au to Cu wire.
  - Qualification completed; FPCN published
  - Customer approvals received
  - **Implemented in production as of WK 32 2014**
- NCP330 UDFN4 converting from Au to Pd-Cu wire.
  - Qualification complete
  - **FPCN published WK 31 2014**
  - Expect implementation Q4 2014

## Program key attributes :

- Cost savings : **\$182k / Q**
- Qualification **Complete**



	program	2014				2015			
NCP380 TSOP5/6	FPCN Issued			▲					
	Implementation				▲	■			
NCP330 UDFN	FPCN Issued				▲				
	Implementation					▲	■		



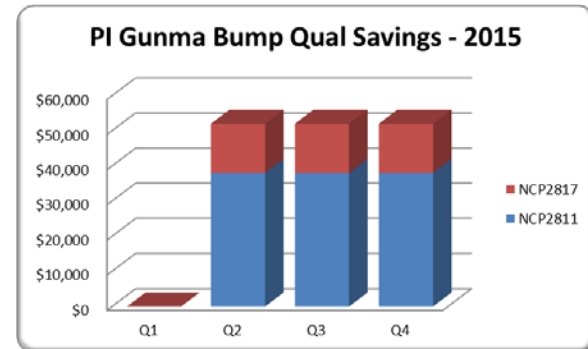
# FCI to Gunma

## Executive summary:

- NCP2811 and NCP2817 Bump on I/O devices in qualification for bumping at Gunma.
- Currently bumped at FCI.
- Qual lots built and in reliability testing.
- Estimated cost savings = \$38/wafer
- FPCN publication expected Q4 2014
- Cost savings to start Q2 2015

## Program key attributes :

- Cost savings \$52k / Q
- Program expenses : \$10k
- Qualification Q4 2014

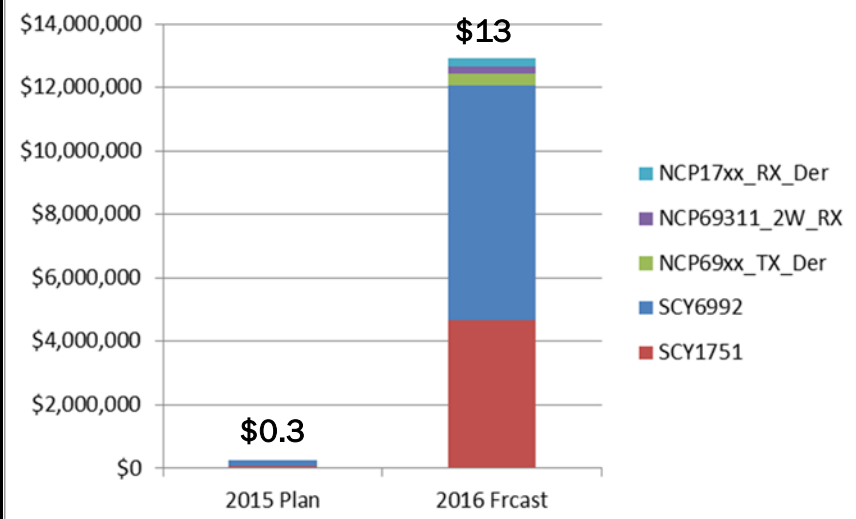


	program	2014	2015
NCP2811, NCP2817 Gunma Qual	Reliability Testing	[Progress bar: Q2 2014 to Q3 2014]	
	PCN Publication	[Progress bar: Q3 2014 to Q4 2014]	
	Implementation	[Progress bar: Q4 2014 to Q2 2015]	



# A4WP engagement – 2016 forecast

Company	RX	TX	MP Forecast / Quotes / OPP
LG	X		G4 accessory after market Q4-2015 10Ku then Smart-Phone for Local Market (0.5Mu). Adoption in G5 starting H2-2016 + 1.5Mu. Q#1928074
Huawei	X		Q2-2016 Ramp-up. H2'15, 1Mu
Xiaomi	X	X	Q3-2016 Ramp-up. Estimated 2Mu
ZTE	X		MP April 2016, 600Ku
HTC	X	X	M10 Project MP End of Q1 Launch. 1Mu Icirround and Microtips are bidding on TX modules Qty 100Ku 2016. OPP#742342 - #742343
Futjitsu	X		April'16. 800Ku/yr
Foxconn	X		3D display Camera, End customer Light. MP Q2'16 100Ku. Q#1936426
Sirin Mobile	X		MP Q1-2016 - 10-20Ku 2016. Flextronics Sweden. Q#1933210



### TX and RX Modules and Charging PADs ODM

Convenient Power HK, Ltd		X	Multiple designs. TX Cat 2 10Ku/50Ku. OPP#742581
Samsung Digital Media	X	X	Targets multiple Samsung products. Interest in Wipower Co-developments with ON Semi
Samsung Wireless (Charging Pad)		X	Recent interest. Delivered TX EVB Opp#741232
Heesung Electronic, Ltd	X	X	LG G4 Back Cover design cancelled (?). TX Cat 4. MCU TI CC2541. RTM End of December. 100Ku/Yr
Chemtronics Co, Ltd	X	X	RX for Smartphone and Low Power Laptop. RX project tiling = 2X. TX Cat 3. RTM MCU Microchip. 200Ku/ Yr, RTM Q2'16
Komatech Co Ltd	X	X	Back Cover design. Class 2,3) TX Cat 2. MCU TI Microchip. RTM Q1'16. 100Ku/Yr
Taiwan View Achieve CO., ltd (Icirround)	X	X	Working on 3 PRUs (5,10 and 20W) for sample Q4-1015. And one PTU.
Gill Electronics, Inc. (Gill Holding Company, Inc)		X	Current A4WP TX module market leader. Delivered TX EVB and documentation.
Microtips Technology Inc		X	
Lear Corporation		X	Current A4WP TX module market leader. Delivered TX EVB and documentation.
Funai Electric Co, Inc		X	
Hosiden Corporation		X	

	Smart phone TAM	High End Smart-Phones				
		TAM	QCOM TAM	SCY1751 + Derivatives SCY175x Bottom-up		
	2016			Pess	Frctest	Optim
Samsung	301	80	20	0	0	5
Apple	210	210	0	0	0	0
Lenovo	117	10	3	0	0	1
Huawei	102	25	5	0.5	1	3
Xiaomi	90	15	10	1	2	4
LG	75	10	10	1	2	4
Yulong	69	5	2.5	0	0	1
Sony	67	10	4	0	0	0
ZTE	69	5	2.5	0.6	0.6	0.6
Nokia	57	5	5	0	0	0
HTC	24	10	5	1	1	5
BlackBerry	8	0	0	0	0	0
OPPO / BBK	30	10	5	1	1.5	1.5
Others ( - OPPO / BBK)	241	25	15	1	2	5
<b>Total</b>		<b>420</b>				
		<b>1460</b>	<b>420</b>	<b>6.1</b>	<b>10.1</b>	<b>30.1</b>
<b>Attachement rates / Market Share. Conservative estimates</b>			<b>21%</b>			

