



研新科技有限公司

**EMI SOLUTION PRODUCTS**

**2019.11**

## 。 公司簡介

御鑫科技有限公司( YSTechnology)是由研新科技有限公司於2016年3月於台灣桃園市新屋區所成立,生產微型的共模濾波器( Common Mode Filter),主要使用於手機內攝像頭與屏幕之訊號傳輸線路的共模雜訊過濾,及其他高頻訊號線路之共模雜訊過濾之用。

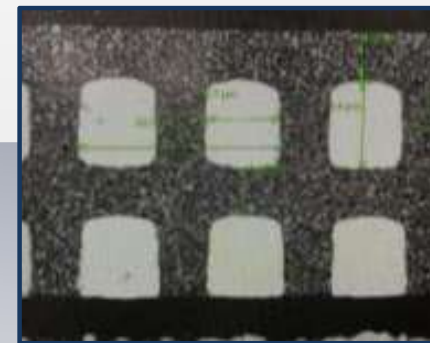
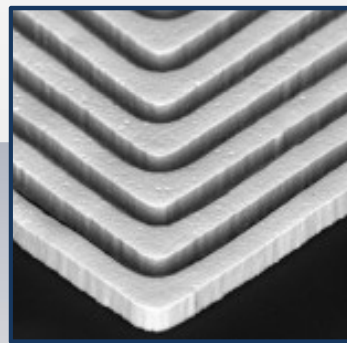
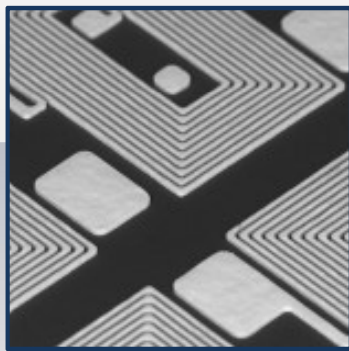
研新公司(YST)成立於2000年,多年來一直是鐵氧體(Ferrite)小磁環(用於網絡變壓器磁芯)的最大品牌廠,具有深厚的鐵氧體生產技術,並於2015年開發鐵氧體薄片(用於NFC天線的磁遮蔽)生產工藝,技術先進,生產的薄磁片面積之大,國內首屈一指.磁片品質穩定,獲得日系手機公司的長期使用。

御鑫科技之成立乃是以研新公司鐵氧體磁片工藝技術為基礎,製造出高頻特性優良的6寸直徑鐵氧體基板,及鐵氧體磁環用於網絡變壓器的多年電感器經驗,再鉅資導入微影製程設備,招募具多年微影製程經驗的工程師團隊,擺脫傳統陶瓷積層電感製程生產方式,直接以精密的微影製程生產微型的共模濾波器,以滿足手機元件微型化的需求趨勢。

## 。技術特點

本公司採用的工藝有別於傳統的陶瓷積層技術,以精密的半導體微影技術(2um精度的乾式黃光製程),在6寸直徑的鐵氧體基板上成長精細的銅線圈(銅線寬6um,線間距離5um,銅線厚度10um.電極引出銅柱高達100um).可以準確製作Size (EIAJ) 0806、0605、0403 以下的貼片共模濾波器,具有極高的共模雜訊衰減率,及良好的工作頻寬。

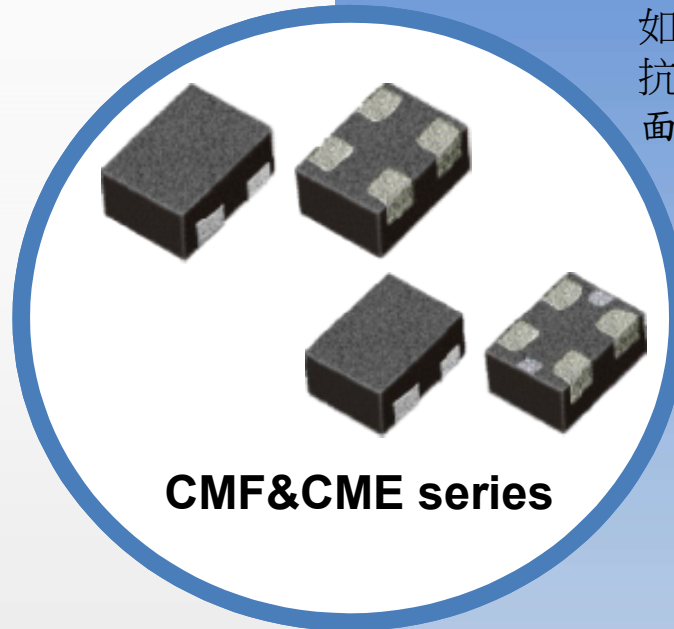
此薄膜製程技術目前以共模濾波器為產品。可使用各式六吋圓形基板,如矽晶圓、陶瓷基板、鐵磁性基板。可應用的相關產品如:被動元件、濾波器、薄膜天線、電感、電容、厚銅線路重佈、被動元件模組、功能性載板、小型化模組封裝等。



## ◦ 共模濾波器

**CMF (Common Mode Filter)** 共模濾波器可消除差模信號傳輸線上的共模雜訊，可應用於各種信號傳輸介面如：USB, HDMI, MIPI, MHL, Display Port, and camera.

**CMF** 是由一對電感線圈平行排列並由磁性材料包覆而成。提供差分訊號低衰減的傳輸，並將信號主頻的共模雜訊濾除。



**CMF&CME series**

### 特性

1. 小尺寸元件：  
0605 (0.65x0.50x0.30mm)  
0806 (0.85x0.65x0.40mm)
2. 低共模阻抗至高共模阻抗 (0 ~ 90 ohm at 100MHz)。低共模阻抗適用於如 USB3.1等高速傳輸介面，高共模阻抗適用於如 HDMI、MIPI、MHL 等介面。
3. CMF 因其線阻抗匹配良好，使於高速傳輸信號下不會影響訊號品質
4. 具有高的截止頻率。

### 應用

適用於須抑制共模雜訊之差分高速傳輸介面如：MIPI, USB High Speed, IEEE1394, MHL, HDMI, LVDS, Displayport, Thunderbolt, etc.

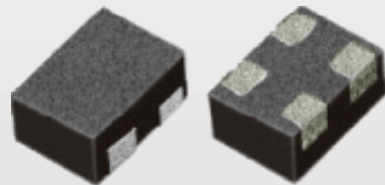
可應用於：

1. NB, Desktop
2. Smart phones
3. Cameras, Video Cameras

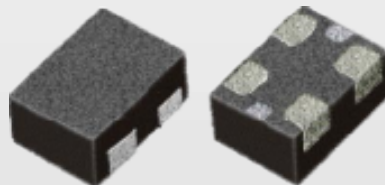


## Rating

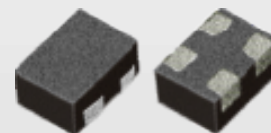
HIGH SPEED SIGNAL LINE	ULTRA HIGH SPEED SIGNAL LINE	
IEEE1394/USB2.0/MIP/LVDS...etc.	DVI/USB3.0/HDMI/DP...etc.	USB3.1 Gen1/Gen2...etc.
<p>CMF0605G 900 2P</p> <p>CMF0806G 900 2P</p> <p>CMF0806G 650 2P</p>	<p>CMF0605S 120 2P</p> <p>CMF0605S 350 2P</p> <p>CMF0806S 120 2P</p> <p>CMF0806S 350 2P</p>	<p>CMF0605T 0802P</p> <p>CMF0605T 1202P</p> <p>CMF0806T 0802P</p> <p>CMF0806T 1202P</p>
<p><b>Plus ESD Function</b></p> <p>CME0806G 900 2P</p>	<p><b>Plus ESD Function</b></p> <p>CME0806S 120 2P</p> <p>CME0806S 350 2P</p> <p>CME0806S 500 2P</p>	<p><b>FOR RFI solution</b></p>



CMF0806



CME0806



CMF0605

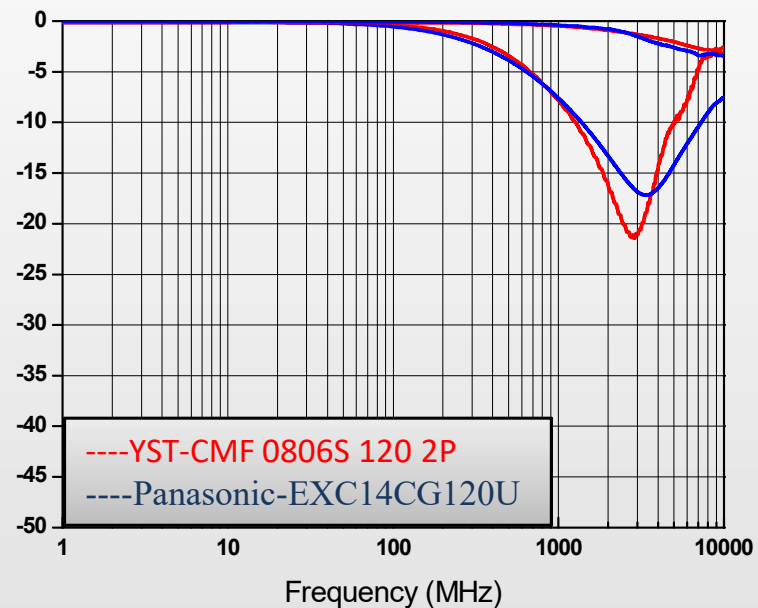
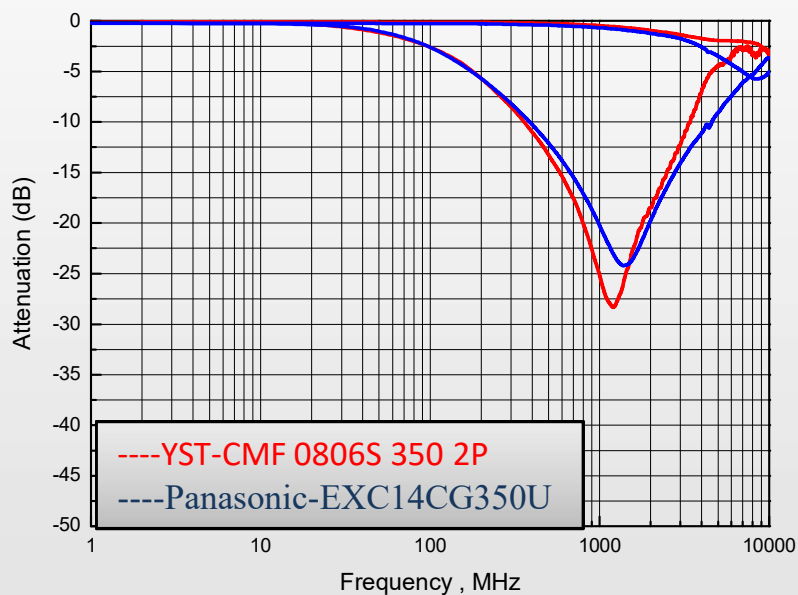
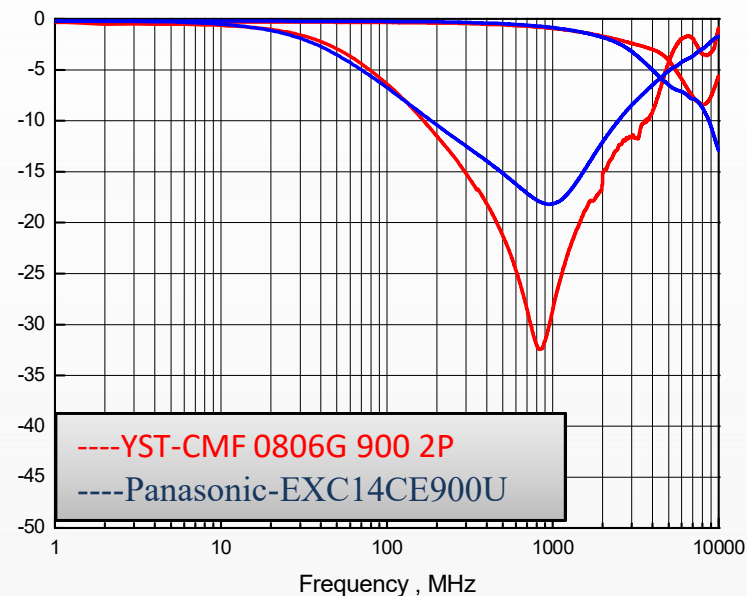
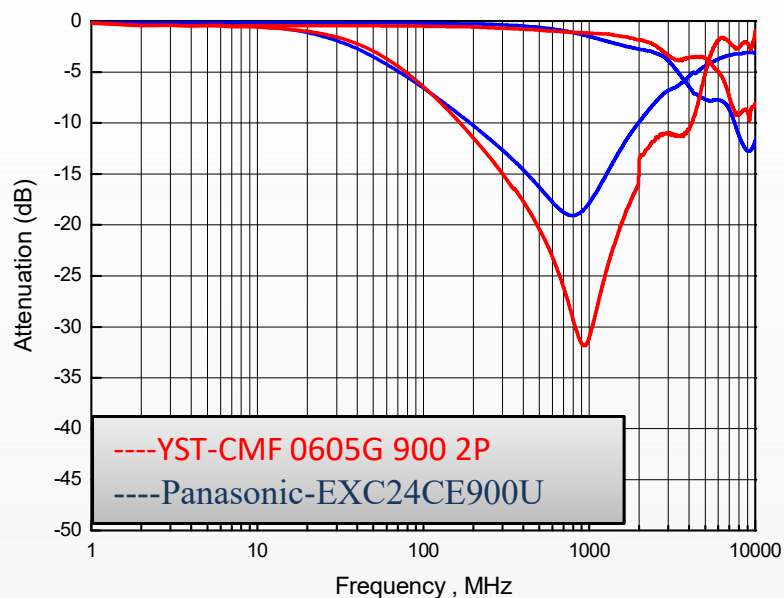
# ○ Specifications

Part number	Rated current Max (mA)	Rated valtage (V)	Insulation Resistance Min (MΩ)	DCR MAX (Ω)	Common Mode Impedance ±25% (Ω) @100MHz
<b>CMF0605 (EIA 02502)</b>					
CMF0605G 900 2P	100	5	10	5	90
CMF0605S 350 2P	100	5	10	3	35
CMF0605S 120 2P	100	5	10	2	12
<b>CMF0806 (EIA 03025)</b>					
CMF0806G 900 2P	100	5	10	4	90
CMF0806G 500 2P	100	5	10	4	50
CMF0806S 350 2P	100	5	10	3	35
CMF0806S 120 2P	100	5	10	2	12
<b>CME0806 (EIA 03025) Plus ESD Function</b>					
CME0806G 900 2P	100	5	10	4	90
CME0806S 500 2P	100	5	10	4	50
CME0806S 350 2P	100	5	10	3	35
CME0806S 120 2P	100	5	10	2	12
Part number	Rated current Max (mA)	Rated valtage (V)	Insulation Resistance Min (MΩ)	DCR MAX (Ω)	Common Mode attenuation (GHz)
<b>CMF0806 (EIA 03025) T type</b>					
CMF0806T 0802P	100	5	10	2	5.42
CMF0806T 1202P	100	5	10	2	2.42
<b>CMF0605 (EIA 02502) T type</b>					
CMF0605T 0802P	100	5	10	2	5.42
CMF0605T 1202P	100	5	10	2	2.42

# ○ Cross Reference 0806 & 0605 size **YST** technology

Application	YST	TDK	Murata	Panasonic	INPAQ
IEEE1394/USB2.0/M IPI/LVDS...etc.	CMF 0605 <b>G</b> CMF 0806 <b>G</b>	TCM 0605 <b>G</b> TCM 0806 <b>G</b>	NFP0 <b>QSN</b>	EXC4 <b>CE</b> EXC4 <b>CT</b> EXC14 <b>CE</b> EXC14 <b>CT</b>	TNF 0605 <b>R</b> TNF 0806 <b>R</b>
DVI/USB3.0/HDMI/D P...etc.	CMF 0605 <b>S</b> CMF 0806 <b>S</b>	TCM 0605 <b>S</b> TCM 0806 <b>S</b>	NFP0 <b>QSN</b> DLP0 <b>NSA</b>	EXCX4 <b>CH</b> EXC14 <b>CH</b> EXC14 <b>CG</b>	TNF 0605 <b>U</b> TNF 0806 <b>U</b>
USB3.1 Gen1/Gen2...etc.	CMF 0605 <b>T</b> CMF 0806 <b>T</b>	TCM 0605 <b>T</b> TCM 0806 <b>T</b>	NFP0 <b>QHB</b>	EXCX4 <b>CZ</b> EXC14 <b>CZ</b>	TRF 0605 <b>G</b>
<b>Plus ESD Function</b>					
IEEE1394/USB2.0/M IPI/LVDS...etc.	CME 0806 <b>G</b>	TCE 0806 <b>G</b>		EXC14 <b>CS</b>	TNFE 0806 <b>R</b>
DVI/USB3.0/HDMI/D P...etc.	CME 0806 <b>S</b>	TCE 0806 <b>S</b>		EXC14 <b>CS</b>	

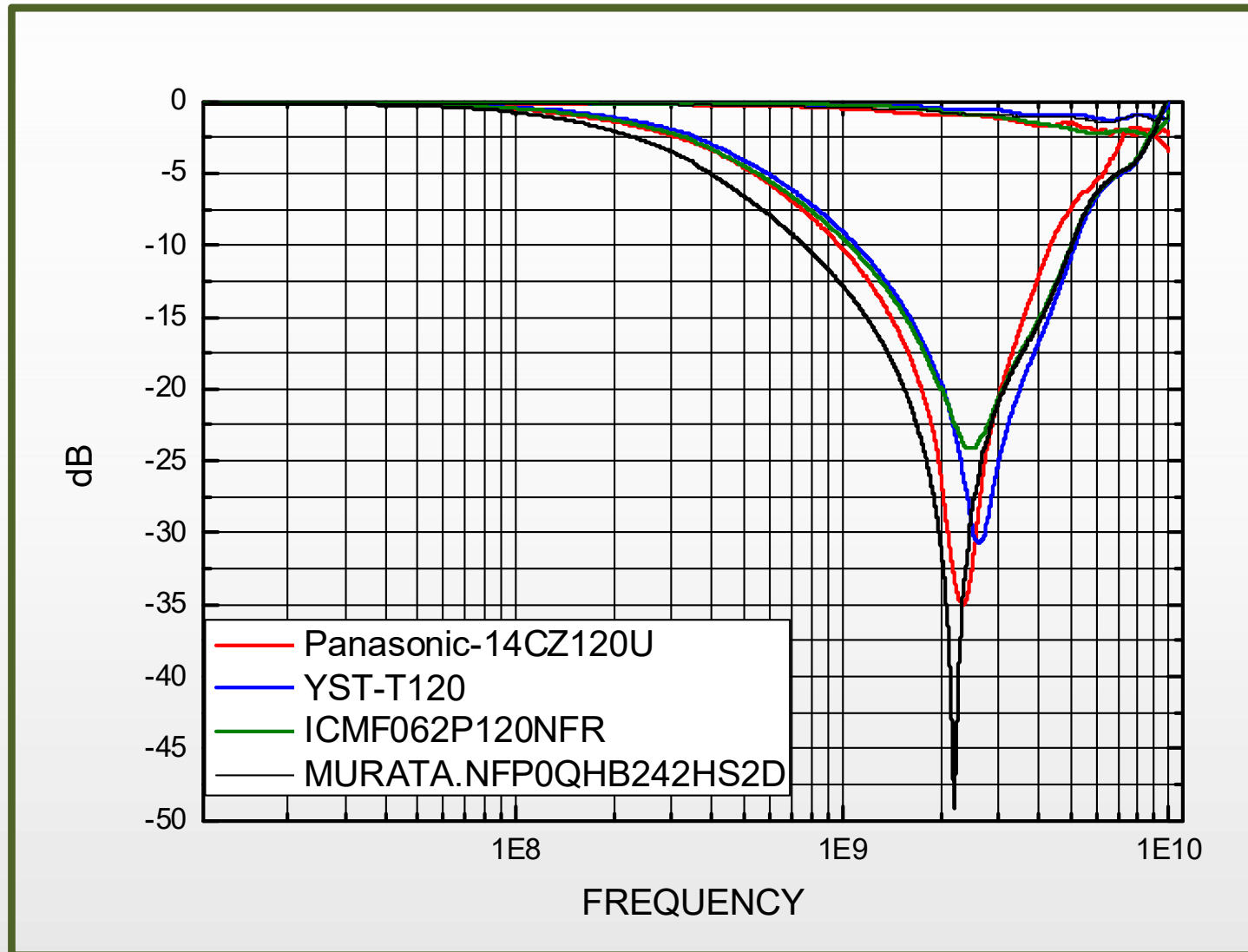
◦ Compare of CMF0806 & Panasonic EXC14 series





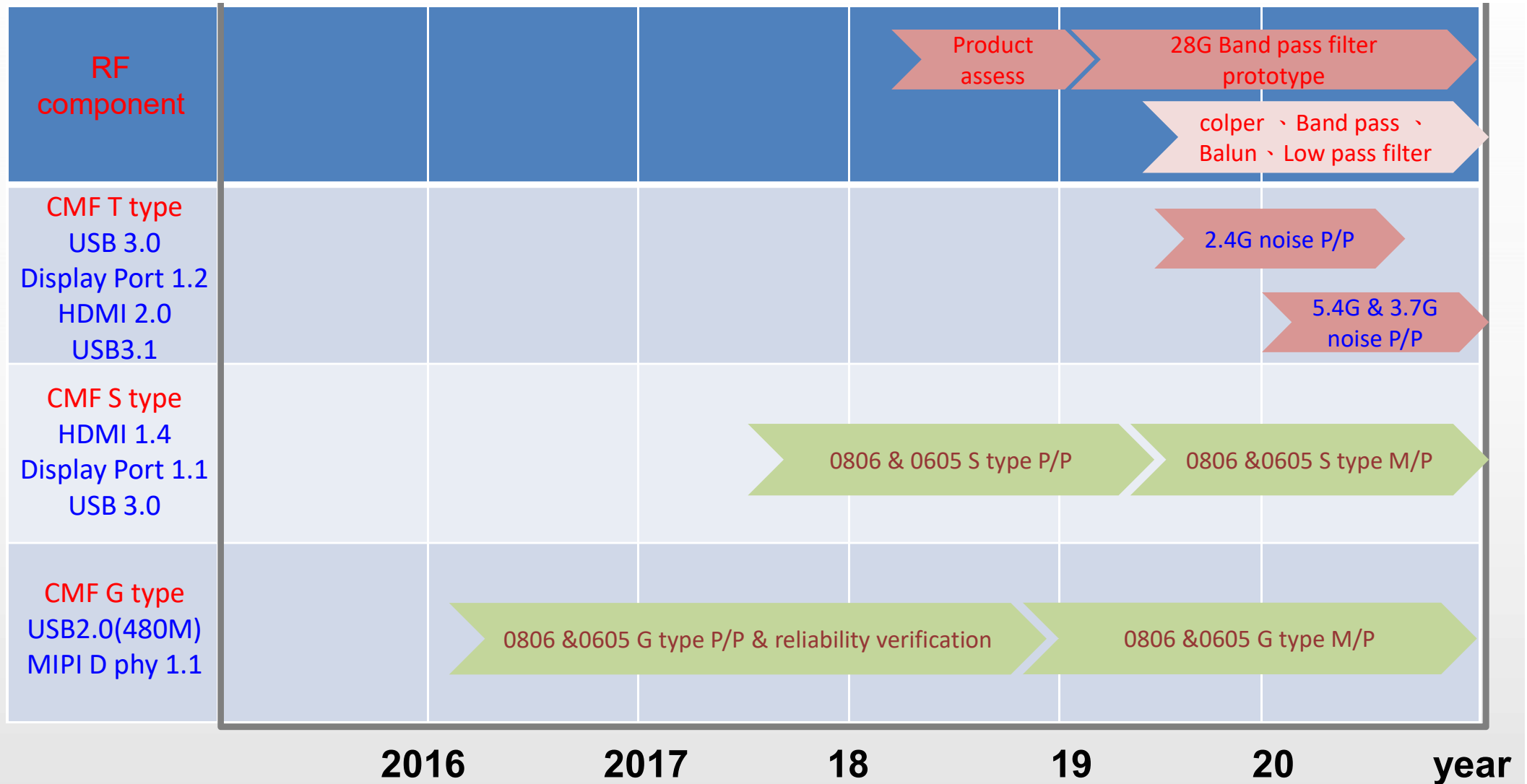
◦ **CMF0806 T120 compare with other**

→ The CMF0806 T120 for wifi 2.42GHz RFI solution.



## Product Roadmap

### Application



P/P : Pilot run

M/P : Mass Production

# Reliability performance

Test Item	Specification	Test Method	Spec	Sample Number (PCS/LOT)	Results
IR reflow	custom	Lead Soldering Temperature : 265±5°C @10sec time : 1+2times	△R<20%	2000	PASS
HAST	JESD 47 JESD 22-A101 JESD 22-A110 JESD 22-A118 JESD 22-A102	Temperature : 130±3°C Humidity : 85%~90% (RH) Vapor Pressure:33.3psia (2.27 atm) Time : 96hrs (-0,+2)hrs Test Voltage : 1 times for Rated Voltage	Insulation resistance >10MΩ	77	PASS
Temperature Cycle		1 Cycle Step 1 -40°C(+0°C,-3°C) / 30(+3,-0) min Step 2 Ordinary Temp. / within 3 min Step 3 +85(+3°C,-0°C) / 30(+3,-0) min Step 4 Ordinary Temp. / within 3 min Total of 100 cycles.	△R<20%	77	PASS
Heat life		Temperature : 85±3°C Test Voltage : 2 times for Rated Voltage Time : 1000h (+48h,-0h)	Insulation resistance >10MΩ	77	PASS
Resistance to Solder Heat		MIL-STD-202G Method210	1. Solder temperature : 260±5°C 2. Flux : Rosin 3. DIP time : 10±1sec	1. More than 95% of terminal electrode should be covered with new solder. 2. No mechanical damage. 3. Impedance value should be within ± 20% of the initial value. 4. Inductance value should be within ±10% of the initial value.	77
Solderability	J-STD-002C	1. Solder temperature : 235±5°C 2. Flux : Rosin 3. DIP time : 5±1sec	More than 95% of terminal electrode should be covered with new solder	77	PASS

△R : [(reflow 3 times RDC - reflow 1 time RDC) / reflow 1 time RDC] × %

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