



12. NFC Operation Description

Within USA :

- WLAN 2.4GHz 802.11 b/g/n
- Bluetooth v4.0 LE
- Mobile Hotspot 2.4GHz
- FM Radio Receiver
- NFC

Although the chipset documentation may indicate possible functions,
The following have been permanently disabled in this device and cannot be enabled
by the end user or service provider :

(BT)

- BT 4.1 : **Not Supported**
- ANT : **Not Supported**

(WLAN)

- N/A

(FM Radio)

- N/A

(NFC)

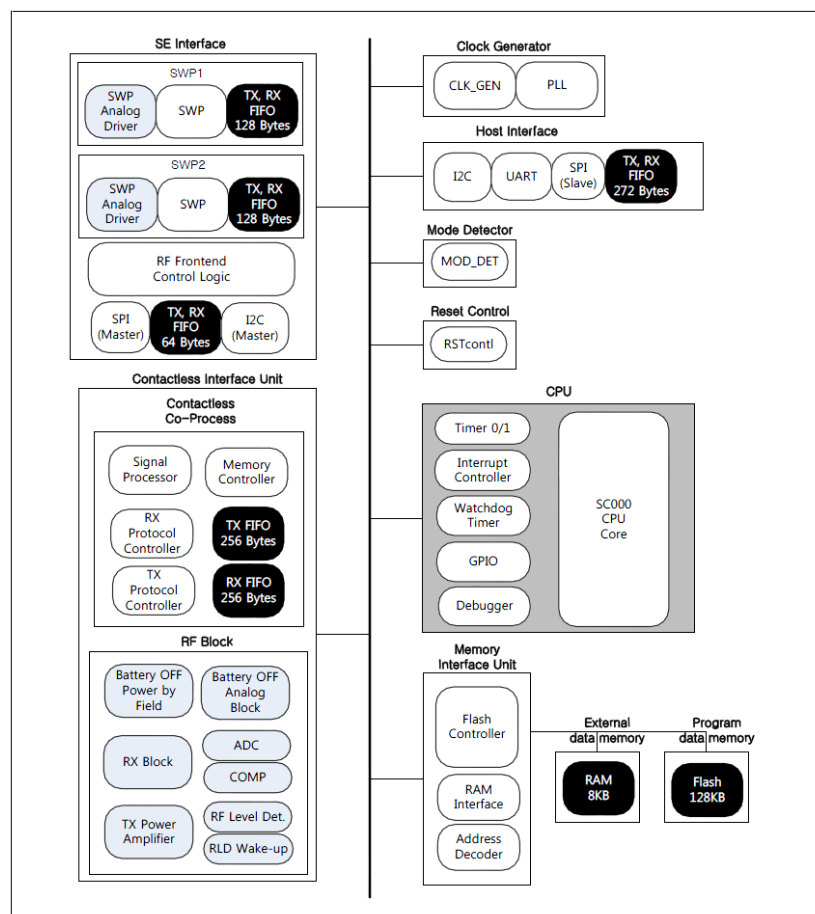
- N/A

NFC : S3FWRN5

The S3FWRN5 controller used in contactless communication at a frequency of 13.56 MHz is based on the SC000 microcontroller core.

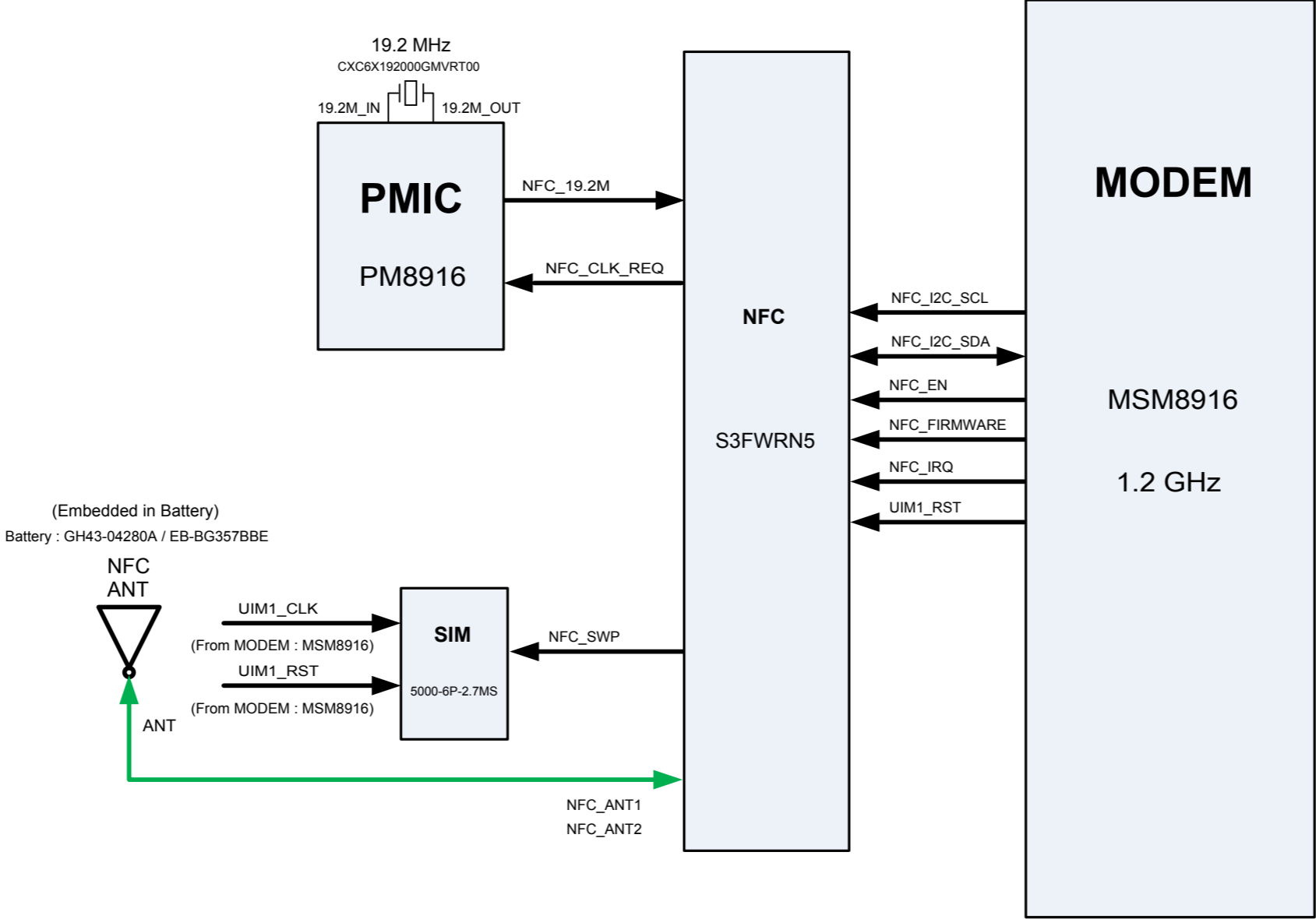
Supported by the S3FWRN5 hardware these operation modes based on the ISO/IEC standards :

- ISO/IEC 18092 peer-to-peer (Active/Passive initiator and target)
- ISO/IEC 14443 A (NFC-A) Reader/Writer
- ISO/IEC 14443 B (NFC-B) Reader/Writer
- ISO/IEC 15693 (NFC-V) Reader/Writer
- Sony FeliCa (NFC-F) Reader/Writer
- Topaz Reader/Writer
- KOVIO(RF Barcode) Reader
- ISO/IEC 14443 A (NFC-A) card emulation
- ISO/IEC 14443 B (NFC-B) card emulation
- Sony FeliCa (NFC-F) card emulation
- Type B' card emulation
- ISO/IEC 15693 (NFC-V) card emulation



SM-G357FZ REV1.0 NFC Block Diagram

RF TX: RED
 RF RX: BLUE
 TX & RX : GREEN
 CONTROL,CLK: BLACK




Customer	ELENTec Co., Ltd	Date	2014. 07 . 28
		Version	1.0

Product Approval Sheet

- Product Name : Loop Antenna Module for Mobile RFID
- Project Name : EXAX – 1405 – SM-G357FZ
- Approved Models : SAMSUNG – SM-G357FZ

Approval of the Product

ELENTec Co., Ltd Approval	Division	Submitted	Checked	Approved
	Department/ Name			
	Date.			
	Signature			
EXAX Co., Ltd Approval	Division	Submitted	Checked	Approved
	Department/ Name	Development / Joodong, Lee	/	Development / Youngjin, Sohn
	Date.	2014.07.28		2014.07.28
	Signature	이주동		

Suppliers : EXAX Co., Ltd

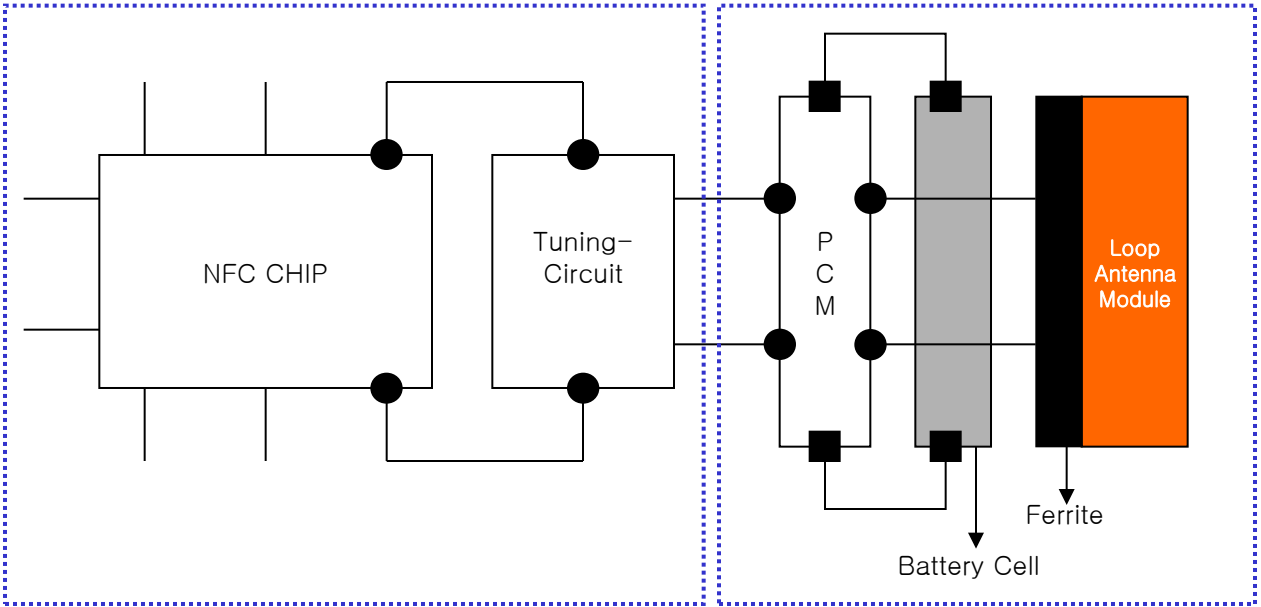
Address : 371-50, #1801, Ace High-end tower 3-cha Gasan-Digital1-ro,
Geumcheon-gu, Seoul, Korea

Telephone : +82-2-6925-7373 (Fax) +82-2-3283-5580

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- 2. Loop Antenna Assembly Dimension : 4 Page
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- 6. Inspection : 8 Page

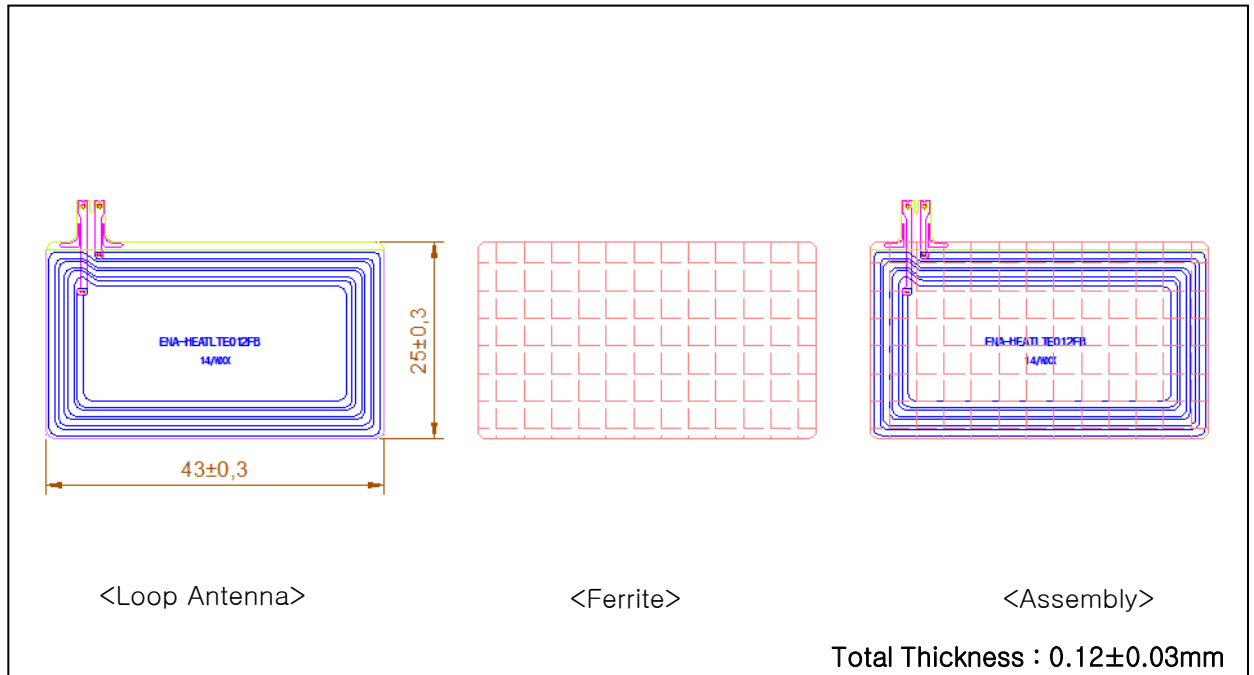
2. Production Circuit Diagram



< Phone Board >

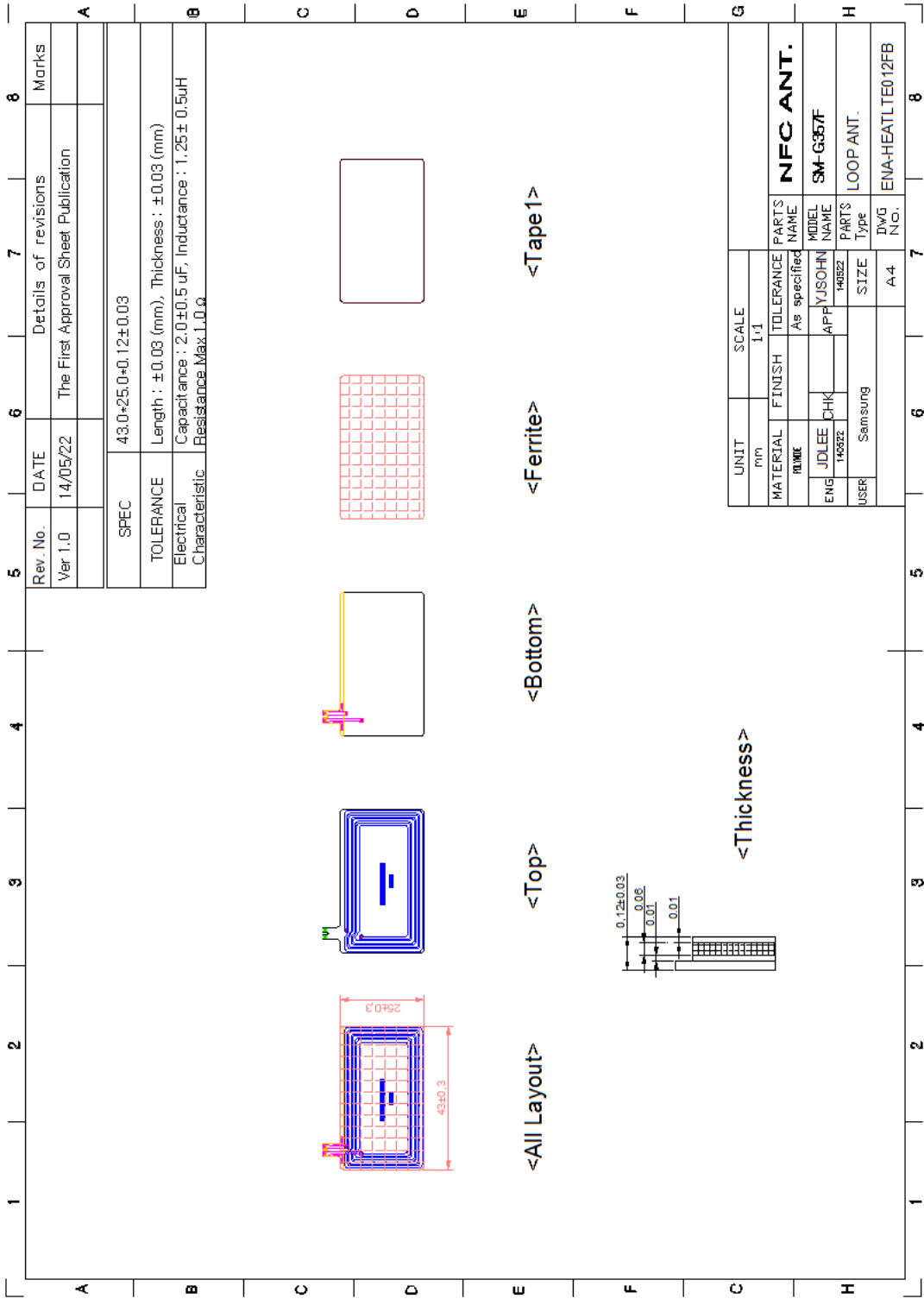
< Battery Pack >

3. Loop Antenna Module Assembly Dimension



PRODUCT NAME : EXAX - 1405 - SM-G357FZ

APPLICATION MODEL : SAMSUNG - SM-G357FZ



PRODUCT NAME : EXAX – 1405 – SM-G357FZ	Page 7
APPLICATION MODEL : SAMSUNG – SM-G357FZ	

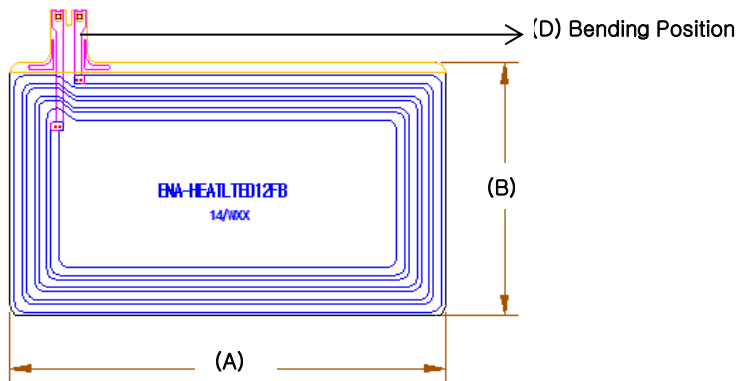
Electrical Characteristic Test Sheet		Submitted	Checked	Approved
		<i>이주홍</i>	/	<i>[Signature]</i>
		06/17	/	06/17
DATE	June 16, 2014			
TEST Lab	EXAX Lab			
TEST Model	SAMSUNG – SM-G357FZ Application Battery Built-in Loop Antenna			
계측 설비	CARD MODE – ACR122, READER MODE – Mifare Ultralight Hioki 3522 LCR Meter (Frequency : 100KHz ,Power : 3V)			
Spec.	Card Mode – More then 25mm, Reader Mode – More then 25mm			

TEST DATA

SPL No.	L (uH)	C (uF)	R (Ω)	Antenna Freq.(MHz)	Recognition distance (mm)	
					CARD	READER
SPEC.	1.25 ± 0.5	2.0 ± 0.5	Max 1.0	18.0 ± 1.0	More than 25mm	More than 25mm
1	1.25	2.03	0.41	18.1	45	38
2	1.25	2.03	0.54	17.9	46	37
3	1.25	2.03	0.52	18.0	46	38
4	1.25	2.02	0.52	18.1	45	39
5	1.24	2.01	0.53	18.1	46	37
6	1.24	2.02	0.45	18.2	48	39
7	1.25	2.03	0.48	18.0	44	37
8	1.25	2.02	0.49	18.1	46	37
9	1.25	2.01	0.50	17.9	47	38
10	1.24	2.02	0.50	18.0	45	37

PRODUCT NAME : EXAX - 1405 - SM-G357FZ	Page 8
APPLICATION MODEL : SAMSUNG - SM-G357FZ	

<h1>Inspection Certification</h1>	Submitted	Checked	Approved
	이주중	/	
	06/17	/	06/17
Model	SAMSUNG - SM-G357FZ Application Battery Built-in Loop Antenna		
Test Date	June 16, 2014		



DESCRIPTION

(C) Thickness : 0.12±0.03mm

SPL No.	(A) 43.0±0.3	(B) 25.0±0.3	(C) 0.12±0.03	(D) Bending Test	Verdict
				Verdict (Bending of 90 degree /10 times)	
1	42.94	25.02	0.12	OK	Pass
2	42.97	25.03	0.12	OK	Pass
3	43.10	24.98	0.12	OK	Pass
4	43.03	24.96	0.12	OK	Pass
5	42.98	24.99	0.12	OK	Pass
6	42.95	25.03	0.12	OK	Pass
7	43.02	25.01	0.12	OK	Pass
8	43.06	25.09	0.12	OK	Pass
9	43.01	25.06	0.13	OK	Pass
10	42.96	24.93	0.12	OK	Pass
Opinion	Product is the no problem				