

Customer	Wits	Date	2022. 06. 07.
		Version	Version 00

Product Spec. & Approval Sheet

Product Name	Tx Module for Wireless Charger			Product Picture
Part Number	H03010161A			
Application Model	WWP-T2200 Coil Block			
Application Model	ALMUS Single Coil Block			
Specification	Ls(Inductance)	6.3uH±10% (@1V, 100kHz)		
	Rs (Resistance)	42.0mΩ±20% (@1V,100kHz)		
	Block	Width	48.8±0.5mm	
		Length	49.5±0.5mm	
	Ass'Y	Lead	59.6±1.0mm	
		Length	(From center of coil to end of lead)	
	Thickness	Max 2.6mm(Release paper included)		
Customer		Drawing	Reviewer	Reviewer 2
Wits	Department / Name			
	Data			
	Sign			
Supplier		Drawing	Reviewer	Approver
Wits	Department / Name	Development Team S.J Kwon	Development Team D.M Moon	Development Team E.G Jung
	Data	2022. 06. 07.	2022. 06. 07.	2022. 06. 07.
	Sign	純	10/06/2022	DM

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	Factroy	LOT CN7, DIEM THUY IP(A AREA), HONG TIEN COMMUNE, PHO YEN TOWN, THAI NGUYEN PROVINCE, VIETNAM 24709			

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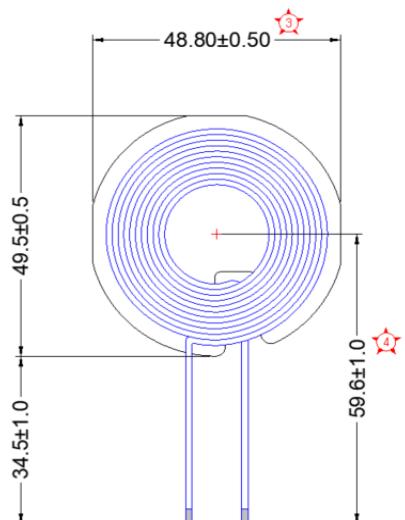
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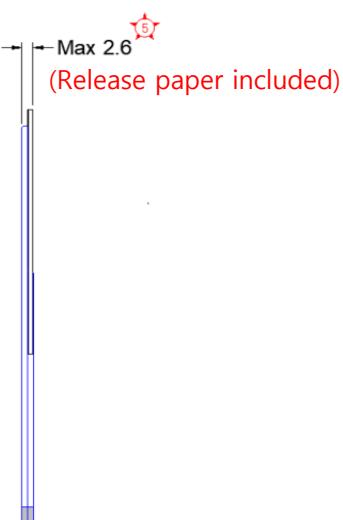
2. Product Specification

2. 1 Product Drawing

- Top view



- Side view



- Pic view



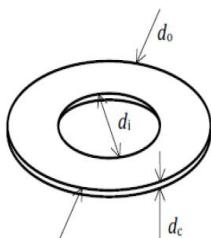
2. 2 Electrical Spec. < CTQ >

NO.	항목	규격
1	CTO Ls (Inductance)	6.3uH±10%
2	CTO Rs (Resistance)	42mΩ±20%

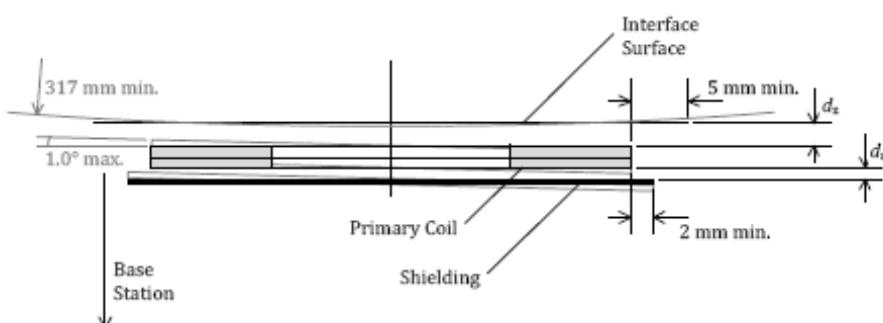
- LCR Meter - 1) Tong Hui TH2837LX (@ 1V, 100kHz)

2) HIOKI LCR Meter (@ 1V, 100kHz)

2. 3 Coil Drawing



Parameter	Symbol	Value
Outer Diameter	d_o	$44.0\pm1.5\text{mm}$
Inner Diameter	d_i	$20.5\pm0.5\text{mm}$
Thickness	d_c	$2.1\pm0.5\text{mm}$
Number of Turns	N	10
Number of Layers	-	1Layer or 2Layer / Full Overlap



Parameter	Symbol	Value
Pad surface / coil distance	d_z	1.75~2.5mm
Shielding agent/coil distance	d_s	1.0mm under
Shielding agent thickness	-	0.5mm upper

Part Number : H03010161A
Application Model : WWP-T2200 Coil Block

WITS

2. 4 Winding Specification

No	Terminal No.		Winding		Winding Method
	Start	Finish	Wire	Turns	
1	1	1	USTC 0.08 Φ x 105	10	STANDARD SOLENOID (Winding Direction : Counterclockwise)

* Wire Temp. Class : 155°C

* Solder Thermal Resistance : 380±5°C (Time : 3 sec)

2. 5 LOT NUMBER Notation

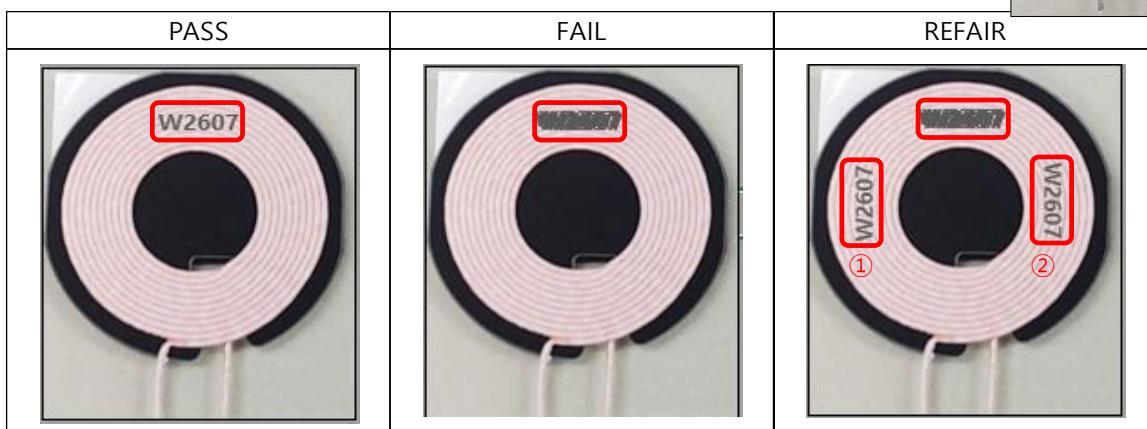
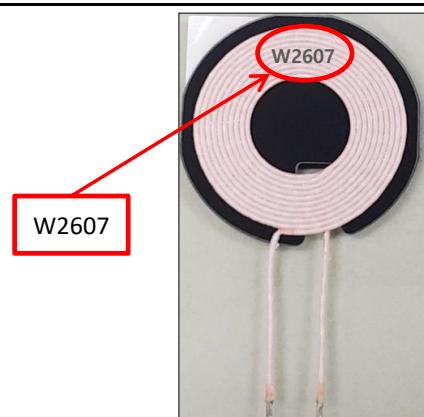
Lot : W 2 6 07
(1) (2) (3) (4)

(1) Wits

(2) Production year : 0 ~ 9

(3) Production Month : 1 ~ 9, A, B, C (Oct : A, Nov : B, Dec : C)

(4) Production Day : 01~31



2.6 Manufacturing Site

(1) Wits(Vietnam Factory) : LOT CN7, DIEM THUY IP(A AREA), HONG TIEN COMMUNE,
PHO YEN TOWN, THAI NGUYEN PROVINCE, VIETNAM 24709

2.7 Parts List

No.	Code	Product Name	Specification	Vender	Q'ty	Hazardous Substances
1	M01730036A	Ferrite block	48.8 * 49.5 * 1.0T(Tape 포함)	EMI/ MOSTA	1EA	PASS
2	H03010162A	Coil Unit	A11 Coil CW_시계, 1Layer 10turns	Wits	1EA	PASS
3	M01020018A	Bond	AF04	BOSTIC	0.02g	PASS

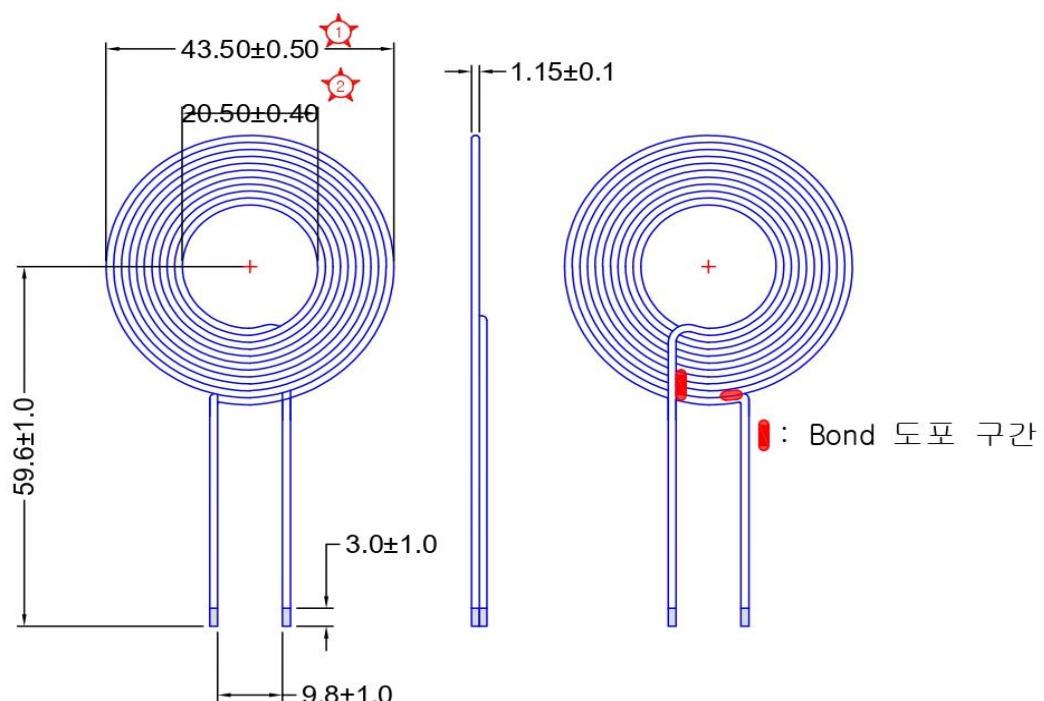
2. 8 Raw Material Drawing

2. 8. 1 Coil Drawing

CHANGED CONTENT				
Rev	Content	Drafted	Approved	Date.
00	INITIAL RELEASE	S.J Kwon	E.G Jung	2022.05.24

⊗ NOTE

1. Wire : USTC Wire 0.08 * 105 strands(2UEW)
2. Turns : 10 Turns
3. Coil Thickness : $1.15 \pm 0.1\text{mm}$
4. 측정 위치 : Coil Outer - 정형 제품 기준 최 외곽을 측정
Coil Thickness - 권선된 Coil의 2 Layer 측정
5.  : CPK



Part List			Data 2022. 05. 24.		WITS Drawing Name Single Coil	
ERP Code	SPEC	Q'Ty	Approved Department			
			Approver			
			Reviewer			
			Drafter			
Stock Number			Department			
			Scale 1/1	Unit mm	Weight	
			A4	1	Of 1	

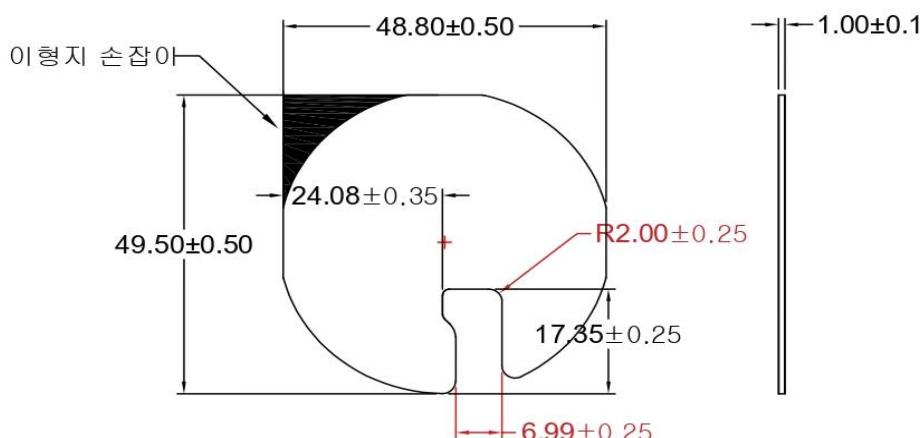
2. 8 Raw Material Drawing

2. 8. 2 Ferrite Sheet Drawing

CHANGED CONTENT				
Rev	Content	Drafted	Approved	Date.
00	INITIAL RELEASE	S.J Kwon	E.G Jung	2022.05.24

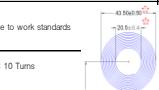
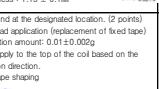
※ NOTE

- 재질 : Mn-Zn
- Tape : Top - 단면 Block 무광(0.05mmT) / Bot - 양면 Tape(0.05mmT)
- Thickness : 1.0 ± 0.1mm
- 이형지 Color : White

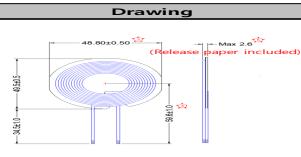
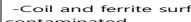


Part List			Data 2022. 05. 24.		WITS Ferrite	
ERP Code	SPEC	Q'Ty	Approved Department			
			Approver			
			Reviewer			
			Drafter			
Stock Number			Department		Drawing Size A4	
			Scale 1/1	Unit mm	Drawing Number 1 Of 1	

3. Manufacturing Process & Management Chart

Process Step Number	Process flow chart			Product / Process Characteristics			Special Characteristic	Control Methods				Control Position	Reaction Plan	Remarks (Special Process)		
	Cell	SMD	Man	Process Name / Operation Description	Machine, Device, Jig, Tools for Manufacturing	No	Product	Process	standard	Measurement Technique	Sample Frequency	Control Method	Manufacturing Department	QC		
	△			Incoming parts		1	Incoming raw materials		item/Quantity				○		Relevant team notification and return	
C10	◇	IOC				1	Ferite	Size	CTF		3D Measuring Machine	Sampling/Lot	Import inspection report	○	Relevant team notification and return	
										Visual						
										Check the condition based on the visual inspection	Visually	Sampling/Lot	Import inspection report	○	Selection/Return/Discard/Special	
										Model	USTC Wre 0.08+105 Strands (2UEW)					
										Size	Check the external condition (break, disconnection x)					
										characteristic	Pin Hole : 1M 18point under	pinhole meter, voltage meter		○		
										Thickness	1.16 ± 0.03mm (1.13 ~ 1.19mm) (Overall Diameter)					
										Acquisition of environmental data report from certified institutions (ROHS, Hf, MSDS, Phthalates, St)		once/year	Certification body report	○	Return	
										Category	G Cd Pb Hg Cr Cl Sb					
										Category	Organic: 650 50 150 650 800 800 650					
C20	△			Raw material input		1			Check the raw material input identification tag	Visually	before input		○			Check again after taking action
C30	○	Coil winding	Winding machine			1	Winding equipment setting			JIG Tension Meter Thermometer	2 times/day	Facility Daily Inspection Sheet	○	equipment readjustment		
										Vernier callipers	Outer/Inner Diameter Inspection Early/Middle/Last 10ea (n=30ea/LOT)					
										Vernier callipers	Outer/Inner Diameter Inspection Early/Middle/Last 10ea (n=30ea/LOT)					
										Vernier callipers	Sampling/Lot					
C40	○			Make a shape of Coil Lead and bonding.	Dipping Fixture JG Dispenser	1			Apply Bond at the designated location. (2 points) ① Coil lead application (replacement of fixed tape) Application amount: 0.01±0.002g Do not apply to the top of the coil based on the application direction. Lead shape shaping		Dipping Fixture JG	ALL	Daily Inspection Sheet	○		Selection/disposal
C50	○	Dipping				1	Dipping Fixture JG Cutting machine	A11 Coil	Dipping JG Coil settled Alignment after Wre Lead Cutting	CTF		ALL	Daily Inspection Sheet	○	Selection/disposal	
C60	○					bonding	Dimension JG Dispenser machine	1	A11 Coil	Non-woven Tape attach.		Visual Inspection	ALL	Daily Inspection Sheet	○	refar / disposal
C70	○			Coil Assy pressure.	Press machine	1	Coil Assy press		Thickness measurement after pressure : Max 2.6mm		Visual Inspection	ALL	Daily Inspection Sheet	○	refar / disposal	
C80	○			Thickness Check	Thickness gauge / GO NO JG	1	Thickness Check		Thickness : Max 2.6mm (Release film include)		Vernier callipers	ALL	Daily Inspection Sheet	○	refar / disposal	
C90	◇						Product measurement	1	LCR Meter Setting	100kHz / 1V		Visual Inspection	ALL	Daily Inspection Sheet		
C100	◇					OQC	Coil Ass'y	1	Visual Check		Visual Inspection	Initial product 3lot ALL Test Sampling (S=4, AOL 0.1)	Daily Inspection Sheet	○	disposal	
						2	Measure Inductance & Resistance	CTF		LCR Meter		Initial product 3lot ALL Test Sampling (S=4, AOL 0.1)	Daily Inspection Sheet	○	disposal	
						3	Width size check	CTF		Vernier callipers		Initial product 3lot ALL Test Sampling (S=4, AOL 0.1)	Daily Inspection Sheet	○	disposal	
						4	Length size check	CTF		Vernier callipers		Initial product 3lot ALL Test Sampling (S=4, AOL 0.1)	Daily Inspection Sheet	○	disposal	
						5	Thickness Check	CTF	Thickness : Max 2.6mm (Release film include)	Thickness gauge / GO NO JG		Initial product 3lot ALL Test Sampling (S=4, AOL 0.1)	Daily Inspection Sheet	○	disposal	

4. Appearance Limit

Visual Inspection Standard (H03010161A [WWP-T2200 Coil Block])							
				No. Release			
				Revision	-		
				Version	00		
1. Purpose : The standard is applied at the time of shipment inspection to prevent the visual defects and leakage of defective products. 2. Application : Only for H03010161A [WWP-T2200 Coil Block] 3. Composition : Product Size							
Item	Inspection Item	Spec.	Inspection Method	Instrument	Drawing		
Ferrite Sheet	Width	48.8±0.5 mm	Measure width of ferrite sheet				
	Length	49.5±0.5 mm	Measure length of ferrite sheet				
Ass'y	Coil Lead Length	59.6±1.0 mm	From center of coil to end of lead				
	Thickness	Max 2.6 mm	UpperCoil and Under Coil Overlap for area Thickness. (Release film include)				
4. Inspection Method 1>. A inspector shall carry out the inspection with a finger coat after removing contaminants that can occur during inspection. 2>. A inspector shall do a visual inspection basically. When an unusual matter occurs, the inspector shall not judge alone but shall make a judgment after agreement with the engineer in charge. 3>. After use, the instrument should be in position. The inspector shall contact the quality team when the instrument is unusual.							
5. Criteria							
Defect type	Picture	Cause	Criteria	Exception			
Contamination		- Coil and ferrite surfaces are contaminated  Contamination due to careless handling	Defective / - Size should be irrelevant ※ Both coil and ferrite are subject to inspection.	- Discoloration of the surface of the coil by acetone and the milky white crumbs generated during curing are judged to be non-defective.			
Coil damage		- Damage due to physical force during handling	Accepted / - When the copper wire is not broken and the damage is 3 mm or less in the longitudinal direction. Manage the winding and bending part the same (see photo on the right) Defective / - When copper wire is broken regardless of its length (bare copper wire)	 If there is no disconnection of copper wire (Within 3 mm in longitudinal direction)			
Ferrite Sheet Film Damage			Accepted / - When the surface of the ferrite sheet is not exposed Defective / - When the surface of the ferrite sheet is exposed	When it is damaged indirectly by external damages			
Foreign Matter		- Poor lamination  Foreign matter or air bubbles are inserted when attaching the film	Accepted / - When the foreign body is not inserted but simply air bubbles are generated - Up to 2 bubbles within 3 mm in longitudinal direction Defective / - When foreign matter is inserted, it is defective regardless of size and quantity. - When air bubbles are out of the range of 3 mm in the longitudinal direction				
Chipping		- It occurs when cutting a ferrite sheet - It is damaged indirectly by external damage	Defective / - When the number of chipping defect is more than 5 and its each size is less than 4.0 mm ² . - When the size exceeds 4.0 mm ²				
Surface exposure		- Poor Film Lamination	Defective / - When the exposed area of edge exceeds 5 mm ²	In case of simple exposure due to poor adhesion			
Poor Punching		- It occurs when blanking film.  Burr occurs due to poor punching condition	Defective / - When the outer diameter dimension exceeds spec. - When the hole dimension is less than spec				
Poor Winding		- It occurs when winding coils under wrong winding condition and foreign body is inserted in winding	Accepted / - when the gap is 0.5 mm or less Defective / - When the gap is over 0.5 mm - When foreign body is inserted in between coils				
Coil Loosening		- Coil is loosened by damage - Tape melts excessively due to heat during dipping	Accepted / - Tape Melting without loosening is good ※ During dipping, Tape Melting is an inevitable with sticking phenomenon Defective / - When coil is loosened more than 1/3 of tape width				
Low lead		- Wrong dipping condition - The coil end is cut excessively.	Defective / - When the uniform coating area length is less than Solder Min. SPEC (Solder Length Spec : Max 4 mm)				
Copper explosion		- It occurs during winding or bending coil	Accepted / - When the exposed part is 3mm or less - The copper exposure at the bottom of the solder part is classified as bad only when the wire is broken regardless of the length. Defective / - When the exposed part exceeds 3 mm ※ Management of winding part and bending part are same.	 			

5 Measuring Instrument List

No.	Instrument Name	Purpose of Use
1	LCR Meter TONG HUI : TH2837LX	Inductance check Resistance check
2	LCR Meter HIOKI LCR Meter	



< LCR Meter>

6. Reliability test warranty conditions

No	Test item	Test condition	Specification
1	Temperature Cycle Test	<p>-40°C $\pm 5^\circ\text{C}$ \leftrightarrow 85°C $\pm 5^\circ\text{C}$, -40°C \leftrightarrow 85°C ≤ 30 min.</p> <p>Preceding descriptions condition 1 cycle application 72 cycle enforcements</p> <p>Under the condition of normal temperature measuring data after keeping more than 12Hr</p>	
2	Humidity Test	Temperature: 80°C, Humidity: 80% RH, Time: 120Hr	Initial Inductance within $\pm 10\%$
3	Salt Spray Test	<p>Salt concentration 5$\pm 0.5\%$ / 35$\pm 2^\circ\text{C}$ / PH 6.2~7.2</p> <p>8 Hrs Spray / 16 Hrs Waiting / 3 Cycle(72 Hrs)</p>	

7. Storage

- Temperature: -45~40°C
- Humidity: Less than 70%RH
- Warranty is within 12 months after shipment
- Operating Temperature: -40~85°C