TEST ve KONTROL HİZMETLERİ A.Ş.

Test
TS EN ISO IEC 17025
AB-0387-T

Hasköy Sanayi Sitesi İdari Bina No:16/13
Gebze – KOCAELİ / TÜRKİYE

AB-0387-T
EMC1049
12-21
V.0

DENEY RAPORU
TESTING REPORT

Cihazın Sahibi *Customer*	**DEMA RÖLE SAN. VE TİC.A.Ş.** *Atatürk Cad. Zümrütevler Mah. İnanç Sk. No:4 34852 Maltepe/ İSTANBUL*
İstek Numarası *Order Number*	**EMCAS-21393** *EMCAS-21393*
Makine / Cihaz *Equipment*	**CPM 312-SE ÇOK FONKSİYONLU DİJİTAL SABİT TİP AŞIRI AKIM RÖLESİ / CPM 310-DE ÇOK FONKSİYONLU SOKETLİ TİP DİJİTAL AŞIRI AKIM RÖLESİ** *CPM 312-SE MULTIFUNCTION DIGITAL FIXED TYPE OVERCURRENT RELAY/ CPM 310-DE MULTIFUNCTION SOCKET TYPE DIGITAL OVERCURRENT RELAY*
Tip *Type*	**CPM310 DE – CPM312 SE** *CPM310 DE – CPM312 SE*
İmalatçı *Manufacturer*	**DEMA RÖLE SAN. VE TİC.A.Ş.** *Atatürk Cad. Zümrütevler Mah. İnanç Sk. No:4 34852 Maltepe/ İSTANBUL*
Açıklamalar *Remarks*	---
Numune Kabul Tarihi *Date of receipt*	**14.09.2021**
Deney Tarihi *Date of Test*	**14.09.2021 - 17.09.2021**
Raporun Sayfa Sayısı *Number of pages of the Report*	**99**

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Deney ve / veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu raporun tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.*The test and / or measurement results, the uncertainties (if applicable) with confidence probability and measurement methods are given on the following pages which are part of this report.*

Bu rapor; firmamıza verilen numunelere uygulanan deney veya deneyler sonucunda hazırlanmıştır. Müşteriye ait diğer numuneleri kapsamaz. *Müşterinin beyan ettiği bilgilerden laboratuvarımız sorumlu tutulamaz.*
*This report was prepared after applying test / tests to the samples that are sent to our laboratory. Note that this report does not involve other samples of the customer. *Our laboratory cannot be held responsible for incomplete information declared by the customer.*

Mühür ve Tarih *(Seal and Date)*	**Deney Sorumlusu** *(Person in Charge of Test)*	**Laboratuar Müdürü** *(Head of Laboratory)*	**Rapor Sorgulama** *(Report Verification)*
DENEY VE KALİBRASYON MERKEZİ • 2009 •			
29/12/2021	**Hakan ALTUN**	**...../...../.....** **Refik ALEMDAR**	**9P688240EFP**

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V0 / 29.12.2021	---	İlk yayın / *First Edition*

İÇİNDEKİLER *(Contents)*

1 TEST ÖZETİ *(Test Summary)*

Deneyler aşağıdaki standartlara göre yapılmıştır. *The tests were performed according to following standards.*

1.1 Ürün Standartları *(Product Standards)*

Doküman Numarası *Document Number*	**Adı** *Title*
TS EN 60255-26	Ölçme röleleri ve koruma cihazları - Bölüm 26: Elektromanyetik uyumluluk kuralları / *Measuring relays and protection equipment - Part 26: Electromagnetic compatibility requirements*

1.2 Yayılım Deneyleri *(Emission Tests)*

Standart *Standard*	**Test Adı** *Test Type*	**Sonuç** *Result*	**Karar Kuralı** *Decision Rule*	**Açıklama** *Comment*
TS EN 55011 TS EN 55022	Bağlantı Ucu Bozulma Gerilimi *Conducted Emission*	**Geçti** ***Pass***	"Basit Kural"	Bu deney güncel akreditasyon kapsamımızdadır.*This test is covered our current accreditation scope.*
	Elektromanyetik Yayılım Bozulması *Radiated Emission – electromagnetic field*	**Geçti** ***Pass***	"Basit Kural"	Bu deney güncel akreditasyon kapsamımızda değildir. *This test is not covered our current accreditation scope.*

1.3 Bağışıklık Deneyleri *(Immunity Tests)*

Standart *Standard*	**Test Adı** *Test Type*	**Sonuç** *Result*	**Karar Kuralı** *Decision Rule*	**Açıklama** *Comment*
TS EN 61000-4-2	Elektrostatik Boşalmaya Bağışıklık *Electrostatic Discharge (ESD)*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızdadır.*This test is covered our current accreditation scope.*
TS EN 61000-4-3	Işıyan Elektromanyetik Alanlara Bağışıklık Deneyi *Radiated Immunity*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızdadır.*This test is covered our current accreditation scope.*
TS EN 61000-4-4	Elektriksel Hızlı Geçişler /Burst *Electrical Fast Transient / Burst Immun.*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızdadır.*This test is covered our current accreditation scope.*
TS EN 61000-4-5	Ani Yükselmelere Bağışıklık *Surge Immunity*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızdadır.*This test is covered our current accreditation scope.*
TS EN 61000-4-6	İletilen RF Bozulmalara Bağışıklık *Conducted RF Disturbance Immunity*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızdadır.*This test is covered our current accreditation scope.*
TS EN61000-4-11	Gerilim Çukurları, Kısa Kesintiler *Voltage Dips, Short Interruptions Immunity*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızdadır.*This test is covered our current accreditation scope.*
TS EN61000-4-29	Gerilim Çukurları, Kısa Kesintiler *Voltage Dips, Short Interruptions Immunity*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızda değildir. *This test is not covered our current accreditation scope.scope.*

TS EN 60255-26	DC Kademeli Kapanma /Başlatma *DC Gradual Shut-Down / Start Up*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızda değildir. *This test is not covered our current accreditation scope.scope.*
TS EN 61000-4-17	D.a giriş güç uçlarında meydana gelen dalgacıklara karşı bağışıklık deneyi *Ripple on d.c. input power port, immunity test*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızda değildir. *This test is not covered our current accreditation scope.scope.*
TS EN 61000-4-16	Elektromanyetik uyumluluk (EMU) - bölüm 4-16: Deney ve ölçme teknikleri - 0 Hz ile 150 kHz frekans aralığında iletilen ortak mod bozulumlar için bağışıklık deneyleri *Electromagnetic compatibility (EMC) - Part 4-16: Testing and measurement techniques - Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızdadır.*This test is covered our current accreditation scope.*
TS EN 61000-4-18	Elektromanyetik uyumluluk (EMU) - Bölüm 4-18: Deney ve ölçme teknikleri - Sönümlü salınımlı dalga bağışıklık deneyi *Electromagnetic compatibility (EMC) - Part 4-18: Testing and measurement techniques - Damped oscillatory wave immunity test*	**Geçti** ***Pass***	"Uygulanabilir Değil"	Bu deney güncel akreditasyon kapsamımızdadır.*This test is covered our current accreditation scope.*

2 KULLANILAN TANIMLAR ve KISALTMALAR *(Definitions and Acronmys Used in This Test Report)*

DGC Deneye Giren Cihaz

ESD Electrostatic Discharge

DBD Dikey Bulaştırma Düzlemi

YYO Yarı Yansımasız Oda

VCP Vertical Coupling Plane

YBD Yatay Bağlaştırma Düzlemi

HCP Horizontal Coupling Plane

CDN Coupling – Decoupling Network

LISN Line Impedance Stabilization Network

SAC Semianecohic Chamber

AM Amplitude Modulation

PM Pulse Modulation

RI Radiated Immunity

CI Conducted Immunity

N.A Not Applicable/Uygulanamadı.

EUT Equipment Under Test

MF Magnetic Field

VD Voltage Dips

CE Conducted Emission

RE Radiated Emission

DP Disturbance Power

H&F Harmonics & Flicker

T Click

TI Transient Immunity

TE Transient Emission

EFT Electrical Fast Transient

EMC Electromagnetic Compatibility

RF Radio Frequency

EM Electromagnetic

☒ Onaylı kutu, deney raporunda kullanılan şartları gösterir. *(This sign indicates that listed condition is applicable for this test report.)*

☐ Onaysız kutu, deney raporunda kullanılmayan şartları gösterir. *(This sign indicates that listed condition is not applicable for this test report.)*

3 DENEYE GİREN CİHAZ *(Equipment Under Test)*

*Cihazın adı, markası, modeli, seri numarası, yazılım bilgisi, çalışma gerilimi, güç bilgileri, sistem bileşenleri, yardımcı bileşen bilgisi, cihaz üreticisi ve sahibinin isim ve adres bilgileri müşteri tarafından beyan edilmiştir.

**Name, brand, model, serial number, software information, operating voltage, power information, system components, auxiliary component information, device manufacturer and owner's name and address information provided by the customer.*

3.1 Deneye Giren Cihazın Tanımı *(Description of EUT)*

***Adı** *Name*	**CPM 312-SE ÇOK FONKSİYONLU DİJİTAL SABİT TİP AŞIRI AKIM RÖLESİ / CPM 310-DE ÇOK FONKSİYONLU SOKETLİ TİP DİJİTAL AŞIRI AKIM RÖLESİ** *CPM 312-SE MULTIFUNCTION DIGITAL FIXED TYPE OVERCURRENT RELAY/ CPM 310-DE MULTIFUNCTION SOCKET TYPE DIGITAL OVERCURRENT RELAY*			
***Üretici Firma** *Manufacturer*	**DEMA RÖLE SAN. VE TİC.A.Ş.** *Atatürk Cad. Zümrütevler Mah. İnanç Sk. No:4 34852 Maltepe/ İSTANBUL*			
***Model** *Model*	**CPM310 DE – CPM312 SE** *CPM310 DE – CPM312 SE*	***Seri Numarası** *Serial Number*	CPM312 SE: C22100004 CPM310 DE:C1210008	
***Cihaz Yeri Tipi** *Kind of handling*	☐ Zeminde duran cihaz *Standing floor equipment*	☒ Masaüstü cihaz *Table top equipment*	☐Diğer *Other*	

3.2 Güç Kaynağı *(Power Supply)*

***Çalışma Gerilimi** *Voltage*	(24-240) VDC / (48-240) VAC	***Çalışma Frekansı** *Frequency*	50/60Hz	
***Güç** *Power*	Max. 8 W / 15 VA (CPM312 SE) Max. 10 W / 16.5 VA (CPM310 DE)	***Nominal Akım** *Nominal Current*	---	
***Güç Kablosu** *Power Cable*	☐ Sabit (*permanent)* ☐ Ekranlı (*Shielded)*	☒ Sökülebilir (*removable)* ☒ Ekransız (u*n-shielded)*	Kablo uzunluğu (m): 1,5m *Cable Length*	

3.3 DGC Yazılımı *(EUT Software)*

***Adı** *Name*	CPM310 DE için; C1=sw_c1_v0027 ve C2=sw_c2_v0026 CPM312 SE için; C1=sw_c1_v0027 ve C2=sw_c2_v0026
***Tanımı** *Description*	---
***Versiyon Numarası** *Version Number*	---

3.4 DGC Sistem Bileşenleri *(EUT System Components)*

***Adı** *Name*	***Üretici** *Manufacturer*	***Model** *Model*	***Açıklama** *Description*
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3.5 DGC Çalışma Modu ve Yardımcı Cihazlar *(EUT Operation Mode and Support Equipments)*

3.5.1 DGC, deneyler esnasında aşağıdaki şartlar altında çalıştırılmıştır. *(The EUT was opeated under following conditions during the tests.)*

DGC' nin enerji bağlantısı yapılmıştır. Deneyler DGC' nin normal çalışma durumunda yapılmıştır. Deney esnasında bütün sistem bileşenleri dahil edilerek deneyler yapılmıştır. *The EUT was connected to the mains supply. The tests were performed normal operation mode of the EUT. During the experiment, all system components were included and experiments were carried out.*

3.5.2 Deneyler esnasında DGC' nin bileşeni olmayan aşağıdaki cihazlar DGC' ye bağlanmıştır. *(The listed peripheral devices which are not part of the EUT were connected to the EUT during measurements.)*

Adı *Name*	**Üretici** *Manufacturer*	**Model** *Model*	**Açıklama** *Description*

3.6 Kritik Bileşen Listesi*(Critical Component List)*

CPM 310 DE BİLEŞEN LİSTESİ

LibRef	Comment	Description	Designator	Footprint	Manufacturer	Manufacturer Part Number	Quantity
EUTO_Manufacturing	Manufacturing	For Manufacturing	EL1	EUTO_MANUFACTURING			1
MH_M2	MH_M2	M2 Mounting Hole	MH1, MH2, MH3, MH4	MH2			4
CON800608CB	8006-08CB	CONN Card Edge Connector, 2.54mm, 2x4, THT	J1, J2	CONN_8006-08CB	Alfa Elektronik	8006-08CB	2
CONKLS12-TL007	KLS12TL007	CONN RJ45 Modular Jack with Transformer (Vertical PCB Mount)	J3	CONN_KLS12-TL007	KLS ELECTRONIC	KLS12-TL007	1
DODSMCJ15CA	SMCJ15CA	DIODE TVS 15V 24.4V DO214AB	D1, D2, D3, D4	DO-214AB_SMC_DIOM6959X26M	Littelfuse Inc.	SMCJ15CA	4
TRAZMCT86	ZMCT86	TRANSFORMER Current Sense 2000:1 2.5mA Through Hole	TRA1, TRA2, TRA3, TRA4	TRANSFORMER_ZMCT86	Qingxian Zeming Langxi Electronic	ZMCT86	4
FB74275043	1K 3A	FERRITE BEAD 1K OHM 3A 1LN	FB1, FB2, FB3, FB4	FB_74275043	Wurth Electronics Inc.	74275043	4

Description	Designator	LibRef	Manufacturer Part Number	Quantity
CAP FILM 2.2nF 20% 500VAC RAD Y1 CAP	C1	CAPB81123C1222M189	B81123C1222M189	1
CAP FILM 2.2nF 20% 500VAC RAD Y1 CAP	C2	CAPB81123C1222M189	B81123C1222M189	1
CAP FILM 100nF %20 760VDC RADIAL X2 CAP	C3	CAPPHE840MB6	PHE840MB6100MB05R17	1
CAP FILM 100nF %20 760VDC RADIAL X2 CAP	C4	CAPPHE840MB6	PHE840MB6100MB05R17	1
CAP FILM 100nF %20 760VDC RADIAL X2 CAP	C5	CAPPHE840MB6	PHE840MB6100MB05R17	1
CAP FILM 100nF %20 760VDC RADIAL X2 CAP	C6	CAPPHE840MB6	PHE840MB6100MB05R17	1
CAP FILM 2.2nF 20% 500VAC RAD Y1 CAP	C7	CAPB81123C1222M189	B81123C1222M189	1
CAP FILM 2.2nF 20% 500VAC RAD Y1 CAP	C8	CAPB81123C1222M189	B81123C1222M189	1
CAP CER 1nF 300VAC RADIAL, X1 Y2 CAP	C9	CAPDE2E3KY102MB3B	DE2E3KY102MB3BU02F	1
CAP CER 1nF 100V X7R 0805	C10	CAPCL21B102KCAN	CL21B102KCANNNC	1
CAP ALUM 2200uF 20% 25V T/H	C11	CAP228CKS025M	228CKS025M	1
CAP ALUM 1000uF 20% 16V RADIAL	C12	CAPESK108M016	ESK108M016AH2AA	1
CAP CER 2.2nF 250VAC X7R 2211	C13	CAP122014370E	502R30W222KV3E-****-SC	1
CAP ALUM 68uF 20% 400V RADIAL	C14	CAP400BXW68ME	400BXW68MEFC18X20	1
CAP ALUM 68uF 20% 400V RADIAL	C15	CAP400BXW68ME	400BXW68MEFC18X20	1
CAP ALUM 10uF 20% 50V RADIAL	C16	CAPECA-1HM100	ECA-1HM100	1
CAP CER 680nF 50V X7R 1206	C17	CAPCL31B684KBHN	CL31B684KBHNNNE	1
CAP CER 680nF 50V X7R 1206	C18	CAPCL31B684KBHN	CL31B684KBHNNNE	1
CAP ALUM 47uF 20% 35V RADIAL	C19	CAPECA-1VM470I	ECA-1VM470I	1
CAP CER 100nF 50V X7R 0603	C20	CAPCC0603JRX7	CC0603JRX7R9BB104	1
CAP CER 2.2nF 250VAC X7R 2211 - Y2	C21	CAP502R30W222K	502R30W222KV3E-****-SC	1
CAP CER 2.2nF 250VAC X7R 2211 - Y2	C22	CAP502R30W222K	502R30W222KV3E-****-SC	1
CAP CER 2.2nF 250VAC X7R 2211 - Y2	C23	CAP502R30W222K	502R30W222KV3E-****-SC	1
CAP CER 2.2nF 250VAC X7R 2211 - Y2	C24	CAP502R30W222K	502R30W222KV3E-****-SC	1
CAP CER 680pF 250VAC X7R 2211	C25	CAP502R30W681	502R30W681KV3E-****-SC	1
CAP CER 680pF 250VAC X7R 2211	C26	CAP502R30W681	502R30W681KV3E-****-SC	1
DIODE TVS 350V 567V DO214AB	D1	DODSMCJ350CA	SMCJ350CA	1
DIODE BRIDGE RECTIFIER 600V 2A DFS	D2	DODDF206ST-G	DF206ST-G	1
DIODE SCHOTTKY 100V 20A TO220AB	D3	DODV20100S-E3/4W	V20100S-E3/4W	1
DIODE GEN PURP 1kV 1A AXIAL	D4	DODMUR1100EG	MUR1100EG	1
DIODE GEN PURP 1kV 1A AXIAL	D5	DODMUR1100EG	MUR1100EG	1

FUSE BRD MNT 1.6A 250VAC RADIAL	F1	FUSRST 1.6-BULK	RST 1.6-BULK	1
Fiducial Marker 1mm Diameter	FD1	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD2	Fiducial_1mm		1
CONN Header Erkek 2x10 2.54mm x 2.54mm 3A	J1	CON2011-2X05G00SB	2011-2X05G00SB-A010	1
CMC 1mH 3A 2LN TH	L1	CMC744822301	744822301	1
IND FIXED 10uH 1.5A 70 mOHM TH	L2	INDAIUR-12-100K	AIUR-12-100K	1
Optocoupler Transistor Output 5300Vrms 1 Channel 4-DIP	OPT1	OPTSFH615A-3X006	SFH615A-3X006	1
RES DIP 4R7 OHM 5% 3W AXIAL	R1	RESAC03000004	AC03000004701JAC00	1
RES DIP 4R7 OHM 5% 3W AXIAL	R2	RESAC03000004	AC03000004701JAC00	1
RES DIP 33R OHM 1% 1/4W AXIAL	R3	RESRNMF14FTC33R0	RNMF14FTC33R0	1
RES SMD 82K OHM 5% 1W 2512	R4	RESRMCF2512JT82K0	RMCF2512JT82K0	1
RES DIP 33R OHM 1% 1/4W AXIAL	R5	RESRNMF14FTC33R0	RNMF14FTC33R0	1
RES SMD 150R OHM 1% 0.25W 0603	R6	RESCRGP0603F150R	CRGP0603F150R	1
RES SMD 24R9 OHM 1% 1/4W 1206	R7	RESRMCF1206FG24R9	RMCF1206FG24R9	1
RES SMD 1K OHM 1% 1/4W 0603	R8	RESESR03EZPF1001	ESR03EZPF1001	1
RES SMD 7K68 OHM 1% 1/4W 1206	R9	RESRMCF1206FT7K68	RMCF1206FT7K68	1
RES SMD 6R8 OHM 1% 1/4W 1206	R10	RESRMCF1206FT6R80	RMCF1206FT6R80	1
RES SMD 5K1 OHM 1% 1/4W 1206	R11	RESRMCF1206FT5K10	RMCF1206FT5K10	1
RES SMD 5K1 OHM 1% 1/4W 1206	R12	RESRMCF1206FT5K10	RMCF1206FT5K10	1
Inrush Current Limiter 2 Ohms ±20% 5A 0.394" (10mm)	RT1	TERSL102R005	SL10 2R005	1
VARISTOR 430V 4.5kA Varistor 1 Circuit Through Hole Disc 14mm	RV1	VARB72214S0271K101	B72214S0271K101	1
TRANSFORMER Flyback Transformer 5VDCout Npri=27, Nout=9	TRA1	TRASM2540127	SM2540127	1
IC OFFLINE SWIT PROG OVP 8DIP	U1	ICTOP258PN	TOP258PN	1
IC Shunt Voltage Reference IC 36V ±1% 100mA 8-SOIC	U2	ICTL431ACDR	TL431ACDR	1

LibRef	Comment	Description	Designator	Footprint	Manufacturer	acturer Part N	Quantity
EUTO_Manufacturing	Manufacturing	For Manufacturin	EL1	EUTO_MANUI			1
Fiducial_1mm	Fiducial_1mm	Fiducial Marker 1r	FD1, FD2	Fiducial_1mm			2
MH_M2	MH_M2	M2 Mounting Hol	MH1, MH2, MH3, MH4	MH2			4
CAP502R30W681	680pF	CAP CER 680pF 25	C10, C11, C12, C13	CAP_2211_L x	Johanson Die	502R30W681K	4
CON15052226R	15052226R	CON DEMA 26 pir	J1	CONN_15052	DEMA	15052226R	1
ICAP2127KADJ1	AP2127	IC REG LIN POS AI	U2	SOT-23-5_SO1	Diodes Incorp	AP2127K-ADJT	1
FBBLM18KG601BH1D	600R 1A	FERRITE BEAD 600	FB3	FB_0603	Murata Electr	BLM18KG601B	1
FBBLM41PG600SN1L	60R 6A	FERRITE BEAD 60	FB1_DI1, FB1_DI2, FB1_DI3, FB1_DI	FB_1806	Murata Electr	BLM41PG600S	18
CAPCC0603JRX7R7BB224	220nF	CAP CER 0.22UF 1	C1_DI1, C1_DI2, C1_DI3, C1_DI4, C	CAP_0603_L x	Yageo	CC0603JRX7R7	9
CL10B105KA8NNNC	1uF 25V	CAP CER 1UF 25V	C7	CAP_0603_L x	Samsung Elec	CL10B105KA8I	1
CL10B224KA8NNNC	220nF 25V	CAP CER 0.22UF 2	C4, C6, C8	CAP_0603_L x	Samsung Elec	CL10B224KA8I	3
CL10B391KB8NNNC	390pF 50V	CAP CER 390PF 50	C5	CAP_0603_L x	Samsung Elec	CL10B391KB8I	1
CL10B474KA8NFNC	470nF 25V	CAP CER 0.47UF 2	C2_DI1, C2_DI2, C2_DI3, C2_DI4, C	CAP_0603_L x	Samsung Elec	CL10B474KA8I	9
RESCRCW25121M00FKEG	1M %1	RES SMD 1M OHN	R3_DI1, R3_DI2, R3_DI3, R3_DI4, R	RES_2512_L x	Vishay Dale	CRCW25121M	9
RESCRCW25122K2	2K2 %1	RES SMD 2K2 OHI	R1_DI1, R1_DI2, R1_DI3, R1_DI4, R	RES_2512_L x	Vishay Dale	CRCW25122K	18
RESCRCW2512510K	510K	RES SMD 510K OH	R2_DI1, R2_DI2, R2_DI3, R2_DI4, R	RES_2512_L x	Vishay Dale	CRCW251251(	9
RESCRGCQ2512F68K	68K %1	RES SMD 68K OHI	R7_DI1, R7_DI2, R7_DI3, R7_DI4, R	RES_2512_L x	TE Connectivi	CRGCQ2512F6	9
DODDF206ST-G	DF206STG	DIODE BRIDGE RE	D1_DI1, D1_DI2, D1_DI3, D1_DI4, D	DF06S-T	Comchip Tech	DF206ST-G	9
ERJ-PA3F1802V	18K	RES SMD 18K OHI	R9	RES_0603_L x	Panasonic Ele	ERJ-PA3F1802	1
ERJ-PA3F4701V	4K7	RES SMD 4.7K OH	R5_DI1, R5_DI2, R5_DI3, R5_DI4, R	RES_0603_L x	Panasonic Ele	ERJ-PA3F4701	9
ERJ-PA3F5602V	56K	RES SMD 56K OHI	R8	RES_0603_L x	Panasonic Ele	ERJ-PA3F5602	1
ERJ-PA3F6802V	68K	RES SMD 68K OHI	R4_DI1, R4_DI2, R4_DI3, R4_DI4, R	RES_0603_L x	Panasonic Ele	ERJ-PA3F6802	9
CAPGRM188R61C475KAAJD	4.7µF 16V	CAP CER 4.7UF 16	C3, C9	CAP_0603_L x	Samsung Elec	GRM188R61C	2
TRSIPN60R3K4CE	IPN60R3K4CE	TRANS MOSFET N	Q1_DI1, Q1_DI2, Q1_DI3, Q1_DI4, C	SOT223-3_SO	Infineon Tech	IPN60R3K4CE/	9
DODMMSZ4705T1G	MMSZ4705T1G	DIODE ZENER 18V	D3_DI1, D3_DI2, D3_DI3, D3_DI4, D	CATHODE-SO	ON Semicond	MMSZ4705T1(	9
VARMOV07D431K	430V	VARISTOR 430V 1	RV1_DI1, RV1_DI2, RV1_DI3, RV1_D	MOV07D Seri	Bourns Inc.	MOV-07D431	9
CON1001878420E	10018784-10200T	CONN PCI Express	J2	CONN_10018	Not Buy	Not Buy	1
OPTPS2561L1A	PS2561L1A	Optocoupler Tran	OPT1_DI1, OPT1_DI2, OPT1_DI3, O	SMD-4_Gullw	CEL	PS2561L-1-A	9
DODSMCJ350CA	SMCJ350CA	DIODE TVS 350V 5	D2_DI1, D2_DI2, D2_DI3, D2_DI4, D	DO-214AB_SM	Littelfuse Inc.	SMCJ350CA	9
ICSN74AUP1G06DBVR	SN74AUP1G06DB	IC INVERTER 1CH	U1_DI1, U1_DI2, U1_DI3, U1_DI4, U	SOT-23-5_SO1	Texas Instrum	SN74AUP1G0(	9

LibRef	Comment	Description	Designator	Footprint	Manufacturer	acturer Part N	Quantity
EUTO_Manufacturing	Manufacturing	For Manufacturin	EL1	EUTO_MANUI			1
Fiducial_1mm	Fiducial_1mm	Fiducial Marker 1r	FD1, FD2	Fiducial_1mm			2
MH_M2	MH_M2	M2 Mounting Ho	MH1, MH2	MH2			2
CAP502R30W681	680pF 250VAC	CAP CER 680pF 25	C21, C22, C23, C24, C25	CAP_2211_L x	Johanson Die	502R30W681K	5
CON15052226R	15052226R	CON DEMA 26 pir	J1	CONN_15052	DEMA	15052226R	1
FB74279266	1K 200mA	FERRITE BEAD 1K	FB2, FB3	FB_0603	Wurth Electro	74279266	2
CMC744272251	970R 2A	CMC 250uH 2A 2L	L1	CMC_7442722	Wurth Electro	744272251	1
ICADM2687EB1	ADM2687EB1	IC RS-485 Transce	U2	SOIC-16WB_S	Analog Device	ADM2687EBR	1
ICAP2127KADJ1	AP2127	IC REG LIN POS AI	U1	SOT-23-5_SO1	Diodes Incorp	AP2127K-ADJT	1
FBBLM18KG601BH1D	600R 1A	FERRITE BEAD 600	FB1	FB_0603	Murata Electr	BLM18KG601B	1
CL10B101KB8NNNC	100pF 50V	CAP CER 100PF 50	C10, C12, C15, C16, C20	CAP_0603_L x	Samsung Elec	CL10B101KB8N	5
CL10B105KA8NNNC	1uF 25V	CAP CER 1UF 25V	C6	CAP_0603_L x	Samsung Elec	CL10B105KA8N	1
CL10B224KA8NNNC	220nF 25V	CAP CER 0.22UF 2	C3, C5, C7, C9, C11, C14, C17, C19	CAP_0603_L x	Samsung Elec	CL10B224KA8N	8
CL10B391KB8NNNC	390pF 50V	CAP CER 390PF 50	C4	CAP_0603_L x	Samsung Elec	CL10B391KB8N	1
CL21B106KPQNNNE	10uF 10V	CAP CER 10UF 10V	C1_Relay1, C1_Relay2, C1_Relay3,	CAP_0805_L x	Samsung Elec	CL21B106KPQ	8
ERJ-PA3F22R0V	22R	RES SMD 22 OHM	R1_Relay1, R1_Relay2, R1_Relay3,	RES_0603_L x	Panasonic Ele	ERJ-PA3F22R0	11
ERJ-PA3F1001V	1K0	RES SMD 1K OHM	R5, R13	RES_0603_L x	Panasonic Ele	ERJ-PA3F1001	2
ERJ-PA3F1200V	120R	RES SMD 120 OHM	R10	RES_0603_L x	Panasonic Ele	ERJ-PA3F1200	1
ERJ-PA3F1802V	18K	RES SMD 18K OHM	R4	RES_0603_L x	Panasonic Ele	ERJ-PA3F1802	1
ERJ-PA3F4701V	4K7	RES SMD 4.7K OH	R2_Relay1, R2_Relay2, R2_Relay3,	RES_0603_L x	Panasonic Ele	ERJ-PA3F4701	12
ERJ-PA3F5602V	56K	RES SMD 56K OHM	R3	RES_0603_L x	Panasonic Ele	ERJ-PA3F5602	1
CONESQ-105-12-L-D	ESQ-105-12-L-D	CONN SOCKET 2X	J3	CONN_ ESQ-1	Samtec Inc.	ESQ-105-12-L-	1
CAPGRM188R61C106KAALD	10UF 16V	CAP CER 10UF 16V	C13, C18	CAP_0603_L x	Samsung Elec	GRM188R61C	2
CAPGRM188R61C475KAAJD	4.7µF 16V	CAP CER 4.7UF 16	C2, C8	CAP_0603_L x	Samsung Elec	GRM188R61C	2
TRSMMBT2222ALT1	MMBT2222ALT1	TRANS NPN 40V 0	TRS1_Relay1, TRS1_Relay2, TRS1_R	SOT23-3_SOT	Infineon Tech	MMBT2222AL	8
VARMOV14D330K	33V	VARISTOR 33V 1k	VAR1, VAR2	MOV-14D330	Bourns Inc.	MOV-14D330	2
CON1001878420E	10018784-10200T	CONN PCI Express	J2	CONN_10018	Not Buy	Not Buy	1
DODNTS260SFT1G	NTS260SFT1G	DIODE SCHOTTKY	D1_Relay1, D1_Relay2, D1_Relay3,	NTS26-SOD-1	ON Semicond	NTS260SFT1G	8
RESRC1206FR-07120RL	120R %1	RES SMD 120 OHM	R6	RES_1206_Wi	Yageo	RC1206FR-07	1
RLYRY611005	RY611005	RELAY GENERAL P	RL1_Relay1, RL1_Relay2, RL1_Relay	RLY611005	TE Connectivi	RY611005	8
DODSMAJ12CA	SMAJ12CA	DIODE TVS 12V 19	D2, D3	SMAJ_DIOM4	Littelfuse Inc.	SMAJ12CA	2
ICTBUCA06531	TBUCA06531	IC SURGE SUPP TB	IC1, IC2	BOURNS TBU-	Bourns Inc.	TBU-CA065-30	2

LibRef	Comment	Description	Designator	Footprint	Manufacturer	Manufacturer Part Number	Quantity
EUTO_Manufacturing	Manufacturing	For Manufacturing	EL2	EUTO_MANUFACTURING			1
Fiducial_1mm	Fiducial_1mm	Fiducial Marker 1mm Diameter	FD1, FD2, FD3, FD4, FD5, FD6, FD7, FD8	Fiducial_1mm			8
MH_M2	MH_M2	M2 Mounting Hole	MH1, MH2, MH3, MH4, MH5, MH6, MH7, MH8	MH2			8
DOD1N4148W	1N4148	DIODE GEN PURP 100V 300mA SOD123	D7	CATHODE-SOD123	Diodes Incorporated	1N4148W-7-F	1
IC74LVC1G11GW,125	IC74LVC1G11GW,125	IC GATE AND 1CH 3-INP 6TSSOP	U7, U14	SOP65P210X110-6N	Nexperia USA Inc.	74LVC1G11GW,125	2
SW2192MST	219-2MST	SWITCH SLIDE DIP 2POS SPST 100mA 20V Surface Mount	SW1, SW3	219-2MST	CTS Electrocomponents	219-2MSTR	2
CAP502R30W222K	2.2nF	CAP CER 2.2nF 250VAC X7R 2211 - Y2	C198, C199, C207, C208	CAP_2211_L x W x H (5.72 x 2.8 x 2.9)	Johanson Dielectrics Inc.	502R30W222KV3E-****-SC	4
CON2011-1x07GR	CON2011-1x07GR	CONN HEADER 1x7 POS 2.54 Angle	J1	CONN_Pin Header 1x7 TH Pitch 2.54mm Angle	OUPIIN	2011-1x07GR	1
RES3296W-1-203	3296W-1-203	RES POT 20K OHM 0.5W PC PIN TOP	R52	RES_POT_3296W	Bourns Inc.	3296W-1-203	1
CON1001878420	10018784-10200TLF	CONN PCI Express, 36 Position, 1mm, THT	J3, J4, J5	CONN_10018784-10200TLF	Amphenol ICC (FCI)	10018784-10200TLF	3
MECH36903205S	36903205S	EMI Shield, 20x20mm, SMD	MECH1	36903205S	Wurth Electronics Inc.	36903205S	1
FB742792040	600R 2A	FERRITE BEAD 600 OHM 0805 2A 1LN	FB8, FB9, L2_1, L2_2, L2_3, L2_4, L3_1, L3_2, L3_3, L3_4	FB_0805	Wurth Electronics Inc.	742792040	10
CON612010206	61201020621	CONN Header, Shrouded, 2.54mm, 10pin SMT	J6, J10	CONN_61201020621	Wurth Electronics Inc.	61201020621	2
CON61300311121	61300311121	CONN HEADER 1x3 POS 2.54	J7, J9	CONN_Pin Header 1x3 TH Pitch 2.54mm	Wurth Electronics Inc.	61300311121	2

CON61400413321	61400413321	CONN USB 4POS FEMALE STR TYPE B	J8	CONN_6140041 3321_TypeB_ USB	Wurth Electronics Inc.	61400413321	1
MODABG128064A23	ABG128064A23-BIW-R	LCD Module, 128x64dots, 93x70x13.8mm, THT	MOD1	ABG128064A2 3-BIW-R LCD-GRAFIK	Gemini Technology Co.Ltd.	ABG128064A2 3-BIW-R	1
CRYABM3C-24.000MHZ	ABM3C-24.000MHZ-D4Y-T	CRYSTAL 24MHZ 18pF SMD	X1, X3	CRY_ABM3G_L x W (5x3.2)	Abracon LLC	ABM3C-24.000MHZ-D4Y-T	2
CRYABS25-32.768KHZ-T	ABS25-32.768KHZ-T	CRYSTAL 32.7680KHZ 12.5PF SMD	X4	CRY_ABS25_S eries_L x W (8 x 3.8)	Abracon LLC	ABS25-32.768KHZ-T	1
ICADE7868AACPZ	ADE7868A	IC ENERGY METER MULTIFUN 40LFCSP	U15	LFCSP-40_CP_40_10	Analog Devices Inc.	ADE7868AACP Z	1
ICAP2127KADJ1	AP2127	IC REG LIN POS ADJ 300mA SOT23-5	U13	SOT-23-5_SOT95P280 X145-5N	Diodes Incorporated	AP2127K-ADJTRG1	1
ICAS4C8M16SA6TIN	AS4C8M16SA-6TIN	IC SDRAM Memory IC 128Mb (8M x 16) Parallel 166MHz 5ns 54-TSOP II	U1, U9	TSOP-54_11P96X00	Alliance Memory, Inc.	AS4C8M16SA-6TIN	2
TRSBC847C,215	BC847C,215	TRANS NPN 45V 0.1A SOT23	Q1	SOT23_TO-236_SOT95P23 7X111-3N	Nexperia USA Inc.	BC847C,215	1
TRSBC81825MTF	BC818	TRANS NPN 25V 0.8A SOT-23	TRS3	SOT23_TO-236_SOT95P23 7X111-3N	ON Semiconducto r	BC81825MTF	1
FBBLM18AG601SN1D	600R 500mA	FERRITE BEAD 600 OHM 0603 500mA 1LN	FB1, FB2, FB3, FB4, FB5, FB6, FB7, FB10, FB11, FB12	FB_0603	Murata Electronics North America	BLM18AG601S N1D	10
CAPCL10A226MQ8NRNE	22uF/6.3V	CAP CER 22UF 6.3V X5R 0603	C16, C20, C21, C34, C55, C78, C80, C118, C121, C125, C126, C140	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10A226MQ8 NRNE	12
CL10B101KB8NNNC	100pF 50V	CAP CER 100PF 50V X7R 0603	C61_1, C61_2, C61_3, C61_4, C156, C196	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10B101KB8 NNNC	6
CL10B103KB8NCNC	10nF 50V	CAP CER 10000PF 50V X7R 0603	C197	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10B103KB8 NCNC	1
CL10B104KA8NNNC	100nF 25V	CAP CER 0.1UF 25V X7R 0603	C201, C206, C220	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10B104KA8 NNNC	3
CL10B105KA8NNNC	1uF 25V	CAP CER 1UF 25V X7R 0603	C167	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10B105KA8 NNNC	1

CL10B223KB8NNNC	22nF 50V	CAP CER 0.022UF 50V X7R 0603	C60_1, C60_2, C60_3, C60_4, C62_1, C62_2, C62_3, C62_4	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10B223KB8NNNC	8
CL10B224KA8NNNC	220nF 25V	CAP CER 0.22UF 25V X7R 0603	C1, C3, C4, C5, C6, C7, C8, C9, C10, C12, C13, C14, C15, C19, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C36, C38, C39, C40, C42, C43, C44, C45, C46, C47, C48, C49, C50, C57, C59, C63, C64, C65, C67, C69, C72, C73, C75, C77, C79, C81, C82, C84, C85, C87, C88, C92, C93, C94, C95, C97, C98, C99, C100, C101, C102, C103, C104, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C119, C120, C124, C127, C128, C129, C130, C131, C132, C133, C134, C135, C142, C144, C145, C146, C148, C149, C151, C153, C154, C155, C160, C161, C162, C164, C166, C168, C169, C170, C171, C175, C180, C182, C186, C188, C189, C200, C205, C218	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10B224KA8NNNC	119
CL10B225KP8NNNC	2.2uF 10V	CAP CER 2.2UF 10V X7R 0603	C76	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10B225KP8NNNC	1
CL10B391KB8NNNC	390pF 50V	CAP CER 390PF 50V X7R 0603	C165	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10B391KB8NNNC	1
CL10C120JB8NNNC	12pF 50V	CAP CER 12PF 50V NP0 0603	C173, C174, C203, C204	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10C120JB8NNNC	4
CL10C150JB8NNNC	15pF 50V	CAP CER 15PF 50V NP0 0603	C183, C184	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10C150JB8NNNC	2
CL10C220JB8NCNC	22pF 50V	CAP CER 22PF 50V NP0 0603	C70, C172, C191, C192, C193, C194, C195, C202, C209, C210	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	CL10C220JB8NCNC	10
CL32B226KOJNNNE	22uF 16V	CAP CER 22UF 16V X7R 1210	C89, C90, C157	CAP_1210_L x W (3.2 x 2.5)	Samsung Electro-Mechanics	CL32B226KOJNNNE	3
BATCR2032-VAY3	CR2032-VAY3	Battery, CR2032, Li/MnO2, Coin Cell, THT	BAT2	BAT_CR2023-VAY3	EEMB	CR2032-VAY3	1
LEDDEMAC0001	LEDDEMAC0001	Custom LED, 1x6, RRYRRY, THT	LED1	DEMA_LED_0001	Custom	Custom	1
CMCDLW21SN9001	90R 330mA	CMC 330mA 2LN 90 OHM SMD	CMC1	CMC_DLW21SN900SQ2L	Murata Electronics North America	DLW21SN900SQ2L	1
CONDS1024-04-1X20V822	DS1024-04-1X20V822	CONN HEADER, Socket, Bottom Entry, 2x10pin, 2.54 mm, THT	J2	CONN_DS1024-04-1X20V822	Connfly Electronic Co. LTD	DS1024-04-1X20V822	1
DODECLAMP2378P	ECLAMP2378P	DIODE RC (Pi) EMI Filter 2nd Order Low Pass 8 Channel 100R 11pF SMD	D1, D4, D5, D9	SON50P160X58_HS-17N_L x W (4 x 1.6)	Semtech Corporation	ECLAMP2378P.TCT	4
CRYECS-163.84	ECS-163.84-18-30B-AGN-TR	CRYSTAL 16.384MHZ 18pF SMD	X2	CRY_ECS-163.84-18-30B-AGN-TR_L x W (5 x 3.2)	ECS Inc.	ECS-163.84-18-30B-AGN-TR	1
RESERA-6AEB102V	1K %0.1	RES SMD 1K OHM 0.1% 1/8W 0805	R38_1, R38_2, R38_3, R38_4, R49_1, R49_2, R49_3, R49_4	RES_0805_L x W (2 x 1.25)	Panasonic Electronic Components	ERA-6AEB102V	8

ERJ-3GEY0R00V	0R, 1/10W	RES SMD 0 OHM 1% 1/10W 0603	R22, R161, R162, R163, R164, R214	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-3GEY0R00V	6
RESERJ-3GEY0R00V	0R	RES SMD 0 OHM JUMPER 1/10W 0603	R103, R104	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-3GEY0R00V	2
ERJ-PA3F6491V	6K49	RES SMD 6.49K OHM 1% 1/4W 0603	R84	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJPA3F6491V	1
ERJ-PA3F22R0V	22R	RES SMD 22 OHM 1% 1/4W 0603	R72, R73, R75, R77, R78, R79, R80, R81, R82, R94, R169, R179, R180, R181, R182, R183, R184, R192, R194, R195, R196	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F22R0V	21
ERJ-PA3F51R0V	51R	RES SMD 51 OHM 1% 1/4W 0603	R50	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F51R0V	1
ERJ-PA3F1000V	100R	RES SMD 100 OHM 1% 1/4W 0603	R43_1, R43_2, R43_3, R43_4	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F1000V	4
ERJ-PA3F1001V	1K0	RES SMD 1K OHM 1% 1/4W 0603	R8, R9, R10, R11, R12, R20, R51, R54, R55, R56, R57, R59, R60, R62, R63, R64, R65, R66, R67, R68, R71, R83, R97, R98, R99, R100, R101	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F1001V	27
ERJ-PA3F1004V	1M0	RES SMD 1M OHM 1% 1/4W 0603	R168	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F1004V	1
ERJ-PA3F1503V	150K	RES SMD 150K OHM 1% 1/4W 0603	R128	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F1503V	1
ERJ-PA3F1802V	18K	RES SMD 18K OHM 1% 1/4W 0603	R131	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F1802V	1
ERJ-PA3F2003V	200K	RES SMD 200K OHM 1% 1/4W 0603	R187	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F2003V	1
ERJ-PA3F2200V	220R	RES SMD 220 OHM 1% 1/4W 0603	R85, R86, R87, R88, R89, R90	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F2200V	6
ERJ-PA3F3302V	33K	RES SMD 33K OHM 1% 1/4W 0603	R37, R126	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F3302V	2
ERJ-PA3F4701V	4K7	RES SMD 4.7K OHM 1% 1/4W 0603	R1, R2, R3, R4, R5, R6, R7, R13, R14, R15, R16, R17, R18, R19, R21, R23, R24, R44_1, R44_2, R44_3, R44_4, R53, R58, R61, R69, R70, R74, R76, R91, R92, R95, R96, R102, R132, R133, R134, R135, R136, R137, R148, R159, R160, R185, R186, R188, R189, R190, R191, R193, R199, R200, R205, R206, R218	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F4701V	54
ERJ-PA3F4702V	47K	RES SMD 47K OHM 1% 1/4W 0603	R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R114, R115, R116, R117, R118, R119, R120, R121, R122, R123, R124, R125, R129	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F4702V	25

ERJ-PA3F5602V	56K	RES SMD 56K OHM 1% 1/4W 0603	R130	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F5602V	1
ERJ-PA3F6803V	680K	RES SMD 680K OHM 1% 1/4W 0603	R127	RES_0603_L x W (1.6 x 0.8)	Panasonic Electronic Components	ERJ-PA3F6803V	1
DODESD9X5.0ST5G	ESD9X5.0ST5G	DIODE TVS DIODE 5V 12.3V SOD923	D6, D8	ESD9X3-SOD923_SODFL100X43-2N_L x W (0.8 x 0.6)	ON Semiconductor	ESD9X5.0ST5G	2
CAPGRM188R61C	1UF 16V	CAP CER 1UF 16V X5R 0603	C74, C83	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	GRM188R61C105KA93D	2
CAPGRM188R61C475KAAJD	4.7µF 16V	CAP CER 4.7UF 16V X5R 0603	C2, C11, C17, C18, C33, C35, C37, C41, C51, C52, C53, C54, C56, C58, C66, C68, C71, C86, C91, C96, C105, C117, C122, C123, C136, C137, C138, C139, C141, C143, C147, C150, C152, C158, C159, C163, C176, C178, C179, C181, C185, C187, C190, C217	CAP_0603_L x W (1.6 x 0.8)	Samsung Electro-Mechanics	GRM188R61C475KAAJD	44
FBHI2220P601R-10	600R	FERRITE BEAD 600 OHM 2220 1LN	FB13, FB14	FB_2220 (5650 Metric)	Laird-Signal Integrity Products	HI2220P601R-10	2
ICKSZ8081RNBIA	KSZ8081RNBIA	IC TXRX ETHERNET 32QFN	U6	QFN50P500X500X110_HS-33N	Microchip Technology	KSZ8081RNBIATR	1
ICMCP1320T29LE	MCP1320T-29LE	IC SUPERVISOR 2.9V SOT23-5	U8	SOT-23-5_SOT95P280X145-5N	Microchip Technology	MCP1320T-29LE/OT	1
ICMCP4018T	MCP4018T-503E/LT	IC Digital Potentiometer 50k Ohm 1 Circuit 128 Taps I²C Interface SC-70-6	U4	SOT65P210X110-6N	Microchip Technology	MCP4018T-503E/LT	1
ICIMXRT1021CAG4A	MIMXRT1021	IC i.MX RT Series Crossover Arm Cortex-M7 Processor 16KB Cache 500MHz 144-Pin LQFP	U3, U11	QFP50P2200X2200X160-144N	NXP USA Inc.	MIMXRT1021CAG4A	2
ICOPA2171AIDR	OPA2171AIDR	IC General Purpose Amplifier 2 Circuit Rail-to-Rail 8-SOIC	U5	SOIC127P600X175-8N	Texas Instruments	OPA2171AIDR	1
ICPAM2310BE1	PAM2310	IC REG BUCK ADJ 2A SYNC 8SOIC	U12	SOP8_SOP127P600X175-8N	Diodes Incorporated	PAM2310BECADJR	1
ICPCA9306DCTR	ICPCA9306DCTR	IC Voltage Level Translator Bidirectional 1 Circuit 2 Channel SM8 (SSOP)	U16	DCT8	Texas Instruments	PCA9306DCTR	1
ICPCA9552BS118	PCA9552BS-118	IC LED DRVR LIN DIM 25MA 24HVQFN	U17	QFN50P400X400X80_HS-25L	NXP USA Inc.	PCA9552BS,118	1
ICPCF85263AT/AJ	PCF85263AT/AJ	IC RTC CLK/CALENDAR I2C 8SOIC	U18	SOIC-8_SOIC127P600X175-8N	NXP USA Inc.	PCF85263AT/AJ	1

TRSPMV40UN2R	PMV40UN2R	TRANS MOSFET N-CHANNEL 30V 3.7A SOT23	TRS1_1, TRS1_2, TRS1_3, TRS1_4, TRS2_1, TRS2_2, TRS2_3, TRS2_4	SOT236AB_PMV40UN2R	Nexperia USA Inc.	PMV40UN2R	8
SWPTS645SM43	SWPTS645SM43	Switch Tactile, SPST-NO, 50mA 12V, 4.3mm, SMT	SW2	PTS645SM43SMTR92LFS	C&K	PTS645SM43SMTR92 LFS	1
RESRC0603FR	4K7 1%	RES SMD 4K7 OHM 1% 1/10W 0603	R93, R165, R166, R167, R170, R171, R172, R173, R174, R175, R176, R177, R178	RES_0603_L x W (1.6 x 0.8)	Yageo	RC0603FR-074K7L	13
RESRT0603FRE07	1R %1	RES SMD 1R OHM 1% 1/10W 0603	R39_1, R39_2, R39_3, R39_4, R40_1, R40_2, R40_3, R40_4, R47_1, R47_2, R47_3, R47_4, R48_1, R48_2, R48_3, R48_4	RES_0603_L x W (1.6 x 0.8)	Yageo	RT0603FRE071RL	16
RESRT0805DRE0716RL	16R %0.5	RES SMD 16R OHM 0.5% 1/8W 0805	R41_1, R41_2, R41_3, R41_4, R42_1, R42_2, R42_3, R42_4, R45_1, R45_2, R45_3, R45_4, R46_1, R46_2, R46_3, R46_4	RES_0805_L x W (2 x 1.25)	Yageo	RT0805DRE0716RL	16
INDSRU20164R7Y	4.7uH 0.74A	IND FIXED 4.7uH 1.15A 215 mOHM	L1, L4	SRU2016	Bourns Inc.	SRU2016-4R7Y	2
DODUSBLC6-4SC6	USBLC6-4SC6	DIODE TVS 5.25V 17V SOT23-6	D10	SOT23_6_SOT95P280X145-6N	STMicroelectronics	USBLC6-4SC6	1
DODVESD01-02V-G-08	VESD01-02V-G-08	DIODE TVS 1V 9V SOD523	D2_1, D2_2, D2_3, D2_4, D3_1, D3_2, D3_3, D3_4	SODFL1608X70N_VESD01-02V-G-08	Vishay Semiconductor Diodes Division	VESD01-02V-G-08	8
INDVLS5045E2R2	2.2uH 4.7A	IND FIXED 2.2uH 4.7A 28.6 mOHM	L5	INDP5050X45N	TDK Corporation	VLS5045EX-2R2N	1
ICW25Q128JVSIM	W25Q128JVSIM	IC NOR FLASH 128M SPI 133MHZ 8SOIC	U2, U10	8-SOIC WİDE-PACKAGE CODE S)	Winbond Electronics	W25Q128JVSIM	2

LibRef	Comment	Description	Designator	Footprint	Manufacturer	acturer Part N	Quantity
CON800608CBE	CON800608CBE	CONN Card Edge	J1, J3	CON800608C	Not Buy		2
EUTO_Manufacturing	Manufacturing	For Manufacturin	EL1	EUTO_MANU			1
Fiducial_1mm	Fiducial_1mm	Fiducial Marker 1r	FD1, FD2	Fiducial_1mm			2
MH_M2	MH_M2	M2 Mounting Hol	MH1, MH2	MH2			2
CAP228CKS025M	2200uF 25V	CAP ALUM 2200uF	C11	CAP_DIP_S x L	Illinois Capac	228CKS025M	1
CAP400BXW68ME	68uF 400V	CAP ALUM 68uF 2	C14, C15	CAP_ELECTRO	Rubycon	400BXW68ME	2
CAP122014370E	2.2nF 250VAC	CAP CER 2.2nF 25	C13	CAP_2211_L x	Johanson Die	502R30W222K	1
CAP502R30W222K	2.2nF	CAP CER 2.2nF 25	C21, C22, C23, C24	CAP_2211_L x	Johanson Die	502R30W222K	4
CAP502R30W681	680pF 250VAC	CAP CER 680pF 25	C25, C26, C27, C28	CAP_2211_L x	Johanson Die	502R30W681K	4
CMC744822301	1mH 3A	CMC 1mH 3A 2LN	L1	CMC_7448223	Wurth Electro	744822301	1
CON61301021121	61301021121	CONN HEADER VE	J4	CONN_Pin He	Wurth Electro	61301021121	1
RESAC03000004708JAC00	4R7 3W	RES DIP 4.7 OHM	R1, R2	RES_DIP_L x W	Vishay Beysch	AC030000047	2
INDAIUR-12-100K	10uH	IND FIXED 10uH 1	L2	L_DIP_S x D x	Abracon LLC	AIUR-12-100K	1
VARB72214S0271K101	275VAC	VARISTOR 430V 4	RV1	TDK_B72214S	EPCOS (TDK)	B72214S0271K	1
CAPB81123C1222M189	2.2nF 500VAC	CAP FILM 2.2nF 20	C1, C2, C7, C8	CAP_DIP_S x L	EPCOS (TDK)	B81123C1222M	4
CAPCC0603JRX7	100nF 50V	CAP CER 100nF 50	C20	CAP_0603_L x	Yageo	CC0603JRX7R9	1
CL10B104KA8NNNC	100nF	CAP CER 0.1UF 25	C29, C30	CAP_0603_L x	Samsung Elec	CL10B104KA8N	2
CAPCL21B102KCAN	1nF 100V	CAP CER 1nF 100V	C10	CAP_0805_L x	Samsung Elec	CL21B102KCA	1
CAPCL31B684KBHN	680nF 50V	CAP CER 680nF 50	C17, C18	CAP_1206_L x	Samsung Elec	CL31B684KBH	2
RESCRGP0603F150R	150R %1	RES SMD 150R OH	R6	RES_0603_L x	TE Connectivi	CRGP0603F15	1
CAPDE2E3KY102MB3B	1nF 300VAC	CAP CER 1nF 300V	C9	CAP_DIP_S x L	Murata Electr	DE2E3KY102M	1
DODDF206ST-G	DF206STG	DIODE BRIDGE RE	D2	DF06S-T	Comchip Tech	DF206ST-G	1
CAPECA-1HM100	10uF 50V	CAP ALUM 10uF 2	C16	CAP_ELECTRO	Panasonic Ele	ECA-1HM100	1
CAPECA-1VM470I	47uF 35V	CAP ALUM 47uF 2	C19	CAP_ELECTRO	Panasonic Ele	ECA-1VM470I	1
CAPESK108M016	1000uF 16V	CAP ALUM 1000uF	C12	CAP_ELECTRO	KEMET	ESK108M016A	1
RESESR03EZPF1001	1K 1%	RES SMD 1K OHM	R8	RES_0603_L x	Rohm Semico	ESR03EZPF100	1

DODMUR1100EG	MUR1100EG	DIODE GEN PURP	D4, D5	MUR1100_AX	ON Semicond	MUR1100EG	2
CON1001878420E	10018784-10200TI	CONN PCI Express	J2	CONN_10018	Not Buy	Not Buy	1
CAPPHE840MB6	100nF 275V	CAP FILM 100nF %	C3, C4, C5, C6	CAP_DIP_S x L	KEMET	PHE840MB61	4
RESRMCF1206FG24R9	24R9	RES SMD 24R9 OH	R7	RES_1206_L x	Stackpole Ele	RMCF1206FG	1
RESRMCF1206FT5K10	5K1	RES SMD 5K1 OHM	R11, R12	RES_1206_L x	Stackpole Ele	RMCF1206FT5	2
RESRMCF1206FT6R80	6R8	RES SMD 6R8 OHI	R10	RES_1206_L x	Stackpole Ele	RMCF1206FT6	1
RESRMCF1206FT7K68	7K68	RES SMD 7K68 OH	R9	RES_1206_L x	Stackpole Ele	RMCF1206FT7	1
RESRMCF2512JT82K0	82K 1W	RES SMD 82K OHM	R4	RES_2512_L x	Stackpole Ele	RMCF2512JT8	1
RESRNMF14FTC33R0	33R	RES DIP 33R OHM	R3, R5	RES_DIP_L x D	Stackpole Ele	RNMF14FTC3	2
FUSRST 1.6-BULK	RST 1.6-BULK	FUSE BRD MNT 1.	F1	FUSE BRD MN	Bel Fuse Inc.	RST 1.6-BULK	1
OPTSFH615A-3X006	SFH615A	Optocoupler Tran	OPT1	DIP-4_400_SF	Isocom Comp	SFH615A-3X	1
TERSL102R005	SL102R005	Inrush Current Lir	RT1	SL10 2R005	Ametherm	SL10 2R005	1
TRASM2540127	SM2540127	TRANSFORMER FI	TRA1	Transformer_	Ulus Trafo	SM2540127	1
DODSMCJ350CA	SMCJ350CA	DIODE TVS 350V 5	D1	DO-214AB_SM	Littelfuse Inc.	SMCJ350CA	1
ICTL431ACDR	ICTL431ACDR	IC Shunt Voltage	U2	D8	Texas Instrum	TL431ACDR	1
ICTOP258PN	TOP258PN	IC OFFLINE SWIT	U1	PDIP-8C	Power Integra	TOP258PN	1
DODUSBLC6-4SC6	USBLC6-4SC6	DIODE TVS 5.25V	D6	SOT23_6_SOT	STMicroelectr	USBLC6-4SC6	1
DODV20100S-E3/4W	V20100S	DIODE SCHOTTKY	D3	TO254P1051X	Vishay Semicd	V20100S-E3/4	1

CPM 312 SE BİLEŞEN LİSTESİ

Description	Designator	LibRef	ufacturer Part Nu	Quantity
DIODE TVS 15V 24.4V DO214AB	D1	DODSMCJ15CA	SMCJ15CA	1
DIODE TVS 15V 24.4V DO214AB	D2	DODSMCJ15CA	SMCJ15CA	1
DIODE TVS 15V 24.4V DO214AB	D3	DODSMCJ15CA	SMCJ15CA	1
DIODE TVS 15V 24.4V DO214AB	D4	DODSMCJ15CA	SMCJ15CA	1
FERRITE BEAD 1K OHM 0603 3A	FB1	FB74275043	74275043	1
FERRITE BEAD 1K OHM 0603 3A	FB2	FB74275043	74275043	1
FERRITE BEAD 1K OHM 0603 3A	FB3	FB74275043	74275043	1
FERRITE BEAD 1K OHM 0603 3A	FB4	FB74275043	74275043	1
CONN Card Edge Connector, 2.	J1	CON800608CBE		1
TRANSFORMER Current Sense 2	TRA1	TRAZMCT86		1
TRANSFORMER Current Sense 2	TRA2	TRAZMCT86		1
TRANSFORMER Current Sense 2	TRA3	TRAZMCT86		1
TRANSFORMER Current Sense 2	TRA4	TRAZMCT86		1

Description	Designator	Manufacturer Part Number	LibRef
CAP CER 0.22UF 25V X7R 0603	C4	CL10B224KA8NNNC	CL10B224KA8NNNC
CAP CER 0.22UF 25V X7R 0603	C6	CL10B224KA8NNNC	CL10B224KA8NNNC
CAP CER 0.22UF 25V X7R 0603	C8	CL10B224KA8NNNC	CL10B224KA8NNNC
CAP CER 0.47UF 25V X7R 0603	C1_Dig_1	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C1_Dig_2	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C1_Dig_3	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C1_Dig_4	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C1_Dig_5	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C1_Dig_6	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C1_Dig_7	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C2_Dig_1	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C2_Dig_2	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C2_Dig_3	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C2_Dig_4	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C2_Dig_5	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C2_Dig_6	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 0.47UF 25V X7R 0603	C2_Dig_7	CL10B474KA8NFNC	CL10B474KA8NFNC
CAP CER 1UF 25V X7R 0603	C7	CL10B105KA8NNNC	CL10B105KA8NNNC
CAP CER 4.7UF 16V X5R 0603	C3	GRM188R61C475KAAJD	CAPGRM188R61C475KAAJI

CAP CER 390PF 50V X7R 0603	C5	CL10B391KB8NNNC	CL10B391KB8NNNC
CONN Header Dişi 2x10 2.54mm x 2.54n	J1	2044-2X20GXXSA-A009	CON2044-2X20GXXSA
CONN PCI Express EDGE , 36 Position, 1	J3		CON1001878420E
CONN Terminal, 16 Contact, Horizontal	J2	XY2500R-D-16P	CONXY2500R-D-16P
DIODE BRIDGE RECTIFIER 600V 2A DFS	D2_Dig_1	DF206ST-G	DODDF206ST-G
DIODE BRIDGE RECTIFIER 600V 2A DFS	D2_Dig_2	DF206ST-G	DODDF206ST-G
DIODE BRIDGE RECTIFIER 600V 2A DFS	D2_Dig_3	DF206ST-G	DODDF206ST-G
DIODE BRIDGE RECTIFIER 600V 2A DFS	D2_Dig_4	DF206ST-G	DODDF206ST-G
DIODE BRIDGE RECTIFIER 600V 2A DFS	D2_Dig_5	DF206ST-G	DODDF206ST-G
DIODE BRIDGE RECTIFIER 600V 2A DFS	D2_Dig_6	DF206ST-G	DODDF206ST-G
DIODE BRIDGE RECTIFIER 600V 2A DFS	D2_Dig_7	DF206ST-G	DODDF206ST-G
DIODE TVS 350V 567V DO214AB	D1_Dig_1	SMCJ350CA	DODSMCJ350CA
DIODE TVS 350V 567V DO214AB	D1_Dig_2	SMCJ350CA	DODSMCJ350CA
DIODE TVS 350V 567V DO214AB	D1_Dig_3	SMCJ350CA	DODSMCJ350CA
DIODE TVS 350V 567V DO214AB	D1_Dig_4	SMCJ350CA	DODSMCJ350CA
DIODE TVS 350V 567V DO214AB	D1_Dig_5	SMCJ350CA	DODSMCJ350CA
DIODE TVS 350V 567V DO214AB	D1_Dig_6	SMCJ350CA	DODSMCJ350CA
DIODE TVS 350V 567V DO214AB	D1_Dig_7	SMCJ350CA	DODSMCJ350CA
DIODE ZENER 18V 500mW SOD123	D3_Dig_1	MMSZ4705T1G	DODMMSZ4705T1G
DIODE ZENER 18V 500mW SOD123	D3_Dig_2	MMSZ4705T1G	DODMMSZ4705T1G
DIODE ZENER 18V 500mW SOD123	D3_Dig_3	MMSZ4705T1G	DODMMSZ4705T1G
DIODE ZENER 18V 500mW SOD123	D3_Dig_4	MMSZ4705T1G	DODMMSZ4705T1G
DIODE ZENER 18V 500mW SOD123	D3_Dig_5	MMSZ4705T1G	DODMMSZ4705T1G
DIODE ZENER 18V 500mW SOD123	D3_Dig_6	MMSZ4705T1G	DODMMSZ4705T1G
DIODE ZENER 18V 500mW SOD123	D3_Dig_7	MMSZ4705T1G	DODMMSZ4705T1G
FERRITE BEAD 60 OHM 1806 1LN	FB1_Dig_1	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB1_Dig_2	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB1_Dig_3	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB1_Dig_4	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB1_Dig_5	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB1_Dig_6	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB1_Dig_7	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB2_Dig_1	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB2_Dig_2	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB2_Dig_3	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB2_Dig_4	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB2_Dig_5	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB2_Dig_6	BLM41PG600SN1L	FBBLM41PG600SN1L
FERRITE BEAD 60 OHM 1806 1LN	FB2_Dig_7	BLM41PG600SN1L	FBBLM41PG600SN1L

FERRITE BEAD 600 OHM 0603 1A 1 LN	FB3	BLM18KG601BH1D	FBBLM18KG601BH1D
Fiducial Marker 1mm Diameter	FD1		Fiducial_1mm
Fiducial Marker 1mm Diameter	FD2		Fiducial_1mm
Fiducial Marker 1mm Diameter	FD3		Fiducial_1mm
Fiducial Marker 1mm Diameter	FD4		Fiducial_1mm
IC INVERTER SCHMITT 1CH SOT23-5	U1_Dig_1	SN74LVC1G14DBVR	ICSN74LVC1G141
IC INVERTER SCHMITT 1CH SOT23-5	U1_Dig_2	SN74LVC1G14DBVR	ICSN74LVC1G141
IC INVERTER SCHMITT 1CH SOT23-5	U1_Dig_3	SN74LVC1G14DBVR	ICSN74LVC1G141
IC INVERTER SCHMITT 1CH SOT23-5	U1_Dig_4	SN74LVC1G14DBVR	ICSN74LVC1G141
IC INVERTER SCHMITT 1CH SOT23-5	U1_Dig_5	SN74LVC1G14DBVR	ICSN74LVC1G141
IC INVERTER SCHMITT 1CH SOT23-5	U1_Dig_6	SN74LVC1G14DBVR	ICSN74LVC1G141
IC INVERTER SCHMITT 1CH SOT23-5	U1_Dig_7	SN74LVC1G14DBVR	ICSN74LVC1G141
IC REG LIN POS ADJ 300mA SOT23-5	U2	AP2127K-ADJTRG1	ICAP2127KADJ1
Optocoupler Transistor Output 5000Vr	OPT1_Dig_1	PS2561L-1-A	OPTPS2561L1A
Optocoupler Transistor Output 5000Vr	OPT1_Dig_2	PS2561L-1-A	OPTPS2561L1A
Optocoupler Transistor Output 5000Vr	OPT1_Dig_3	PS2561L-1-A	OPTPS2561L1A
Optocoupler Transistor Output 5000Vr	OPT1_Dig_4	PS2561L-1-A	OPTPS2561L1A
Optocoupler Transistor Output 5000Vr	OPT1_Dig_5	PS2561L-1-A	OPTPS2561L1A
Optocoupler Transistor Output 5000Vr	OPT1_Dig_6	PS2561L-1-A	OPTPS2561L1A
Optocoupler Transistor Output 5000Vr	OPT1_Dig_7	PS2561L-1-A	OPTPS2561L1A
RES SMD 1M OHM 1% 1W 2512	R3_Dig_1	CRCW25121M00FKEG	RESCRCW25121M00FKEG
RES SMD 1M OHM 1% 1W 2512	R3_Dig_2	CRCW25121M00FKEG	RESCRCW25121M00FKEG
RES SMD 1M OHM 1% 1W 2512	R3_Dig_3	CRCW25121M00FKEG	RESCRCW25121M00FKEG
RES SMD 1M OHM 1% 1W 2512	R3_Dig_4	CRCW25121M00FKEG	RESCRCW25121M00FKEG
RES SMD 1M OHM 1% 1W 2512	R3_Dig_5	CRCW25121M00FKEG	RESCRCW25121M00FKEG
RES SMD 1M OHM 1% 1W 2512	R3_Dig_6	CRCW25121M00FKEG	RESCRCW25121M00FKEG
RES SMD 1M OHM 1% 1W 2512	R3_Dig_7	CRCW25121M00FKEG	RESCRCW25121M00FKEG
RES SMD 2K2 OHM 1% 1W 2512	R1_Dig_1	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R1_Dig_2	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R1_Dig_3	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R1_Dig_4	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R1_Dig_5	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R1_Dig_6	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R1_Dig_7	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R6_Dig_1	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R6_Dig_2	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R6_Dig_3	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R6_Dig_4	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R6_Dig_5	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 2K2 OHM 1% 1W 2512	R6_Dig_6	CRCW25122K20FKEG	RESCRCW25122K2

RES SMD 2K2 OHM 1% 1W 2512	R6_Dig_7	CRCW25122K20FKEG	RESCRCW25122K2
RES SMD 4.7K OHM 1% 1/4W 0603	R5_Dig_1	ERJ-PA3F4701V	ERJ-PA3F4701V
RES SMD 4.7K OHM 1% 1/4W 0603	R5_Dig_2	ERJ-PA3F4701V	ERJ-PA3F4701V
RES SMD 4.7K OHM 1% 1/4W 0603	R5_Dig_3	ERJ-PA3F4701V	ERJ-PA3F4701V
RES SMD 4.7K OHM 1% 1/4W 0603	R5_Dig_4	ERJ-PA3F4701V	ERJ-PA3F4701V
RES SMD 4.7K OHM 1% 1/4W 0603	R5_Dig_5	ERJ-PA3F4701V	ERJ-PA3F4701V
RES SMD 4.7K OHM 1% 1/4W 0603	R5_Dig_6	ERJ-PA3F4701V	ERJ-PA3F4701V
RES SMD 4.7K OHM 1% 1/4W 0603	R5_Dig_7	ERJ-PA3F4701V	ERJ-PA3F4701V
RES SMD 18K OHM 1% 1/4W 0603	R9	ERJ-PA3F1802V	ERJ-PA3F1802V
RES SMD 47K OHM 1% 1/4W 0603	R4_Dig_1	ERJ-PA3F4702V	ERJ-PA3F4702V
RES SMD 47K OHM 1% 1/4W 0603	R4_Dig_2	ERJ-PA3F4702V	ERJ-PA3F4702V
RES SMD 47K OHM 1% 1/4W 0603	R4_Dig_3	ERJ-PA3F4702V	ERJ-PA3F4702V
RES SMD 47K OHM 1% 1/4W 0603	R4_Dig_4	ERJ-PA3F4702V	ERJ-PA3F4702V
RES SMD 47K OHM 1% 1/4W 0603	R4_Dig_5	ERJ-PA3F4702V	ERJ-PA3F4702V
RES SMD 47K OHM 1% 1/4W 0603	R4_Dig_6	ERJ-PA3F4702V	ERJ-PA3F4702V
RES SMD 47K OHM 1% 1/4W 0603	R4_Dig_7	ERJ-PA3F4702V	ERJ-PA3F4702V
RES SMD 56K OHM 1% 1/4W 0603	R8	ERJ-PA3F5602V	ERJ-PA3F5602V
RES SMD 68K OHM 1% 1W 2512	R7_Dig_1	CRGCQ2512F68K	RESCRGCQ2512F68K
RES SMD 68K OHM 1% 1W 2512	R7_Dig_2	CRGCQ2512F68K	RESCRGCQ2512F68K
RES SMD 68K OHM 1% 1W 2512	R7_Dig_3	CRGCQ2512F68K	RESCRGCQ2512F68K
RES SMD 68K OHM 1% 1W 2512	R7_Dig_4	CRGCQ2512F68K	RESCRGCQ2512F68K
RES SMD 68K OHM 1% 1W 2512	R7_Dig_5	CRGCQ2512F68K	RESCRGCQ2512F68K
RES SMD 68K OHM 1% 1W 2512	R7_Dig_6	CRGCQ2512F68K	RESCRGCQ2512F68K
RES SMD 68K OHM 1% 1W 2512	R7_Dig_7	CRGCQ2512F68K	RESCRGCQ2512F68K
RES SMD 510K OHM 5% 1W 2512	R2_Dig_1	CRCW2512510KJNEG	RESCRCW2512510K
RES SMD 510K OHM 5% 1W 2512	R2_Dig_2	CRCW2512510KJNEG	RESCRCW2512510K
RES SMD 510K OHM 5% 1W 2512	R2_Dig_3	CRCW2512510KJNEG	RESCRCW2512510K
RES SMD 510K OHM 5% 1W 2512	R2_Dig_4	CRCW2512510KJNEG	RESCRCW2512510K
RES SMD 510K OHM 5% 1W 2512	R2_Dig_5	CRCW2512510KJNEG	RESCRCW2512510K
RES SMD 510K OHM 5% 1W 2512	R2_Dig_6	CRCW2512510KJNEG	RESCRCW2512510K
RES SMD 510K OHM 5% 1W 2512	R2_Dig_7	CRCW2512510KJNEG	RESCRCW2512510K
TRANS MOSFET N-CHANNEL 600V 2.6A	Q1_Dig_1	IPN60R3K4CEATMA1	TRSIPN60R3K4CE
TRANS MOSFET N-CHANNEL 600V 2.6A	Q1_Dig_2	IPN60R3K4CEATMA1	TRSIPN60R3K4CE
TRANS MOSFET N-CHANNEL 600V 2.6A	Q1_Dig_3	IPN60R3K4CEATMA1	TRSIPN60R3K4CE
TRANS MOSFET N-CHANNEL 600V 2.6A	Q1_Dig_4	IPN60R3K4CEATMA1	TRSIPN60R3K4CE
TRANS MOSFET N-CHANNEL 600V 2.6A	Q1_Dig_5	IPN60R3K4CEATMA1	TRSIPN60R3K4CE
TRANS MOSFET N-CHANNEL 600V 2.6A	Q1_Dig_6	IPN60R3K4CEATMA1	TRSIPN60R3K4CE
TRANS MOSFET N-CHANNEL 600V 2.6A	Q1_Dig_7	IPN60R3K4CEATMA1	TRSIPN60R3K4CE
VARISTOR 430V 1.2kA DISC 7mm	RV1_Dig_1	MOV-07D431KTR	VARMOV07D431K
VARISTOR 430V 1.2kA DISC 7mm	RV1_Dig_2	MOV-07D431KTR	VARMOV07D431K
VARISTOR 430V 1.2kA DISC 7mm	RV1_Dig_3	MOV-07D431KTR	VARMOV07D431K
VARISTOR 430V 1.2kA DISC 7mm	RV1_Dig_4	MOV-07D431KTR	VARMOV07D431K
VARISTOR 430V 1.2kA DISC 7mm	RV1_Dig_5	MOV-07D431KTR	VARMOV07D431K
VARISTOR 430V 1.2kA DISC 7mm	RV1_Dig_6	MOV-07D431KTR	VARMOV07D431K
VARISTOR 430V 1.2kA DISC 7mm	RV1_Dig_7	MOV-07D431KTR	VARMOV07D431K

Description	Designator	LibRef	Manufacturer Part Number	Quantity
CAP CER 10UF 10V X7R 0805	C1_Relay1	CL21B106KPQNNNE	CL21B106KPQNNNE	1
CAP CER 10UF 10V X7R 0805	C1_Relay2	CL21B106KPQNNNE	CL21B106KPQNNNE	1
CAP CER 10UF 10V X7R 0805	C1_Relay3	CL21B106KPQNNNE	CL21B106KPQNNNE	1
CAP CER 10UF 10V X7R 0805	C1_Relay4	CL21B106KPQNNNE	CL21B106KPQNNNE	1
CAP CER 10UF 10V X7R 0805	C1_Relay5	CL21B106KPQNNNE	CL21B106KPQNNNE	1
CAP CER 10UF 10V X7R 0805	C1_Relay6	CL21B106KPQNNNE	CL21B106KPQNNNE	1
CAP CER 10UF 10V X7R 0805	C1_Relay7	CL21B106KPQNNNE	CL21B106KPQNNNE	1
CAP CER 0.1UF 25V X7R 0603	C2	CL10B104KA8NNNC	CL10B104KA8NNNC	1
CAP CER 0.1UF 25V X7R 0603	C3	CL10B104KA8NNNC	CL10B104KA8NNNC	1
CAP CER 680pF 250VAC X7R 2211	C4	CAP502R30W681	502R30W681KV3E-****-SC	1
CAP CER 680pF 250VAC X7R 2211	C5	CAP502R30W681	502R30W681KV3E-****-SC	1
CAP CER 4.7UF 16V X5R 0603	C6	CAPGRM188R61C475KA	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C7	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 390PF 50V X7R 0603	C8	CL10B391KB8NNNC	CL10B391KB8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C9	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 1UF 25V X7R 0603	C10	CL10B105KA8NNNC	CL10B105KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C11	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C12	CAPGRM188R61C475KA	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C13	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 100PF 50V X7R 0603	C14	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C15	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 100PF 50V X7R 0603	C16	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 10UF 16V X5R 0603	C17	CAPGRM188R61C106KA	GRM188R61C106KAALD	1
CAP CER 0.22UF 25V X7R 0603	C18	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 100PF 50V X7R 0603	C19	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 100PF 50V X7R 0603	C20	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C21	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 10UF 16V X5R 0603	C22	CAPGRM188R61C106KA	GRM188R61C106KAALD	1
CAP CER 0.22UF 25V X7R 0603	C23	CL10B224KA8NNNC	CL10B224KA8NNNC	1

CAP CER 100PF 50V X7R 0603	C24	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 680pF 250VAC X7R 2211	C25	CAP502R30W681		1
DIODE SCHOTTKY 60V 2A SOD123FL	D1_Relay1	DODNTS260SFT1G	NTS260SFT1G	1
DIODE SCHOTTKY 60V 2A SOD123FL	D1_Relay2	DODNTS260SFT1G	NTS260SFT1G	1
DIODE SCHOTTKY 60V 2A SOD123FL	D1_Relay3	DODNTS260SFT1G	NTS260SFT1G	1
DIODE SCHOTTKY 60V 2A SOD123FL	D1_Relay4	DODNTS260SFT1G	NTS260SFT1G	1
DIODE SCHOTTKY 60V 2A SOD123FL	D1_Relay5	DODNTS260SFT1G	NTS260SFT1G	1
DIODE SCHOTTKY 60V 2A SOD123FL	D1_Relay6	DODNTS260SFT1G	NTS260SFT1G	1
DIODE SCHOTTKY 60V 2A SOD123FL	D1_Relay7	DODNTS260SFT1G	NTS260SFT1G	1
DIODE TVS 12V 19.9V DO214AC	D2	DODSMAJ12CA	SMAJ12CA	1
DIODE TVS 12V 19.9V DO214AC	D3	DODSMAJ12CA	SMAJ12CA	1
DIODE TVS 5.25V 17V SOT23-6	D4	DODUSBLC6-4SC6	USBLC6-4SC6	1
FERRITE BEAD 2211	FB1	FB2211		1
FERRITE BEAD 600 OHM 0603 1A 1 LN	FB2	FBBLM18KG601BH1D	BLM18KG601BH1D	1
FERRITE BEAD 1K OHM 0603 1LN	FB3	FB74279266	74279266	1
FERRITE BEAD 1K OHM 0603 1LN	FB4	FB74279266	74279266	1
Fiducial Marker 1mm Diameter	FD1	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD2	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD3	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD4	Fiducial_1mm		1
IC SURGE SUPP TBU 300mA 650VIMP SMD	IC1	ICTBUCA06531	TBU-CA065-300-WH	1
IC SURGE SUPP TBU 300mA 650VIMP SMD	IC2	ICTBUCA06531	TBU-CA065-300-WH	1
CONN RJ45, 1x1, 100Mbit, With Magnetics, W	J1	CONKLS12TL001	KLS12-TL001-8P8C-1-03	1
CONN HEADER 1x2 POS 2.54	J2	CON61300211121	61300211121	1
CONN PCI Express EDGE , 36 Position, 1mm	J3	CON1001878420E		1
CONN Terminal, 15 Contact, Horizontal, 5.08r	J4	CONXY2500R-D-15P	XY2500R-D-15P	1
CMC 250uH 2A 2LN 970 OHM SMD	L1	CMC744272251	744272251	1
RES SMD 22 OHM 1% 1/4W 0603	R1_Relay1	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R1_Relay2	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R1_Relay3	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1

RES SMD 22 OHM 1% 1/4W 0603	R1_Relay4	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R1_Relay5	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R1_Relay6	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R1_Relay7	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R2_Relay1	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R2_Relay2	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R2_Relay3	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R2_Relay4	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R2_Relay5	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R2_Relay6	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R2_Relay7	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 56K OHM 1% 1/4W 0603	R3	ERJ-PA3F5602V	ERJ-PA3F5602V	1
RES SMD 18K OHM 1% 1/4W 0603	R4	ERJ-PA3F1802V	ERJ-PA3F1802V	1
RES SMD 1K OHM 1% 1/4W 0603	R5	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 120 OHM 1% 1/4W 1206	R6	RESRC1206FR-07120RL	RC1206FR-07120RL	1
RES SMD 4.7K OHM 1% 1/4W 0603	R7	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R8	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 22 OHM 1% 1/4W 0603	R9	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 120 OHM 1% 1/4W 0603	R10	ERJ-PA3F1200V	ERJ-PA3F1200V	1
RES SMD 22 OHM 1% 1/4W 0603	R11	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R12	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 1K OHM 1% 1/4W 0603	R13	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R14	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RELAY GENERAL PURPOSE SPDT 8A 5V	RL1_Relay1	RLY611005	RY611005	1
RELAY GENERAL PURPOSE SPDT 8A 5V	RL1_Relay2	RLY611005	RY611005	1
RELAY GENERAL PURPOSE SPDT 8A 5V	RL1_Relay3	RLY611005	RY611005	1
RELAY GENERAL PURPOSE SPDT 8A 5V	RL1_Relay4	RLY611005	RY611005	1
RELAY GENERAL PURPOSE SPDT 8A 5V	RL1_Relay5	RLY611005	RY611005	1
RELAY GENERAL PURPOSE SPDT 8A 5V	RL1_Relay6	RLY611005	RY611005	1
RELAY GENERAL PURPOSE SPDT 8A 5V	RL1_Relay7	RLY611005	RY611005	1
TRANS NPN 40V 0.6A SOT23	TRS1_Relay1	TRSMMBT2222ALT1	MMBT2222ALT1	1
TRANS NPN 40V 0.6A SOT23	TRS1_Relay2	TRSMMBT2222ALT1	MMBT2222ALT1	1
TRANS NPN 40V 0.6A SOT23	TRS1_Relay3	TRSMMBT2222ALT1	MMBT2222ALT1	1
TRANS NPN 40V 0.6A SOT23	TRS1_Relay4	TRSMMBT2222ALT1	MMBT2222ALT1	1
TRANS NPN 40V 0.6A SOT23	TRS1_Relay5	TRSMMBT2222ALT1	MMBT2222ALT1	1
TRANS NPN 40V 0.6A SOT23	TRS1_Relay6	TRSMMBT2222ALT1	MMBT2222ALT1	1
TRANS NPN 40V 0.6A SOT23	TRS1_Relay7	TRSMMBT2222ALT1	MMBT2222ALT1	1
IC REG LIN POS ADJ 300mA SOT23-5	U1	ICAP2127KADJ1	AP2127K-ADJTRG1	1
IC RS-485 Transceiver, 5kV Isolated, SOIC-16	U2	ICADM2687EB1	ADM2687EBRIZ-RL7	1
VARISTOR 33V 1kA DISC 14mm	VAR1	VARMOV14D330K	MOV-14D330K	1
VARISTOR 33V 1kA DISC 14mm	VAR2	VARMOV14D330K	MOV-14D330K	1

Description	Designator	LibRef	Manufacturer Part Number	Quantity
Battery, CR2032, Li/MnO2, Coin Cell, THT	BAT2	BATCR2032-VAY3	CR2032-VAY3	1
CAP CER 0.22UF 25V X7R 0603	C1	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C2	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C3	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C4	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C5	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C6	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C7	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C8	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C9	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C10	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C11	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C12	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C13	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C14	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C15	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 22UF 6.3V X5R 0603	C16		CL10A226MQ8NRNE	1
CAP CER 4.7UF 16V X5R 0603	C17	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 4.7UF 16V X5R 0603	C18	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C19	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 22UF 6.3V X5R 0603	C20		CL10A226MQ8NRNE	1
CAP CER 22UF 6.3V X5R 0603	C21		CL10A226MQ8NRNE	1
CAP CER 0.22UF 25V X7R 0603	C22	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C23	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C24	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C25	CL10B224KA8NNNC	CL10B224KA8NNNC	1

CAP CER 0.22UF 25V X7R 0603	C26	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C27	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C28	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C29	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C30	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C31	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C32	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C33	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 22UF 6.3V X5R 0603	C34		CL10A226MQ8NRNE	1
CAP CER 4.7UF 16V X5R 0603	C35	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C36	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C37	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C38	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C39	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C40	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C41	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C42	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C43	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C44	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C45	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C46	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C47	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C48	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C49	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C50	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C51	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 4.7UF 16V X5R 0603	C52	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1

CAP CER 4.7UF 16V X5R 0603	C53	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 4.7UF 16V X5R 0603	C54	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 22UF 6.3V X5R 0603	C55		CL10A226MQ8NRNE	1
CAP CER 4.7UF 16V X5R 0603	C56	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C57	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C58	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C59	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.022UF 50V X7R 0603	C60_CT1	CL10B223KB8NNNC	CL10B223KB8NNNC	1
CAP CER 0.022UF 50V X7R 0603	C60_CT2	CL10B223KB8NNNC	CL10B223KB8NNNC	1
CAP CER 0.022UF 50V X7R 0603	C60_CT3	CL10B223KB8NNNC	CL10B223KB8NNNC	1
CAP CER 0.022UF 50V X7R 0603	C60_CT4	CL10B223KB8NNNC	CL10B223KB8NNNC	1
CAP CER 100PF 50V X7R 0603	C61_CT1	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 100PF 50V X7R 0603	C61_CT2	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 100PF 50V X7R 0603	C61_CT3	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 100PF 50V X7R 0603	C61_CT4	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 0.022UF 50V X7R 0603	C62_CT1	CL10B223KB8NNNC	CL10B223KB8NNNC	1
CAP CER 0.022UF 50V X7R 0603	C62_CT2	CL10B223KB8NNNC	CL10B223KB8NNNC	1
CAP CER 0.022UF 50V X7R 0603	C62_CT3	CL10B223KB8NNNC	CL10B223KB8NNNC	1
CAP CER 0.022UF 50V X7R 0603	C62_CT4	CL10B223KB8NNNC	CL10B223KB8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C63	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C64	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C65	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C66	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C67	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C68	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C69	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 22PF 50V NP0 0603	C70	CL10C220JB8NCNC	CL10C220JB8NCNC	1

CAP CER 4.7UF 16V X5R 0603	C71	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C72	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C73	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 1UF 16V X5R 0603	C74	CAPGRM188R61C	GRM188R61C105KA93D	1
CAP CER 0.22UF 25V X7R 0603	C75	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 2.2UF 10V X7R 0603	C76	CL10B225KP8NNNC	CL10B225KP8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C77	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 22UF 6.3V X5R 0603	C78		CL10A226MQ8NRNE	1
CAP CER 0.22UF 25V X7R 0603	C79	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 22UF 6.3V X5R 0603	C80		CL10A226MQ8NRNE	1
CAP CER 0.22UF 25V X7R 0603	C81	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C82	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 1UF 16V X5R 0603	C83	CAPGRM188R61C	GRM188R61C105KA93D	1
CAP CER 0.22UF 25V X7R 0603	C84	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C85	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C86	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C87	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C88	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 22UF 16V X7R 1210	C89	CL32B226KOJNNNE	CL32B226KOJNNNE	1
CAP CER 22UF 16V X7R 1210	C90	CL32B226KOJNNNE	CL32B226KOJNNNE	1
CAP CER 4.7UF 16V X5R 0603	C91	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C92	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C93	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C94	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C95	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C96	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C97	CL10B224KA8NNNC	CL10B224KA8NNNC	1

CAP CER 0.22UF 25V X7R 0603	C98	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C99	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C100	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C101	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C102	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C103	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C104	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C105	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C106	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C107	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C108	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C109	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C110	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C111	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C112	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C113	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C114	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C115	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C116	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C117	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 22UF 6.3V X5R 0603	C118		CL10A226MQ8NRNE	1
CAP CER 0.22UF 25V X7R 0603	C119	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C120	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 22UF 6.3V X5R 0603	C121		CL10A226MQ8NRNE	1
CAP CER 4.7UF 16V X5R 0603	C122	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 4.7UF 16V X5R 0603	C123	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C124	CL10B224KA8NNNC	CL10B224KA8NNNC	1

CAP CER 22UF 6.3V X5R 0603	C125		CL10A226MQ8NRNE	1
CAP CER 22UF 6.3V X5R 0603	C126		CL10A226MQ8NRNE	1
CAP CER 0.22UF 25V X7R 0603	C127	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C128	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C129	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C130	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C131	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C132	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C133	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C134	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C135	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C136	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 4.7UF 16V X5R 0603	C137	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 4.7UF 16V X5R 0603	C138	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 4.7UF 16V X5R 0603	C139	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 22UF 6.3V X5R 0603	C140		CL10A226MQ8NRNE	1
CAP CER 4.7UF 16V X5R 0603	C141	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C142	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C143	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C144	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C145	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C146	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C147	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C148	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C149	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C150	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C151	CL10B224KA8NNNC	CL10B224KA8NNNC	1

CAP CER 4.7UF 16V X5R 0603	C152	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C153	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C154	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C155	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 100PF 50V X7R 0603	C156	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 22UF 16V X7R 1210	C157	CL32B226KOJNNNE	CL32B226KOJNNNE	1
CAP CER 4.7UF 16V X5R 0603	C158	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 4.7UF 16V X5R 0603	C159	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C160	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C161	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C162	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C163	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C164	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 390PF 50V X7R 0603	C165	CL10B391KB8NNNC	CL10B391KB8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C166	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 1UF 25V X7R 0603	C167	CL10B105KA8NNNC	CL10B105KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C168	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C169	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C170	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C171	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 22PF 50V NP0 0603	C172	CL10C220JB8NCNC	CL10C220JB8NCNC	1
CAP CER 12PF 50V NP0 0603	C173	CL10C120JB8NNNC	CL10C120JB8NNNC	1
CAP CER 12PF 50V NP0 0603	C174	CL10C120JB8NNNC	CL10C120JB8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C175	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C176	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 4.7UF 16V X5R 0603	C178	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 4.7UF 16V X5R 0603	C179	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1

CAP CER 0.22UF 25V X7R 0603	C180	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C181	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C182	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 15PF 50V NP0 0603	C183	CL10C150JB8NNNC	CL10C150JB8NNNC	1
CAP CER 15PF 50V NP0 0603	C184	CL10C150JB8NNNC	CL10C150JB8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C185	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C186	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C187	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C188	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C189	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C190	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 22PF 50V NP0 0603	C191	CL10C220JB8NCNC	CL10C220JB8NCNC	1
CAP CER 22PF 50V NP0 0603	C192	CL10C220JB8NCNC	CL10C220JB8NCNC	1
CAP CER 22PF 50V NP0 0603	C193	CL10C220JB8NCNC	CL10C220JB8NCNC	1
CAP CER 22PF 50V NP0 0603	C194	CL10C220JB8NCNC	CL10C220JB8NCNC	1
CAP CER 22PF 50V NP0 0603	C195	CL10C220JB8NCNC	CL10C220JB8NCNC	1
CAP CER 100PF 50V X7R 0603	C196	CL10B101KB8NNNC	CL10B101KB8NNNC	1
CAP CER 10000PF 50V X7R 0603	C197	CL10B103KB8NCNC	CL10B103KB8NCNC	1
CAP CER 2.2nF 250VAC X7R 2211 - Y2	C198	CAP502R30W222K	502R30W222KV3E-****-SC	1
CAP CER 2.2nF 250VAC X7R 2211 - Y2	C199	CAP502R30W222K	502R30W222KV3E-****-SC	1
CAP CER 0.22UF 25V X7R 0603	C200	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.1UF 25V X7R 0603	C201	CL10B104KA8NNNC	CL10B104KA8NNNC	1
CAP CER 22PF 50V NP0 0603	C202	CL10C220JB8NCNC	CL10C220JB8NCNC	1
CAP CER 12PF 50V NP0 0603	C203	CL10C120JB8NNNC	CL10C120JB8NNNC	1
CAP CER 12PF 50V NP0 0603	C204	CL10C120JB8NNNC	CL10C120JB8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C205	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C206	CL10B224KA8NNNC	CL10B224KA8NNNC	1

CAP CER 2.2nF 250VAC X7R 2211 - Y2	C207	CAP502R30W222K	502R30W222KV3E-****-SC	1
CAP CER 2.2nF 250VAC X7R 2211 - Y2	C208	CAP502R30W222K	502R30W222KV3E-****-SC	1
CAP CER 12PF 50V NP0 0603	C209	CL10C120JB8NNNC	CL10C120JB8NNNC	1
CAP CER 12PF 50V NP0 0603	C210	CL10C120JB8NNNC	CL10C120JB8NNNC	1
CAP CER 4.7UF 16V X5R 0603	C217	CAPGRM188R61C475KAAJD	GRM188R61C475KAAJD	1
CAP CER 0.22UF 25V X7R 0603	C218	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CAP CER 0.22UF 25V X7R 0603	C220	CL10B224KA8NNNC	CL10B224KA8NNNC	1
CMC 330mA 2LN 90 OHM SMD	CMC1	CMCDLW21SN9001	DLW21SN900SQ2L	1
DIODE RC (Pi) EMI Filter 2nd Order Low Pass 8 Channel 100R 11pF SMD	D1	DODECLAMP2378P	ECLAMP2378P.TCT	1
DIODE TVS 1V 9V SOD523	D2_CT1	DODVESD01-02V-G-08	VESD01-02V-G-08	1
DIODE TVS 1V 9V SOD523	D2_CT2	DODVESD01-02V-G-08	VESD01-02V-G-08	1
DIODE TVS 1V 9V SOD523	D2_CT3	DODVESD01-02V-G-08	VESD01-02V-G-08	1
DIODE TVS 1V 9V SOD523	D2_CT4	DODVESD01-02V-G-08	VESD01-02V-G-08	1
DIODE TVS 1V 9V SOD523	D3_CT1	DODVESD01-02V-G-08	VESD01-02V-G-08	1
DIODE TVS 1V 9V SOD523	D3_CT2	DODVESD01-02V-G-08	VESD01-02V-G-08	1
DIODE TVS 1V 9V SOD523	D3_CT3	DODVESD01-02V-G-08	VESD01-02V-G-08	1
DIODE TVS 1V 9V SOD523	D3_CT4	DODVESD01-02V-G-08	VESD01-02V-G-08	1
DIODE RC (Pi) EMI Filter 2nd Order Low Pass 8 Channel 100R 11pF SMD	D4	DODECLAMP2378P	ECLAMP2378P.TCT	1
DIODE RC (Pi) EMI Filter 2nd Order Low Pass 8 Channel 100R 11pF SMD	D5	DODECLAMP2378P	ECLAMP2378P.TCT	1
DIODE TVS DIODE 5V 12.3V SOD923	D6	DODESD9X5.0ST5G	ESD9X5.0ST5G	1
DIODE GEN PURP 100V 300mA SOD123	D7	DOD1N4148W	1N4148W-7-F	1
DIODE TVS DIODE 5V 12.3V SOD923	D8	DODESD9X5.0ST5G	ESD9X5.0ST5G	1
DIODE RC (Pi) EMI Filter 2nd Order Low Pass 8 Channel 100R 11pF SMD	D9	DODECLAMP2378P	ECLAMP2378P.TCT	1
DIODE TVS 5.25V 17V SOT23-6	D10	DODUSBLC6-4SC6	USBLC6-4SC6	1
DIODE ARRAY SCHOTTKY 30V 200mA SOT23-3	D11	DODBAT54CLT1G	BAT54CLT1G	1
DIODE ARRAY SCHOTTKY 30V 200mA SOT23-3	D12	DODBAT54CLT1G	BAT54CLT1G	1
FERRITE BEAD 600 OHM 0603 1LN	FB1	FBBLM18AG601SN1D	BLM18AG601SN1D	1
FERRITE BEAD 600 OHM 0603 1LN	FB2	FBBLM18AG601SN1D	BLM18AG601SN1D	1
FERRITE BEAD 600 OHM 0603 1LN	FB3	FBBLM18AG601SN1D	BLM18AG601SN1D	1

FERRITE BEAD 600 OHM 0603 1LN	FB4	FBBLM18AG601SN1D	BLM18AG601SN1D	1
FERRITE BEAD 600 OHM 0603 1LN	FB5	FBBLM18AG601SN1D	BLM18AG601SN1D	1
FERRITE BEAD 600 OHM 0603 1LN	FB6	FBBLM18AG601SN1D	BLM18AG601SN1D	1
FERRITE BEAD 600 OHM 0603 1LN	FB7	FBBLM18AG601SN1D	BLM18AG601SN1D	1
FERRITE BEAD 600 OHM 0805 1LN	FB8	FB742792040	742792040	1
FERRITE BEAD 600 OHM 0805 1LN	FB9	FB742792040	742792040	1
FERRITE BEAD 600 OHM 0603 1LN	FB10	FBBLM18AG601SN1D	BLM18AG601SN1D	1
FERRITE BEAD 600 OHM 0603 1LN	FB11	FBBLM18AG601SN1D	BLM18AG601SN1D	1
FERRITE BEAD 600 OHM 0603 1LN	FB12	FBBLM18AG601SN1D	BLM18AG601SN1D	1
Fiducial Marker 1mm Diameter	FD1	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD2	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD3	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD4	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD5	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD6	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD7	Fiducial_1mm		1
Fiducial Marker 1mm Diameter	FD8	Fiducial_1mm		1
CONN HEADER 1x7 POS 2.54	J1	CON61300711121	61300711121	1
CONN HEADER, Socket, Bottom Entry, 2x10pin, 2.54 mm, THT	J2	CON61302015721	61302015721	1
CONN Card Edge Connector, 2.54mm, 2x4, THT	J3	CON800608CB	8006-08CB	1
CONN PCI Express, 36 Position, 1mm, THT	J4	CON1001878420	10018784-10200TLF	1
CONN PCI Express, 36 Position, 1mm, THT	J5	CON1001878420	10018784-10200TLF	1
CONN Header, Shrouded, 2.54mm, 10pin SMT	J6	CON612010206	61201020621	1
CONN HEADER 1x3 POS 2.54	J7	CON61300311121	61300311121	1
CONN USB 4POS FEMALE STR TYPE B	J8	CON61400413321	61400413321	1
CONN HEADER 1x3 POS 2.54	J9	CON61300311121	61300311121	1
CONN Header, Shrouded, 2.54mm, 10pin SMT	J10	CON612010206	61201020621	1
CONN HEADER 1x4 POS 2.54	J11	CON61300411121	61300411121	1
CONN HEADER 1x4 POS 2.54	J12	CON61300411121	61300411121	1
CONN HEADER 1x4 POS 2.54	J13	CON61300411121	61300411121	1
CONN HEADER 1x4 POS 2.54	J14	CON61300411121	61300411121	1
IND FIXED 4.7uH 1.15A 215 mOHM	L1	INDSRU20164R7Y	SRU2016-4R7Y	1
FERRITE BEAD 600 OHM 0805 1LN	L2_CT1	FB742792040	742792040	1
FERRITE BEAD 600 OHM 0805 1LN	L2_CT2	FB742792040	742792040	1
FERRITE BEAD 600 OHM 0805 1LN	L2_CT3	FB742792040	742792040	1
FERRITE BEAD 600 OHM 0805 1LN	L2_CT4	FB742792040	742792040	1

FERRITE BEAD 600 OHM 0805 1LN	L3_CT1	FB742792040	742792040	1
FERRITE BEAD 600 OHM 0805 1LN	L3_CT2	FB742792040	742792040	1
FERRITE BEAD 600 OHM 0805 1LN	L3_CT3	FB742792040	742792040	1
FERRITE BEAD 600 OHM 0805 1LN	L3_CT4	FB742792040	742792040	1
IND FIXED 4.7uH 1.15A 215 mOHM	L4	INDSRU20164R7Y	SRU2016-4R7Y	1
IND FIXED 2.2uH 4.7A 28.6 mOHM	L5	INDVLS5045E2R2	VLS5045EX-2R2N	1
Custom LED, 1x6, RRYRRY, THT	LED1	LEDDEMAC0001		1
EMI Shield, 20x20mm, SMD	MECH1	MECH36903205S	36903205S	1
LCD Module, 128x64dots, 93x70x13.8mm, THT	MOD1	MODABG128064A23	ABG128064A23-BIW-R	1
RES SMD 4.7K OHM 1% 1/4W 0603	R1	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R2	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R3	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R4	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R5	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R6	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R7	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 1K OHM 1% 1/4W 0603	R8	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R9	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R10	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R11	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R12	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R13	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R14	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R15	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 47K OHM 1% 1/4W 0603	R25	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R26	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R27	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R28	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R29	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R30	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R31	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R32	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R33	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R34	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R35	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R36	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 33K OHM 1% 1/4W 0603	R37	ERJ-PA3F3302V	ERJ-PA3F3302V	1
RES SMD 1K OHM 0.1% 1/8W 0805	R38_CT1	RESERA-6AEB102V	ERA-6AEB102V	1
RES SMD 1K OHM 0.1% 1/8W 0805	R38_CT2	RESERA-6AEB102V	ERA-6AEB102V	1

RES SMD 1K OHM 0.1% 1/8W 0805	R38_CT3	RESERA-6AEB102V	ERA-6AEB102V	1
RES SMD 1K OHM 0.1% 1/8W 0805	R38_CT4	RESERA-6AEB102V	ERA-6AEB102V	1
RES SMD 1R OHM 1% 1/10W 0603	R39_CT1	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R39_CT2	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R39_CT3	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R39_CT4	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R40_CT1	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R40_CT2	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R40_CT3	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R40_CT4	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R41_CT1	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R41_CT2	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R41_CT3	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R41_CT4	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R42_CT1	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R42_CT2	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R42_CT3	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R42_CT4	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 100 OHM 1% 1/4W 0603	R43_CT1	ERJ-PA3F1000V	ERJ-PA3F1000V	1
RES SMD 100 OHM 1% 1/4W 0603	R43_CT2	ERJ-PA3F1000V	ERJ-PA3F1000V	1
RES SMD 100 OHM 1% 1/4W 0603	R43_CT3	ERJ-PA3F1000V	ERJ-PA3F1000V	1
RES SMD 100 OHM 1% 1/4W 0603	R43_CT4	ERJ-PA3F1000V	ERJ-PA3F1000V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R44_CT1	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R44_CT2	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R44_CT3	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R44_CT4	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 16R OHM 0.5% 1/8W 0805	R45_CT1	RESRT0805DRE0716RL	RT0805DRE0716RL	1

RES SMD 16R OHM 0.5% 1/8W 0805	R45_CT2	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R45_CT3	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R45_CT4	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R46_CT1	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R46_CT2	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R46_CT3	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 16R OHM 0.5% 1/8W 0805	R46_CT4	RESRT0805DRE0716RL	RT0805DRE0716RL	1
RES SMD 1R OHM 1% 1/10W 0603	R47_CT1	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R47_CT2	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R47_CT3	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R47_CT4	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R48_CT1	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R48_CT2	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R48_CT3	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1R OHM 1% 1/10W 0603	R48_CT4	RESRT0603FRE07	RT0603FRE071RL	1
RES SMD 1K OHM 0.1% 1/8W 0805	R49_CT1	RESERA-6AEB102V	ERA-6AEB102V	1
RES SMD 1K OHM 0.1% 1/8W 0805	R49_CT2	RESERA-6AEB102V	ERA-6AEB102V	1
RES SMD 1K OHM 0.1% 1/8W 0805	R49_CT3	RESERA-6AEB102V	ERA-6AEB102V	1
RES SMD 1K OHM 0.1% 1/8W 0805	R49_CT4	RESERA-6AEB102V	ERA-6AEB102V	1
RES SMD 51 OHM 1% 1/4W 0603	R50	ERJ-PA3F51R0V	ERJ-PA3F51R0V	1
RES SMD 1K OHM 1% 1/4W 0603	R51	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES POT 20K OHM 0.5W PC PIN TOP	R52	RES3296W-1-203	3296W-1-203	1
RES SMD 4.7K OHM 1% 1/4W 0603	R53	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 1K OHM 1% 1/4W 0603	R54	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R55	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R56	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R57	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R58	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 1K OHM 1% 1/4W 0603	R59	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R60	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R61	ERJ-PA3F4701V	ERJ-PA3F4701V	1

RES SMD 4.7K OHM 1% 1/4W 0603	R62	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R63	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R64	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R65	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R66	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R67	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R68	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R69	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R70	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 1K OHM 1% 1/4W 0603	R71	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 22 OHM 1% 1/4W 0603	R72	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R73	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R74	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 22 OHM 1% 1/4W 0603	R75	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R76	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 22 OHM 1% 1/4W 0603	R77	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R78	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R79	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R80	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R81	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R82	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 1K OHM 1% 1/4W 0603	R83	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 6.49K OHM 1% 1/4W 0603	R84	ERJ-PA3F6491V	ERJPA3F6491V	1
RES SMD 120 OHM 1% 1/4W 0603	R85	ERJ-PA3F1200V	ERJ-PA3F1200V	1
RES SMD 120 OHM 1% 1/4W 0603	R86	ERJ-PA3F1200V	ERJ-PA3F1200V	1
RES SMD 120 OHM 1% 1/4W 0603	R87	ERJ-PA3F1200V	ERJ-PA3F1200V	1
RES SMD 120 OHM 1% 1/4W 0603	R88	ERJ-PA3F1200V	ERJ-PA3F1200V	1
RES SMD 120 OHM 1% 1/4W 0603	R89	ERJ-PA3F1200V	ERJ-PA3F1200V	1
RES SMD 120 OHM 1% 1/4W 0603	R90	ERJ-PA3F1200V	ERJ-PA3F1200V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R91	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R92	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4K7 OHM 1% 1/10W 0603	R93	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 22 OHM 1% 1/4W 0603	R94	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R95	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R96	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 1K OHM 1% 1/4W 0603	R97	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R98	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R99	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R100	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 1K OHM 1% 1/4W 0603	R101	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 47K OHM 1% 1/4W 0603	R114	ERJ-PA3F4702V	ERJ-PA3F4702V	1

RES SMD 47K OHM 1% 1/4W 0603	R115	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R116	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R117	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R118	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R119	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R120	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R121	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R122	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R123	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R124	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 47K OHM 1% 1/4W 0603	R125	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 33K OHM 1% 1/4W 0603	R126	ERJ-PA3F3302V	ERJ-PA3F3302V	1
RES SMD 680K OHM 1% 1/4W 0603	R127	ERJ-PA3F6803V	ERJ-PA3F6803V	1
RES SMD 150K OHM 1% 1/4W 0603	R128	ERJ-PA3F1503V	ERJ-PA3F1503V	1
RES SMD 47K OHM 1% 1/4W 0603	R129	ERJ-PA3F4702V	ERJ-PA3F4702V	1
RES SMD 56K OHM 1% 1/4W 0603	R130	ERJ-PA3F5602V	ERJ-PA3F5602V	1
RES SMD 18K OHM 1% 1/4W 0603	R131	ERJ-PA3F1802V	ERJ-PA3F1802V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R132	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R133	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R134	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R135	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R136	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R137	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R148	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R159	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R160	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 0 OHM 1% 1/10W 0603	R161	ERJ-3GEY0R00V	ERJ-3GEY0R00V	1
RES SMD 0 OHM 1% 1/10W 0603	R162	ERJ-3GEY0R00V	ERJ-3GEY0R00V	1
RES SMD 0 OHM 1% 1/10W 0603	R163	ERJ-3GEY0R00V	ERJ-3GEY0R00V	1
RES SMD 0 OHM 1% 1/10W 0603	R164	ERJ-3GEY0R00V	ERJ-3GEY0R00V	1
RES SMD 4K7 OHM 1% 1/10W 0603	R165	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 4K7 OHM 1% 1/10W 0603	R166	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 4K7 OHM 1% 1/10W 0603	R167	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 1M OHM 1% 1/4W 0603	R168	ERJ-PA3F1004V	ERJ-PA3F1004V	1
RES SMD 22 OHM 1% 1/4W 0603	R169	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 4K7 OHM 1% 1/10W 0603	R170	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 4K7 OHM 1% 1/10W 0603	R171	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 4K7 OHM 1% 1/10W 0603	R172	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 4K7 OHM 1% 1/10W 0603	R173	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 4K7 OHM 1% 1/10W 0603	R174	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 4K7 OHM 1% 1/10W 0603	R175	RESRC0603FR	RC0603FR-074K7L	1

RES SMD 4K7 OHM 1% 1/10W 0603	R176	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 4K7 OHM 1% 1/10W 0603	R177	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 4K7 OHM 1% 1/10W 0603	R178	RESRC0603FR	RC0603FR-074K7L	1
RES SMD 22 OHM 1% 1/4W 0603	R179	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R180	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R181	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R182	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R183	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R184	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R185	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R186	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 200K OHM 1% 1/4W 0603	R187	ERJ-PA3F2003V	ERJ-PA3F2003V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R188	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R189	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R190	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R191	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 22 OHM 1% 1/4W 0603	R192	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R193	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 22 OHM 1% 1/4W 0603	R194	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R195	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 22 OHM 1% 1/4W 0603	R196	ERJ-PA3F22R0V	ERJ-PA3F22R0V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R199	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R200	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R205	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R214	ERJ-PA3F4701V	ERJ-PA3F4701V	1
RES SMD 1K OHM 1% 1/4W 0603	R217	ERJ-PA3F1001V	ERJ-PA3F1001V	1
RES SMD 4.7K OHM 1% 1/4W 0603	R218	ERJ-PA3F4701V	ERJ-PA3F4701V	1
SWITCH SLIDE DIP 2POS SPST 100mA 20V Surface Mount	SW1	SW2192MST	219-2MSTR	1
Switch Tactile, SPST-NO, 50mA 12V, 4.3mm, SMT	SW2	SWPTS645SM43	PTS645SM43SMT R92LFS	1
SWITCH SLIDE DIP 2POS SPST 100mA 20V Surface Mount	SW3	SW2192MST	219-2MSTR	1
TRANS MOSFET N-CHANNEL 30V 3.7A SOT23	TRS1_ CT1	TRSPMV40UN2R	PMV40UN2R	1
TRANS MOSFET N-CHANNEL 30V 3.7A SOT23	TRS1_ CT2	TRSPMV40UN2R	PMV40UN2R	1
TRANS MOSFET N-CHANNEL 30V 3.7A SOT23	TRS1_ CT3	TRSPMV40UN2R	PMV40UN2R	1
TRANS MOSFET N-CHANNEL 30V 3.7A SOT23	TRS1_ CT4	TRSPMV40UN2R	PMV40UN2R	1
TRANS MOSFET N-CHANNEL 30V 3.7A SOT23	TRS2_ CT1	TRSPMV40UN2R	PMV40UN2R	1
TRANS MOSFET N-CHANNEL 30V 3.7A SOT23	TRS2_ CT2	TRSPMV40UN2R	PMV40UN2R	1

TRANS MOSFET N-CHANNEL 30V 3.7A SOT23	TRS2_CT3	TRSPMV40UN2R	PMV40UN2R	1
TRANS MOSFET N-CHANNEL 30V 3.7A SOT23	TRS2_CT4	TRSPMV40UN2R	PMV40UN2R	1
TRANS NPN 25V 0.8A SOT-23	TRS3	TRSBC81825MTF	BC81825MTF	1
IC SDRAM Memory IC 128Mb (8M x 16) Parallel 166MHz 5ns 54-TSOP II	U1	ICAS4C8M16SA6TIN	AS4C8M16SA-6TIN	1
IC NOR FLASH 128M SPI 104MHZ 8WSON	U2	ICW25Q128JVSIM	W25Q128JVSIM	1
IC i.MX RT Series Crossover Arm Cortex-M7 Processor 16KB Cache 500MHz 144-Pin LQFP	U3	ICIMXRT1021CAG4A	MIMXRT1021CAG4A	1
IC Digital Potentiometer 50k Ohm 1 Circuit 128 Taps I²C Interface SC-70-6	U4	ICMCP4018T	MCP4018T-503E/LT	1
IC General Purpose Amplifier 2 Circuit Rail-to-Rail 8-SOIC	U5	ICOPA2171AIDR	OPA2171AIDR	1
IC TXRX ETHERNET 32QFN	U6	ICKSZ8081RNBIA	KSZ8081RNBIATR	1
IC AND GATE 1CH 2-INP SC-74A	U7	IC74LVC1G08GV125	74LVC1G08GV,125	1
IC SUPERVISOR 2.9V SOT23-5	U8	ICMCP1320T29LE	MCP1320T-29LE/OT	1
IC SDRAM Memory IC 128Mb (8M x 16) Parallel 166MHz 5ns 54-TSOP II	U9	ICAS4C8M16SA6TIN	AS4C8M16SA-6TIN	1
IC NOR FLASH 128M SPI 104MHZ 8WSON	U10	ICW25Q128JVSIM	W25Q128JVSIM	1
IC i.MX RT Series Crossover Arm Cortex-M7 Processor 16KB Cache 500MHz 144-Pin LQFP	U11	ICIMXRT1021CAG4A	MIMXRT1021CAG4A	1
IC REG BUCK ADJ 2A SYNC 8SOIC	U12	ICPAM2310BE1	PAM2310BECADJR	1
IC REG LIN POS ADJ 300mA SOT23-5	U13	ICAP2127KADJ1	AP2127K-ADJTRG1	1
IC AND GATE 1CH 2-INP SC-74A	U14	IC74LVC1G08GV125	74LVC1G08GV,125	1
IC ENERGY METER MULTIFUN 40LFCSP	U15	ICADE7868AACPZ	ADE7868AACPZ	1
IC Voltage Level Translator Bidirectional 1 Circuit 2 Channel SM8 (SSOP)	U16	ICPCA9306DCTR	PCA9306DCTR	1
IC LED DRVR LIN DIM 25MA 24HVQFN	U17	ICPCA9552BS118	PCA9552BS,118	1
IC Real Time Clock (RTC) IC Clock/Calendar 64B I²C, 2-Wire Serial 8-SOIC (0.154", 3.90mm Width)	U18	ICMCP7940MI1	MCP7940M-I/SN	1
CRYSTAL 24MHZ 18pF SMD	X1	CRYABM3C-24.000MHZ	ABM3C-24.000MHZ-D4Y-T	1
CRYSTAL 16.384MHZ 18pF SMD	X2	CRYECS-163.84	ECS-163.84-18-30B-AGN-TR	1
CRYSTAL 24MHZ 18pF SMD	X3	CRYABM3C-24.000MHZ	ABM3C-24.000MHZ-D4Y-T	1
CRYSTAL 32.7680KHZ 6pF SMD	X4	CRYABS25-32.768KHZ	ABS25-32.768KHZ-6-T	1

4 GENEL TEST ŞARTLARI *(General Test Conditions)*

4.1 Çevresel Şartlar *(Environmental Conditions)*

Bu raporda aksi belirtilmedikçe deneyler aşağıdaki çevre şartlarında yapılmıştır. *Unless otherwise noted in this report, the tests has been done at following environmental conditions.*

Sıcaklık *(Temperature)*	: 15 – 35 ° C
Nem *(Humidity)*	: 30 – 60 %
Atmosfer Basıncı *(Atmospheric Pressure)*	: 860 – 1060 Pa

4.2 Test Cihazlarının Kalibrasyonu *(Calibration of Test Equipment)*

Kalibrasyon sistemi, EMC Test ve Kontrol Hizmetleri A.Ş.' nin kalite yönetim sisteminin bir parçasıdır. Test cihazlarının kalibrasyonu, Uluslararası Birimler Sisteminde (SI) tanımlanmış birimleri realize eden ulusal ölçüm standartlarına izlenebilirliği belgeler.

The calibration system is a part of EMC Test ve Kontrol Hizmetleri A.Ş.'s quality management system. The calibration of test equipment documents the traceability to national standards which realize the unit of measurement according to the International System of Units (SI).

5 TEST SONUÇLARI *(Test Results)*

5.1 Elektrostatik Boşalmaya Karşı Bağışıklık Deneyi *(ESD Immunity)*

5.1.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, operatörün cihaza veya çevresine doğrudan veya bir aletle teması sonucu oluşan, statik elektrik boşalmalarına karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

The purpose of this test to verify the immunity of the electrical or electronic equipment againist to electrostatic discharge(ESD) generated by an operator touching (directly or with a tool) to the equipment or its vicinity. The EUT should provide the desired performance level.

5.1.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000–4–2		**Test Portu** *Test Port*	Cihazın Kutusu *Enclosure*
Test Seyiyesi *Test Level*	**Temasla Boşalma** *Contact Discharge*	± 6kV	**Havada Boşalma** *Air Discharge*	± 8kV
Performans Kriteri *Performance Criteria*	Performans kriteri TS EN 60255-26 standardına göre tanımlanmıştır. *Performance criteria was defined according to generic standard TS EN 60255-26.*			
B	Deney esnasında DGC'nin performansında azalma veya fonksiyonlarında kayıp olabilir. Çalışma durumu değişmemelidir. *Degredation of performance or loss of function is allowed. There is no change of operation mode.*			

5.1.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

Deney esnasında madde 3.5' te tanımlandığı şekilde çalıştırıldı. DBD üzerine doğrudan boşalma, DGC' nin yalıtkan yüzeylerine havadan boşalma uygulandı. Uygulanan deney şartları aşağıdadır.

The EUT was operated as described in section 3.5 during tests. Contact discharge was applied to vertical coupling plane, air discharge was applied to non-conductive surfaces of the EUT. Performed test requirements are below.

Temasla Boşalma Gerilimi *Contact Discharge Voltage*	☒ ±2kV	☒ ±4kV	☒ ±6Kv	☐ ±8kV	☐ ±15kV
Havadan Boşalma Gerilimi *Air Discharge Voltage*	☐ ±2kV	☐ ±4kV	☒ ±6kV	☒ ±8kV	☐ ±15kV
Boşalma Devresi *Discharge Network*	☒ 330Ω/150pF		☐ …..		
Boşalma Sayısı *Discharge Factor*	☒ >10		☐ >24		
Boşalma Türü *Kind of Discharge*	☒ Doğrudan *(direct)*		☒ Temasla *(contact discharge)* ☒ Havadan *(air discharge)*		
	☒ Dolaylı *(indirect)*		☒ YBD *(HCP)* ☒ DBD *(VCP)*		
Ortam Sıcaklığı *Ambient Temperature*	23º	**Bağıl Nem** *Relative Humidity*	%50		

5.1.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**15.09.2021**	**Hakan ALTUN**

5.2 Işıyan Elektromanyetik Alan Bağışıklık Deneyi *(Radiated Immunity)*

5.2.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, radyo vericiler ya da elektromanyetik enerji yayan herhangi bir cihaz tarafından oluşturulan yayılan bozulmalara karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

The purpose of this test to verify the immunity of the electrical or electronic equipment against to radiated disturbances induces by radio frequency electromagnetic fields generated by radio transmitters or any other device radiated electromagnetic energy. The EUT should provide the desired performance level.

5.2.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000-4-3	**Test Edilecek Port** *Test Port*	Cihazın Kutusu *Enclosure*
Frekans Aralığı *Frequency Range*	☒ 80 – 1000MHz	☒ 1400 – 2700MHz	☒80MHz, 160MHz, 380MHz, 450MHz, 900MHz, 1850MHz, 2150MHz
Alan Şiddeti *Field Strength*	☒ 10V/m	☒ 10V/m	☒ 10V/m
Modülasyon *Modulation*	☒ AM %80, 1kHz sinüs	☒ AM %80, 1kHz sinüs	☒ AM %80, 1kHz sinüs
Performans Kriteri *Performance Criteria*	Performans kriteri TS EN 60255-26 standardına göre tanımlanmıştır. *Performance criteria was defined according to generic standard TS EN 60255-26.*		
A	DGC, deney esnasında ve deneyden sonra tasarlandığı şekilde çalışmaya devam etmelidir. Performansta azalma veya fonksiyon kaybı olmamalıdır. *The EUT shall continue to operate as intended during and after the test. No degredation of performance or loss of function.*		

5.2.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, yansımasız odada toprak referans düzleminden 80cm yukarıda ahşap masa üzerine yerleştirildi. Güç kaynağına bağlanarak madde 3.5' da tanımlandığı şekilde çalıştırıldı. Yayılan RF gürültüsü DGC' ye uygulandı. Deney mesafesi 1m dir. Uygulanan deney şartları aşağıdadır.

The EUT is placed on wooden table 80cm above the ground plane at absorber lined chamber. It was connected to the power supply and is operated as described in section 3.5. The radiated RF noise is applied to the EUT. Test distance is 1m. The applied test parameters are below.

Frekans Aralığı *Frequency Range*	☒ 80 – 1GHz	☒ 1400 – 2700MHz	☒80MHz, 160MHz, 380MHz, 450MHz, 900MHz, 1850MHz, 2150MHz
Alan Şiddeti *Field Strength*	☒ 10V/m	☒ 10V/m	☒ 10V/m
Modülasyon *Modulation*	☒ AM %80, 1kHz sinüs	☒ AM %80, 1kHz sinüs	☒ AM %80, 1kHz sinüs
Bekleme Süresi *Dwell Time*	2sn	**Frekans Artışı** *Frequency Step*	%1
Ortam Sıcaklığı *Ambient Temperature*	23º	**Bağıl Nem** *Relative Humidity*	%50

5.2.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**15.09.2021**	**Hakan ALTUN**

5.3 Elektriksel Hızlı Geçici Rejim / Patlama Bağışıklık Deneyi *(Burst Immunity)*

5.3.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, küçük indüktif yüklerin ya da kontrol düzenlerinin anahtarlanması sonucu oluşan kısa süreli geçişlere (burst) karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

The purpose of this test to verify the immunity of the electrical or electronic equipment againist bursts of very short transients generated by the switching of small inductive loads, relay contact bouncing or switching of switchgear. The EUT should provide the desired performance level.

5.3.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000–4–4			
Test Edilecek Port *Test Port*	☒ AC Besleme *(AC Power)*	☒ DC Besleme *(DC Power)*	☒ İşaret Hatları *(Signal Line) B,C, F, G*	☒ İşaret Hatları *(Signal Line) D,E*
Test Gerilimi *Test Voltage*	4kV	4kV	4kV	2kV
Tekrarlama Frekansı *Repetition Frequency*	5kHz	5kHz	5kHz	5kHz
Bulaştırma Yöntemi *Coupling Method*	Doğrudan bulaştırma *Direct injection*	Doğrudan bulaştırma *Direct injection*	Doğrudan bulaştırma *Direct injection*	Doğrudan bulaştırma *Direct injection*
Performans Kriteri *Performance Criteria*	Performans kriteri TS EN 60255-26 standardına göre tanımlanmıştır. *Performance criteria was defined according to generic standard TS EN 60255-26.*			
B	Deney esnasında DGC'nin performansında azalma veya fonksiyonlarında kayıp olabilir. Çalışma durumu değişmemelidir. *Degredation of performance or loss of function is allowed. There is no change of operation mode.*			

5.3.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, bozucu işareti doğrudan enjekte etmek için bulaştırma devresi üzerinden güç kaynağına bağlanarak madde 3.5' da tanımlandığı şekilde çalıştırıldı. DGC' nin AC&DC besleme hatlarına ve işaret hatlarına deney işareti uygulandı.

The EUT is connected to the power mains through a coupling device that directly couples the interference signal. And is operated as described in section 3.5. The conducted RF noise is applied ac-dc mains and signal lines of the EUT.

Test Portu ve Test Gerilimi *Tested Port and Test Voltage*	AC Besleme Hatları, 4kV *AC mains , 4 kV*		
Test Portu ve Test Gerilimi *Tested Port and Test Voltage*	DC Besleme Hatları, 4kV *DC mains , 4 kV*		
Test Portu ve Test Gerilimi *Tested Port and Test Voltage*	İşaret Hatları *(Signal Line),* 4kV *B,C, F, G*		
Test Portu ve Test Gerilimi *Tested Port and Test Voltage*	İşaret Hatları *(Signal Line),* 2kV *D,E*		
Tekrarlama Frekansı *Repetition Frequency*	5kHz	**Test Süresi** *Test Duration*	60sn
Bulaştırma Yöntemi *Coupling Method*	Doğrudan Enjeksiyon *Direct Injection*	**Uygulanan Polarite** *Performed Polarity*	Pozitif ve Negatif
Ortam Sıcaklığı *Ambient Temperature*	23º	**Bağıl Nem** *Relative Humidity*	%50

5.3.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**15.09.2021**	**Hakan ALTUN**

5.4 Ani Yükselmelere Karşı Bağışıklık Deneyi *(Surge Immunity)*

5.4.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, yıldırım geçici rejimlerine ya da anahtarlama esnasında meydana gelen tek yönlü ani gerilim yükselmelerine karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

The purpose of this test to verify the immunity of the electrical or electronic equipment againist unidirectional surges caused by overvoltages from switching and lightning transients. The EUT should provide the desired performance level.

5.4.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000–4–5				
Test Edilecek Port *Test Port*	☒ AC Besleme *(AC Power)*		☒ DC Besleme *(DC Power)*	☒ İşaret Hatları *(Signal Line) B,C,D,E,F*	☒ İşaret Hatları *(Signal Line) B,C,F*
Test Gerilimi *Test Voltage*	Hat-Hat *Line to line*	2kV	2kV	2kV	2kV
	Hat-Toprak *Line to earth*	4kV	4kV	4kV	4kV
Bulaştırma Yöntemi *Coupling Method*	Doğrudan Enjeksiyon *Direct Injection*		Doğrudan Enjeksiyon *Direct Injection*	--	
Performans Kriteri *Performance Criteria*	Performans kriteri TS EN 60255-26 standardına göre tanımlanmıştır. *Performance criteria was defined according to generic standard TS EN 60255-26.*				
B	Deney esnasında DGC'nin performansında azalma veya fonksiyonlarında kayıp olabilir. Çalışma durumu değişmemelidir. *Degredation of performance or loss of function is allowed. There is no change of operation mode.*				

5.4.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, bozucu işareti doğrudan enjekte etmek için bulaştırma devresi üzerinden güç kaynağına bağlanarak madde 3.5' da tanımlandığı şekilde çalıştırıldı. DGC' nin AC&DC besleme hatlarına ve işaret hatlarına deney işareti uygulandı.

The EUT is connected to the power mains through a coupling device that directly couples the interference signal. And is operated as described in section 3.5. The conducted RF noise is applied ac-dc mains and signal lines of the EUT.

Test Portu *Tested Port*	AC & DC Besleme, L-N *AC&DC Mains*	Test Gerilimi Test Voltage	2 kV
Test Portu *Tested Port*	AC & DC Besleme, L-PE, N-PE *AC & DC Mains*	Test Gerilimi Test Voltage	4 kV
Test Portu *Tested Port*	İşaret Hatları *(Signal Line)* *B,C, D, E, F*	Test Gerilimi Test Voltage	4 kV
Test Portu *Tested Port*	İşaret Hatları *(Signal Line)* *B, C, F*	Test Gerilimi Test Voltage	2 kV
Bulaştırma Yöntemi *Coupling Method*	Doğrudan Enjeksiyon *Direct Injection*	Uygulanan Polarite *Performed Polarity*	Pozitif ve Negatif
Tekrarlama Süresi *Repetition Time*	60sn	Darbe Sayısı *Number of Test Pulse*	5
Ortam Sıcaklığı *Ambient Temperature*	23º	Bağıl Nem *Relative Humidity*	%50

5.4.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. CPM 310 – DE model cihazın giriş sigortası 2 A olarak değiştirilmiştir. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. The input fuse of the CPM 310 – DE model device has been changed to 2 A.During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	Deney Tarihi *Date of Test*	Deney Personeli *Test Personnel*
OLUMLU / PASS	**16.09.2021**	**Hakan ALTUN**

5.5 RF Alanlar Tarafından Üretilen, İletilen Bozulmalara Karşı Bağışıklık Deneyi *(Conducted Immunity)*

5.5.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, radyo vericiler ya da elektromanyetik enerji yayan herhangi bir cihaz tarafından oluşturulan kablo yolu ile iletilen bozulmalara karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

The purpose of this test to verify the immunity of the electrical or electronic equipment againist to conducted disturbances induces by radio frequency electromagnetic fields generated by radio transmitters or any other device radiated electromagnetic energy. The EUT should provide the desired performance level.

5.5.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000–4–6			
Test Edilecek Port *Test Port*	☒ AC Besleme *(AC Power)*	☒ DC Besleme *(DC Power)*	☒ İşaret Hatları *(Signal Line) B,C,D,E,F,G*	☒ İşaret Hatları *(Signal Line) B,C,D,E,F,G*
Frekans Aralığı *Frequency Range*	150kHz – 80MHz 27,68MHz	150kHz – 80MHz 27,68MHz	150kHz – 80MHz	27,68MHz
Test Gerilimi *Test Voltage*	10V	10V	10V	10V
Modülasyon *Modulation*	AM %80, 1kHz Sinüs	AM %80, 1kHz Sinüs	AM %80, 1kHz Sinüs	AM %80, 1kHz Sinüs
Performans Kriteri *Performance Criteria*	Performans kriteri TS EN 60255-26 standardına göre tanımlanmıştır. *Performance criteria was defined according to generic standard TS EN 60255-26.*			
A	DGC, deney esnasında ve deneyden sonra tasarlandığı şekilde çalışmaya devam etmelidir. Performansta azalma veya fonksiyon kaybı olmamalıdır. *The EUT shall continue to operate as intended during the test and after the test. No degredation of performance or loss of function.*			

5.5.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, bozucu işareti doğrudan enjekte etmek için bulaştırma devresi üzerinden güç kaynağına bağlanarak madde 3.5' da tanımlandığı şekilde çalıştırıldı. DGC' nin AC&DC besleme hatlarına ve işaret hatlarına deney işareti uygulandı.

The EUT is connected to the power mains through a coupling device that directly couples the interference signal. And is operated as described in section 3.5. The conducted RF noise is applied ac-dc mains and signal lines of the EUT.

Test Portu ve Test Gerilimi *Tested Port*	AC Besleme, 10V	**Frekans Aralığı** *Frequency Range*	150kHz – 80MHz 27, 68MHz
Test Portu ve Test Gerilimi *Tested Port*	DC Besleme, 10V	**Frekans Aralığı** *Frequency Range*	150kHz – 80MHz 27, 68MHz
Test Portu ve Test Gerilimi *Tested Port*	İşaret Hatları *(Signal Line)* B, C, D, E , F, G,10V	**Frekans Aralığı** *Frequency Range*	150kHz – 80MHz
Test Portu ve Test Gerilimi *Tested Port*	İşaret Hatları *(Signal Line)* B, C, D, E , F, G,10V	**Frekans Aralığı** *Frequency Range*	27, 68MHz
Modülasyon *Modulation*	AM %80, 1kHz Sinüs	**Bulaştırma Yöntemi** *Coupling Method*	CDN M3
Bekleme Süresi *Dwell Time*	2sn	**Frekans Artışı** *Frequency Step*	%1
Ortam Sıcaklığı *Ambient Temperature*	23º	**Bağıl Nem** *Relative Humidity*	%50

5.5.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**15.09.2021**	**Hakan ALTUN**

5.6 Gerilim Çukurları, Kısa Kesintiler, Gerilim Değişimleri Bağışıklık Deneyi *(Voltage Dips&Short Interrupt.)*

5.6.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, düşük gerilim güç kaynaklarında oluşan gerilim çukurlarına ya da gerilim kesilmelerine karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

This purpose of this test to verify the immunity of the electrical or electronic equipment againist voltage dips or voltage interruption of the low voltage power supply. The EUT should provide the desired performance level.

5.6.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000–4–11		
Gerilim Çukuru *Voltage Dips*	☒ U_{NOM} – %30(25/30 Periyot), A	☒ U_{NOM} – %60(10/12 Periyot)	☒ U_{NOM} – %100(0,5/25 Periyot)
Kısa Kesintiler *Short Interruptions*	☒ U_{NOM} – %100(250/300 Periyot)		
Performans Kriteri *Performance Criteria*	Performans kriteri TS EN 60255-26 standardına göre tanımlanmıştır. *Performance criteria was defined according to generic standard TS EN 60255-26.*		
A	DGC, deney esnasında ve deneyden sonra tasarlandığı şekilde çalışmaya devam etmelidir. Performansta azalma veya fonksiyon kaybı olmamalıdır. *The EUT shall continue to operate as intended during the test and after the test.. No degredation of performance or loss of function.*		

5.6.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, madde 3.5' da tanımlandığı şekilde çalıştırıldı. DGC' nin besleme hattına gerilim çukurları ve kısa kesintiler uygulandı.

The EUT was operated as described in section 3.5. The voltage dips and short interruptions are applied to the supply line of the EUT.

Test Portu *Tested Port*	AC Besleme *AC Mains*	**Nominal Gerilim** *Nominal Voltage*	230V
Gerilim Çukuru *Voltage Dips*	☒ U_{NOM} – %30(25/30 Periyot), A	☒ U_{NOM} – %60(10/12 Periyot)	☒ U_{NOM} – %100(0,5/25 Periyot)
Kısa Kesintiler *Short Interruptions*	☒ U_{NOM} – %100(250/300 Periyot)		
Test Faz Açısı *Tested Phase Angel*	0,90,180,270	**Uygulama Sayısı** *Events*	5
Ortam Sıcaklığı *Ambient Temperature*	23º	**Bağıl Nem** *Relative Humidity*	%50

5.6.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**16.09.2021**	**Hakan ALTUN**

5.7 Gerilim Çukurları, Kısa Kesintiler, Gerilim Değişimleri Bağışıklık Deneyi *(Voltage Dips&Short Interrupt.)*

5.7.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, düşük gerilim güç kaynaklarında oluşan gerilim çukurlarına ya da gerilim kesilmelerine karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

This purpose of this test to verify the immunity of the electrical or electronic equipment againist voltage dips or voltage interruption of the low voltage power supply. The EUT should provide the desired performance level.

5.7.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000–4–29		
Gerilim Çukuru *Voltage Dips*	☒ U_{NOM} – %30(500ms), A	☒ U_{NOM} – %60(200 ms)	☒ U_{NOM} – %100 (50 ms)
Kısa Kesintiler *Short Interruptions*	☒ U_{NOM} – %100(5 sn)		
Performans Kriteri *Performance Criteria*	Performans kriteri TS EN 60255-26 standardına göre tanımlanmıştır. *Performance criteria was defined according to generic standard TS EN 60255-26.*		
A	DGC, deney esnasında ve deneyden sonra tasarlandığı şekilde çalışmaya devam etmelidir. Performansta azalma veya fonksiyon kaybı olmamalıdır. *The EUT shall continue to operate as intended during the test and after the test. No degredation of performance or loss of function.*		

5.7.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, madde 3.5' da tanımlandığı şekilde çalıştırıldı. DGC' nin besleme hattına gerilim çukurları ve kısa kesintiler uygulandı.

The EUT was operated as described in section 3.5. The voltage dips and short interruptions are applied to the supply line of the EUT.

Test Portu *Tested Port*	DC Besleme *DC Mains*	**Nominal Gerilim** *Nominal Voltage*	24V
Gerilim Çukuru *Voltage Dips*	☒ U_{NOM} – %30(500ms), A	☒ U_{NOM} – %60(200 ms)	☒ U_{NOM} – %100 (50ms)
Kısa Kesintiler *Short Interruptions*	☒ U_{NOM} – %100(5 sn)		
Test Faz Açısı *Tested Phase Angel*	---	**Uygulama Sayısı** *Events*	---
Ortam Sıcaklığı *Ambient Temperature*	23º	**Bağıl Nem** *Relative Humidity*	%50

5.7.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**16.09.2021**	**Hakan ALTUN**

5.8 DC Dalgalanma Deneyi *(DC Ripple)*

5.8.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, d.a güç giriş uçlarında meydana gelen dalgacıklara (ripple) karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

The purpose of this experiment is to verify the immunity properties of electrical and electronic devices against ripples that occur at the DC power input terminals. The EUT should provide the desired performance level.

5.8.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000–4–17		
Test Gerilimi *Test Voltage*	%15 DC Dalgalanma Gerilimi		
Bekleme Süresi *Dwell Time*	1 min	**Frekans** *Frequency*	100/120 Hz
Performans Kriteri *Performance Criteria*	Performans kriteri TS EN 60255-26 standardına göre tanımlanmıştır. *Performance criteria was defined according to generic standard TS EN 60255-26.*		
A	DGC, deney esnasında ve deneyden sonra tasarlandığı şekilde çalışmaya devam etmelidir. Performansta azalma veya fonksiyon kaybı olmamalıdır. *The EUT shall continue to operate as intended during the test and after the test.. No degredation of performance or loss of function.*		

5.8.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, madde 3.5' da tanımlandığı şekilde çalıştırıldı. DGC' nin DC besleme hattına dalgalanma gerilimi uygulandı.
The EUT was operated as described in section 3.5. The ripple voltage are applied to the supply line of the EUT.

Test Portu *Tested Port*	DC Besleme *DC Mains*	**Test Gerilimi** *Test Voltage*	%15 DC Dalgalanma Gerilimi
Bekleme Süresi *Dwell Time*	1 min	**Frekans** *Frequency*	100/120 Hz
Ortam Sıcaklığı *Ambient Temperature*	23º	**Bağıl Nem** *Relative Humidity*	%50

5.8.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**16.09.2021**	**Hakan ALTUN**

5.9 DC Kademeli Kapanma/Başlatma Deneyi *(DC Gradual Shut-Down/Start Up)*

5.9.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, performanslarını belirlemek için yapılır.

The purpose of this experiment is to determine the performance of electrical and electronic devices.

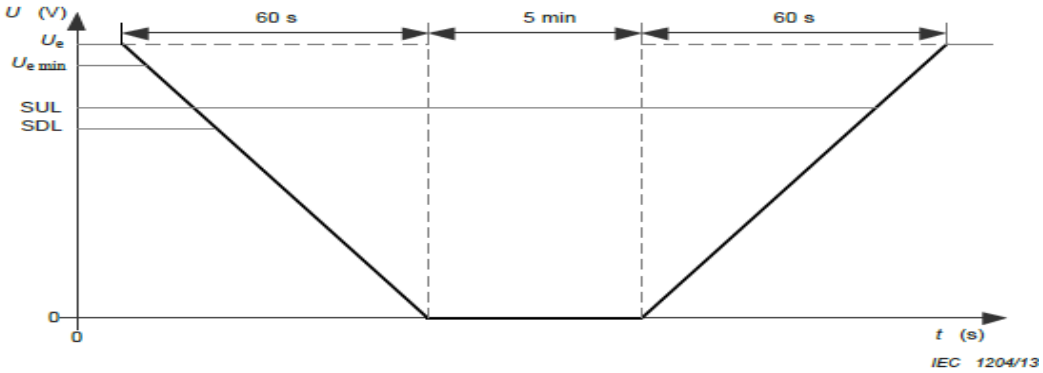
5.9.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 60255-26		
Güç Kapalı *Power Off*	5 min		
Kapatma Rampası *Shut-Down Ramp*	60 sn	**Yol Verme Rampası** *Start Up Ramp*	60 sn
Performans Kriteri *Performance Criteria*	Performans kriteri TS EN 60255-26 standardına göre tanımlanmıştır. *Performance criteria was defined according to generic standard TS EN 60255-26.*		
C	Test esnasında DGC'nin performansında bozulmaya veya fonksiyon kaybına izin verilir. Bu fonksiyon kaybı DGC'deki kontrol cihazlarının devreye girmesiyle, operator müdahalesiyle veya DGC'nin kendi kendine normal çalışma durumuna dönmesiyle ortadan kalkar. *Performance degradation or loss of function of the EUT is allowed during testing. This loss of function is eliminated by the activation of the controllers in the EUT, by operator intervention, or by the EUT returning to its normal operating state by itself.*		

5.9.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, madde 3.5' da tanımlandığı şekilde çalıştırıldı. DGC' nin DC besleme hattına aşağıdaki senaryo uygulandı.

The EUT was operated as described in section 3.5 The following scenario is applied to the DC supply line of the EUT.



Key

U_e	rated auxiliary power supply voltage
$U_{e\ min}$	lower limit of U_e
SDL	shut-down limit
SUL	start-up limit

Figure 2 – Gradual shut down/start-up test

Test Portu *Tested Port*	DC Besleme *DC Mains*	**Nominal Gerilim** *Nominal Voltage*	24V
Güç Kapalı *Power Off*	5 min		
Kapatma Rampası *Shut-Down Ramp*	60 sn	**Yol Verme Rampası** *Start Up Ramp*	60 sn
Ortam Sıcaklığı *Ambient Temperature*	23º	**Bağıl Nem** *Relative Humidity*	%50

5.9.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**16.09.2021**	**Hakan ALTUN**

5.10 Bağlantı Ucu Bozulma Gerilimi *(Conducted Emission)*

5.10.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazlar tarafından üretilen bağlantı yollu istenmeyen işaretlerin seviyelerini ölçmektir. DGC' nin emisyon değerleri belirlenen limitleri aşmamalıdır.

The purpose of this test to measure the levels of conducted spurious signals generated by the electrical or electronic equipment. The emission level of the EUT shall not exceed the specified limit.

5.10.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 55011	**Grup ve Sınıf** *Group and Class*	Grup 1, Sınıf A
Test Portu *Tested Port*	AC Besleme *AC Main*	**Test Yöntemi** *Test Method*	LISN
Limit *Limit*	**Frekans [MHz]**	**Quasi Peak Limit [dBuV]**	**Avarage Limit [dBuV]**
	0,15 – 0,5	79	66
	0,5 – 5	73	60
	5 - 30	73	60

5.10.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, LISN'a bağlanarak madde 3.5' te tanımlandığı şekilde çalıştırıldı. Ölçüm alıcısının band genişliği 9kHz olarak ayarlandı. En kötü bozulmayı tespit etmek için güç kaynağının tüm hatlarında ölçüm alındı. En yüksek emisyon değerleri kaydedildi. Kablo kayıpları, LISN faktörü ve darbe sınırlayıcının araya girme kaybı ölçüm sonuçlarına ilave edildi.

The EUT was connected to LISN and it was operated as described in section 3.5. The bandwith of measuring receiver is set 9kHz. In order to find maximum conducted emission all AC lines are checked. Maximum emission values were recorded. The LISN was used to measure. Cable loss, LISN factors and insertion loss of transient limitter are included to measuring results.

5.10.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. DC ölçümlerde CPM 310-DE model cihazın SMPS devresinde yer alan bobinin endüktans değeri 1mh den 2 mh'ye çıkartılmıştır. DC ölçümlerde CPM 312-SE model cihazın SMPS devresinde yer alan bobinin endüktans değeri 1mh den 7.9 mh'ye çıkartılmıştır. Bu şartlar altında ölçülen emisyon değerleri limitlerin altındadır. Ölçüm grafikleri Madde 9.1'te verilmiştir.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. In DC measurements, the inductance value of the coil in the SMPS circuit of the CPM 310-DE model device was increased from 1mh to 2mh. In DC measurements, the inductance value of the coil in the SMPS circuit of the CPM 312-SE model device was increased from 1mh to 7.9mh. The emission values measured under these conditions are below the limits. Measurement charts are given in Article 9.1.

CPM 312-SE MODEL AC ÖLÇÜM SONUCU

Conducted Emission at AC Mains			Test Yöntemi *Test Method*	LISN
Frekans [MHz]	**Quasi Peak [dBuV]**		**Avarage [dBuV]**	
	Ölçülen Seviye *Measured Level*	**Limit**	**Ölçülen Seviye** *Measured Level*	**Limit**
0.180	77	79	51	66
0.235	64	79	54	66
0.590	44	73	37	60
0.760	42	73	32	60
1.6	37	73	28	60
5.2	31	73	19	60
9	37	73	21	60
15	41	73	21	60
28	37	73	11	60

CPM 312-SE MODEL DC ÖLÇÜM SONUCU

Conducted Emission at DC Mains			Test Yöntemi *Test Method*	LISN
Frekans [MHz]	**Quasi Peak [dBuV]**		**Avarage [dBuV]**	
	Ölçülen Seviye *Measured Level*	**Limit**	**Ölçülen Seviye** *Measured Level*	**Limit**
0.155	66	79	62	66
0.210	53	79	48	66
0.530	38	73	29	60
0.910	30	73	20	60
2.6	24	73	14	60
6.7	30	73	22	60
21	42	73	38	60
27	31	73	21	60

CPM 312-DE MODEL AC ÖLÇÜM SONUCU

Conducted Emission at AC Mains			Test Yöntemi *Test Method*	LISN
Frekans [MHz]	**Quasi Peak [dBuV]**		**Avarage [dBuV]**	
	Ölçülen Seviye *Measured Level*	**Limit**	**Ölçülen Seviye** *Measured Level*	**Limit**
0.180	47	79	52	66
0.230	44	79	57	66
0.600	22	73	38	60
1.4	19	73	27	60
5.1	18	73	19	60
8.4	41	73	22	60
15	38	73	32	60
28	38	73	24	60

CPM 312-DE MODEL DC ÖLÇÜM SONUCU

Conducted Emission at AC Mains			Test Yöntemi *Test Method*	LISN
Frekans [MHz]	**Quasi Peak [dBuV]**		**Avarage [dBuV]**	
	Ölçülen Seviye *Measured Level*	**Limit**	**Ölçülen Seviye** *Measured Level*	**Limit**
0.180	47	79	55	66
0.210	44	79	45	66
0.420	22	79	14	66
0.850	19	73	10	60
1.6	18	73	9	60
4.7	41	73	8	60
17	38	73	35	60
28	38	73	21	60

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**14.09.2021**	**Hakan ALTUN**

5.11 Yayılım Bozulması *(Radiated Emission)*

5.11.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazlar tarafından üretilen ışıma yollu istenmeyen işaretlerin seviyelerini ölçmektir. DGC' nin emisyon değerleri belirlenen limitleri aşmamalıdır.

The purpose of this test to measure the levels of radiated spurious signals generated by the electrical or electronic equipment. The emission level of the EUT shall not exceed the specified limit.

5.11.2 Test Şartları *(Test Requirements)*

<table>
<tr><td>Temel Standart
Basic Standard</td><td>EN 55011
EN 55022</td><td>Grup ve Sınıf
Group and Class</td><td>Grup 1 / Sınıf A</td></tr>
<tr><td>Test Portu
Tested Port</td><td>Cihazın Kutusu
Enclosure</td><td>Ölçüm Mesafesi
Measurement Distance</td><td>3 m</td></tr>
<tr><td rowspan="6">Limit
Limit</td><td colspan="2">Frekans [MHz]</td><td colspan="2">Quasi Peak Limit [dBuV/m]</td></tr>
<tr><td colspan="2">30 – 230</td><td colspan="2">40</td></tr>
<tr><td colspan="2">230 – 1000</td><td colspan="2">47</td></tr>
<tr><td>Frekans [GHz]</td><td>Peak Limit [dBuV/m]</td><td>Average Limit [dBuV/m]</td></tr>
<tr><td>1-3</td><td>76</td><td>56</td></tr>
<tr><td>3-6</td><td>80</td><td>60</td></tr>
</table>

5.11.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, alıcı antenden 3m uzağa yerleştirildi. Ölçüm alıcısının band genişliği 120 kHz olarak ayarlandı. Ölçümler DGC'nin normal çalışma modunda yapıldı. En kötü bozulmayı tespit etmek için antenin yatay ve dikey polarizasyonunda ölçümler tekrarlandı. Kablo kayıpları ve anten faktörü ölçüm sonuçlarına ilave edildi. En kötü durum ölçüm sonucu olarak kaydedildi.

The EUT is placed 3m away from the receiving antenna. The bandwith of masuring receiver is set 120 kHz. Measurements were performed at normal mode of the EUT. In order to find maximum radiated emission both vertical and horizontal polarization of the antenna the measurements are repetead. Cable loss and antenna factors are included to measuring results. The worst case results were recorded.

5.11.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Ölçümler DGC'den 3m uzakta yapılmıştır. Bu yüzden limitler 10dB genişletilmiştir. Bu şartlar altında ölçülen emisyon değerleri limitlerin altındadır. Ölçüm grafikleri Madde 9.2'te verilmiştir.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. The measurement was performed 3m away from the EUT, so the standard limits were expanded by 10dB. Measured emission level under these conditions were below the specified limit. See section 9.2 for measurement graphics.

CPM 312- SE ÖLÇÜM SONUCU

Frekans [MHz]	**Quasi Peak [dbuV/m]**	
	Ölçülen Seviye *Measured Level*	**Limit**
31	31	50
78	34	50
122	34	50
390	43	57
560	50	57
610	49	57
790	38	57
910	33	57

Frekans [GHz]	**Peak [dbuV/m]**		**Average [dbuV/m]**	
	Ölçülen Seviye *Measured Level*	**Limit**	**Ölçülen Seviye** *Measured Level*	**Limit**
1.4	38	76	32	56
1.9	38	76	28	56
2.4	42	76	33	56
3.9	56	80	45	60
4.7	63	80	49	60
5.6	64	80	52	60

CPM 310- DE ÖLÇÜM SONUCU

Frekans [MHz]	**Quasi Peak [dbuV/m]**	
	Ölçülen Seviye *Measured Level*	**Limit**
35	32	50
79	36	50
125	22	50
390	42	57
500	40	57
670	32	57
950	33	57

Frekans [GHz]	**Peak [dbuV/m]**		**Average [dbuV/m]**	
	Ölçülen Seviye *Measured Level*	**Limit**	**Ölçülen Seviye** *Measured Level*	**Limit**
1.2	36	76	24	56
1.9	38	76	21	56
2.5	40	76	31	56
3.8	57	80	44	60
4.7	62	80	49	60
5.6	63	80	52	60

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**14.09.2021**	**Hakan ALTUN**

5.12 Şebeke Frekanslı Manyetik Alan Bağışıklık Deneyi *(Power Frequency Magnetic Field Immunity)*

5.12.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, güç hatlarının yakınlarında oluşan şebeke frekanslı manyetik alanlara karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

The purpose of this test to verify the immunity of the electrical or electronic equipment when subjected to power frequency magnetic fields related to the proximity of power conductors. The EUT should provide the desired performance level.

5.12.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000-4-8		
Test Portu *Tested Port*	AC Besleme *AC Mains*	Alan Şiddeti	30 A/m – 300 A/m
Performans Kriteri *Performance Criteria*	Performans kriteri TS EN 60255-26 standardına göre tanımlanmıştır. *Performance criteria was defined according to generic standard TS EN 60255-26.*		
A	DGC, deney esnasında ve deneyden sonra tasarlandığı şekilde çalışmaya devam etmelidir. Performansta azalma veya fonksiyon kaybı olmamalıdır. *The EUT shall continue to operate as intended during the test and after the test. No degredation of performance or loss of function.*		

5.12.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, normal çalışma koşullarında test edilmelidir. İndüksiyon bobininin yatay ve dikey polarizasyonlarında DGC' nin dört yüzü için deneyler tekrar edilir. Uygulanan deney şartları yukarıdadır.

The EUT should tested normal operation mode. Both vertical and horizontal polarisation of the induction coil the test was performed four sides of the EUT. Performed test requirements are above.

5.12.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**18.09.2021**	**Hakan ALTUN**

5.13 0 Hz İlâ 150 kHz Frekans Aralığında İletilen Ortak Mod Bozulumlar İçin Bağışıklık Deneyi *(Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz)*

5.13.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, güç hattı ve işaret hatları üzerinden iletilen ortak mod bozulmalara karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

The purpose of this test to verify the immunity of the electrical or electronic equipment againist to power line and signal line common mode conducted disturbances. The EUT should provide the desired performance level. .

5.13.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000-4-16		
Test Edilecek Port *Test Port*	☒ AC Besleme *(AC Power)* ☒ Sinyal Hatlar *(Signal Line)*	**Test Gerilimi** *Test Voltage*	150V,300V
Frekans Aralığı *Frequency Range*	0Hz – 15kHz	**Performans Kriteri** *Performance Criteria*	A

5.13.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC, normal çalışma koşullarında test edilmiştir.DGC'nin ilgili hatlarına test süresi kadar bozucu işaret uygulandı.

The EUT was tested normal operation mode. Related cables of the EUT is impressed with low frequency noise for test dueation.

5.13.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**18.09.2021**	**Hakan ALTUN**

5.14 Sönümlü Salınımlı Dalga Bağışıklık Deneyi *(Damped Oscillatory Wave Immunity)*

5.14.1 Amaç *(Purpose)*

Bu deneyin amacı, elektrikli ve elektronik cihazların, güç hattı ve işaret hatlarına karşı bağışıklık özelliklerini doğrulamaktır. DGC istenen performans seviyesini sağlamalıdır.

The purpose of this test to verify the immunity of the electrical or electronic equipment againist to power line and signal line. The EUT should provide the desired performance level. .

5.14.2 Test Şartları *(Test Requirements)*

Temel Standart *Basic Standard*	EN 61000-4-18		
Test Edilecek Port *Test Port*	AC&DC Besleme *(AC&DC Power)*	İşaret Hatları (Signal Line) B, C, F	İşaret Hatları (Signal Line) D,E
Frekans Aralığı *Frequency Range*	1 MHz damped oscillatory wave	1 MHz damped oscillatory wave	1 MHz damped oscillatory wave
Test Gerilimi *Test Voltage*	2.5kV/1kV	2.5kV/1kV	1kV/0kV

5.14.3 Test Düzeneği ve Test Prosedürü *(Test Setup and Test Procedure)*

DGC normal çalışma koşullarında test edilmiştir. DGC' nin ilgili hatlarına bozucu işaret uygulandı.

The EUT was tested normal operation mode. Related cables of the EUT is impressed with unbalance noise for test duration.

5.14.4 Sonuç *(Result)*

Deneyler CPM 312-SE ve CPM 310-DE modellerine uygulanmıştır. Deney esnasında numunenin çalışmasında herhangi bir performans kaybı gözlenmemiştir. DGC normal çalışmasına devam etmiştir. DGC, istenen performans seviyesini sağlamaktadır.

Experiments were applied to the CPM 312-SE and CPM 310-DE models. During the test no loss of performance of the sample was observed. After the test the EUT was operated as intended. The EUT was achieved desired performance level.

Netice *Conclusion*	**Deney Tarihi** *Date of Test*	**Deney Personeli** *Test Personnel*
OLUMLU / PASS	**18.09.2021**	**Hakan ALTUN**

6 KULLANILAN TEST CİHAZLARI *(Test Equipment Used)*

Deney *Test*	**Cihazın Adı** *Equipment Name*	**Seri Numarası** *Serial Number*	**Modeli** *Model*	**Üretici** *Manufacturer*	**Kalibrasyon Bitiş Tarihi** *End of Calibration*
ESD	ESD&ESD TABANCA	1232	NSG437	TESEQ	12/2023
	Yatay Bulaştırma Düzlemi	---	YBD002	EMC	---
	Dikey Bulaştırma Düzlemi	040001	DBD001	EMC	---
RI	Bağışıklık Deney Anteni	100022	HL046	R&S	Alan Kalib.
	Horn Anten	090927	HA0118G	R&S	12/2022
	İşaret Üreteci	3447A00520	83752A	HEWLETT-PACKARD	01/2022
	80 – 1000 MHz Güç Yükselteci	07760005	BLWA 0810-160/75D	BONN	Alan Kalib.
	1 – 2 GHz Güç Yükselteci	M1J9AD0-017	AR1929-30	PST	Alan Kalib.
	2 – 6 GHz Güç Yükselteci	5190 F	1001	OPHIR RF	Alan Kalib.
	Alan Probu	0464301	FA7218/KIT	AR	02/2022
CI	RF Test Sistemi	123	NSG 2070	SCHAFFNER	---
	Bulaştırma Devresi	14589	CDNM2/M3	SCHAFFNER	03/2023
	6 dB Zayıflatıcı	KM208	40 – 6 – 43	WEINSCHEL	03/2024
	Akım Enjeksiyon Probu	24092001	AEP2M500M	EMC Elektronik	05 / 2023
EFT	EFT/Burst Üreteci	0304-30	UCS 500M4	EM TEST	10/2022
	Kapasitif Kelepçe	090906	KK6100044	EMC	---
V.DİPS	Deney Üreteci	0304-30	UCS 500M4	EM TEST	10/2022
ŞFMA	1X1m Kare Anten	090908	HA1MK	EMC Elektronik	12/2022
	Değişken Gerilim Trafosu	090910	VAC	EMC Elektronik	---
	Akım Üreteci	090907	AD120A	0 EMC Elektronik	---
SURGE	EFT/Burst Üreteci	0304-30	UCS 500M4	EM TEST	10/2022
	BURST - SURGE DARBE ÜRETECİ	4094	NSG3060	TESEQ	12/2023
	Burst Kapasitif Kelepçe	090906	KK 6100044	EMC ELEKTORNİK	---
RE	Ultralog Antenna	100214	HL562	ROHDE&SCHWARZ	12/2021
	EMI Test Alıcısı	1142.8007.03	ESPI	R&S	02/2022
CE	EMI Test Alıcısı	1142.8007.03	ESPI	R&S	02/2022
	LISN	15012122	LS100A1	EMC	02/2022

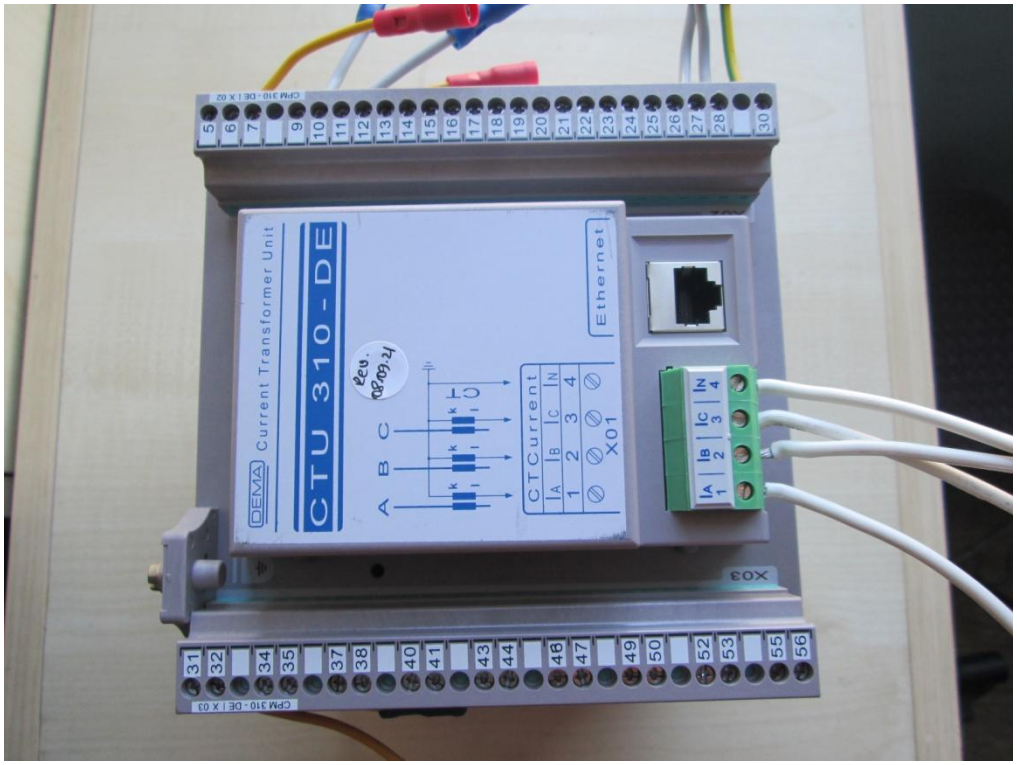
	Darbe Sınırlayıcı	091101	TL10K30M	EMC	03/2022

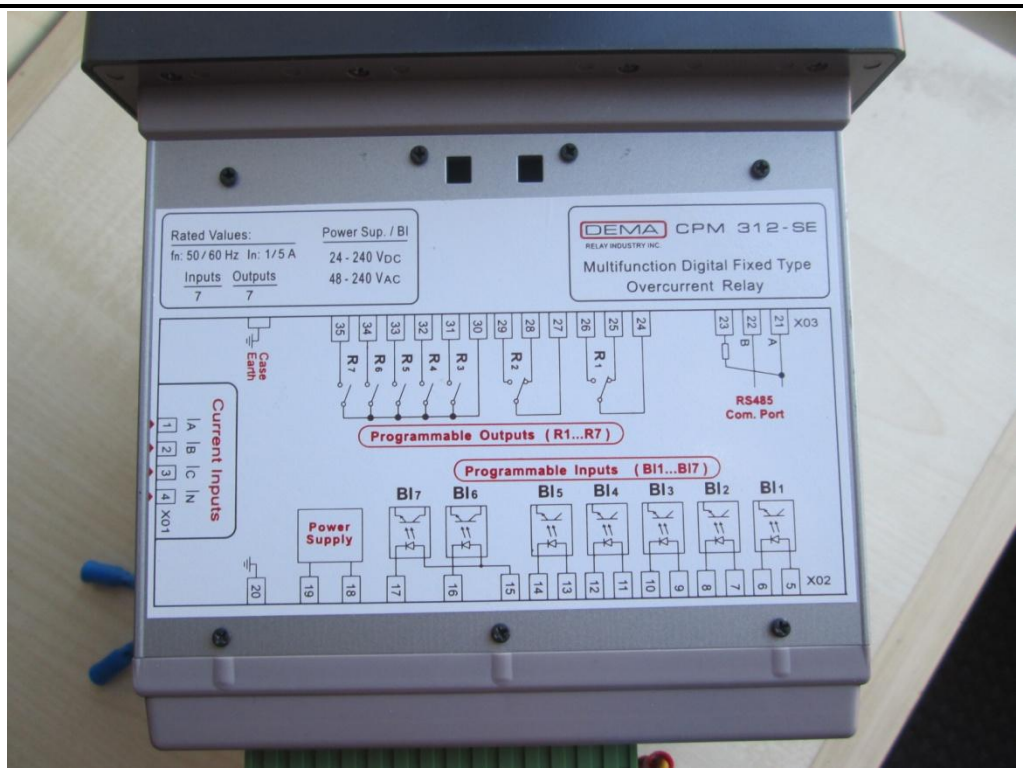
7 ÖLÇÜM BELİRSİZLİĞİ *(Measurement Uncertainty)*

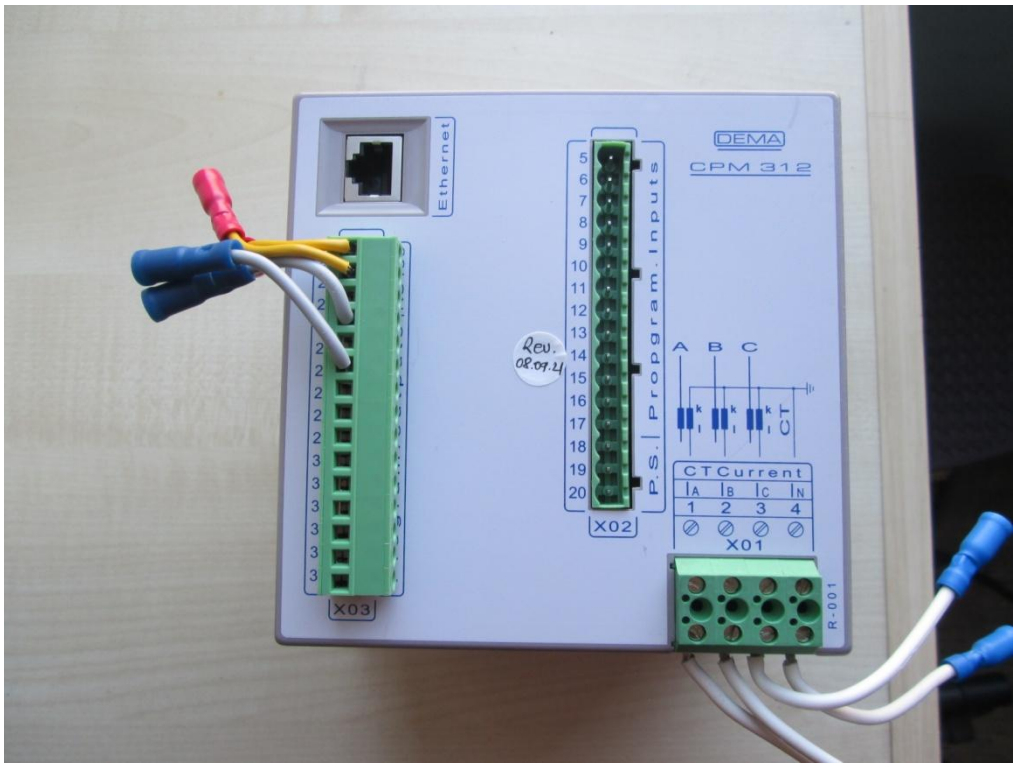
Emisyon Deneyleri *Emission Tests*	
Bağlantı Ucu Bozulma Gerilimi *Conducted Emission*	± 3,78dB
Yayılım Bozulması *Radiated Emission*	± 5.39dB

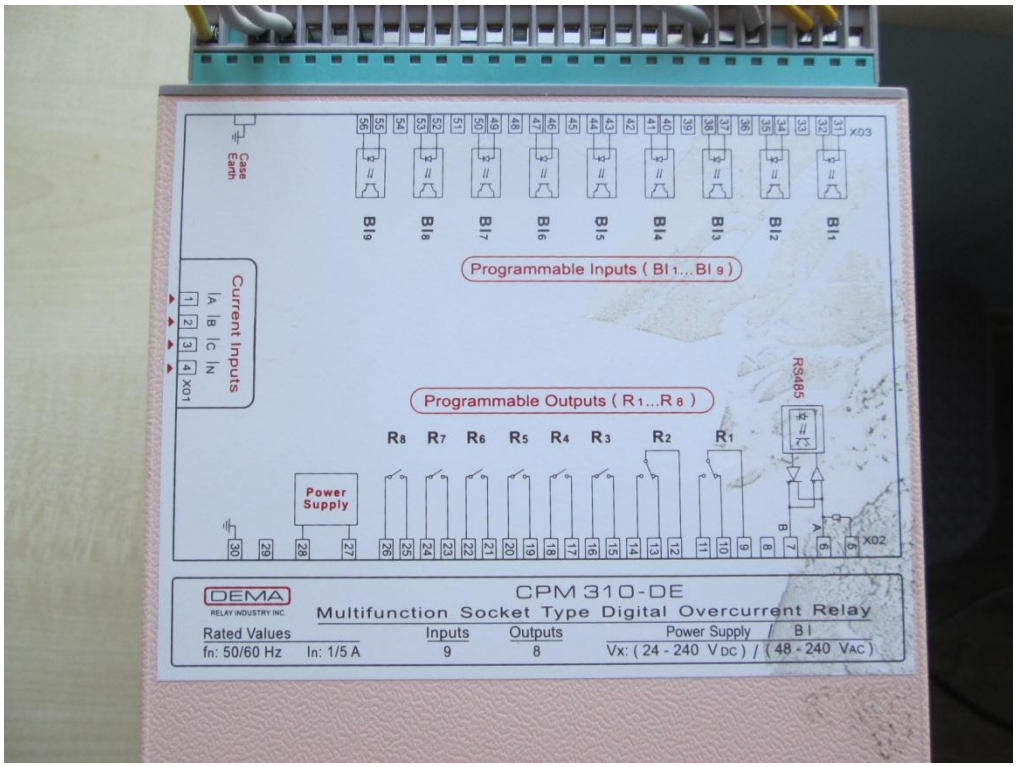
Bağışıklık Deneyleri *Immunity Tests*	
Elektrostatik Boşalmaya Bağışıklık *Electrostatik Discharge Immunity*	Deney üreteci standart gereksinimlerini karşılıyor. *Test generator fulfills the Standard requirements.*
Yayılan EM Alanlara Bağışıklık *Radiated EM Field Immunity*	± 1,83dB
Elektriksel Hızlı Geçişler / Patlama Bağışıklık *Electrical Fast Transient / Burst Immunity*	Deney üreteci standart gereksinimlerini karşılıyor. *Test generator fulfills the Standard requirements.*
Ani Yükselmelere Bağışıklık *Surge Immunity*	Deney üreteci standart gereksinimlerini karşılıyor. *Test generator fulfills the Standard requirements.*
İletilen RF Bozulmalara Bağışıklık *Conducted RF Disturbance Immunity*	± 1,93dB
Gerilim Çukurları, Kısa Kesintiler Bağışıklık *Voltage Dips, Short Interruptions Immunity*	Deney üreteci standart gereksinimlerini karşılıyor. *Test generator fulfills the Standard requirements.*

8 TEST FOTOĞRAFLARI *(Test Photos)*

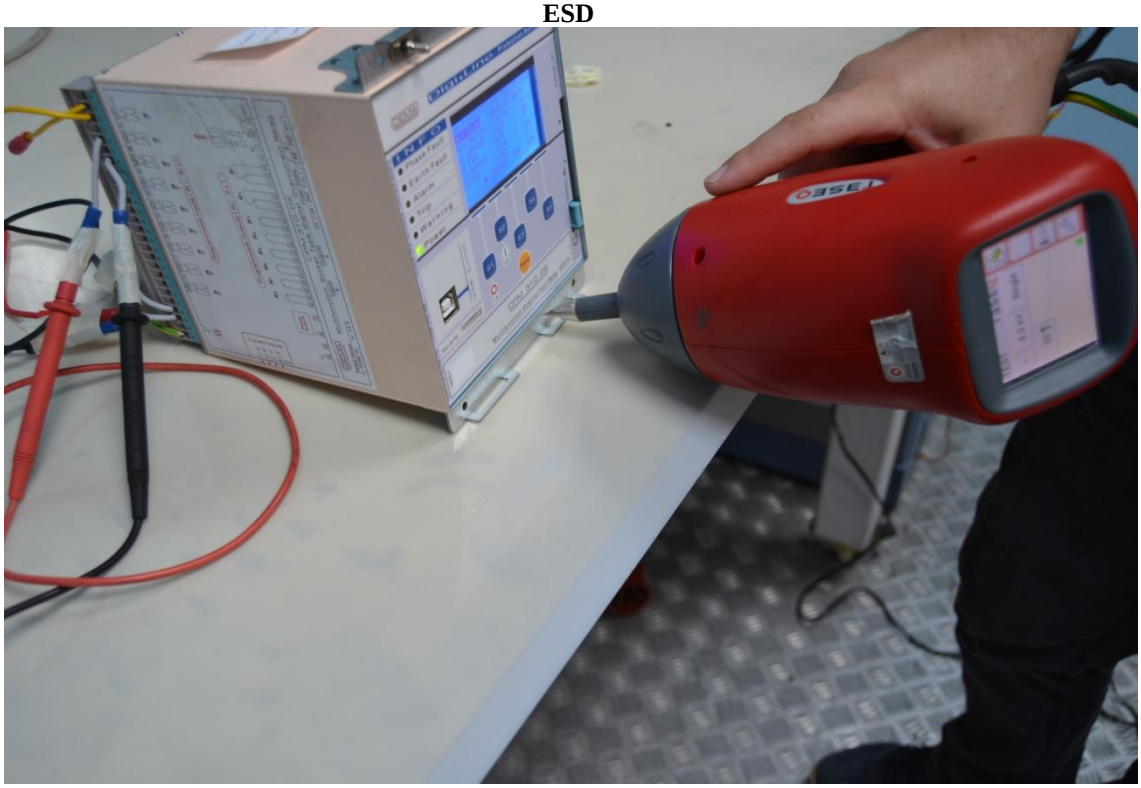


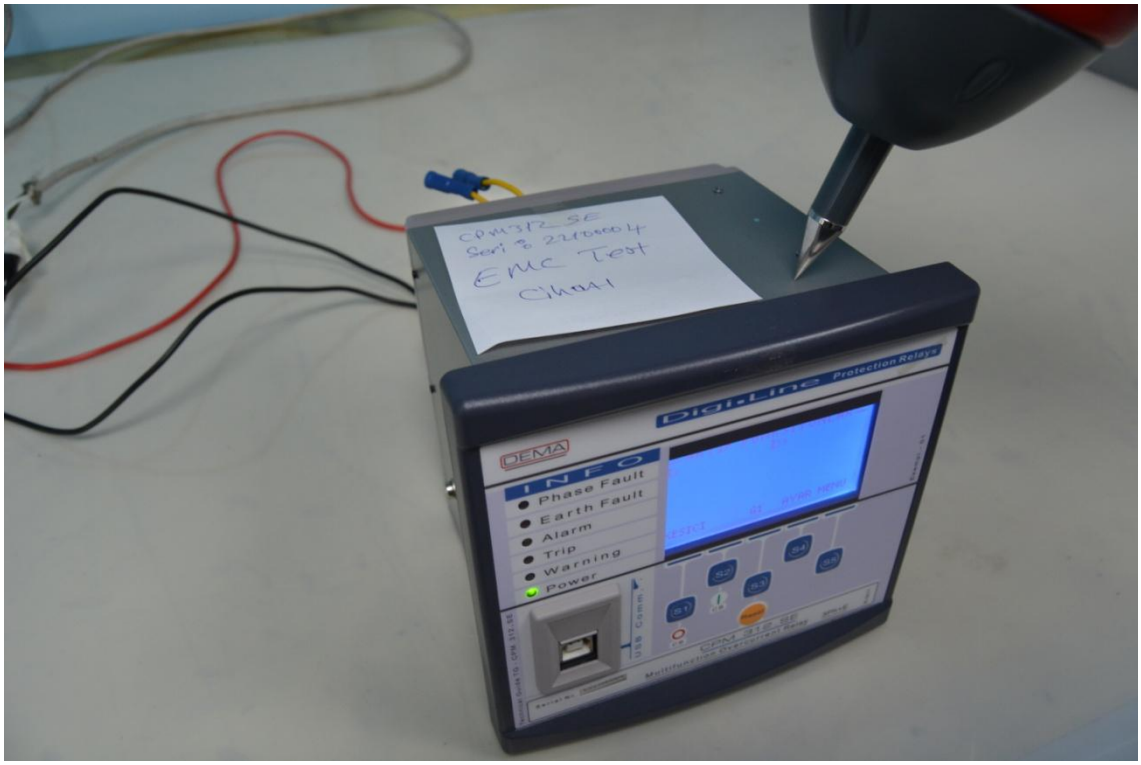


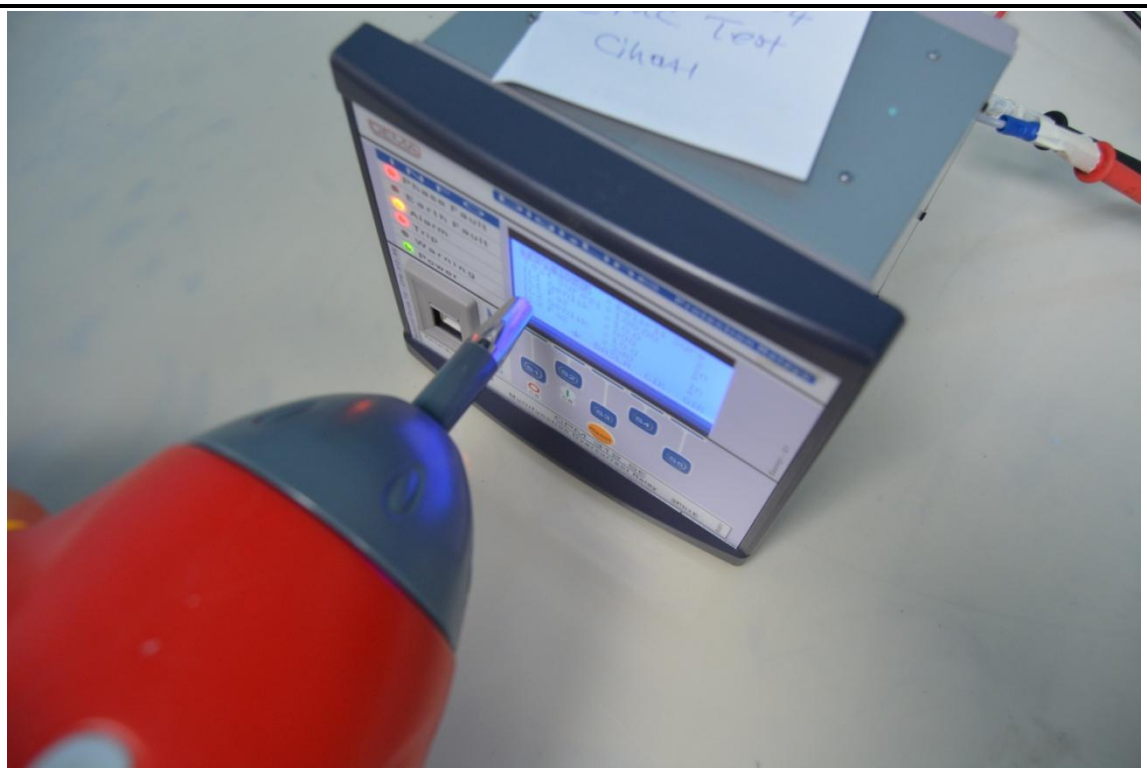


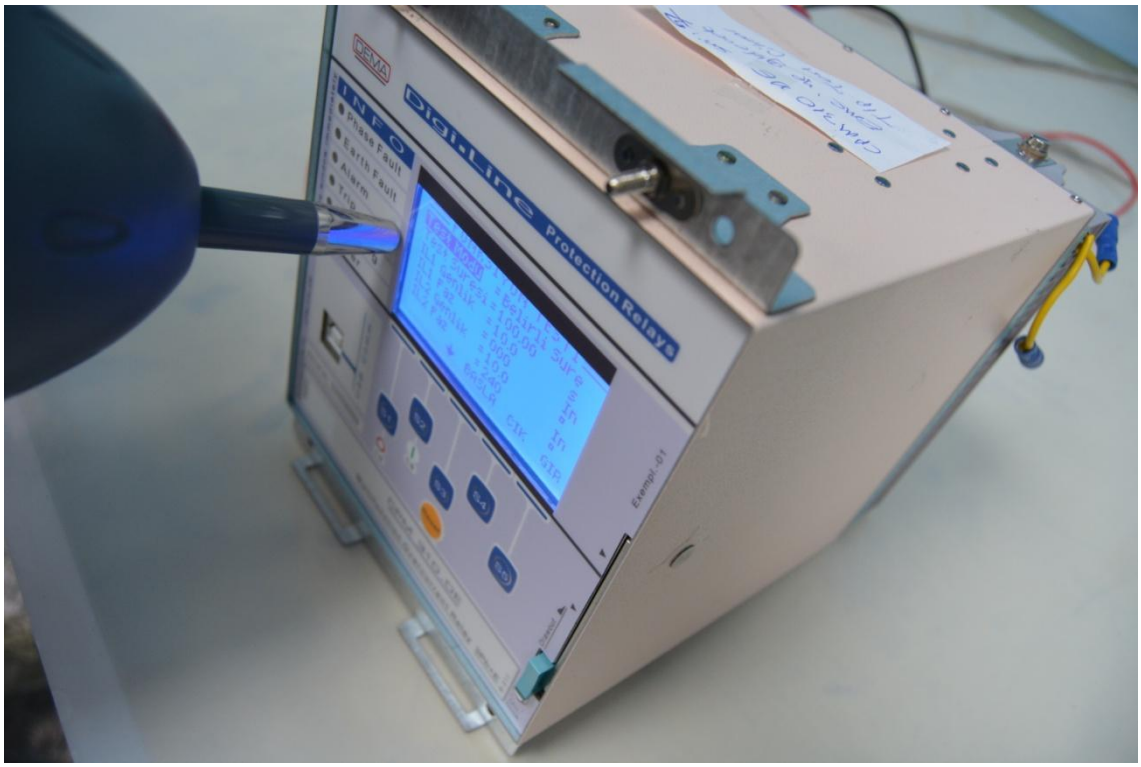


ESD

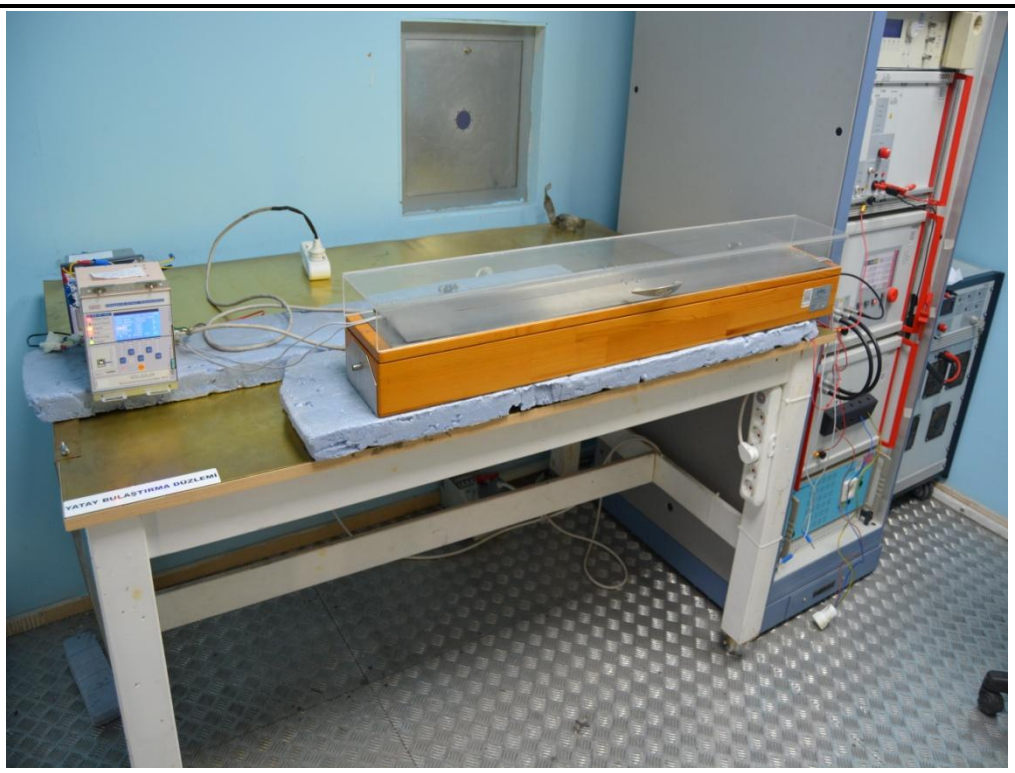


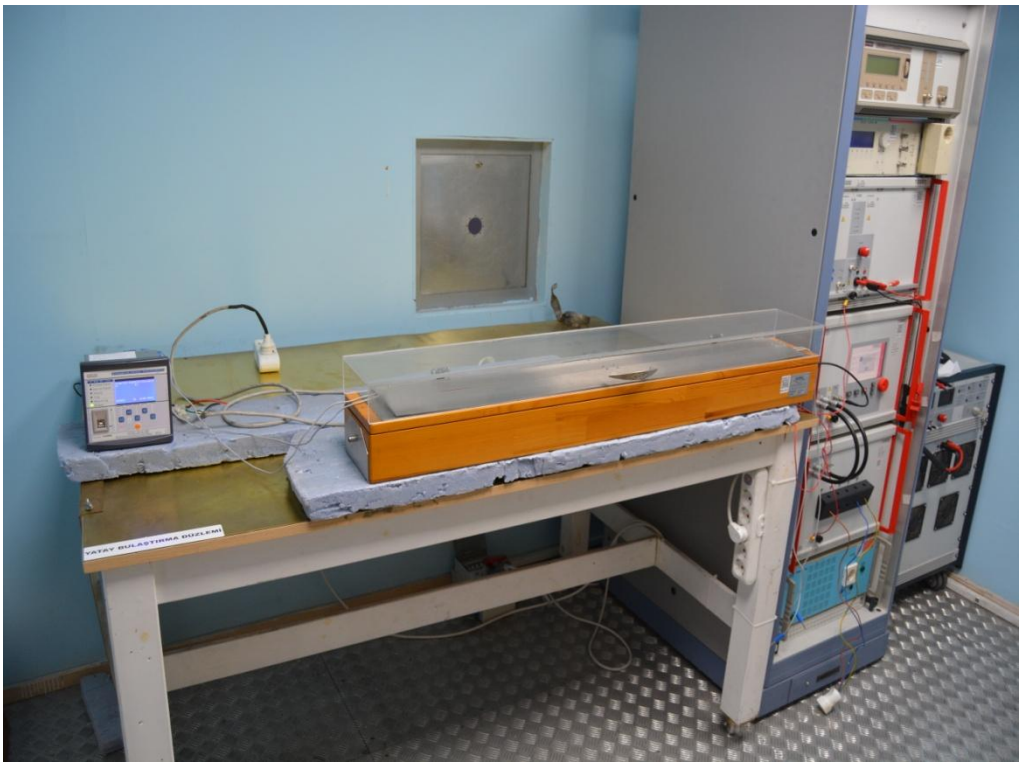


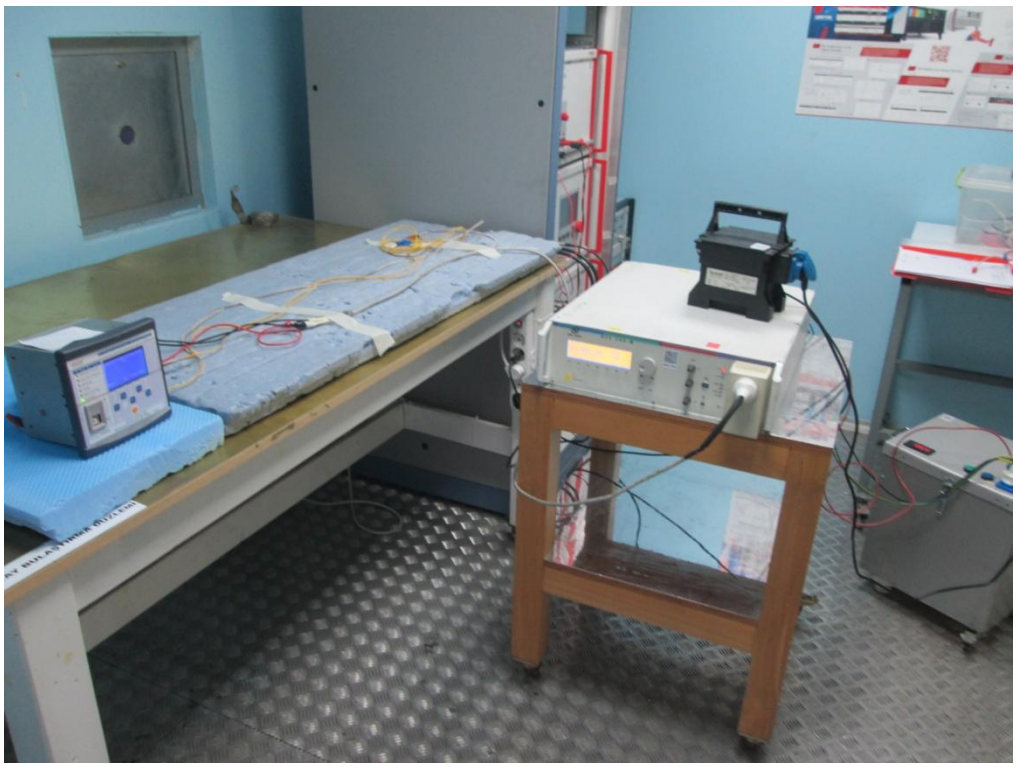




BURST & SURGE & VOLTAGE DİPS &VOLTAGE INTERRUPTİONS

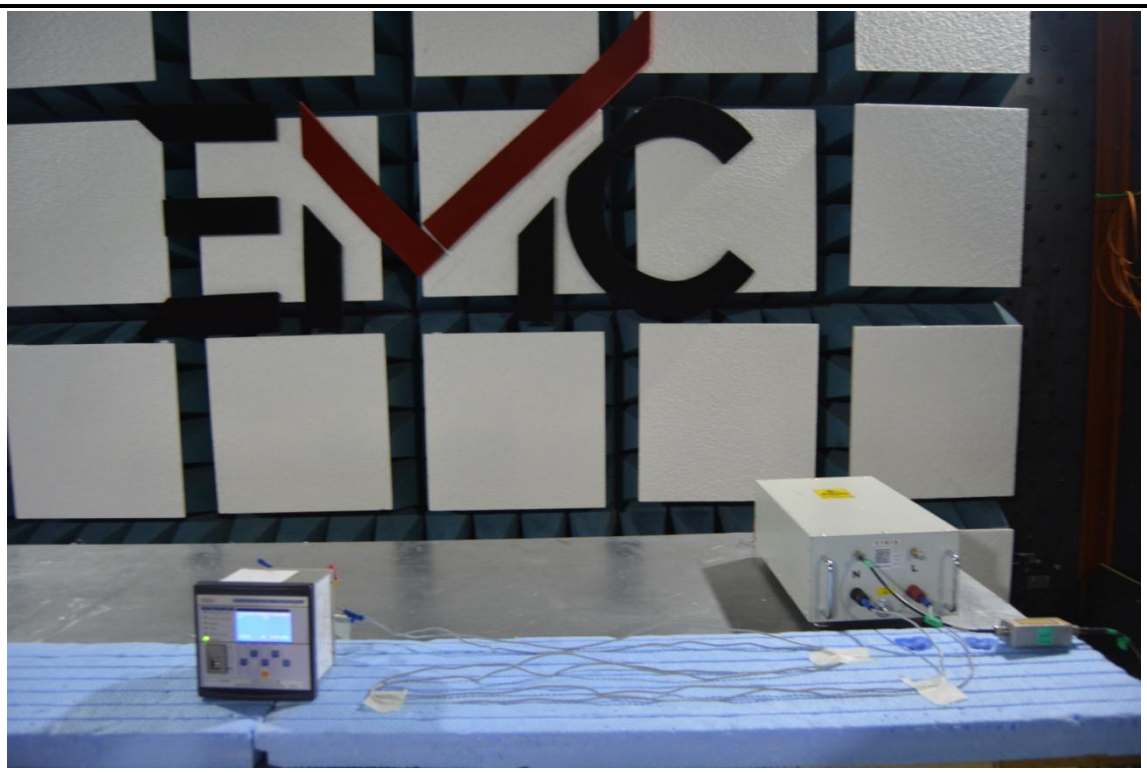




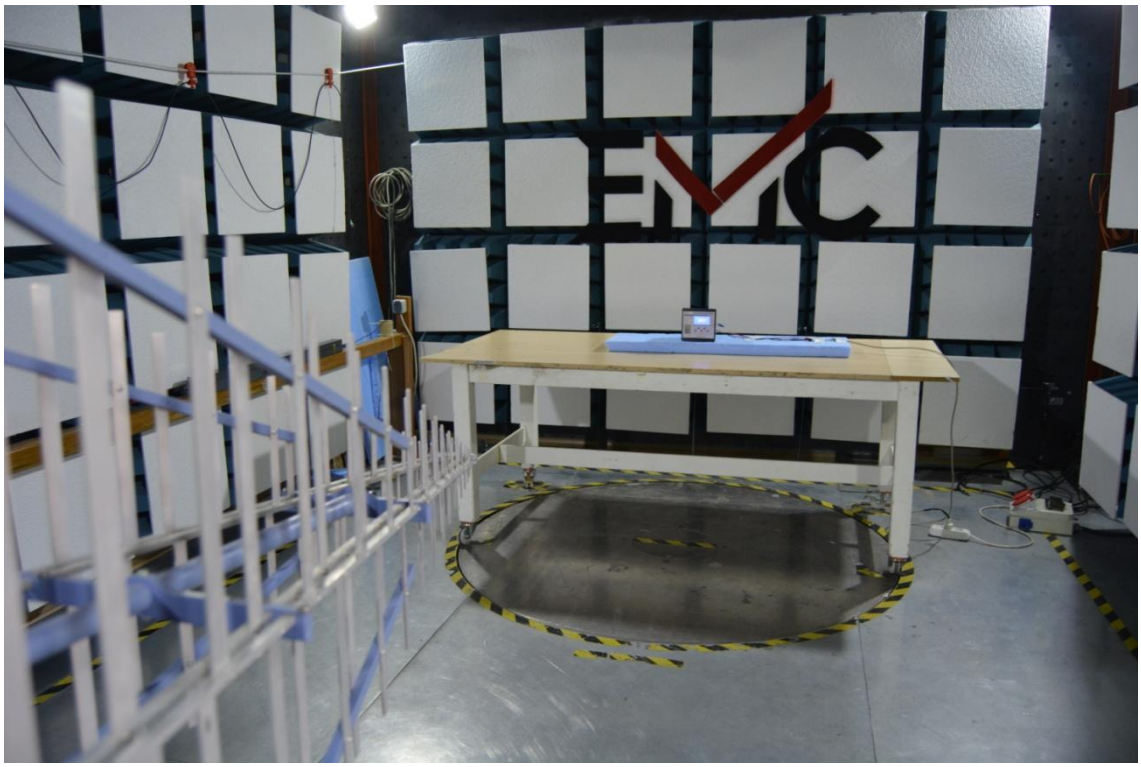


CONDUCTED IMMUNITY

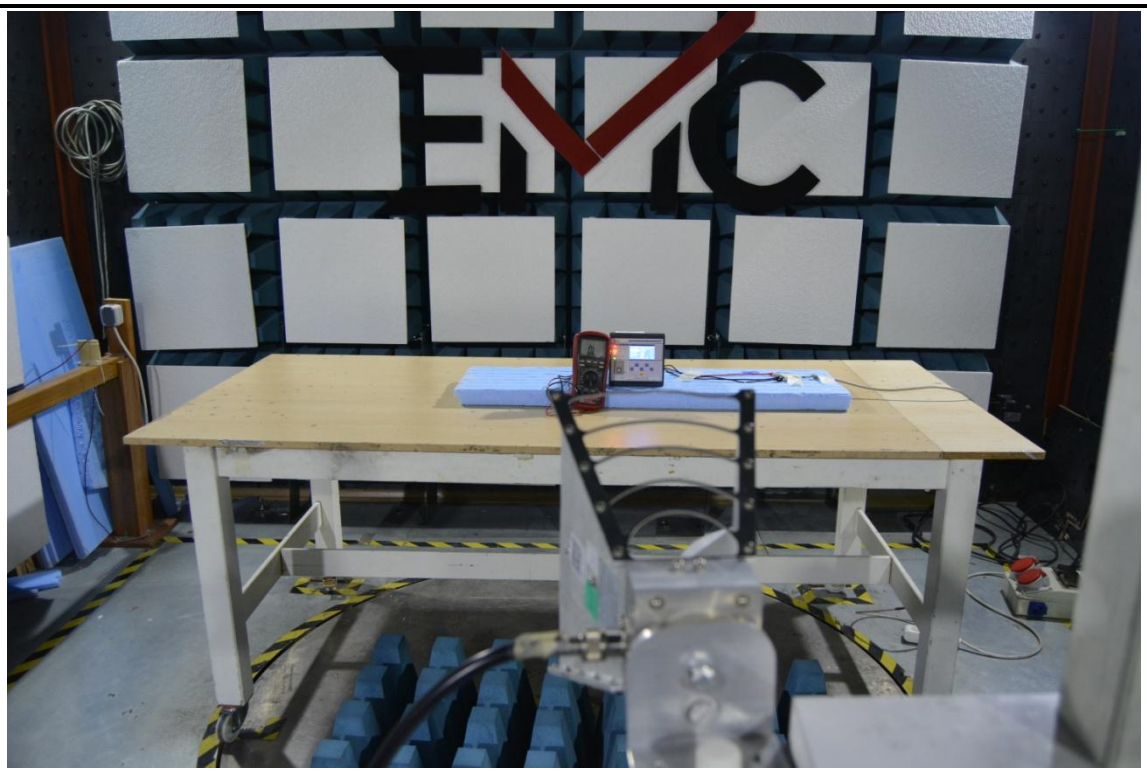
CONDUCTED EMISSION

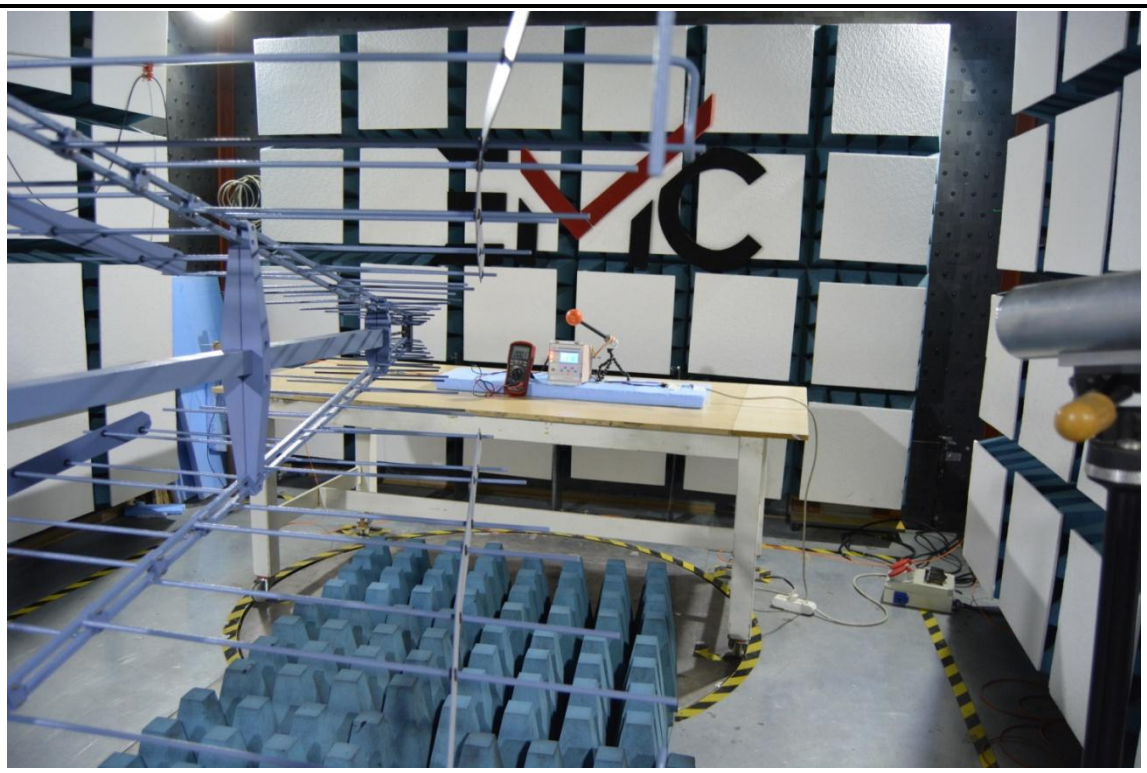


RADIATED EMISSION



RADIATED IMMUNITY



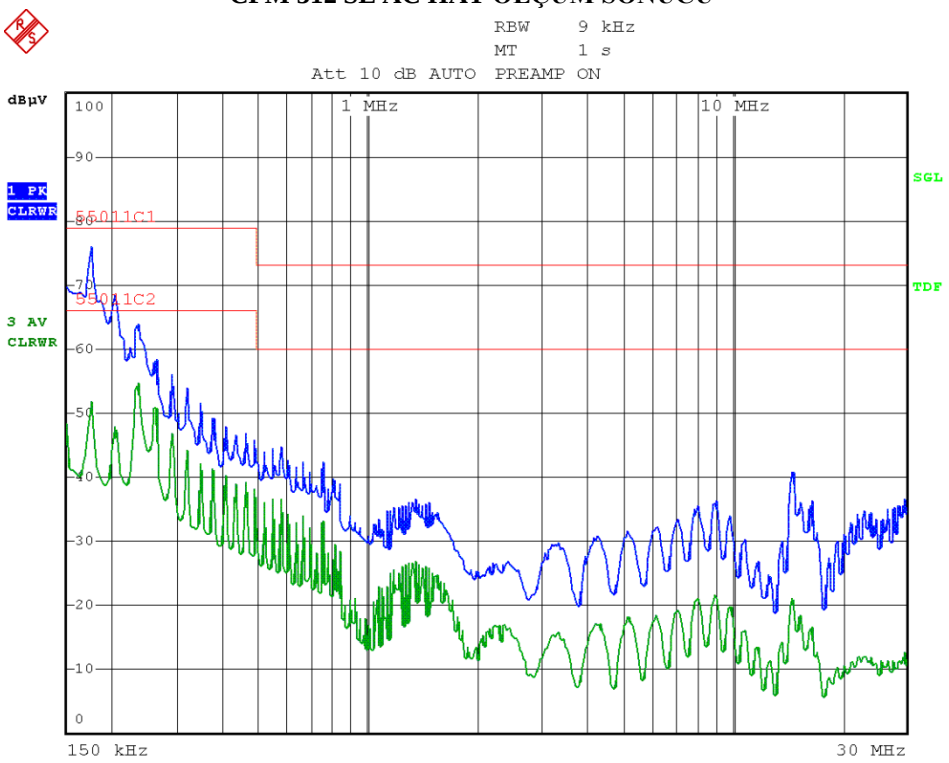


ŞEBEKE FREKANSLI MANYETİK ALAN DENEYİ

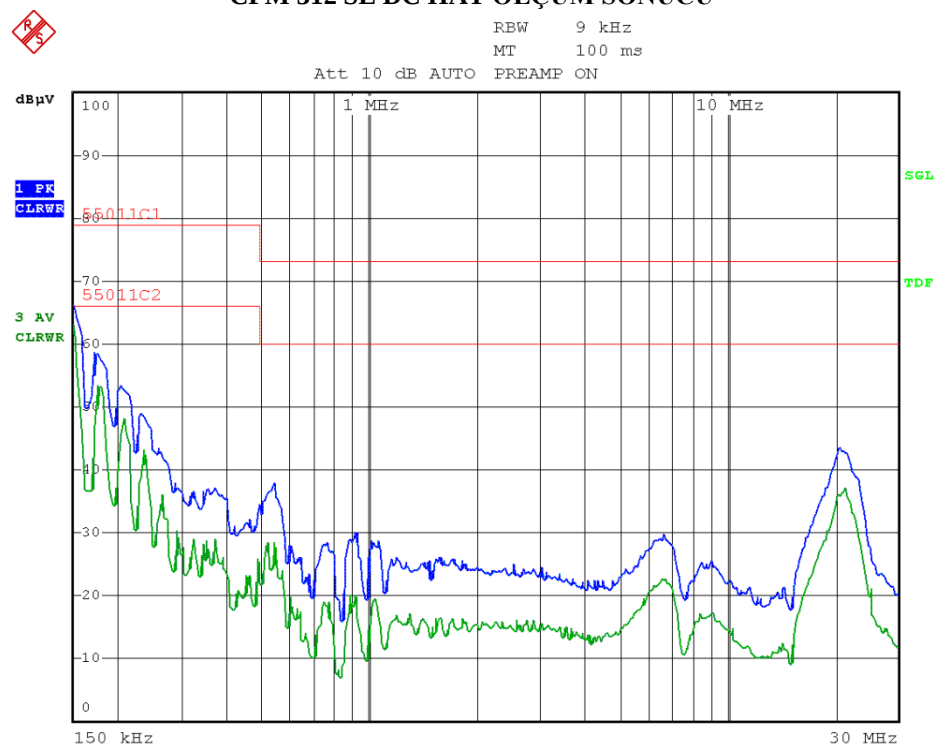
9 EKLER *(Attachments)*

9.1 Bağlantı Ucu Bozulma Gerilimi *(Conducted Emission)*

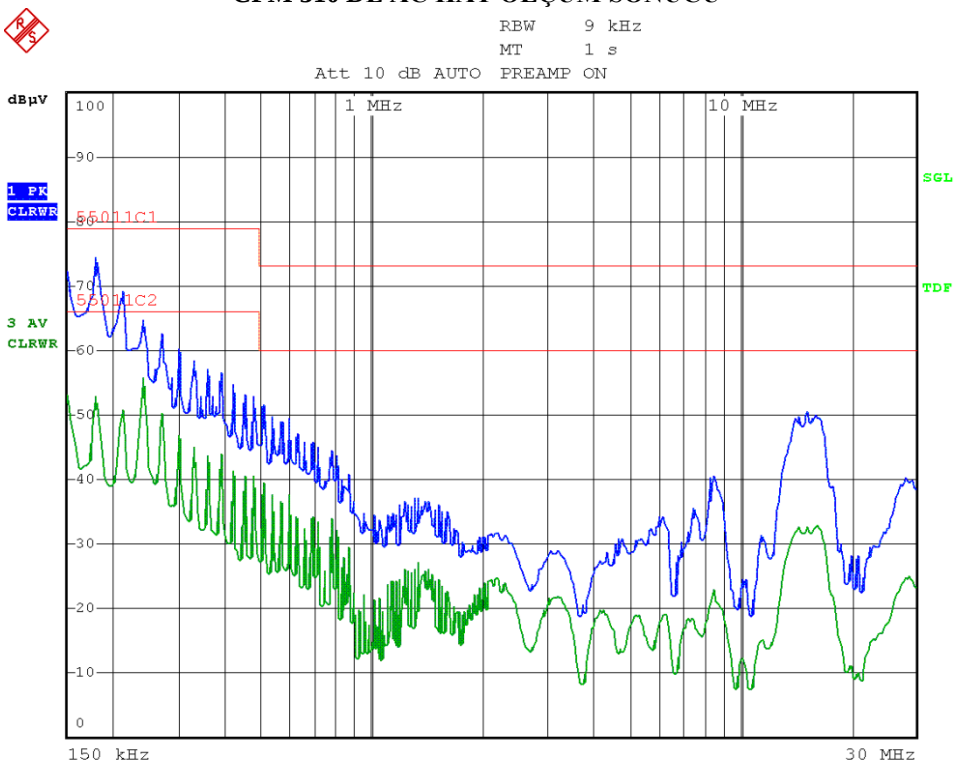
CPM 312 SE AC HAT ÖLÇÜM SONUCU



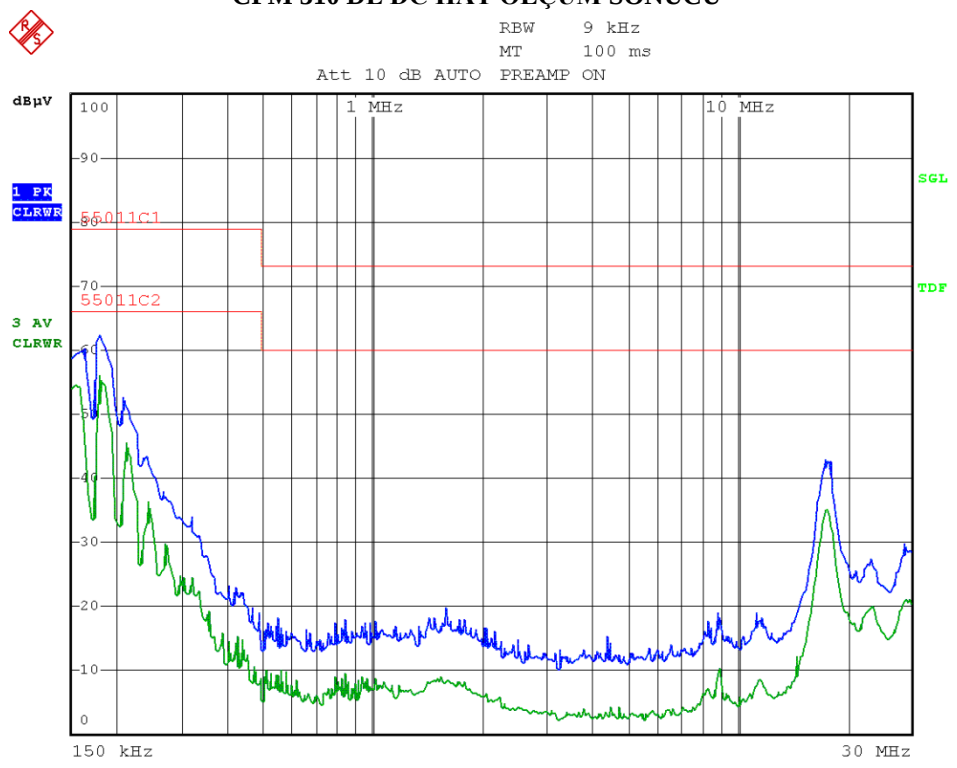
CPM 312 SE DC HAT ÖLÇÜM SONUCU



CPM 310 DE AC HAT ÖLÇÜM SONUCU

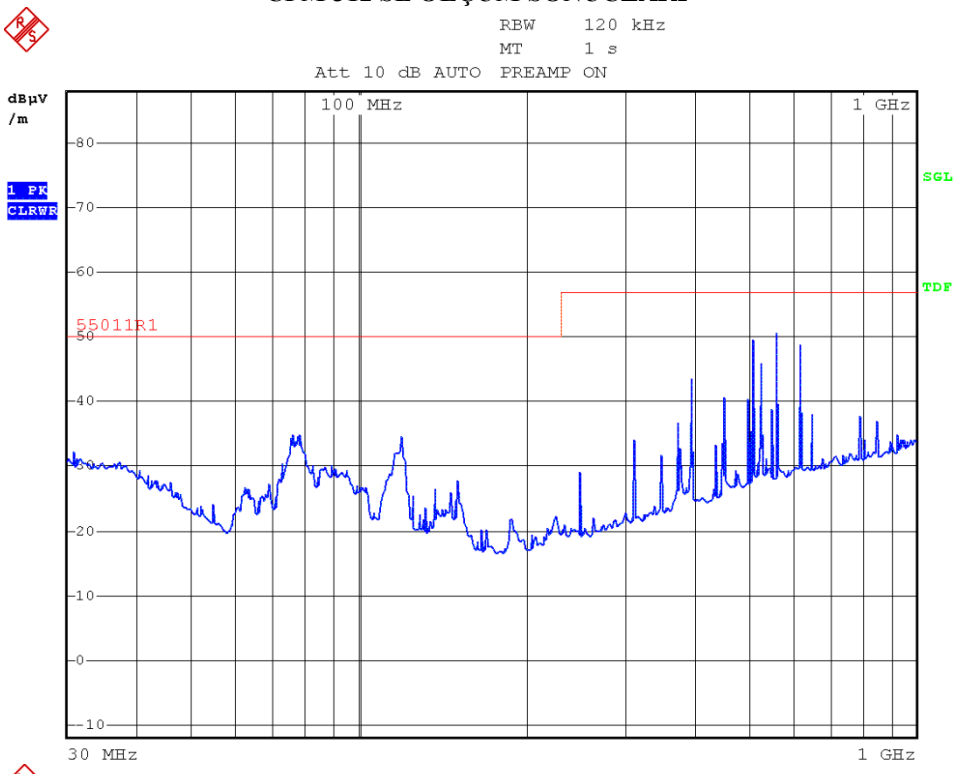


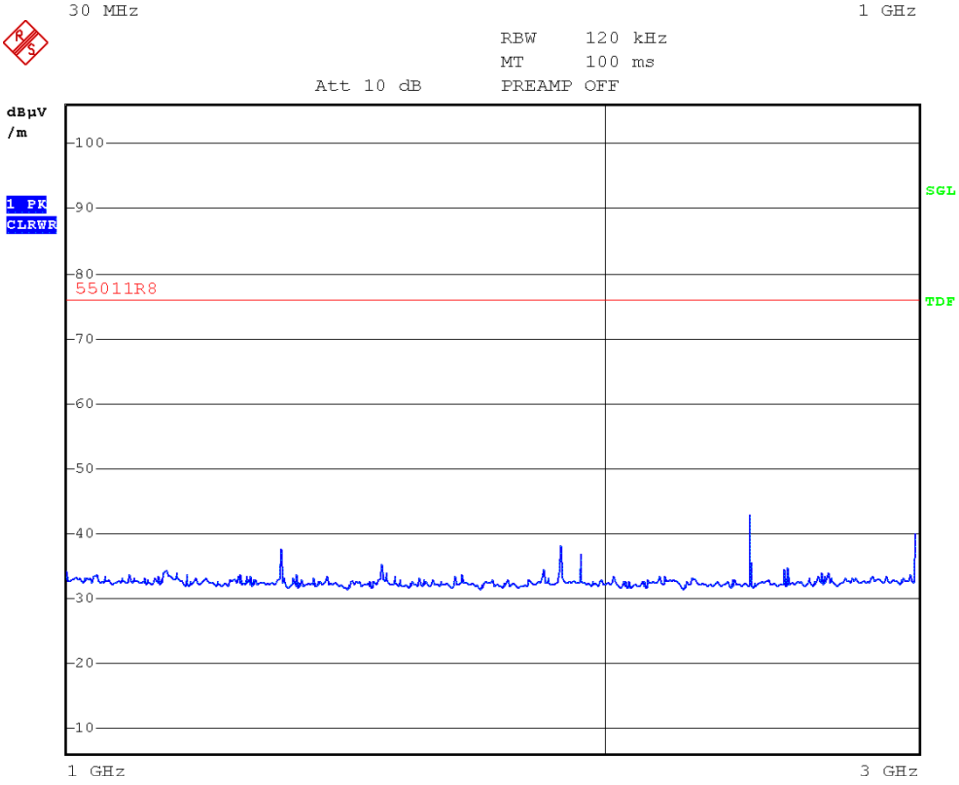
CPM 310 DE DC HAT ÖLÇÜM SONUCU

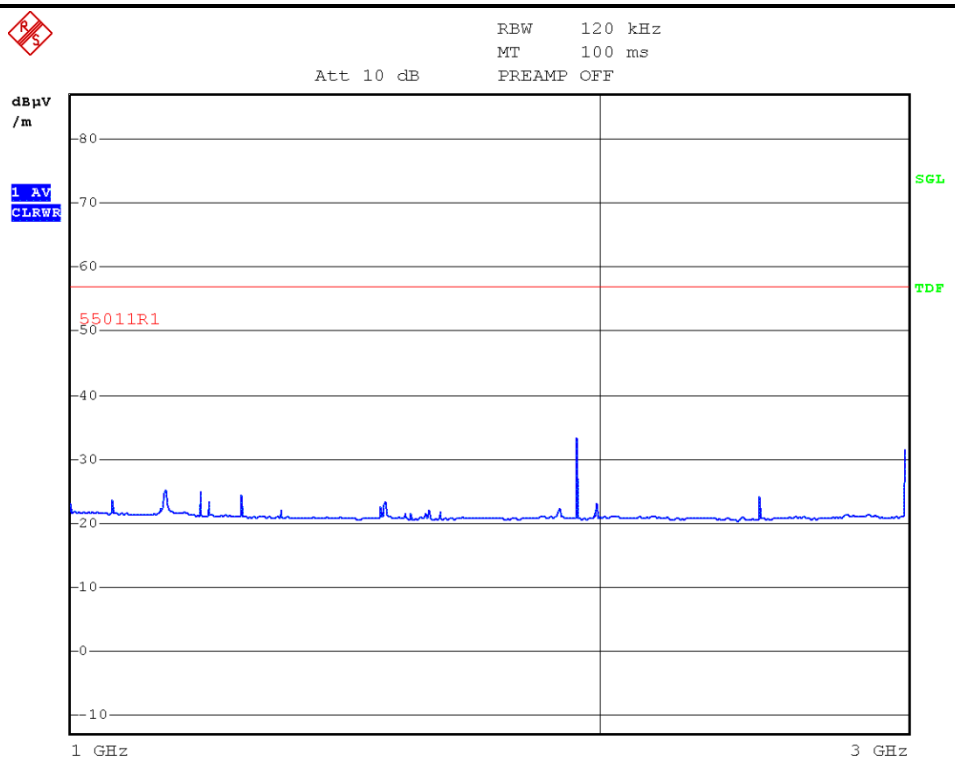


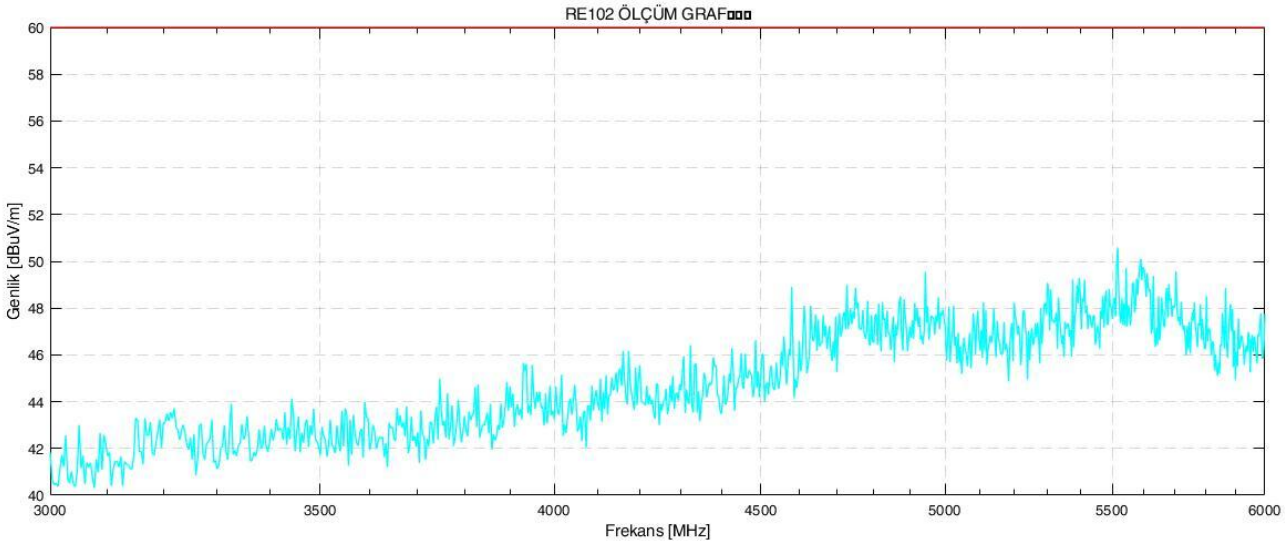
9.2 Yayılım Bozulması *(Radiated Emission)*

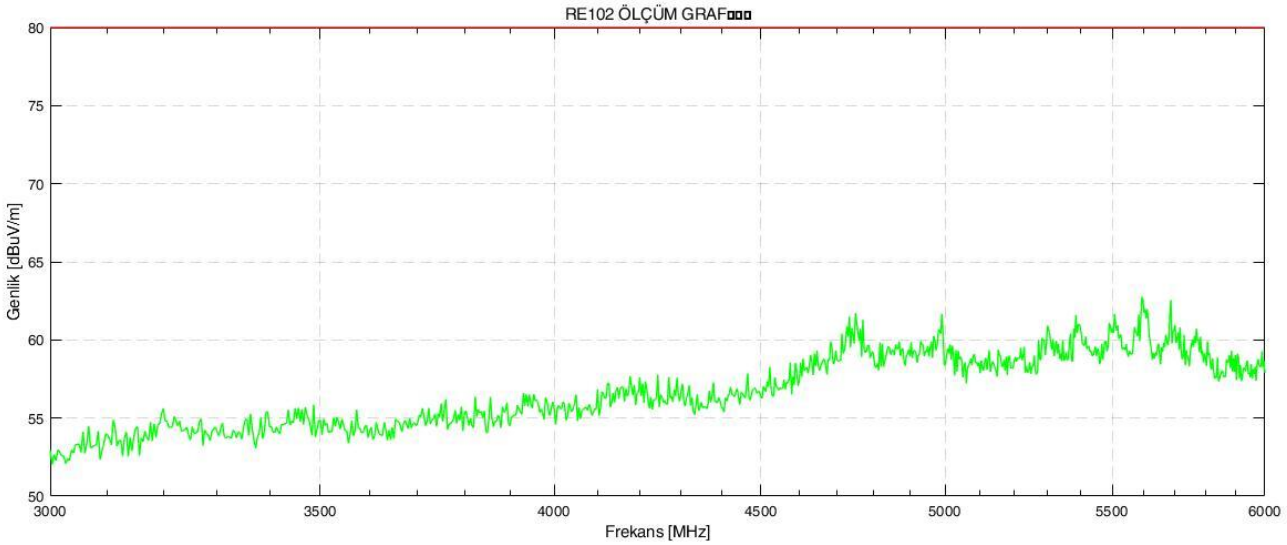
CPM 312 SE ÖLÇÜM SONUCLARI











CPM 310 DE ÖLÇÜM SONUCLARI