ROHDE&SCHWARZ

SERVICEUNTERLAGEN SME

Baugruppe Referenz/Stepsynthese

1035.6501.02

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7. Prüfen und Instandsetzen der Baugruppe

7.1 Funktionsbeschreibung

Die Baugruppe Referenz/Stepsynthese besteht aus den beiden Funktionsblöcken *Referenzfrequenzen* und *Stepsynthese*.

Die Funktionseinheit *Referenzfrequenzen* erzeugt die notwendigen Bezugs- und Referenzfrequenzen für die übrigen Synthese- und Modulationsbaugruppen im Gerät.

Die Funktionseinheit *Stepsynthese* liefert ein Ausgangssignal im Frequenzbereich von 103..117MHz, dessen Oberwellen die Grobauflösung der Synthese liefern.

7.1.1 Referenzfrequenzen

Das Herzstück der Signalerzeugung ist ein rauscharmer 100MHz-Quarz-Oszillator, der über eine schmalbandige PLL wahlweise an einen internen oder externen Frequenzstandard angebunden wird. Durch Teilen, direktes Auskoppeln und Vervielfachen werden Frequenzen von 10, 50, 100 und 600MHz erzeugt.

7.1.1.1 100MHz-Erzeugung

Das 100MHz-Signal wird in einem konventionellen Quarzoszillator (V5) mit Serienresonanzkreis erzeugt. Eine zweite Stufe V35 verstärkt das ausgekoppelte Signal auf ca. 17dBm.

Über vier Gatestufen als Isolationsverstärker (V60, V70, V80, V90) wird das 100MHz-Signal auf der Baugruppe verteilt.

7.1.1.2 REFERENZ-PLL

In der Referenz-PLL werden die 100MHz über Teiler bis auf 1MHz - der *Vergleichsfrequenz* am Phasendetektor (D525) - heruntergeteilt.

Dabei werden 50MHz für das Referenzsignal REF50 an X72 und 10MHz für die Ausgabe des Frequenzstandards EXTREF an X73 abgezweigt.

Das *Referenzsignal* für den Phasendetektor D525 wird über den Multiplexer D520 aus IREF (TCXO), EREF (externe Quelle) und OREF (ROSC) über die Steuerbits R0 und R1 ausgewählt.

Der nachfolgende programmierbare Referenzteiler D510 teilt die möglichen Eingangsfrequenzen 1..16MHz auf 1MHz herab.

Die Ausgangsimpulse des digitalen Phasendetektors gelangen auf einen PI-Regler (N530 mit Beschaltung), der den 100MHz-Quarz-VCO steuert. Die Regelbandbreite der Referenz-PLL beträgt ca. 10Hz.

7.1.1.3 Frequenzstandards und ABSTIMMUNG TCXO/ROSC

Das Ausgangssignal des **TCXO** gelangt als TTL-Signal IREF auf den Multiplexer D520. Die Spannungsversorgung für den TCXO wird vom Gatter D535-D über das Steuerbit R1 automatisch abgeschaltet, wenn der TCXO nicht als Frequenzstandard ausgewählt ist.

Über den D/A-Wandler D555 (Auflösung: 12Bit) und den nachgeschalteten OPs N565 und N562 wird die Frequenz des TCXO feinabgestimmt. N562 addiert eine zusätzliche externe Tunespannung (Eingang EXTTUNE). OP N550 erzeugt für die Option ROSC eine genaue und temperaturstabile Abstimmspannung 0..12V am Ausgang OPTTUNE.

Das 10MHz-Signal vom **ROSC** und **externe Frequenzstandards** gelangen über die Eingänge X74 (OPTREF) und X73 (EXTREF) als TTL-Signale OREF und EREF auf Multiplexer D520.

Der Anschluß EXTREF (Buchse X73) hat somit bidirektionale Funktion. Wenn das Relais K1 geschlossen ist, gibt er 10MHz als Frequenzstandard aus. Bei geöffnetem K1, ist EXTREF Eingang für einen externen Frequenzstandard (1..16MHz).

7.1.1.4 600MHz-Erzeugung

Durch eine Kettenschaltung von zwei zu Verdreifacher und Verdoppler abgewandelten Differenzverstärkern werden aus 100MHz 600MHz erzeugt.

Hinter beiden Vervielfacherstufen folgen jeweils steile Bandpässe zur Selektierung des Nutzsignals.

Ein induktiver Leistungsteiler (L271) verteilt das 600MHz-Signal auf die Basisstufe V280 zur Stepsynthese und die Emitterstufe V285 zum Ausgang REF600.

Über das Steuerbit SR600 (OP N290) kann das Ausgangssignal REF600 von dem Pinschalter V290/V295 um ca. -40dB abgesenkt werden.

7.1.2 Stepsynthese

In der Step-PLL wird ein VCO 103..117MHz mit 100MHz auf 3..17MHz abgemischt und auf das Ausgangsignal eines programmierbaren Teilers 3..17MHz synchronisiert.

7.1.2.1 600MHz-Teiler DIVREF

Der programmierbare ECL-Teiler DIVREF (D310) teilt das 600MHz-Eingangssignal durch Teilerfaktoren von 17..100 mit Bruchteilern von minimal 1/8.

Das resultierende Ausgangssignal 6..34MHz wird mit dem folgenden D-Flip-Flop (D320) auf 3..17MHz heruntergeteilt. Über einen Tiefpaß gelangt es als *Referenzsignal* SDIV für die Step-PLL auf den Phasendetektor N470.

7.1.2.2 Mischer und Trennverstärker

Die *Vergleichsfrequenz ZFVCO* am Phasendetektor N470 wird durch Abmischen der VCO-Frequenz mit 100MHz erzeugt.

Ein Teil des VCO-Ausgangssignals wird über die RF-Stufe (N430, N440) auf den RF-Eingang des Mischers N380 geführt.

Der LO-Eingang von N380 wird von der Emitterstufe V380 mit 100MHz und einem Pegel von ca. 16dBm angesteuert.

Am IF-Ausgang von N380 entsteht u.a. das Differenzband 3..17MHz, welches über die ZF-Stufe N350 als *Vergleichsfrequenz* ZFVCO auf den Phasendetektor N470 gelangt. Die Ein- und Ausgangstiefpässe an N350 sorgen für die notwendige Unterdrückung der 100MHz-LO-Frequenz und höherer Mischprodukte.

7.1.2.3 REGLER STEP-PLL und RAMPENSTEUERUNG

Das Loop-Filter hinter N470 besteht aus einem konventionellen PI-Regler (N465 mit Beschaltung) und steilflankigen Tiefpässen an Ein- und Ausgang. Die Regelbandbreite der Schleife beträgt 350kHz. Die minimale Ausgangsspannung VSVCO wird durch V475/V473 auf ca. 0.5V begrenzt.

Große Frequenzsprünge außerhalb des Fangbereichs werden durch den analogen Frequenzdetektor mit nachfolgender Rampensteuerung realisiert. Parallel zum Phasendetektor werden Referenz- (SDIV) und Vergleichsfrequenz (ZFVCO) analog gemessen und von OP N460

verglichen. Bei Überschreiten einer Differenz von ca. 300kHz wird über Komperator N468-A/B und Analogschalter D460-A/B in Abhängigkeit vom Vorzeichen der Differenz ein konstanter Strom auf die Integrationskapazität C473 eingeprägt. Die dadurch erzeugte Spannungsrampe am Ausgang von N465 führt den Step-VCO bis in den Fangbereich der PLL, und wird dort wieder abgeschaltet.
Der Einschwingvorgang muß nach maximal 100µs abgeschlossen sein.

7.1.2.4 STEP-VCO 103..117MHz

Der Step-VCO (V408) ist ein konventioneller FET-Oszillator in Drainschaltung. V420 verstärkt das Signal auf einen definierten Pegel und führt es über einen resistiven Leistungsteiler zur RF-Stufe in die PLL und zur Ausgangsstufe V435 für die Step-Frequenz.

7.1.3 DATENÜBERTRAGUNG und DIAGNOSE

Die Ansteuerung der Baugruppe erfolgt über die serielle Schnittstelle SERBUS (D610). Über Strobe 1 werden die Diagnosemultiplexer adressiert, die Betriebsart der Referenz-PLL und die Tunespannung für TCXO/ROSC eingestellt. Über Strobe 2 erfolgen die zeitkritischen Einstellungen für den Teilerfaktor der Step-PLL und die Steuerung des Ausgangs REF600.

Über die Diagnose können alle Ausgangssignale der Baugruppe sowie einige interne Signale zur Funktionsprüfung und Fehlersuche abgerufen werden.

Die Regelspannungen der beiden VCOs - VQ100 und VSVCO - werden von Fensterkomparatoren (N680-A..D) mit nachfolgender Hystereseschaltung (D680-A..D) überwacht. Beim Ausrasten der Schleifen wird über IR0 und IR1 ein Interrupt ausgelöst.

7.2 Meßgeräte und Hilfsmittel

- Spektrumanalysator ...1.2GHz (z.B. FSA).
- 50Ω-Kabel mit Meßadapter für Bergsteckerpaare.
- Meßsender 1..16MHz, Frequenzgenauigkeit $<10^{-6}$ (z.B. SMG).
- Oszilloskop mit 100MHz Bandbreite (z.B. BOL).
- Digitales Speicher-Oszilloskop für Punkt 7.4.10.2 (z.B. BOS).
- Multimeter (DC-Spannungsgenauigkeit ±4mV bei 4V Eingangsspannung = ±0.1%, z.B. UDL44).
- Prüfspannungsquelle 0..20V (z.B. NGT20).
- Servicekit (1039.3520).

7.3 Fehlersuche

Die folgenden Fehlerbeschreibungen sind nur als grobe Übersicht zu verstehen.

Zur Fehlerlokalisation ist grundsätzlich eine Signalverfolgung aufgrund des Stromlaufs vorzunehmen. Dazu sind die Arbeitspunkte der Transistoren und die HF-Pegel an den jeweiligen Prüfpunkten vermerkt. Die HF-Prüfpunkte sind gleichspannungsfrei (Ausnahme: TTL-Pegel) und mit einem 475Ω-Widerstand auf Bergsteckerpaare mit Masseanschluß geführt.

7.3.1 Referenzfrequenzen

Referenz-PLL rastet nicht	Referenz-PLL nach 7.4.3.1 überprüfen. Eingangssignale am Phasendetektor D525 über TPOINT 203 und 204 überprüfen. Eingang OPTREF nach 7.4.3.3 überprüfen. 100MHz-Quarz-VCO nach 7.4.2 prüfen.
Keine Ausgabe von 10MHz-Frequenzstandard	Prüfe Ausgang EXTREF nach 7.4.3.2
Feinabstimmung von TCXO/ROSC nicht möglich	Funktionsfähigkeit der Referenz-PLL nach 7.4.3.1 sicherstellen. Tuning nach 7.4.4 prüfen.
Kein Signal an REF50	Funktion des 100MHz-Quarz-VCOs über TPOINT 209 sicherstellen. Ausgang REF50 (TPOINT 207) nach 7.4.12 prüfen.
Kein Signal an REF100	Ausgang REF100 (TPOINT 209) nach Punkt 7.4.12 prüfen. 100MHz-Quarz-VCO nach 7.4.2 prüfen.
Kein Signal an REF600	Funktion des 100MHz-Quarz-VCOs über TPOINT 209 sicherstellen. 300MHz-Zwischenfrequenz über TPOINT 206 prüfen und evtl. Abgleich nach 7.4.5.1 wiederholen. Ausgang REF600 (TPOINT 210) nach Punkt 7.4.5.3 prüfen und evtl. Abgleich nach 7.4.5.2 und 7.4.5.3 wiederholen.
Ausgangssignale mit starkem Phasenjitter	Alle Ausgangssignale der Baugruppe haben einen starken Phasenjitter im NF-Bereich: 100MHz-Quarz B20 auswechseln.

7.3.2 Stepsynthese

Step-PLL rastet nicht	LO-Signal am Phasendetektor N470 über TPOINT 213 prüfen. Pegel des 600MHz-Eingangstakt für Teiler D310 nach 7.4.5.3 prüfen. RF-Signal am Phasendetektor N470 über TPOINT 214 prüfen. Pegel am LO-Eingang von N380 nach 7.4.6 prüfen. Step-VCO nach 7.4.7.2 prüfen. RF- und ZF-Pegel nach 7.4.8 prüfen. Weitere Fehlersuche unter *Nebenwellenburst auf Step-Frequenz.*
Nebenwellenburst auf Step-Frequenz	Die Step-Frequenz läßt sich zwar prinzipiell einstellen, hat jedoch ein breites Störspektrum. Rampensteuerung nach 7.4.9 prüfen. Falls bis hier kein Fehler gefunden wurde, kommt der Komparator N468, der Analogschalter D460, der Phasendetektor N470 oder der OP N465 in Betracht. Feinabgleich nach 7.4.10.1 wiederholen.
Einschwingprobleme der Step-Frequenz	Einrastvorgang der Step-PLL benötigt mehr als 100us. Einschwingverhalten der Step-PLL nach 7.4.10.3 prüfen. Rampensteuerung nach 7.4.10.1 neu abgleichen.

7.4 Prüfen und Abgleich

Zum kompletten Abgleich der Baugruppe sind die einzelnen Prüf- und Abgleichpunkte unter 7.4 in der genannten Reihenfolge durchzuführen. Ansonsten wird auf Prüf- und Abgleichpunkte bei der Fehlersuche 7.3 hingewiesen.

Zu den einzelnen Punkten ist jeweils vermerkt, welche Baugruppendeckel montiert werden müssen.

Die RF-Frequenzeinstellungen sind grundsätzlich im CW-Betrieb (MODULATION OFF) durchzuführen.

7.4.1 Datenübertragung und Stromaufnahme

- Einstellungen A: UTILITIES/DIAG/TPOINT/STATE ON
  /TEST POINT 202
  UTILITIES/REF OSC/SOURCE INT
  /ADJUSTMENT STATE ON
  /FREQUENCY ADJUSTMENT 2000

- Einstellungen B: UTILITIES/DIAG/TPOINT/STATE ON
  /TEST POINT 213
  UTILITIES/REF OSC/SOURCE EXT
  /EXT FREQUENCY 7 MHz

▶ Logische Zustände nach folgender Tabelle prüfen:

Subadresse 0			Subadresse 1		
SME-Einstellung	D620 (Byte 0) 4 5 6 7 14	D630 (Byte 1) 4 5 6 7 14 12 11	SME-Einst. FREQ	D330 (Byte 0) 4 5 6 7 14 13 12 11	D340 (Byte 1) 4 5 11
A	L H L H L	L H H L H L L	912 MHz	H H H L L L H H	L L H
B	H L H L H	H L L H L H H	877 MHz	L L L H H H L L	H L H
			88 MHz	L L L L L L L L	L H L

Die High-Pegel an D620 (Subadresse 0/Byte 0: Adressierung der Diagnosepunkte) liegen nicht statisch an.
Byte 3 und 4 von Subadresse 0 (Tunespannung TCXO/ROSC) sind hardwaremäßig nicht erreichbar und werden deshalb bei Einstellung A über den angezeigten Diagnosewert geprüft:
▶ TPOINT 202 = -6..-4V

Prüfen der Stromaufnahme:

- Durch Auslöten der Eingangsdrosseln L100..L104 und Einschleifen eines Amperemeters kann die Stromaufnahme der Baugruppe gemessen werden (Für die Sollwerte siehe Kapitel 7.7).

7.4.2 100MHz-QUARZ-VCO

- Prüfspannungsquelle mit 7V Abstimmspannung an X541/X542 (X542=Masse) anschließen.
- Voltmeter an P10 anschließen.
- Spektrumanalysator (Span 0..500MHz, Ref.-Level 0dBm) an P40/P41 (P41=Masse) anschließen.

▶ Mit L5 Spannung an P10 auf Minimum abgleichen.
▶ Mit L20 die Spannung an P10 für die beiden Endpunkte der Abstimmspannung 1V und 13V jeweils auf den gleichen Wert bringen, so daß die Spannungsänderung an P10 über den Abstimmbereich 1..13V minimal wird.
▶ Absolute Spannung an P10 über 1..13V Abstimmspg. = 10.2 .. 11.2V
Spannungsänderung an P10 über 1..13V Abstimmspg. < 0.2V

▶ Abstimmspannung zwischen -1V und +1V variieren:
Die 100MHz-Schwingung darf nicht abbrechen!

- Abstimmspannung auf 7V einstellen

▶ Mit L35 das 100MHz-Signal an P40 auf -3dBm+/-0.3dBm abgleichen.
▶ Prüfe Pegel an X71 (REF100) auf 4..6dBm.

- ***Nach Entfernen der Prüfspannungsquelle Brücke auf X540-X541 stecken.***

7.4.3 REFERENZ-PLL für 100MHz-QUARZ-VCO

7.4.3.1 Funktionsfähigkeit der REFERENZ-PLL

- Einstellungen: **UTILITIES/REF OSC/SOURCE INT**
  /ADJUSTMENT STATE ON
  /FREQUENCY ADJUSTMENT 2000

▶ Prüfe TPOINT 201 = 2..12V

- Meßsender mit 10MHz/-13dBm an REF (Rückwand) anschließen.

- Einstellungen: **UTILITIES/REF OSC/SOURCE EXT**
  /EXT FREQUENCY 10 MHz

- Frequenz des Meßsenders nach Tabelle verstellen und Regelspannung über TPOINT 201 prüfen:

Frequenz in MHz	Sollwert TPOINT 201	Fehlermeldung SME
10.000000	5..10V	-
10.000100 9.999900	<12V >2V	- -
10.000400 9.999600	>12.5V <-12.5V	Reference Frequency 100MHz VCXO unlocked Reference Frequency 100MHz VCXO unlocked

7.4.3.2 Ausgang EXTREF

- Spektrumanalysator (Span 0..100MHz, Ref.-Level 10dBm) an REF (Rückwand) anschließen.

- Einstellungen: **UTILITIES/REF OSC/SOURCE INT**

▶ Pegel des 10MHz-Frequenzstandard = 6..10dBm
Harmonische < -15dBc

7.4.3.3 Eingang OPTREF

Diese Prüfanweisung ist nur möglich, wenn die Option ROSC Ofenquarz (SM-B1) im Gerät vorhanden ist.

- Einstellungen: **UTILITIES/REF OSC/SOURCE INT**
  ADJUSTMENT STATE OFF

▶ Prüfe TPOINT 201 = 2..12V

7.4.4 ABSTIMMUNG TCXO/ROSC

7.4.4.1 Referenzabgleich für D/A-Wandler

- Hochgenaues Voltmeter an Ausgang OPTTUNE (Motherboardverbindung: X70 A10) anschließen. Dabei ist auf eine gute Masseverbindung zwischen Voltmeter und Baugruppe zu achten.

- Einstellungen: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 202
  UTILITIES/REF OSC/SOURCE INT
  /ADJUSTMENT STATE ON
  /FREQUENCY ADJUSTMENT 1333

▶ Mit R588 U_{OPTUNE} auf 4.000V+/-4mV abgleichen.
▶ Prüfe Spannungen nach Tabelle:

Meßpunkt	Art des Signals	Sollwert für FREQUENCY ADJUSTMENT 1333	Sollwert für FREQUENCY ADJUSTMENT 2666
TPOINT 202	Ausgangsspannung DAC	-3.33V±0.3V	-6.66V±0.6V
X70 A10	Tunespannung für ROSC	4V±0.004V	8V±0.010V
P580	Tunespannung für TCXO	1.6V±0.1V	3.3V±0.2V

7.4.4.2 Externe Tunespannung

- Prüfspannungsquelle an Eingang TUNE (Rückwand) anschließen.
- Voltmeter an P580 anschließen.

- Einstellungen: **UTILITIES/REF OSC/SOURCE INT**
  /ADJUSTMENT STATE ON
  /FREQUENCY ADJUSTMENT 2000

- Spannungen von -10V, 0V und +10V einstellen:
▶ Prüfe Spannung an P580 nach Tabelle:

Meßpunkt	Art des Signals	externe Spannung TUNE	Sollwert
P580	Tunespannung für TCXO	-10V 0V +10V	2.18..2.30V 2.40..2.50V 2.60..2.72V

7.4.5 600MHz-Referenzsignal REF600

Der Deckel der Lötseite muß montiert sein. Beachte 7.5!

7.4.5.1 Abgleich Bandpaß 300MHz

- Einstellungen: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 206

▶ Pegel an TPOINT 206 (ZF300) über
(1.) L230 (Messingkern),
(2.) L231 (Ferritkern),
(3.) L234 (Ferritkern),
(4.) L235 (Messingkern) auf Maximum abgleichen.
Dabei reicht ein Abgleich je Trimmer in obiger Reihenfolge aus.

Die Kerne dürfen nicht aus den Spulen herausgedreht werden und verloren gehen (Vorsicht beim Linksdrehen!).

▶ Pegel TPOINT 206 = 0.1V .. 0.4V

7.4.5.2 Abgleich Bandpaß 600MHz

- Spektrumanalysator (Span 0..1GHz, Ref.-Level 10dBm) an Ausgangsbuchse REF600 anschließen.

- Einstellungen: **FREQ 90 MHz**
  UTILITIES/DIAG/TPOINT/STATE ON
  /TEST POINT 210

▶ Pegel an TPOINT 210 (REF600) über
(1.) L265 (Messingkern),
(2.) L266 (Messingkern),
(3.) L267 (Messingkern),
(4.) L268 (Messingkern) auf Maximum abgleichen.
Dabei reicht ein Abgleich je Trimmer in obiger Reihenfolge aus.

Die Kerne dürfen nicht aus den Spulen herausgedreht werden und verloren gehen (Vorsicht beim Linksdrehen!).

7.4.5.3 Abgleich Pegel REF600

- Einstellungen und Meßgeräte wie unter 7.4.5.2.

▶ Mit R254 Pegel auf 11dBm+/-0.2dB abgleichen.
(Baugruppen-Hauptänderungsindex 1..3)
▶ Mit R254 Pegel auf 14dBm+/-0.2dB abgleichen. (Äi. ab 4)

▶ Prüfe Pegel nach Tabelle:

Meßpunkt	Art des Signals	Sollwert	Bemerkung
X77 REF600	600MHz-Referenzfrequenz	11dBm±0.2dB 14dBm±0.2dB	Äi. 1..3 Äi. ab 4
	600MHz abgeschaltet	<-25dBm	Einstellung: FREQ < 93.75MHz Einstellung: FREQ >= 93.75MHz
TPOINT 210	600MHz über Diagnose	0.2V..0.6V	Einstellung: FREQ < 93.75MHz
P255	600MHz-Takt für Step-Teiler	>-21dBm >-24dBm	Äi. 1..4 Äi. ab 5 mit 50Ω-Kabel messen.

7.4.6 LO-STUFE

- Spektrumanalysator (Span 90..110MHz, Ref.-Level 0dBm) an P390/P391 (P391=Masse, Kammer K) anschließen.

▶ Pegel an P390 = -10..-6dBm

7.4.7 STEP-VCO

7.4.7.1 Grobabgleich des Abstimmbereichs

- Spektrumanalysator (Span 90..130MHz, Ref.-Level 10dBm) an Ausgangsbuchse X75 FSTEP anschließen.
- Prüfspannungsquelle an X406/X407 (X407=Masse) anschließen.

- Abstimmspannung auf 18V einstellen.
▶ Mit L406 Step-Frequenz auf 116..118MHz abgleichen.
- Abstimmspannung auf 2V einstellen.
▶ Mit C400 Step-Frequenz auf 102..103.5MHz abgleichen.

▶ Abgleich von L406 und C400 wiederholen bis die genannten Frequenzen eingehalten werden.

7.4.7.2 Abgleich Pegel FSTEP

- VCO-Frequenz auf 110MHz einstellen.

▶ Mit R412 Pegel auf 6dBm+/-0.4dBm abgleichen.

▶ Frequenz von 103 bis 117MHz durchfahren:
Zulässiger Pegelbereich an X75 FSTEP: 5.2dBm .. 6.8dBm
Pegeländerung: < 0.8dB
Harmonische: < -20dBc

7.4.8 RF- und ZF-STUFE

- Weiterhin Prüfspannungsquelle an X406. Step-VCO-Frequenz auf 110MHz einstellen.
- Spektrumanalysator (Span 100..120MHz, Ref.-Level 0dBm) an P460/P461 anschließen.

▶ Mit R441 Pegel auf -26dBm+/-0.2dBm abgleichen.

▶ Prüfe Pegelbedingungen im genannten Frequenzbereich:

Meßpunkt	Art des Signals	Sollwert	Abstimmspannung an X406
P460	RF-Signal 110MHz RF-Signal 103..117MHz	-26dBm±0.2dBm -27..-24.5dBm, Variation <1.2dBm	ca. 10V ca. 2..18V
P360 (TPOINT 214)	ZF-Signal 3..17MHz	-23dBm..-19dBm, Variation <2dBm	ca. 2..18V

7.4.9 Inbetriebnahme der RAMPENSTEUERUNG

- Weiterhin Prüfspannungsquelle an X406. Spannung auf 16V einstellen.
- Voltmeter an P466/465 (P465=Masse) anschließen.
- Brücke über X461-X462 stecken.

▶ Mit R469 Spannung an P466 auf 0V+/-5mV abgleichen.
▶ Spannung an X406 von 2..18V durchfahren:
Spannung an P466 (TPOINT 208) = -25mV..25mV

- ***Danach Brücke über X460-X461 und über X405-X406 stecken.***

7.4.10 Geschlossene STEP-PLL

Der Deckel der Lötseite muß montiert sein. Beachte 7.5!

7.4.10.1 Feinabgleich der RAMPENSTEUERUNG

- Voltmeter an P466/465 (P465=Masse) anschließen.

- Einstellungen: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 208
  FREQ 820 MHz (FSTEP 115MHz)

▶ Mit R469 Spannung an P466 auf 0V+/-4mV abgleichen.

- Einstellungen: **FREQ 943 MHz** (FSTEP 103.06MHz)
  FREQ 895 MHz (FSTEP 110.00MHz)
  FREQ 836 MHz (FSTEP 117.27MHz)

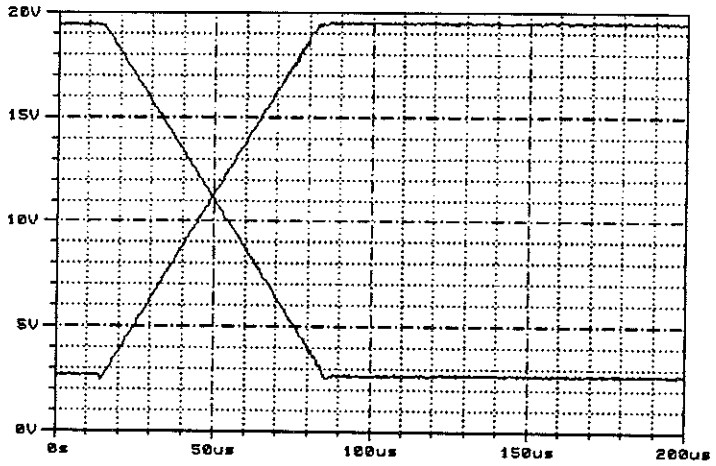
▶ Für alle drei Einstellungen muß gelten:
Spannung an P466 (TPOINT 208) = -10mV .. 10mV

7.4.10.2 Einschwingverhalten der STEP-PLL

• Digitales Speicher-Oszilloskop an X406/X407 (X407=Masse) anschließen.

• Einstellungen **SWEEP/FREQ/START FREQ 836MHz** (FSTEP 117.27MHz)
/STOP FREQ 943MHZ (FSTEP 103.06MHz)
/STEP LIN 107MHZ
/DWELL 20ms
/SPACING LIN
/MODE AUTO

▶ Es sollte sich qualitativ folgendes Oszillogramm ergeben:



x-Achse: Zeit
y-Achse: Abstimmspannung Step-VCO

Im Oszillogramm ist der Spannungsverlauf beider Frequenzsprünge (103->117MHz, 117->103MHz) gleichzeitig dargestellt. Durch den fehlenden Baugruppendeckel liegt das Niveau der Abstimmspannung gegenüber dem abgeglichenen Zustand mit Deckel (103MHz/2V, 117MHz/18V) etwas höher.

▶ Nach dem Abschalten der Rampe müssen alle Einschwingvorgänge spätestens nach 100us - vom Rampenbeginn an gerechnet - abgeklungen sein.

7.4.10.3 Feinabgleich des VCO-Abstimmbereichs

Beide Baugruppendeckel müssen montiert sein. Beachte 7.5!

• Einstellungen: **UTILITIES/DIAG/TPOINT/STATE ON**
/TEST POINT 212

• Einstellung: **FREQ 834 MHz** (FSTEP 117.02MHz)
▶ Mit L406 U(TPOINT 212) auf 18V±0.2V einstellen.
• Einstellung: **FREQ 1149 MHz** (FSTEP 103.05MHz)
▶ Mit C400 U(TPOINT 212) auf 2V±0.2V einstellen.

▶ Abgleich von L406 und C400 wiederholen bis die genannten Bedingungen erfüllt sind.

7.4.11 Mischernebenwellen auf FSTEP

Beide Baugruppendeckel müssen montiert sein. Beachte 7.5!

- Spektrumanalysator an Ausgang FSTEP (X75) anschließen.
- Referenzausgang des Analysators an REF anschließen.

- Einstellungen: **UTILITIES/REF OSC/SOURCE EXT**
  /EXT FREQUENCY 10 MHz

- Die folgenden RF-Frequenzen einstellen und den Nebenwellenabstand bei den angegebenen Trägerabständen messen.

Einstellungen	Step-Teiler	Stepfrequenz (Trägerfrequenz)	Trägerabstand der Mischernebenw.	Absolute Frequenz der rechtsseitigen Mischernw.
FREQ 916 MHz	23.875	112.5654 MHz	523.56 kHz	113.0890 MHz
FREQ 928.8 MHz	21.125	114.2012 MHz	591.72 kHz	114.7929 MHz
FREQ 930.4 MHz	20.875	114.3713 MHz	598.80 kHz	114.9701 MHz
FREQ 833 MHz	17.875	116.7832 MHz	699.30 kHz	117.4825 MHz

▶ Nebenwellenabstand bei den genannten Trägerfrequenzen und Frequenzabständen: < -99dBc.

Um den Nebenwellenabstand im Bereich von -100dBc messen zu können, muß der Analysator auf den Trägerpegel kalibriert, dann um 10dB übersteuert und um den Frequenzabstand der Nebenwelle verstellt werden. Als SPAN bietet sich 10kHz an. Das Rauschniveau muß deutlich unter 100dBc liegen (Evtl. im AVERAGE-Modus messen).

7.4.12 Signalqualität REF600, REF100, REF50

Beide Baugruppendeckel müssen montiert sein. Beachte 7.5!

▶ Prüfe Harmonische und Störlinien nach Tabelle:

Meßpunkt	Spektrale Daten	Sollwert	Bemerkung
X77 REF600	1. Harmonische bei 1.2GHz 100MHz-Störlinien Störung durch Teilerspektrum Trägerabstand 3.0457MHz	<-40dBc <-85dBc <-85dBc	Meßbereich: 0..1GHz Einstellung: **FREQ 77.5MHz** (FSTEP 103.0457MHz) Meßbereich: 595..605MHz
X71 REF100	Signalpegel 100MHz Harmonische Nebenwellenabstand	4..6dBm <-25dBc <-85dBc	insbesondere in 1, 10 und 50MHz-Abstand zum Träger
X72 REF50	Signalpegel 50MHz Harmonische Nebenwellenabstand	9..11.5dBm <-25dBc <-85dBc	insbesondere in 1 und 10MHz-Abstand zum Träger

7.4.13 Diagnosepunkte

Die unterstrichenen Werte in der Tabelle werden mit dem Meßwert von Diagnosepunkt 200 automatisch korrigiert.

TPOINT	Beschreibung	Sollwert	Bemerkung
200	10kOhm Referenzwiderstand	-20mV...20mV	zur Offsetkompensation
201	Regelspannung 100MHz-Quarz-VCO	2...12V	
202	Ausgang D/A-Wandler für Tune-Spannung	-10.1...0.01V	Wert = ADJUSTMENT * (-2.5mV) U(OPTTUNE) = Wert * (-1.2) U(P580) = Wert * (-0.5)
203	1MHz-Referenzsignal für Referenz-PLL	1.8...5.2V	
204	1MHz-Vergleichsfrequenz für Referenz-PLL	2.0...3.0V	
205	Ein-/Ausgang Frequenzstandard (EXTREF)	0.8...3.5	
206	300MHz-Zwischenfrequenz im Versechsfacher	0.1...0.4V	
207	50MHz-Ausgang REF50	0.3...1.3V	Abschluß mit 50Ω.
208	Ausgangsspannung Frequenzdetektor	-40mV...40mV	Step-PLL eingerastet
209	100MHz-Ausgang REF100	0.18...0.60V	Abschluß mit 50Ω.
210	600MHz-Ausgang REF600	0.2...0.6V -20...20mV	RF-Frequenz < 93.75MHz Abschluß mit 50Ω. RF-Frequenz >= 93.75MHz
211	24V-Versorgungsspannung	22.5...25.5V	
212	Regelspannung Step-VCO	1...20V	
213	Ausgangssignal Step-Teiler	0.4...2.5V	
214	Abgemischtes VCO-Signal 3..17MHz	0.10..0.25V	
215	Ausgang Stepfrequenz FSTEP 103..117MHz	0.2...0.6V	Abschluß mit 50Ω.

7.5 Zerlegung und Zusammenbau

Nach Öffnen des Gerätes, Lösen der Baugruppenverriegelung und der HF-Verbindungen, kann die Baugruppe aus ihrem Steckplatz gezogen werden. Beim Entfernen der Schirmdeckel muß zuerst der lötseitige abgeschraubt bzw. gelöst werden. Beim Zusammenbau der Schirmdeckel muß zuerst der bauteilseitige festgeschraubt werden. Wird diese Reihenfolge nicht eingehalten, verziehen sich die Gewindebolzen auf der Baugruppe und beschädigen so die Gewinde der bauteilseitigen Schrauben.

7.6 Digitale Schnittstelle

Baugruppenadresse: 20

Subadresse 0 (Strobe 1): statische Daten

Byte	Bit	Latch/Pin	Name	Funktion
3	7..4	-	-	-
	3..0	D555	TV11..TV8	Tunespannung für TCXO/ROSC (MSB)
2	7..0	D555	TV7..TV0	Tunespannung für TCXO/ROSC (LSB)
1	7	D630 11	R1	Auswahl 0 1 1
	6	12	R0	Frequenzstandard: 0 TCXO 0 ROSC 1 EXTREF
	5	13	-	-
	4	14	ENR0	Buchse EXTREF 0 = Eingang (1..16MHz) 1 = Ausgang (10MHz)
	3	7	NR3	Teiler für Frequenzstandard im Zweierkomplement (1..16) (MSB)
	2	6	NR2	-"- ...
	1	5	NR1	-"- ...
	0	4	NR0	-"- (LSB)
0	7	D620 11	-	-
	6	12	-	-
	5	13	-	-
	4	14	END1	Auswahl 0 1
	3	7	END0	Diagnosemultiplexer: 1 MUX 1 (D650) 0 MUX 2 (D660)
	2	6	DA2	Adressierung des Diagnosepunktes (MSB)
	1	5	DA1	-"- ...
	0	4	DA0	-"- (LSB)

Subadresse 1 (Strobe 2): dynamische Daten

Byte	Bit	Latch/Pin	Name	Funktion
1	7	D340 11	SR600	Steuerbit für REF600: 0 = REF600 ein 1 = REF600 aus
	6	12	-	-
	5	13	-	-
	4	14	-	-
	3	7	SP6	Hauptteiler DIVREF (D310) Bitwert im Teilerfaktor: 2^8
	2	6	SP5	-"- 2^7
	1	5	SP4	-"- 2^6
	0	4	SP3	-"- 2^5
0	7	D330 11	SP2	-"- 2^4
	6	12	SP1	-"- 2^3
	5	13	SP0	-"- 2^2
	4	14	SA1	Hilfsteiler DIVREF (D310) 2^1
	3	7	SA0	-"- 2^0
	2	6	SF2	Bruchteiler DIVREF (D310) 2^{-1}
	1	5	SF1	-"- 2^{-2}
	0	4	SF0	-"- 2^{-3}

7.7 Externe Schnittstellen

Pin	Name	Ein/Ausgang	Herkunft/Ziel	Wertebereich	Signalbeschreibung
X70.A1	EXTTUNE	Eingang	Rückwand TUNE	-10..10V	externe Tunespannung für TCXO (Steilheit typ. 0.1ppm/V)
X70.A10	OPTTUNE	Ausgang	A71,ROSC X22.16	0..12V	Tunespannung für ROSC
X70.A12	SERBUS-CLK	Eingang	A3,CPU X31.40	HCMOS-Pegel	Serbus-Clock
X70.A14 X70.A15	SERBUS-DAT	bidir.	A3,CPU X31.39	HCMOS-Pegel	Serbus-Daten
X70.A16	SERBUS-SYNC	Eingang	A3,CPU X31.37	HCMOS-Pegel	Serbus-Synchronisation
X70.A17	SERBUS-INT	Ausgang	A3,CPU X31.38	HCMOS-Pegel	Serbus-Interrupt
X70.A18	RES-P	Eingang	A3,CPU X31.28	HCMOS-Pegel	Serbus-Reset
X70.A19	DIAG-5V	Ausgang	A3,CPU X31,44	-5V...5V	Diagnose
X70.A22	VA24-P	Eingang	A2,POWS1	23.0...25.0V 4...20mA	Versorgungsspannung analog
X70.A24	VA15-P	Eingang	A2,POWS1	14.85V...15.75V 370...450mA	Versorgungsspannung analog
X70.A26	VA7.5-P	Eingang	A2,POWS1	7.45V...7.95V 600...750mA	Versorgungsspannung analog
X70.A28	VD5-P	Eingang	A2,POWS1	5.15V...5.25V 3...14mA	Versorgungsspannung digital
X70.A30	VA15-N	Eingang	A2,POWS1	-15.75V...-14.85V 120...250mA	Versorgungsspannung analog
X71	REF100	Ausgang	A6,FMOD X65	5±1dBm	Referenz 100MHz
X72	REF50	Ausgang	A8,DSYN X81	9±1dBm	Systemreferenz 50MHz (wird durchgeschleift)
X73	EXTREF	bidir.	Rückwand REF	7±1dBm 0.1..2V_{eff} (-13..13dBm)	Ausgang: Frequenzstandard 10MHz Eingang: ext. Fstd. 1..16MHz (Eingangsimpedanz 2000hm)
X74	OPTREF	Eingang	A71,ROSC X711	0..13dBm	Frequenzstandard ROSC 10MHz
X75	FSTEP	Ausgang	A9,SUM X97	6±1dBm	Stepfrequenz 103..117MHz
X77	REF600	Ausgang	A10,OPU1 X105	10±1dBm 13±1.2dBm	(Äi. 1..3) Referenz 600MHz (Äi. ab 4)

ROHDE&SCHWARZ

SERVICE INSTRUCTIONS SME

Reference/Step-Synthesis

1035.6501.02

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Part list
Coordinates list
Circuit diagram
Layout diagram

7. Checking and Repair of the Module

7.1 Functional Description

The Reference/Step-Synthesis Module consists of the two function units *Reference Frequencies* and *Step Synthesis*.

The function unit *Reference Frequencies* generates the required reference frequencies for the remaining synthesis and modulation boards in the instrument.

The function unit *Step Synthesis* supplies an output signal in the frequency range from 103 to 117MHz, the harmonics of which supply the coarse resolution of the synthesis.

7.1.1 Reference Frequencies

A low-noise 100-MHz crystal oscillator, which is connected to an internal or external frequency standard via a narrow-band PLL, is the nucleus of signal generation. Frequencies of 10, 50, 100 and 600MHz are generated by dividing, direct decoupling and multiplication.

7.1.1.1 Generation of 100MHz

The 100-MHz signal is generated in a conventional crystal oscillator (V5) with series resonant circuit. A second stage V35 amplifies the decoupled signal to approx. 17dBm.

The 100-MHz signal is distributed on the module via four gate stages as buffer amplifiers (V60, V70, V80, V90).

7.1.1.2 REFERENCE-PLL

The 100 MHz are divided by dividers down to 1MHz - the *reference frequency* at the phase detector (D525).

50 MHz are provided for the reference signal REF50 at X72 and 10 MHz for the output of the frequency standard EXTREF at X73.

The *reference signal* for the phase detector D525 is selected via the multiplexer D520 from IREF (TCXO), EREF (external source) and OREF (ROSC) via the control bits R0 and R1.

The subsequent programmable reference divider D510 divides the input frequencies which may vary between 1 and 16MHz to 1MHz.

The output pulses of the digital phase detector pass to a PI controller (N530 with circuitry), which controls the 100-MHz crystal VCO. The control bandwidth of the reference PLL is approx. 10Hz.

7.1.1.3 Frequency Standards and TUNING TCXO/ROSC

The output signal of the TCXO is supplied as TTL signal IREF to the multiplexer D520. The voltage supply to the TCXO is automatically switched off by the gate D535-D via the control bit R1, when the TCXO is not selected as frequency standard.

The frequency of the TCXO is fine-tuned via the D/A converter D555 (resolution: 12 bits) and the subsequent OPs N565 and N562. N562 adds an additional external tuning voltage (input EXTTUNE). OP N550 generates an exact and temperature-stable tuning voltage of 0 to 12 V at the output OPTTUNE for the option ROSC.

The 10-MHz signals of ROSC and external frequency standards pass via the inputs (OPTREF) and X73 (EXTREF) to the multiplexer D520 as TTL signals OREF and EREF.

Thus, the connector EXTREF (socket X73) adopts a bidirectional function. When the relay K1 is closed, it supplies a 10-MHz signal as frequency standard. When K1 is open, EXTREF functions as input for an external frequency standard (1 to 16 MHz).

7.1.1.4 Generation of 600MHz

600 MHz are generated from 100 MHz by means of connecting two differential amplifiers which work as triple amplifier and doubler in series.

Both multiplying stages are followed by steep bandpasses for selection of the wanted signal.

An inductive power divider (L271) distributes the 600-MHz signal onto the base stage V280 to the step synthesis and the emitter stage V285 to the output REF600.

The output signal REF600 can be decreased by approx. -40dB by means of the pin switch V290/V295 via the control bit SR600 (OP N290).

7.1.2 Step Synthesis

In the Step PLL, a VCO 103 to 117 MHz is down-converted with 100 MHz to 3 to 17 MHz and synchronized to the output signal (3 to 17 MHz) of a programmable divider.

7.1.2.1 600-MHz Divider DIVREF

The programmable ECL divider DIVREF (D310) divides the 600-MHz input signal by division factors of 17 to 100 with fractional dividers of min. 1/8.

The resulting output signal of 6 to 34 MHz is divided down to 3 to 17 MHz using the subsequent D flip-flop (D320). It is passed as *reference signal* SDIV for the Step-PLL via a lowpass to the phase detector N470.

7.1.2.2 Mixer and Buffer Amplifier

The *relational frequency ZFVCO* at the phase detector N470 is generated by down-converting the VCO frequency by 100 MHz. Part of the VCO output signal is routed via the RF stage (N430, N440) to the RF input of the mixer N380.

The LO input of N380 is controlled by the emitter stage V380 by 100 MHz and a level of approx. 16 dBm.

The differential band of 3 to 17 MHz at the IF output of N380 is passed as *relational frequency* ZFVCO via the IF stage N350 to the phase detector N470. The input and output lowpasses at N350 provide for the required suppression of the 100 MHz LO frequency and higher mixture products.

7.1.2.3 STEP-PLL CONTROLLER and RAMP CONTROL

The loop filter following N470 consists of a conventional PI controller (N465 with circuitry) and steep-edge lowpasses at the input and output. The control bandwidth of the loop is 350 kHz. The minimum output voltage VSVCO is limited by V475/V473 to approx. 0.5V.

Sudden frequency changes outside the lock-in range are realized using the analog frequency detector with subsequent ramp control. Analog measurement of the reference frequency (SDIV) and the relational frequency (ZFVCO) is carried out parallel with the phase detector and compared by the OpAmp N460. When a difference of approx. 300 kHz is exceeded, a constant current depending on the sign of the difference is impressed on the integration capacity C473 via the comparator N468-A/B and the analog switch D460-A/B. The voltage ramp thus generated at the output of N465 passes the step VCO to the lock-in range of the PLL and is there switched off again.
Settling must have been terminated after max. 100 µs.

7.1.2.4 STEP-VCO 103 to 117 MHz

The step VCO (V408) is a usual FET oscillator designed as drain circuit. V420 amplifies the signal to a specified level and routes it via a resistive power divider to the RF stage in the PLL and to the output stage V435 for the step frequency.

7.1.3 DATA TRANSMISSION and DIAGNOSTICS

The module is controlled via the serial interface SERBUS (D610). The diagnostic multiplexers are addressed via strobe 1, which also sets the operating mode of the reference PLL and the tuning voltage for TCXO/ROSC. The time-critical settings for the divider factor of the step PLL and control of the output REF600 are effected via strobe 2.

All output signals of the module as well as various internal signals for functional check and troubleshooting can be called via the diagnostics function.

The control voltages of the two VCOs - VQ100 and VSVCO - are monitored by window comparators (N680-A..D) with subsequent hysteresis loop (D680-A..D). An interrupt is triggered via IR0 and IR1 as soon as the loops lock out.

7.2 Measuring Equipment and Accessories

- Spectrum analyzer up to 1.2GHz (e.g., FSA).
- 50-Ω cable with test adaptor for RF test points
- Signal generator 1 to 16MHz, frequency accuracy $<10^{-6}$ (e.g., SMG).
- Oscilloscope with 100-MHz bandwidth (e.g., BOL).
- Digital storage oscilloscope for 7.4.10.2 (e.g., BOS).
- Multimeter (DC voltage accuracy ±4mV with 4V input voltage = ±0.1%, e.g., UDL44).
- Test voltage source 0 to 20V (e.g., NGT20).
- Service kit (1039.3520).

7.3 Troubleshooting

The subsequent error descriptions give only a rough survey.

Localization of errors generally requires signal tracing by means of the circuit diagram. Therefore, the operating points of the transistors and the RF levels have been noted down at the respective test points. The RF test points are DC voltage-free (except for TTL levels) and routed to connectors with ground connection via a 475-Ω resistor..

7.3.1 Reference Frequencies

Reference PLL does not lock in	Check reference PLL acc. to 7.4.3.1 Check input signals at the phase detector D525 via TPOINTs 203 and 204. Check the input OPTREF acc. to 7.4.3.3. Check 100-MHz crystal VCO acc. to 7.4.2.
No output of 10-MHz frequency standard	Check output EXTREF acc. to 7.4.3.2
Fine-tuning of TCXO/ROSC not possible	Make sure that the reference PLL works correctly acc. to 7.4.3.1. Check tuning acc. to 7.4.4.
No signal at REF50	Make sure via TPOINT 209 that the 100-MHz crystal VCO works correctly. Check output REF50 (TPOINT 207) acc. to 7.4.12.
No signal at REF100	Check output REF100 (TPOINT 209) acc. to 7.4.12. Check 100-MHz crystal VCO acc. to 7.4.2.
No signal at REF600	Make sure via TPOINT 209 that the 100-MHz crystal VCO works correctly. Check 300-MHz IF via TPOINT 206 and repeat adjustment acc. to 7.4.5.1, if required. Check output REF600 (TPOINT 210) acc. to 7.4.5.3 repeat adjustment acc. to 7.4.5.2 and 7.4.5.3, if required.
Output signals with extreme phase jitter	All output signals of the module have an extreme phase jitter in the AF range: replace 100-MHz crystal B20.

7.3.2 Step Synthesis

Step PLL does not lock in	Check LO signal at the phase detector N470 via TPOINT 213. Check level of the 600-MHz input clock for divider D310 acc. to 7.4.5.3. Check RF signal at the phase detector N470 via TPOINT 214. Check level at the LO input of N380 acc. to 7.4.6. Check step VCO acc. to 7.4.7.2. Check RF level and IF level acc. to 7.4.8. Continue troubleshooting as described under *Noise burst on step frequency*.
Noise burst on step frequency	The step frequency can be set, however, reveals a broad noise spectrum. Check ramp control acc. to 7.4.9. If no error was found with the above mentioned checks, the comparator N468, the analog switch D460, the phase detector N470 or the OP N465 may be faulty. Repeat fine adjustment acc. to 7.4.10.1.
Settling problems with the step frequency	Lock-in procedure of the step PLL requires more than 100µs. Check settling phase of the step PLL acc. to 7.4.10.3. Readjust ramp control acc. to 7.4.10.1.

7.4 Checking and Adjustment

The individual test and adjustment procedures mentioned in this Section have to be carried out in the given order for complete adjustment of the module. Test and adjustment points are also mentioned with troubleshooting, Section 7.3.

The board covers which have to be mounted are noted down for each individual point.

RF frequency setting generally have to be carried out in CW mode (MODULATION OFF).

7.4.1 Data Transmission and Power Consumption

- Settings A: UTILITIES/DIAG/TPOINT/STATE ON
  /TEST POINT 202
  UTILITIES/REF OSC/SOURCE INT
  /ADJUSTMENT STATE ON
  /FREQUENCY ADJUSTMENT 2000

- Settings B: UTILITIES/DIAG/TPOINT/STATE ON
  /TEST POINT 213
  UTILITIES/REF OSC/SOURCE EXT
  /EXT FREQUENCY 7 MHz

▶ Check logic states using the table below:

	Subaddress 0			Subaddress 1	
Setting on the SME	D620 (Byte 0) 4 5 6 7 14	D630 (Byte 1) 4 5 6 7 14 12 11	SME setting FREQ	D330 (Byte 0) 4 5 6 7 14 13 12 11	D340 (Byte 1) 4 5 11
A	L H L H L	L H H L H L L	912 MHz	H H H L L L H H	L L H
B	H L H L H	H L L H L H H	877 MHz	L L L H H H L L	H L H
			88 MHz	L L L L L L L L	L H L

The high levels at D620 (Subaddress 0/Byte 0: Addressing of the diagnostic points) are not applied statically.
Bytes 3 and 4 of subaddress 0 (tuning voltage TCXO/ROSC) are not accessible via the hardware and are therefore checked with setting A via the diagnostic value indicated:
▶ TPOINT 202 = -6..-4V

Checking the power consumption:

- The power consumption of the module can be measured by means of soldering out the input inductors L100 to L104 and connecting an ammeter (rated values can be looked up in Section 7.7).

7.4.2 100-MHz CRYSTAL VCO

- Connect test voltage source with a tuning voltage of 7V to X541/X542 (X542=ground).
- Connect voltmeter to P10.
- Connect spectrum analyzer (span 0 to 500 MHz, ref. level 0dBm) to P40/P41 (P41=ground).

▶ Adjust voltage at P10 to minimum using L5.
▶ Set the voltage at P10 to the same value for both limits of the tuning voltages 1V and 13V such that the change of voltage at P10 becomes minimal across the tuning voltage range 1 to 13V.
▶ Absolute voltage at P10
across 1 to 13V tuning range = 10.2 to 11.2V
Voltage change at P10
across 1 to 13V tuning range < 0.2V

▶ Vary the tuning voltage between -1V and +1V:
The 100-MHz oscillation must not stop!

• Set tuning voltage to 7V

▶ Adjust the 100-MHz signal at P40 to -3dBm+/-0.3dBm.
▶ Check, if level at X71 (REF100) is 4 to 6dBm.

• ***Plug jumper onto X540-X541 after removing the test-voltage source.***

7.4.3 REFERENCE-PLL for 100-MHz CRYSTAL VCO

7.4.3.1 Correct Function of the REFERENCE-PLL

• Settings: **UTILITIES/REF OSC/SOURCE INT**
/ADJUSTMENT STATE ON
/FREQUENCY ADJUSTMENT 2000

▶ Check TPOINT 201 = 2 to 12V

• Connect signal generator with 10MHz/-13dBm to REF (rear panel).

• Settings: **UTILITIES/REF OSC/SOURCE EXT**
/EXT FREQUENCY 10 MHz

• Vary the frequency of the signal generator according to the table below and check the control voltage via TPOINT 201:

Frequency in MHz	Rated value TPOINT 201	Error message on SME
10.000000	5 to 10V	-
10.000100 9.999900	<12V >2V	- -
10.000400 9.999600	>12.5V <-12.5V	Reference Frequency 100MHz VCXO unlocked Reference Frequency 100MHz VCXO unlocked

7.4.3.2 Output EXTREF

• Connect a spectrum analyzer (span 0 to 100 MHz, ref. level 10dBm) to REF (rear panel).

• Settings: **UTILITIES/REF OSC/SOURCE INT**

▶ Level of the 10-MHz frequency standard = 6..10dBm
Harmonics < -15dBc

7.4.3.3 Input OPTREF

This test instruction can only be executed, if the oven-controlled reference oscillator ROSC (option SM-B1) is fitted to the instrument.

- Settings: **UTILITIES/REF OSC/SOURCE INT**
  ADJUSTMENT STATE OFF

▶ Check TPOINT 201 = 2 to 12V

7.4.4 TUNING of TCXO/ROSC

7.4.4.1 Reference Adjustment for D/A Converter

- Connect a highly precise voltmeter to the output OPTTUNE. (motherboard connection: X70 A10). Make sure that there is good ground connection between the voltmeter and the module.

- Settings: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 202
  UTILITIES/REF OSC/SOURCE INT
  /ADJUSTMENT STATE ON
  /FREQUENCY ADJUSTMENT 1333

▶ Adjust V_{OPTUNE} to 4.000V+/-4mV.
▶ Check voltages according to the table below:

Test point	Function of the signal	Rated value for FREQUENCY ADJUSTMENT 1333	Rated value for FREQUENCY ADJUSTMENT 2666
TPOINT 202	Output voltage DAC	-3.33V±0.3V	-6.66V±0.6V
X70 A10	Tuning voltage for ROSC	4V±0.004V	8V±0.010V
P580	Tuning voltage for TCXO	1.6V±0.1V	3.3V±0.2V

7.4.4.2 External Tuning Voltage

- Connect test-voltage source to the input TUNE (rear panel).
- Connect voltmeter to P580.

- Settings: **UTILITIES/REF OSC/SOURCE INT**
  /ADJUSTMENT STATE ON
  /FREQUENCY ADJUSTMENT 2000

- Set voltages of -10V, 0V and +10V:
▶ Check voltage at P580 acc. to the table below:

Test point	Function of the signal	External TUNE voltage	Rated value
P580	Tuning voltage for TCXO	-10V 0V +10V	2.18 to 2.30V 2.40 to 2.50V 2.60 to 2.72V

7.4.5 600-MHz Reference Signal REF600

The cover on the solder side must be fitted. Refer to 7.5!

7.4.5.1 Adjustment of 300-MHz Bandpass

- Settings: UTILITIES/DIAG/TPOINT/STATE ON
  /TEST POINT 206

▶ Adjust level at TPOINT 206 (ZF300) to maximum via
(1.) L230 (brass core),
(2.) L231 (ferrite core),
(3.) L234 (ferrite core),
(4.) L235 (brass core).
One adjustment per trimmer carried out in the above order is sufficient.

The cores must not be winded out of the coils and get lost (caution with turning counterclockwise!)

▶ Level at TPOINT 206 = 0.1V to 0.4V

7.4.5.2 Adjustment of 600-MHz Bandpass

- Connect spectrum analyzer (span 0 to 1GHz, ref. level 10dBm) at output socket REF600.

- Settings: **FREQ 90 MHz**
  UTILITIES/DIAG/TPOINT/STATE ON
  /TEST POINT 210

▶ Adjust level at TPOINT 210 (REF600) to maximum via
(1.) L265 (brass core),
(2.) L266 (brass core),
(3.) L267 (brass core),
(4.) L268 (brass core).
One adjustment per trimmer carried out in the above order is sufficient.

The cores must not be winded out of the coils and get lost (caution with turning counterclockwise!)

7.4.5.3 Adjustment of Level REF600

- Settings and test instruments as under 7.4.5.2.

▶ Adjust level to 11dBm+/-0.2dBm using R254.
(Module Revision 1 to 3)
▶ Adjust level to 14dBm+/-0.2dBm using R254. (Rev. from 4 up)
▶ Check level according to the table below:

Test point	Function of the signal	Rated value	Remark
X77 REF600	600-MHz reference frequency	11dBm±0.2dB 14dBm±0.2dB	Rev. 1 to 3 Rev. from 4 up
	600 MHz switched off	<-25dBm	Setting: FREQ < 93.75MHz Setting: FREQ >= 93.75MHz
TPOINT 210	600 MHz via diagnostics	0.2V to 0.6V	Setting: FREQ < 93.75MHz
P255	600-MHz clock for step divider	>-21dBm >-24dBm	Rev. 1 to 4 Rev. from 5 up Measure using a 50-Ω cable

7.4.6 LO-STAGE

- Connect a spectrum analyzer (span 90 to 110MHz, ref.level 0dBm) to P390/P391 (P391=ground, submodule K).

▶ Level at P390 = -10 to -6dBm

7.4.7 STEP VCO

7.4.7.1 Coarse Adjustment of the Tuning Range

- Connect a spectrum analyzer (span 90 to 130MHz, ref. level 10dBm) to the output socket X75 FSTEP.
- Connect test-voltage source to X406/X407 (X407=ground).

- Set tuning voltage to 18V.
▶ Adjust step frequency to 116 to 118MHz using L406.
- Set tuning voltage to 2V.
▶ Adjust step frequency to 102 to 103.5MHz using C400.

▶ Repeat adjustment using L406 and C400 until the frequencies mentioned above are adhered to.

7.4.7.2 Adjustment of FSTEP Level

- Set VCO frequency to 110MHz.

▶ Adjust level to 6dBm+/-0.4dBm using R412.

▶ Sweep the frequency from 103 to 117MHz:
Permitted level range at X75 FSTEP: 5.2dBm to 6.8dBm
Level deviation: < 0.8dB
Harmonics: < -20dBc

7.4.8 RF and IF STAGES

- Test-voltage source remains at X406. Set frequency of the step VCO to 110MHz.
- Connect a spectrum analyzer (span 100 to 120MHz, ref. level 0dBm) to P460/P461.

▶ Adjust level to -26dBm+/-0.2dBm using R441.

▶ Check level conditions in the above mentioned frequency range:

Test point	Function of the Signal	Rated value	Tuning voltage at X40
P460	RF signal 110MHz RF signal 103 to 117MHz	-26dBm±0.2dBm -27 to -24.5dBm, Variation <1.2dBm	approx. 10V approx. 2 to 18V
P360 (TPOINT 214)	IF signal 3 to 17MHz	-23dBm to -19dBm, Variation <2dBm	approx. 2 to 18V

7.4.9 Putting the RAMP CONTROL into Operation

- Test voltage source remains at X406. Set voltage to 16V.
- Connect voltmeter to P466/465 (P465=ground).
- Plug jumper onto X461-X462.

▶ Adjust voltage at P466 to 0V+/-5mV using R469.
▶ Sweep voltage at X406 from 2 to 18V:
Voltage at P466 (TPOINT 208) = -25mV to 25mV

- ***Subsequently, plug jumper onto X460-X461 and X405-X406.***

7.4.10 Locked STEP PLL

The cover on the solder side must be fitted. Refer to 7.5!

7.4.10.1 Fine Adjustment of the RAMP CONTROL

- Connect voltmeter to P466/465 (P465=ground).

- Settings: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 208
  FREQ 820 MHz (FSTEP 115MHz)

▶ Adjust voltage at P466 to 0V+/-4mV using R469.

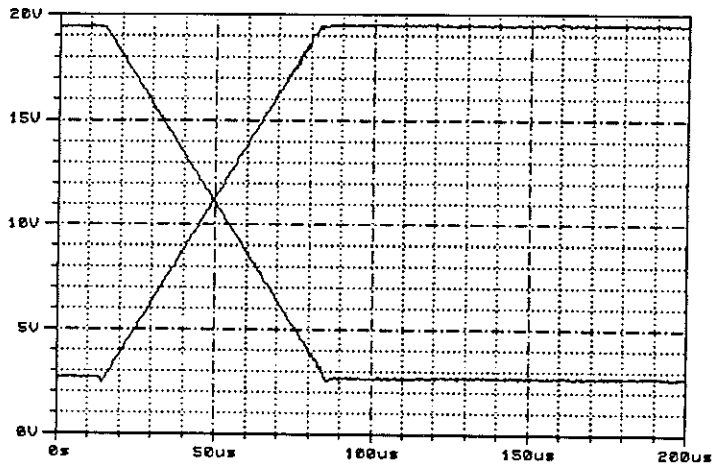
- Settings: **FREQ 943 MHz** (FSTEP 103.06MHz)
  FREQ 895 MHz (FSTEP 110.00MHz)
  FREQ 836 MHz (FSTEP 117.27MHz)

▶ The following applies for all three settings:
Voltage at P466 (TPOINT 208) = -10mV to 10mV

7.4.10.2 Transient behaviour of the STEP PLL

- Connect digital storage oscilloscope to X406/X407 (X407=ground).
- Settings: SWEEP/FREQ/START FREQ 836MHz (FSTEP 117.27MHz)
  /STOP FREQ 943MHZ (FSTEP 103.06MHz)
  /STEP LIN 107MHZ
  /DWELL 20ms
  /SPACING LIN
  /MODE AUTO

▶ The quality of the oscillogram should be as follows:



x-Axis: Time
y-Axis: Tuning Voltage Step VCO

The voltage characteristic of both frequency changes (103 to 117MHz, 117 to 103MHz) is simultaneously shown in the oscillogram. Since the board cover is not fitted, the level of the tuning voltage is slightly higher than the level in the adjusted state with cover fitted (103MHz/2V, 117MHz/18V).

▶ Subsequent to switching off the ramp, all settling procedures must have been finished after max. 100µs from start of the ramp.

7.4.10.3 Fine Adjustment of the VCO Tuning Range

Both board covers must be fitted. Refer to 7.5!

- Settings: UTILITIES/DIAG/TPOINT/STATE ON
  /TEST POINT 212
- Setting: FREQ 834 MHz (FSTEP 117.02MHz)

▶ Set V(TPOINT 212) to 18V±0.2V using L406.

- Setting: FREQ 1149 MHz (FSTEP 103.05MHz)

▶ Set V(TPOINT 212) to 2V±0.2V using C400.

▶ Repeat adjustment using L406 and C400 until the voltages required are obtained.

7.4.11 Spurious Signals of Mixer on FSTEP

Both board covers must be fitted. Refer to 7.5!

- Connect a spectrum analyzer to output FSTEP (X75).
- Connect reference output of the analyzer to REF.

- Settings: **UTILITIES/REF OSC/SOURCE EXT**
  /EXT FREQUENCY 10 MHz

- Set the following RF frequencies and measure the suppression of spurious signals at the given carrier offsets.

Settings	Step divider	Step frequency (Carrier frequency)	Carrier offset of mixer spuriae	Absolute frequency of the right mixer spuriae
FREQ 916 MHz	23.875	112.5654 MHz	523.56 kHz	113.0890 MHz
FREQ 928.8 MHz	21.125	114.2012 MHz	591.72 kHz	114.7929 MHz
FREQ 930.4 MHz	20.875	114.3713 MHz	598.80 kHz	114.9701 MHz
FREQ 833 MHz	17.875	116.7832 MHz	699.30 kHz	117.4825 MHz

▶ Suppression of spurious signals with the above mentioned carrier frequencies and frequency offsets: < -99dBc.

The suppression of spurious signals in the range of -100dBc can be measured by calibrating the analyzer to the carrier level, then overloading it by 10 dB and varying it by the frequency offset of the spurious signal. The span should be 10kHz. The noise level must be far below 100dBc (measure in AVERAGE mode, if required).

7.4.12 Signal Quality REF600, REF100, REF50

Both board covers must be fitted. Refer to 7.5!

▶ Check harmonics and secondary lines according to the table below:

Test point	Spectral Data	Rated value	Remark
X77 REF600	1st harmonic with 1.2GHz 100-MHz secondary lines Interference by divider spectrum Carrier offset 3.0457MHz	<-40dBc <-85dBc <-85dBc	 Measuring range: 0 to 1GHz Setting: FREQ 77.5MHz (FSTEP 103.0457MHz) Measuring range: 595 to 605MHz
X71 REF100	Signal level 100MHz Harmonics Suppression of spurious signals	4 to 6dBm <-25dBc <-85dBc	 particularly with 1, 10 and 50MHz offset
X72 REF50	Signal level 50MHz Harmonics Suppression of spurious signals	9..11.5dBm <-25dBc <-85dBc	 particularly with 1 and 10 MHz offset

7.4.13 Diagnostic Points

The underlined values listed in the table are corrected automatically by means of the measured value of the diagnostic point 200.

TPOINT	Description	Rated value	Remark
200	10-kOhm reference impedance	-20mV to 20mV	for offset compensation
201	Control voltage of 100-MHz crystal VCO	2 to 12V	
202	Output of D/A converter for tuning-voltage	**-10.1 to 0.01V**	Value = ADJUSTMENT * (-2.5mV) V(OPTTUNE) = value * (-1.2) U(P580) = value * (-0.5)
203	1-MHz reference signal for reference PLL	1.8 to 5.2V	
204	1-MHz relational signal for reference PLL	2.0 to 3.0V	
205	Input/output of Frequency standard (EXTREF)	0.8 to 3.5	
206	300-MHz intermediate freq. in the multiplier	0.1 to 0.4V	
207	50-MHz output REF50	0.3 to 1.3V	Terminate by 50Ω.
208	Output voltage of frequency detector	**-40mV to 40mV**	Step PLL locked in
209	100-MHz output REF100	0.18 to 0.60V	Terminate by 50Ω.
210	600-MHz output REF600	0.2 to 0.6V -20mV to 20mV	RF frequency < 93.75MHz Terminate by 50Ω. RF frequency >= 93.75MHz
211	24V-supply voltage	22.5 to 25.5V	
212	Control voltage of step VCO	1 to 20V	
213	Output signal step divider	0.4 to 2.5V	
214	Down-converted VCO signal 3 to 17MHz	**0.10 to 0.25V**	
215	Output step frequency FSTEP 103 to 117MHz	0.2 to 0.6V	Terminate by 50Ω.

7.5 Removal and Assembly

Subsequent to opening the instrument, unlocking the boards and disconnecting the RF connections, the board can be taken out of its slot. Make sure, when removing the screening cover that the cover on the solder side is unscrewed/removed first. With assembly, the screening cover on the component side is the first to be fixed by screws. If this order is not adhered to, the threaded bolts on the board shrink and thus damage the threads of the screws on the component side.

7.6 Digital Interface

Board address: 20

Subaddress 0 (Strobe 1): static data

Byte	Bit	Latch/Pin	Name	Function
3	7 to 4	-	-	-
	3 to 0	D555	TV11 to TV8	Tuning voltage for TCXO/ROSC (MSB)
2	7 to 0	D555	TV7 to TV0	Tuning voltage for TCXO/ROSC (LSB)
1	7	D630 11	R1	Selection of 0 1 1
	6	12	R0	frequency standard: 0 TCXO 0 ROSC 1 EXTREF
	5	13	-	-
	4	14	ENR0	Socket EXTREF 0 = input (1 to 16MHz) 1 = output (10MHz)
	3	7	NR3	Divider for frequency standard (MSB)
	2	6	NR2	in two's complement (1 to 16) ...
	1	5	NR1	-"- ...
	0	4	NR0	-"- (LSB)
0	7	D620 11	-	-
	6	12	-	-
	5	13	-	-
	4	14	END1	Selection 0 1
	3	7	END0	Diagnostic multiplexer: 1 MUX 1 (D650) 0 MUX 2 (D660)
	2	6	DA2	Addressing of the diagnostic point (MSB)
	1	5	DA1	-"- ...
	0	4	DA0	-"- (LSB)

Subaddress 1 (Strobe 2): dynamic data

Byte	Bit	Latch/Pin	Name	Function
1	7	D340 11	SR600	Control bit for REF600: 0 = REF600 on 1 = REF600 off
	6	12	-	-
	5	13	-	-
	4	14	-	-
	3	7	SP6	Main divider DIVREF (D310) Bit value in divider factor: 2^8
	2	6	SP5	-"- 2^7
	1	5	SP4	-"- 2^6
	0	4	SP3	-"- 2^5
0	7	D330 11	SP2	-"- 2^4
	6	12	SP1	-"- 2^3
	5	13	SP0	-"- 2^2
	4	14	SA1	Auxiliary divider DIVREF (D310) 2^1
	3	7	SA0	-"- 2^0
	2	6	SF2	Fractional divider DIVREF (D310) 2^{-1}
	1	5	SF1	-"- 2^{-2}
	0	4	SF0	-"- 2^{-3}

7.7 External Interfaces

Pin	Name	Input/Output	Origin/Destination	Specified range	Signal description
X70.A1	EXTTUNE	Input	Rear panel TUNE	-10 to 10V	external tuning voltage for TCXO (steepness typ. 0.1ppm/V)
X70.A10	OPTTUNE	Output	A71,ROSC X22.16	0..12V	Tuning voltage for ROSC
X70.A12	SERBUS-CLK	Input	A3,CPU X31.40	HCMOS level	Serbus clock
X70.A14 X70.A15	SERBUS-DAT	bidir.	A3,CPU X31.39	HCMOS level	Serbus data
X70.A16	SERBUS-SYNC	Input	A3,CPU X31.37	HCMOS level	Serbus synchronization
X70.A17	SERBUS-INT	Output	A3,CPU X31.38	HCMOS level	Serbus interrupt
X70.A18	RES-P	Input	A3,CPU X31.28	HCMOS level	Serbus reset
X70.A19	DIAG-5V	Output	A3,CPU X31,44	-5V to 5V	Diagnostics
X70.A22	VA24-P	Input	A2,POWS1	23.0 to 25.0V 4 to 20mA	Supply voltage, analog
X70.A24	VA15-P	Input	A2,POWS1	14.85V to 15.75V 370 to 450mA	Supply voltage, analog
X70.A26	VA7.5-P	Input	A2,POWS1	7.45V to 7.95V 600 to 750mA	Supply voltage, analog
X70.A28	VD5-P	Input	A2,POWS1	5.15V to 5.25V 3 to 14mA	Supply voltage, digital
X70.A30	VA15-N	Input	A2,POWS1	-15.75V to -14.85V 120 to 250mA	Supply voltage, analog
X71	REF100	Output	A6,FMOD X65	5±1dBm	100-MHz reference
X72	REF50	Output	A8,DSYN X81	9±1dBm	50-MHz system reference (connected through)
X73	EXTREF	bidir.	Rear panel REF	7±1dBm 0.1 to 2V_{rms} (-13 to 13dBm)	Output: Frequency standard 10MHz Input: ext. Fstd. 1 to 16MHz (Input impedance 200 Ohms)
X74	OPTREF	Input	A71,ROSC X711	0 to 13dBm	Frequency standard ROSC 10MHz
X75	FSTEP	Output	A9,SUM X97	6±1dBm	Step frequency 103 to 117MHz
X77	REF600	Output	A10,OPU1 X105	10±1dBm 13±1.2dBm	(Rev. 1 to 3) 600-MHz reference (Rev. from 4 up)

ROHDE&SCHWARZ

Schaltteillisten
numerisch geordnet
Part lists
in numerical order
Listes des pièces détachées
par numéros de référence

(R 29500 Bl. 3)
095.1000 Bl. 3

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
B20	EQ 100,000MHZ5.0 LF08 QUARTZ CRYSTAL UNIT	1036.4225.00	KVG	EQ0803.0680 SELEKT.	
C1	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C3	CE 10UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7427.00	PHILIPS_CO	2222 116 11109	
C4	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C7	CC 15PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6C0G 150F 50PT	
C8	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C10	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C15	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C20	CC 22PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8396.00	MURATA	GRM42-6C0G 220F 50PT	
C21	CC 180PF+-1%50V NPO 1206 CHIP CAPACITOR	CC 0099.8844.00	PHILIPS_CO	2238 863 18181	
C22	CC 180PF+-1%50V NPO 1206 CHIP CAPACITOR	CC 0099.8844.00	PHILIPS_CO	2238 863 18181	
C23	CC 390PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8880.00	PHILIPS_CO	2238 863 18391	
C30	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C32	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	PHILIPS_CO	2238 863 18471	
C33	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C38	CC 180PF+-1%50V NPO 1206 CHIP CAPACITOR	CC 0099.8844.00	PHILIPS_CO	2238 863 18181	
C42	CC 12PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8744.00	MURATA	GRM42-6C0G 120 F50PT	
C51	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C52	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C54	CC 18PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8767.00	MURATA	GRM42-6C0G 180F 50PT	
C55	CC 68PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8815.00	MURATA	GRM42-6C0G 680F 50PT	
C56	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C65	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C67	CC 18PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8767.00	MURATA	GRM42-6C0G 180F 50PT	
C68	CC 68PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8815.00	MURATA	GRM42-6C0G 680F 50PT	
C69	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C70	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C71	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C72	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C75	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C77	CC 18PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8767.00	MURATA	GRM42-6C0G 180F 50PT	
C78	CC 39PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8796.00	MURATA	GRM42-6C0G 390F 50PT	
C79	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C82	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C85	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C87	CC 18PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8767.00	MURATA	GRM42-6C0G 180F 50PT	
C88	CC 68PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8815.00	MURATA	GRM42-6C0G 680F 50PT	
C92	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C98	CC 100NF+-10%50V X7R 1206	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
..100	CERAMIC CHIP CAPACITOR				
C101	CC 470NF+-10%50V X7R 1812	CC 0007.7498.00	AVX	1812 5C 474KA TOOF	
	CERAMIC CHIP CAPACITOR				
C103	CE 220UF+-20%35V RM5	CE 0008.7904.00	PANASONIC	ECA 1 VFG 221 B	
..105	ELECTROLYTIC CAPACITOR				
C106	CE 100UF+-20%63V RM5	CE 0008.7879.00	PANASONIC	ECA 1 JFG 101 B	
	ELECTROLYTIC CAPACITOR				
C107	CE 100UF+-20%25V RM2.5	CE 0008.7891.00	PANASONIC	ECA-1EFG101I	
	ELECTROLYTIC CAPACITOR				
C108	CE 100UF+-20%25V RM2.5	CE 0008.7891.00	PANASONIC	ECA-1EFG101I	
	ELECTROLYTIC CAPACITOR				
C158	CC 100NF+-10%50V X7R 1206	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
	CERAMIC CHIP CAPACITOR				
C200	CC 1NF+-1% 50V NPO 1206	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
	SMD CERAMIC CAPACITOR				
C204	CC 100PF+-1%50V NPO 1206	CC 0099.8415.00	MURATA	GRM42-6COG 101F 50PT	
	CERAMIC CHIP CAPACITOR				
C206	CC 1NF+-1% 50V NPO 1206	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
	SMD CERAMIC CAPACITOR				
C207	CC 1NF+-1% 50V NPO 1206	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
	SMD CERAMIC CAPACITOR				
C211	CE 100UF+-20%25V RM2.5	CE 0008.7891.00	PANASONIC	ECA-1EFG101I	
	ELECTROLYTIC CAPACITOR				
C212	CE 100UF+-20%25V RM2.5	CE 0008.7891.00	PANASONIC	ECA-1EFG101I	
	ELECTROLYTIC CAPACITOR				
C218	CC 100NF+-10%50V X7R 1206	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
	CERAMIC CHIP CAPACITOR				
C219	CC 100NF+-10%50V X7R 1206	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
	CERAMIC CHIP CAPACITOR				
C221	CC 8,2PF+-0,25 50VNP01206	CC 0007.8242.00	MURATA	GRM42-6COG 8R2 C50PT	
	CERAMIC CHIP CAPACITOR				
C222	CC 12PF+-1% 50V NPO 1206	CC 0099.8744.00	MURATA	GRM42-6COG 120 F50PT	
	CERAMIC CHIP CAPACITOR				
C223	CC 33PF+-1%50V NPO 1206	CC 0099.8780.00	MURATA	GRM42-6COG 330F 50PT	
	CERAMIC CHIP CAPACITOR				
C229	CC 4,7PF+-0,25 50VNP01206	CC 0007.8213.00	MURATA	GRM42-6COG 4R7C 50PT	
	CERAMIC CHIP CAPACITOR				
C230	CC 18PF+-1% 50V NPO 1206	CC 0099.8767.00	MURATA	GRM42-6COG 180F 50PT	
	CERAMIC CHIP CAPACITOR				
C231	CC 18PF+-1% 50V NPO 1206	CC 0099.8767.00	MURATA	GRM42-6COG 180F 50PT	
	CERAMIC CHIP CAPACITOR				
C232	CC 150PF+-1%50V NPO 1206	CC 0099.8509.00	PHILIPS_CO	2238 863 18151	
	CERAMIC CHIP CAPACITOR				
C233	CC 56PF+-1%50V NPO 1206	CC 0099.8809.00	MURATA	GRM42-6COG 560F 50PT	
	CERAMIC CHIP CAPACITOR				
C234	CC 18PF+-1% 50V NPO 1206	CC 0099.8767.00	MURATA	GRM42-6COG 180F 50PT	
	CERAMIC CHIP CAPACITOR				
C235	CC 18PF+-1% 50V NPO 1206	CC 0099.8767.00	MURATA	GRM42-6COG 180F 50PT	
	CERAMIC CHIP CAPACITOR				
C236	CC 100NF+-10%50V X7R 1206	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
	CERAMIC CHIP CAPACITOR				
C240	CC 1NF+-1% 50V NPO 1206	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
	SMD CERAMIC CAPACITOR				
C241	CC 10NF+-10%50V X7R 1206	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
	CERAMIC CHIP CAPACITOR				
C250	CC 3,3PF+-0,25 50VNP01206	CC 0007.8194.00	MURATA	GRM42-6COG 3R3 C50PT	
	CERAMIC CHIP CAPACITOR				
C251	CC 39PF+-1%50V NPO 1206	CC 0099.8796.00	MURATA	GRM42-6COG 390F 50PT	
	CERAMIC CHIP CAPACITOR				
C252	CC 1NF+-1% 50V NPO 1206	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
	SMD CERAMIC CAPACITOR				
C253	CC 100NF+-10%50V X7R 1206	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
..256	CERAMIC CHIP CAPACITOR				
C257	CC 1NF+-1% 50V NPO 1206	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
	SMD CERAMIC CAPACITOR				
C258	CC 1NF+-1% 50V NPO 1206	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
	SMD CERAMIC CAPACITOR				
C260	CC 100NF+-10%50V X7R 1206	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
	CERAMIC CHIP CAPACITOR				
C261	CC 100NF+-10%50V X7R 1206	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
	CERAMIC CHIP CAPACITOR				
C262	CC 100PF+-1%50V NPO 1206	CC 0099.8415.00	MURATA	GRM42-6COG 101F 50PT	
	CERAMIC CHIP CAPACITOR				
C263	CC 100NF+-10%50V X7R 1206	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
	CERAMIC CHIP CAPACITOR				
C264	CC 1,5PF+-0,25 50VNP01206	CC 0007.8159.00	MURATA	GRM42-6COG 1R5 C50PT	
	CERAMIC CHIP CAPACITOR				

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C265	CC 2,7PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8188.00	MURATA	GRM42-6C0G 2R7 C50PT	
C266	CC 3,9PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8207.00	MURATA	GRM42-6C0G 3R9 C50PT	
C267	CC 33PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8780.00	MURATA	GRM42-6C0G 330F 50PT	
C268	CC 5,6PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8220.00	MURATA	GRM42-6C0G 5R6 C50PT	
C269	CC 10PF+-0,25 50VNP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C270	CC 3,9PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8207.00	MURATA	GRM42-6C0G 3R9 C50PT	
C271	CC 1,8PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8165.00	MURATA	GRM42-6C0G 1R8 C50PT	
C272 ..274	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C276	CC 6,8PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8236.00	MURATA	GRM42-6C0G 6R8 C50PT	
C277	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C278	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C279	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C280	CC 2,7PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8188.00	MURATA	GRM42-6C0G 2R7 C50PT	
C281	CC 3,3PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8194.00	MURATA	GRM42-6C0G 3R3 C50PT	
C282	CE 1UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7391.00	PHILIPS_CO	2222 116 11108	
C283	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C284	CC 1,5PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8159.00	MURATA	GRM42-6C0G 1R5 C50PT	
C285	CC 4,7PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8213.00	MURATA	GRM42-6C0G 4R7C 50PT	
C286	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C287	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C288	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C289	CC 10PF+-0,25 50VNP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C290	CC 1NF+-1% 50V NP0 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C291	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C292	CC 27PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8409.00	MURATA	GRM42-6C0G 270F 50PT	
C293	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C294	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C295	CC 1PF+-0,25 50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8667.00	PHILIPS_CO	2238 863 15108	
C296 ..298	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C299	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C311	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C312	CC 10PF+-0,25 50VNP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C313	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C315	CC 150PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8509.00	PHILIPS_CO	2238 863 18151	
C319	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C320	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C321	CC 1NF+-1% 50V NP0 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C322	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C323	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C324	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C325	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C326	CC 82PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8821.00	MURATA	GRM42-6C0G 820F 50PT	
C327	CE 22UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7533.00	PHILIPS_CO	2222 116 11229	
C328 ..331	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C350	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C351	CC 8,2PF+-0,25 50VNPO1206 CERAMIC CHIP CAPACITOR	CC 0007.8242.00	MURATA	GRM42-6C0G 8R2 C50PT	
C352	CC 68PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8815.00	MURATA	GRM42-6C0G 680F 50PT	
C353	CC 68PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8815.00	MURATA	GRM42-6C0G 680F 50PT	
C354	CC 3,3NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8909.00	PHILIPS_CO	2238 581 16621	
C355	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C356	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C357	CC 15PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6C0G 150F 50PT	
C358	CC 8,2PF+-0,25 50VNPO1206 CERAMIC CHIP CAPACITOR	CC 0007.8242.00	MURATA	GRM42-6C0G 8R2 C50PT	
C359	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C360	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C361	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C362	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C363	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C366	CC 15PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6C0G 150F 50PT	
C367	CC 180PF+-1%50V NPO 1206 CHIP CAPACITOR	CC 0099.8844.00	PHILIPS_CO	2238 863 18181	
C368	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C380	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C381 ..383	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C384	CE 2,2UF +-10% 25V 6032 TANTALUM SMD-CAPACITOR	CE 0007.7223.00	KEMET	T491 C225 K 025 AS	
C385	CC 22PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8396.00	MURATA	GRM42-6C0G 220F 50PT	
C386	CC 27PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8409.00	MURATA	GRM42-6C0G 270F 50PT	
C387	CC 47PF+-1%50V C0G 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F 50PT	
C388	CC 33PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8780.00	MURATA	GRM42-6C0G 330F 50PT	
C400	CT 9PF 250V LUFTTR.KONZ. AIR TRIMMER	CT 0564.6885.00	TEKELEC	AT 5276	
C401	CC 10PF+-2% 500V PELL CERAMIC CAPACITOR	CC 0580.9510.00	TEKELEC	501 CHB 100G WL	
C402	CC 4,7PF+-0,1PF500V PELL CAPACITOR	CC 0580.9540.00	TEKELEC	501 CHB 4R7B WL	
C404	CC 27PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8409.00	MURATA	GRM42-6C0G 270F 50PT	
C406	CC 22PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8396.00	MURATA	GRM42-6C0G 220F 50PT	
C408	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C410	CE 4,7UF+-10% 10V 3528 TANTALUM SMD-CAPACITOR	CE 0007.7275.00	KEMET	T491 B 475 K 010 AS	
C411	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C413	CC 82PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8821.00	MURATA	GRM42-6C0G 820F 50PT	
C414	CC 33PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8780.00	MURATA	GRM42-6C0G 330F 50PT	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C417	CC 18PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8767.00	MURATA	GRM42-6COG 180F 50PT	
C418	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C420	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C421	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C423	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C424	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6COG 100 C50PT	
C431	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	PHILIPS_CO	2238 863 18471	
C432	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	PHILIPS_CO	2238 863 18471	
C434	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6COG 100 C50PT	
C435	CC 39PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8796.00	MURATA	GRM42-6COG 390F 50PT	
C436	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C437	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C439	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C440	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	PHILIPS_CO	2238 863 18471	
C441	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	PHILIPS_CO	2238 863 18471	
C443	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C445	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C447	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C448	CC 3,9PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8207.00	MURATA	GRM42-6COG 3R9 C50PT	
C449	CC 12PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8744.00	MURATA	GRM42-6COG 120 F50PT	
C450	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	PHILIPS_CO	2238 863 18471	
C453	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6COG 100 C50PT	
C454	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C455	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C457	CC 220PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	PHILIPS_CO	2238 863 18221	
C458	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C459	CC 6,8PF+-0,1PF500V PELL CERAMIC CAPACITOR	CC 0007.8565.00	TEKELEC	501 CHB 6R8 BWL	
C460	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C461	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C462	CC 1,8NF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0007.7423.00	PHILIPS_CO	2222 863 18182	
C463	CC 6,8PF+-0,1PF500V PELL CERAMIC CAPACITOR	CC 0007.8565.00	TEKELEC	501 CHB 6R8 BWL	
C464	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6COG 101F 50PT	
C465	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C467	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C468	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6COG 101F 50PT	
C469	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C470	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C471	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C472	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6COG 101F 50PT	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C473	CK 68NF+-5%63V RD2,5H7MKT CAPACITOR	CK 0099.2923.00	ROEDERSTEI	MKT 1826-368-06-4	
C474	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	PHILIPS_CO	2222 581 16618	
C475	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C476	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C477	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	PHILIPS_CO	2222 581 16618	
C478	CE 10UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7427.00	PHILIPS_CO	2222 116 11109	
C479	CE 10UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7427.00	PHILIPS_CO	2222 116 11109	
C480	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C481	CC 220PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	PHILIPS_CO	2238 863 18221	
C482	CC 22PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8396.00	MURATA	GRM42-6C0G 220F 50PT	
C483 ..485	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C486	CC 4,7PF+-0,25 50VNPO1206 CERAMIC CHIP CAPACITOR	CC 0007.8213.00	MURATA	GRM42-6C0G 4R7C 50PT	
C487	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C488	CC 270PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8867.00	PHILIPS_CO	2222 863 18271	
C489	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C491	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C492	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C500	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C501	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C510	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C511	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C513	CC 39PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8796.00	MURATA	GRM42-6C0G 390F 50PT	
C514	CC 15PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6C0G 150F 50PT	
C515	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C516	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C517	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C519	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C524	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C525	CC 180PF+-1%50V NPO 1206 CHIP CAPACITOR	CC 0099.8844.00	PHILIPS_CO	2238 863 18181	
C526	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C530	CC 680PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0007.7375.00	PHILIPS_CO	2222 863 18681	
C531	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C532	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C535	CC 680PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0007.7375.00	PHILIPS_CO	2222 863 18681	
C536	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C537	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C538	CE 1UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7391.00	PHILIPS_CO	2222 116 11108	
C539	CE 1UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7391.00	PHILIPS_CO	2222 116 11108	
C540	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C541	CE 2,2UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7404.00	PHILIPS_CO	2222 116 11228	
C542	CK 2,2UF+-5% 50V RD7,2H13 CAPACITOR	CK 0350.5944.00	ROE	MKT1826-522/054	
C543	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C544 ..548	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C552	CE 1UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7391.00	PHILIPS_CO	2222 116 11108	
C555 ..557	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C558	CC 15PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6C0G 150F 50PT	
C560	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C561	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C562	CK 2,2UF+-5% 50V RD7,2H13 CAPACITOR	CK 0350.5944.00	ROE	MKT1826-522/054	
C563	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C564	CE 2,2UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7404.00	PHILIPS_CO	2222 116 11228	
C565	CE 10UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7427.00	PHILIPS_CO	2222 116 11109	
C566	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C567	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C570	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C574	CC 680PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0007.7375.00	PHILIPS_CO	2222 863 18681	
C575	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C576	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C577	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C578	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C579	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C580	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C582	CE 1UF +-10% 25V EIA3528 TANTALUM SMD-CAPACITOR	CE 0007.7217.00	KEMET	T 491 B105 K025 AS	
C595	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C609	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C610	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C620	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C621	CE 22UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7533.00	PHILIPS_CO	2222 116 11229	
C650	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C660	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C680	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C685	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C688	CE 22UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7533.00	PHILIPS_CO	2222 116 11229	
C690	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C691	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C695	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C697	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C698	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	PHILIPS_CO	2238 863 18471	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C900	CE 22UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7533.00	PHILIPS_CO	2222 116 11229	
C901	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
D31	BG SH100E3008 DIVREF ASIC IC GATEARRAY	1039.1240.00	SIEMENS	SH100E3008	
D95	BL 74AC74SC 2XD-FLIPFL DUAL D-TYPE FLIPF	BL 0820.3602.00	NSC	74AC74(SC)	
D320	BL 74ACT74SC 2XRSFLIPFLOP IC DUAL D-FLIPFLOP	BL 0008.0680.00	TOSHIBA	(TC74)ACT74(FN)	
D330	BL PC74HC4094T 8ST.BUSREG BUS REGISTER	BL 0804.0977.00	PHILIPS_SE	(PC)74HC4094(D/T)	
D340	BL PC74HC4094T 8ST.BUSREG BUS REGISTER	BL 0804.0977.00	PHILIPS_SE	(PC)74HC4094(D/T)	
D430	BL 74AC00SC 4X2IN NAND QUAD NAND GATTER	BL 0820.3477.00	NSC	74AC00(SC)	
D445	BL 74AC00SC 4X2IN NAND QUAD NAND GATTER	BL 0820.3477.00	NSC	74AC00(SC)	
D460	BS DG441DY 4XANALOGSCH IC QUAD ANALOG SWITCH	1036.4454.00	SILICONIX	DG441DY	
D500	BL 74AC161SC 4B.BIN CNT 4BIT SYNC.PRES.BIN COUNT.	BL 0820.3519.00	NSC	74AC161(SC)	
D505	BL 74AC00SC 4X2IN NAND QUAD NAND GATTER	BL 0820.3477.00	NSC	74AC00(SC)	
D510	BL PC74HC161T 4B.BIN.CNT BINARY COUNTER	BL 0804.0983.00	PHILIPS_SE	(PC)74HC161(D/T)	
D515	BL PC74HC390T 2XDEC.CNT DUAL DECADE COUNTER	BL 0007.5043.00	PHILIPS_SE	(PC)74HC390(D/T)	
D520	BL PC74HC153T 2X4IN.MUX DUAL MULTIPLEXER	BL 0007.5008.00	PHILIPS_SE	(PC)74HC153(D/T)	
D525	BL PC74HC74T 2XD-FF DUAL D-TYPE FLIPFLOP	BL 0007.3505.00	PHILIPS_SE	(PC)74HC74D(T)	
D535	BL PC74HC00T 4X2IN.NAND QUAD 2INPUT NAND GATE	BL 0007.3463.00	PHILIPS_SE	(PC)74HC00D(T)	
D550	BL PC74HC00T 4X2IN.NAND QUAD 2INPUT NAND GATE	BL 0007.3463.00	PHILIPS_SE	(PC)74HC00D(T)	
D555	BJ DAC8143 1X12B-DAC 12B SERIAL D/A-CONVERTER	1012.9510.00	PMI	DAC8143FS	
D600	BL PC74HCT125T 4XBUFF. 3S QUAD LINE DRIVER	BL 0007.5395.00	PHILIPS_SE	(PC)74HCT125(D/T)	
D610	BG TH3032.1C SERBUSD ASIC IC GATE ARRAY	0008.6143.00	THESYS	TH3032.1C	
D620	BL PC74HC4094T 8ST.BUSREG BUS REGISTER	BL 0804.0977.00	PHILIPS_SE	(PC)74HC4094(D/T)	
D630	BL PC74HC4094T 8ST.BUSREG BUS REGISTER	BL 0804.0977.00	PHILIPS_SE	(PC)74HC4094(D/T)	
D640	BL PC74HC14T 6XINV.SCHM HEXINV.SCHMITT-TRIGGER	BL 0007.4018.00	PHILIPS_SE	(PC)74HC14(D/T)	
D650	BL PC74HC4051T 8CH.AN.MUX 8CHANNEL ANAL.MULTIPLEXER	BL 0007.3592.00	PHILIPS_SE	(PC)74HC4051(D/T)	
D660	BL PC74HC4051T 8CH.AN.MUX 8CHANNEL ANAL.MULTIPLEXER	BL 0007.3592.00	PHILIPS_SE	(PC)74HC4051(D/T)	
D680	BL PC74HC132T 4XSCHMITT T QUAD 2-INP NAND SCHMITT	BL 0520.7811.00	PHILIPS_SE	(PC)74HC132(D/T)	
K1	SR 5V 500 OHM 1X1 SIL RELAY 5V SIL	1012.9604.00	HAMLIN	HE3621A0500	
L1	LD 10 UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L2	LD 4,7UH 10% 0,15A 1210 SMD-INDUCTOR	LD 0008.1687.00	SIEMENS	B82422-A1472-J(K)100	
L3	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L5	LD 112NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9542.00	COMPONEX	E 558 CN-10 0024	
L15	LD 0,22UH10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L20	LD 287NH 8,5W CM18P FE-K COIL+CORE	0613.6289.00	TOKO	E521HN080023	
L30	LD 0,82UH10%0,850HM0,420A CHOKE	LD 0067.2857.00	DALE	IM2	
L33	LD 10 UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L35	LD 170NH 5,5W CM15P FE-K COIL+CORE	0801.4859.00	TOKO	E521 HN-050023	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
L50	LD 2,70UH10%0,550HM0,355A CHOKE	LD 0067.2911.00	DALE	IM2	
L55	LD 0,15UH10%0,100HM1,230A CHOKE	LD 0067.2763.00	DALE	IM2	
L65	LD 0,15UH10%0,100HM1,230A CHOKE	LD 0067.2763.00	DALE	IM2	
L73	LD 2,70UH10%0,550HM0,355A CHOKE	LD 0067.2911.00	DALE	IM2	
L75	LD 0,15UH10%0,100HM1,230A CHOKE	LD 0067.2763.00	DALE	IM2	
L85	LD 0,15UH10%0,100HM1,230A CHOKE	LD 0067.2763.00	DALE	IM2	
L96	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L97	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L98	LD 1UH 10% 0,38A 1210 SMD-INDUCTOR	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L100	LD 3,3UH BEI 1,63A0,160HM CHOKE	LD 0026.4061.00	DALE	IM 6	
L101	LD 15UH 10% 1R2 0,46A CHOKE	LD 0026.4149.00	DALE	IM 6	
L102	LD 4,70UH10%1,200HM0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L103	LD 4,7UH BEI 1,35A0,240HM CHOKE	LD 0026.4084.00	DALE	IM 6	
L104	LD 4,70UH10%1,200HM0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L107	LD 1,20UH10%0,180HM0,620A CHOKE	LD 0067.2870.00	DALE	IM2	
L108	LD 4,70UH10%1,200HM0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L109	LD 4,7UH BEI 1,35A0,240HM CHOKE	LD 0026.4084.00	DALE	IM 6	
L110	LD 4,70UH10%1,200HM0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L206	LD 38 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9442.00	COMPONEX	E 558 AN-10 0041	
L209	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L210	LD 10UH BEI 0,81A 0,660HM CHOKE	LD 0026.4126.00	DALE	IM 6	
L211	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L215	LD 2,20UH10%0,400HM0,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L216	LD 10 UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L230	LD 29 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9420.00	COMPONEX	E 558 AN-10 0040	
L231	LD 32 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L234	LD 32 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L235	LD 29 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9420.00	COMPONEX	E 558 AN-10 0040	
L251	LD 91 NH SMD Q5,1H5 0-K SMD-VHF-COIL	0008.9520.00	COMPONEX	E 558 HN-10 0100	
L253	LD 0,56UH10%0,500HM0,550A CHOKE	LD 0067.2834.00	DALE	IM2	
L256	LD 0,56UH10%0,500HM0,550A CHOKE	LD 0067.2834.00	DALE	IM2	
L260	LD 10 UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L261	LD 1UH 10% 0,38A 1210 SMD-INDUCTOR	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L262	LD 220NH 10% 0,28A 1210 SMD-INDUCTOR	LD 0520.7911.00	SIEMENS	B82422-A3221-J(K)100	
L265 ..268	LD 29 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9420.00	COMPONEX	E 558 AN-10 0040	
L271	LU HF-UEBERTR. 50-1700MHZ RF TRANSFORMER	1036.4590.00	COMPONEX	616DB-1017	
L275	LD 32 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L277	LD 56 NH SMD Q5,1H5 0-K SMD-VHF-COIL	0008.9471.00	COMPONEX	E 558 GN-10 0028	
L278	LD 0,27UH10%0,160HM0,975A CHOKE	LD 0067.2792.00	DALE	IM2	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
L280	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L281	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L282	LD 32 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L285	LD 38 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9442.00	COMPONEX	E 558 AN-10 0041	
L286	LD 56 NH SMD Q5,1H5 0-K SMD-VHF-COIL	0008.9471.00	COMPONEX	E 558 GN-10 0028	
L288	LD 0,47UH10%0,350HM0,660A CHOKE	LD 0067.2828.00	DALE	IM2	
L290	LD 32 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L291	LD 1UH 10% 0,38A 1210 SMD-INDUCTOR	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L292	LD 1UH 10% 0,38A 1210 SMD-INDUCTOR	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L320	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L322	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L324	LD 0,22UH10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L325	LD 0,82UH10%0,850HM0,420A CHOKE	LD 0067.2857.00	DALE	IM2	
L326	LD 1,50UH10%0,220HM0,560A CHOKE	LD 0067.2886.00	DALE	IM2	
L330	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L350	LD 10UH 10% 0,18A 1210 SMD-INDUCTOR	LD 0007.9255.00	SIEMENS	B82422-A1103-J(K)100	
L351	LD 10UH 10% 0,18A 1210 SMD-INDUCTOR	LD 0007.9255.00	SIEMENS	B82422-A1103-J(K)100	
L352	LD 0,33UH10%0,220HM0,830A CHOKE	LD 0067.2805.00	DALE	IM2	
L353	LD 0,27UH10%0,160HM0,975A CHOKE	LD 0067.2792.00	DALE	IM2	
L359	LD 47UH 10% 0,08A 1210 SMD-INDUCTOR	LD 0008.1693.00	SIEMENS	B82422-A1473-J(K)100	
L360	LD 0,39UH10%0,300HM0,710A CHOKE	LD 0067.2811.00	DALE	IM2	
L361	LD 0,33UH10%0,220HM0,830A CHOKE	LD 0067.2805.00	DALE	IM2	
L380	LD 0,22UH10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L381	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L382	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L383	LD 0,22UH10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L384	LD 0,22UH10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L387	LD 0,12UH10%0,090HM1,300A CHOKE	LD 0067.2757.00	DALE	IM2	
L388	LD 0,12UH10%0,090HM1,300A CHOKE	LD 0067.2757.00	DALE	IM2	
L390	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L391	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L392	LD 2,20UH10%0,400HM0,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L393	LD 2,20UH10%0,400HM0,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L394	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L395	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L402	LD 3,30UH10%0,850HM0,285A CHOKE	LD 0067.2928.00	DALE	IM2	
L405	LD 3,30UH10%0,850HM0,285A CHOKE	LD 0067.2928.00	DALE	IM2	
L406	LD 180NH 4,5W CM14P FE-K CHOKE	0303.9024.00	TOKO	301-SS-0400	
L408	LD 3,30UH10%0,850HM0,285A CHOKE	LD 0067.2928.00	DALE	IM2	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
L410	LD 1,20UH10%0,180HMO,620A CHOKE	LD 0067.2870.00	DALE	IM2	
L415	LD 10 UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L418	LD 0,39UH10%0,300HMO,710A CHOKE	LD 0067.2811.00	DALE	IM2	
L420	LD 10 UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L421	LD 90 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9513.00	COMPONEX	E 558 CN-10 0023	
L435	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L436	LD 0,22UH10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L437	LD 0,39UH10%0,300HMO,710A CHOKE	LD 0067.2811.00	DALE	IM2	
L438	LD 0,56UH10%0,500HMO,550A CHOKE	LD 0067.2834.00	DALE	IM2	
L439	LD 0,33UH10%0,220HMO,830A CHOKE	LD 0067.2805.00	DALE	IM2	
L442	LD 38 NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9442.00	COMPONEX	E 558 AN-10 0041	
L448	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L450	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L463	LD 680 UH10%60,00HMO,030A CHOKE	LD 0067.3201.00	DALE	IM-2	
L464	LD 680 UH10%60,00HMO,030A CHOKE	LD 0067.3201.00	DALE	IM-2	
L466	LD 4,7UH 10% 0,15A 1210 SMD-INDUCTOR	LD 0008.1687.00	SIEMENS	B82422-A1472-J(K)100	
L467	LD 680 UH10%60,00HMO,030A CHOKE	LD 0067.3201.00	DALE	IM-2	
L468	LD 680 UH10%60,00HMO,030A CHOKE	LD 0067.3201.00	DALE	IM-2	
L470	LD 47,0UH10%4,500HMO,110A CHOKE	LD 0067.3060.00	DALE	IM2	
L475	LD 4,70UH10%1,200HMO,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L476	LD 10 UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L480	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L500	LD 1UH 10% 0,38A 1210 SMD-INDUCTOR	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L510	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L511	LD 0,39UH10%0,300HMO,710A CHOKE	LD 0067.2811.00	DALE	IM2	
L513	LD 0,33UH10%0,220HMO,830A CHOKE	LD 0067.2805.00	DALE	IM2	
L519	LD 1UH 10% 0,38A 1210 SMD-INDUCTOR	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L525	LD 1,80UH10%0,300HMO,480A CHOKE	LD 0067.2892.00	DALE	IM2	
L526	LD 1,50UH10%0,220HMO,560A CHOKE	LD 0067.2886.00	DALE	IM2	
L550	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L551	LD 1UH 10% 0,38A 1210 SMD-INDUCTOR	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L552	LD 4,7UH 10% 0,15A 1210 SMD-INDUCTOR	LD 0008.1687.00	SIEMENS	B82422-A1472-J(K)100	
L553	LD 1UH 10% 0,38A 1210 SMD-INDUCTOR	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L558	LD 4,7UH 10% 0,15A 1210 SMD-INDUCTOR	LD 0008.1687.00	SIEMENS	B82422-A1472-J(K)100	
L565	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L575	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L576	LD 1UH 10% 0,38A 1210 SMD-INDUCTOR	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L580	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L620	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
L621	LD 10 UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L630	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L650	LD 2,2UH 10% 0,27A 1210 SMD-INDUCTOR	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
N100	BO LM2941T LOWDROP +VREGL VOLTAGE REGULATOR	4024.5989.00	NSC	LM2941T	
N290	BO NE5534D OPAMP OPERATIONAL AMPLIFIER	0815.7555.00	SIGNETICS	NE5534(D)	
N350	BM MSA1105 05-1.3G MMIC IC MICROWAVE MONOLITH AMP	1051.4051.00	AVANTEK	MSA-1105-TR1	
N380	BM SRA1H MIXER 0.5GHZ MIXER	BM 0252.5234.00	MINI-CIRCU	SRA-1H	
N430	BM MSA1105 05-1.3G MMIC IC MICROWAVE MONOLITH AMP	1051.4051.00	AVANTEK	MSA-1105-TR1	
N440	BM MSA1105 05-1.3G MMIC IC MICROWAVE MONOLITH AMP	1051.4051.00	AVANTEK	MSA-1105-TR1	
N460	BO LT1124CS8 2X OPAMP IC OPAMP	1036.4483.00	LINEAR_TEC	(LT)1124(CS8)	
N465	BO AD829JR 1XLOLN OPAMP IC OPAMP	1036.4254.00	ANALOG_DEV	AD829JR	
N468	BO LP365M 4X COMP IC COMPARATOR	1036.4248.10	NSC	LP365M	
N470	BM RMS-1 MIXER 500M MIXER MODULE	0846.4393.00	MINI-CIRCU	RMS-1	
N530	BO NE5534D OPAMP OPERATIONAL AMPLIFIER	0815.7555.00	SIGNETICS	NE5534(D)	
N550	BO OP97FS LP PREC OPAMP OPAMP	1036.4390.00	PMI	OP97F(S)	
N562	BO OP97FS LP PREC OPAMP OPAMP	1036.4390.00	PMI	OP97F(S)	
N565	BO OP97FS LP PREC OPAMP OPAMP	1036.4390.00	PMI	OP97F(S)	
N570	EO 10MHZ-QU.OSZ VTCXO 5V OSCILLATOR VTCXO	1039.3113.00	MILLIREN	453-0102	
N585	BO REF01CS 10V 20MA VREF VOLTAGE REFERENCE	1002.5129.00	PMI	REF01C(S)	
N680	BO LP365M 4X COMP IC COMPARATOR	1036.4248.10	NSC	LP365M	
P10	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P40	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P41	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P200	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P201	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P220	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P221	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P250	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P251	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P255	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P256	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P265	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P266	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P325	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P326	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P360	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P361	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P390	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
P391	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P450	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P451	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P460	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P461	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P465	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P466	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P520	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P525	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P575	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P576	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
P580	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
R1	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	PHILIPS_CO	RCO2	
R2	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R4	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R6	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R7	RG 392 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5672.00	ROEDERSTEI	D25	
R8	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RCO2	
R10	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	PHILIPS_CO	RCO2	
R11	RG 3,92KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5808.00	ROEDERSTEI	D25	
R15	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R16	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	ROEDERSTEI	D25	
R17	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R21	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R22	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R30	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	ROEDERSTEI	D25	
R31	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RCO2	
R35	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R36	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R38	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R40	RG 15,0 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5450.00	ROEDERSTEI	D25	
R42	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R47 ..49	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	ROEDERSTEI	D25	
R50	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RCO2	
R53	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	ROEDERSTEI	D25	
R56	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RCO2	
R57	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R58	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	ROEDERSTEI	D25	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R59	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R65	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RC02	
R67	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	ROEDERSTEI	D25	
R68	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R69	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R71	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R72	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	ROEDERSTEI	D25	
R73	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R75	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RC02	
R77	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	ROEDERSTEI	D25	
R80	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R81	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R82	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R83	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R85	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RC02	
R87	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	ROEDERSTEI	D25	
R89	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R91	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	ROEDERSTEI	D25	
R92	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	ROEDERSTEI	D25	
R93	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R94	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R96	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R97	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R98	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	ROEDERSTEI	D25	
R99	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R100	RG 5,11KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0729.00	ROEDERSTEI	D25	
R101	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	ROEDERSTEI	D25	
R105	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R200	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R201	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R202	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	ROEDERSTEI	D25	
R204	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R206 ..208	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R209	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R210	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R212	RL 0,60W 392 OHM+-1%TK50 RESISTOR	RL 0082.2183.00	RESISTA	MK2	
R213	RL 0,60W 392 OHM+-1%TK50 RESISTOR	RL 0082.2183.00	RESISTA	MK2	
R217	RG 3,92KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5808.00	ROEDERSTEI	D25	
R223	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R240	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R241	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R249	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	ROEDERSTEI	D25	
R250	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R251	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R252	RG 301 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5643.00	ROEDERSTEI	D25	
R253	RG 301 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5643.00	ROEDERSTEI	D25	
R254	RS 0,25W500 OHM+-20% SMD POTENTIOMETER	RS 0007.9603.00	BI_TECHNOL	23 B R... TR	
R255	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R256	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R257	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R258	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R259	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R260	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R261	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R262	RG 82,5 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8861.00	PHILIPS_CO	RC02	
R263	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R264	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R265	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R266	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R267	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	ROEDERSTEI	D25	
R269	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	ROEDERSTEI	D25	
R270	RG 200 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5608.00	PHILIPS_CO	RC02	
R271	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	PHILIPS_CO	RC02	
R272	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R273	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R274	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	ROEDERSTEI	D25	
R275	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	ROEDERSTEI	D25	
R276	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	ROEDERSTEI	D25	
R277	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	ROEDERSTEI	D25	
R278	RG 4,750HM+-1%TK100 1206 CHIP-RESISTOR	RG 0007.8420.00	PHILIPS	RC 02	
R279	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R280	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R281	RG 8,250HM+-1%TK100 1206 CHIP-RESISTOR	RG 0007.8488.00	PHILIPS	RC 02	
R282	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R283	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R284	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R285	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R286	RG 825 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7259.00	ROEDERSTEI	D25	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R287	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	PHILIPS_CO	RCO2	
R288	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	ROEDERSTEI	D25	
R289	RG 5,62KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0735.00	ROEDERSTEI	D25	
R290	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RCO2	
R291	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RCO2	
R292	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R293	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R294	RG 392 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5672.00	ROEDERSTEI	D25	
R295	RG 392 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5672.00	ROEDERSTEI	D25	
R296	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	ROEDERSTEI	D25	
R297	RG 39,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5937.00	ROEDERSTEI	D25	
R298	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	ROEDERSTEI	D25	
R299	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	ROEDERSTEI	D25	
R309	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	ROEDERSTEI	D25	
R310	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RCO2	
R311	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RCO2	
R312	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R313	RG 511 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9051.00	PHILIPS_CO	RCO2	
R314	RG 511 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9051.00	PHILIPS_CO	RCO2	
R315	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R316 ..318	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R319	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R320	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R321	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R322	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RCO2	
R323	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RCO2	
R324	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R325	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R326	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RCO2	
R327	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RCO2	
R328 ..331	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R333	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RCO2	
R334	RG 3,01KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5772.00	ROEDERSTEI	D25	
R335	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R336	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R337	RG O-OHM WIDERSTAND-CHIP RESISTOR CHIP O-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R338	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RCO2	
R339	RG O-OHM WIDERSTAND-CHIP RESISTOR CHIP O-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R341 ..343	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R350	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R351	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R352	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R355	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R357	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R360	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R362	RG 10,OKOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R363	RG 10,OKOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R380	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	ROEDERSTEI	D25	
R381	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	ROEDERSTEI	D25	
R382	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RC02	
R383	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R384	RG 825 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7259.00	ROEDERSTEI	D25	
R385	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R388	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R400	RG 0-OHM WIDERSTAND-CHIP RESISTOR CHIP 0-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R401	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R405	RG 392 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5672.00	ROEDERSTEI	D25	
R406	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R407	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	ROEDERSTEI	D25	
R411	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R412	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R414	RS 0,25W200 OHM+-20% SMD POTENTIOMETER	RS 0007.9590.00	BOURNS	3314G--1-	
R415	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	ROEDERSTEI	D25	
R416	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R417	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RC02	
R418	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	ROEDERSTEI	D25	
R419	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	ROEDERSTEI	D25	
R422	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R424	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R425	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RC02	
R426	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RC02	
R427	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R428	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	ROEDERSTEI	D25	
R429	RG 39,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5543.00	ROEDERSTEI	D25	
R430	RG 39,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5543.00	ROEDERSTEI	D25	
R431	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	ROEDERSTEI	D25	
R432	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R433	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	ROEDERSTEI	D25	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R434	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R435	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R436	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	ROEDERSTEI	D25	
R437	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	ROEDERSTEI	D25	
R438	RG 51,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8810.00	ROEDERSTEI	D25	
R439	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R440	RG 82,5 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8861.00	PHILIPS_CO	RC02	
R441	RS 0,25W200 OHM+-20% SMD POTENTIOMETER	RS 0007.9590.00	BOURNS	3314G--1-	
R442	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R443	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	ROEDERSTEI	D25	
R444	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R445	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R446	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R447	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R448	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R449	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R450	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R451	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	ROEDERSTEI	D25	
R452	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	ROEDERSTEI	D25	
R453	RG 56,2KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1883.00	ROEDERSTEI	D25	
R454	RG 82,5 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8861.00	PHILIPS_CO	RC02	
R455	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R456	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R457	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R458	RG 82,5 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8861.00	PHILIPS_CO	RC02	
R459	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	ROEDERSTEI	D25	
R460	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R461	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R462	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R463	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RC02	
R464	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R465	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R466	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R467	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	ROEDERSTEI	D25	
R468	RG 301 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5643.00	ROEDERSTEI	D25	
R469	RS 0,25W 50 OHM+-20% SMD POTENTIOMETER	RS 0007.9578.00	BOURNS	3314G--1-	
R470	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R471	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R472	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	ROEDERSTEI	D25	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R473	RG 82,5 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8861.00	PHILIPS_CO	RCO2	
R474	RG 7,5KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0764.00	ROEDERSTEI	D25	
R475	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R476	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R477	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RCO2	
R478	RG 332 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6033.00	ROEDERSTEI	D25	
R479	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	ROEDERSTEI	D25	
R480	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	ROEDERSTEI	D25	
R481	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	ROEDERSTEI	D25	
R482	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	ROEDERSTEI	D25	
R483	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	ROEDERSTEI	D25	
R484	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R485	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	ROEDERSTEI	D25	
R486 ..488	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R489	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R490	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	ROEDERSTEI	D25	
R491	RG 0-OHM WIDERSTAND-CHIP RESISTOR CHIP 0-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R492	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R493	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R494	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RCO2	
R495	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R496	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	ROEDERSTEI	D25	
R497	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	ROEDERSTEI	D25	
R498 ..507	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R509 ..512	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R513	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R514	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RCO2	
R515	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RCO2	
R516	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R517	RG 825 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7259.00	ROEDERSTEI	D25	
R518	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	PHILIPS_CO	RCO2	
R519	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R520 ..523	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R524	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R525	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R526	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R527	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RCO2	
R528	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R529	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R530	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R531	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R533	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R535	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R536	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R540	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R541	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R542	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R543	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R544	RG 1,0MOHM+-1%TK100 1206 CHIP RESISTOR	RG 0815.7532.00	PHILIPS_CO	RC 02	
R545	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R546	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R547	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R548	RG 3,01KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5772.00	ROEDERSTEI	D25	
R550	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R551	RG 10,0KOH+-0,1%TK25 1206 SMD-RESISTOR	0009.7666.00	PHILIPS_CO	MPC 01	
R552	RG 12,0KOH+-0,1%TK25 1206 SMD-RESISTOR	0009.7620.00	PHILIPS_CO	MPC 01	
R553	RG 100 OHM+-0,1%TK25 1206 SMD-RESISTOR	0009.8033.00	PHILIPS_CO	MPC 01	
R554	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R555	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R556	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R558 ..560	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R561	RG 20,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5866.00	ROEDERSTEI	D25	
R562	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R563	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R564	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R565	RG 162 OHM+-1%TK100 1206 CHIP RESISTOR TRIMMWERT	RG 0006.8932.00	ROEDERSTEI	D25	
R566	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R567	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R568	RG 3,01KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5772.00	ROEDERSTEI	D25	
R569	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R570	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R571	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R573	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R574	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R575	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R576	RG 100 OHM+-0,1%TK25 1206 SMD-RESISTOR	0009.8033.00	PHILIPS_CO	MPC 01	
R577	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R578	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R579	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R580	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R581	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R582	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R583	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R584	RG 39,2KOH+-0,1%TK25 1206 SMD-RESISTOR	0009.8027.00	PHILIPS_CO	MPC 01	
R587	RG 0-OHM WIDERSTAND-CHIP RESISTOR CHIP 0-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R588	RS 0,25W 5KOHM +-20% SMD POTENTIOMETER	RS 0007.9632.00	BI_TECHNOL	23 B R... TR	
R589	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R590	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R591	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	ROEDERSTEI	D25	
R592	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R593	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R597	RG 27,4KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5895.00	ROEDERSTEI	D25	
R598	RG 27,4KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5895.00	ROEDERSTEI	D25	
R599	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R600 ..602	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R603	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R604	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R605	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R607	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R608	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R610	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R611	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R612 ..614	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R615	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R616	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R619	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R620	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R629	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R630 ..633	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R634	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R635	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R636	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R638 ..640	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R641	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R642	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R643 ..645	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R649	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R650	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R652	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R653	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R659	RG 15,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5843.00	ROEDERSTEI	D25	
R660	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R661	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R662	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R680	RG 39,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5937.00	ROEDERSTEI	D25	
R681	RG 11,0KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0806.00	ROEDERSTEI	D25	
R682	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RC02	
R685	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R687	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R688	RG 121,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1960.00	ROEDERSTEI	D25	
R690	RG 221 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6004.00	ROEDERSTEI	D25	
R691	RG 12,1KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0841.00	PHILIPS_CO	RC02	
R692	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R693	RG 68,1KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1902.00	ROEDERSTEI	D25	
R694	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R697	RG 3,3MOHM+-5%TK200 1206 CHIP RESISTOR	0007.9990.00	ROEDERSTEI	D 25	
R698	RG 1,0MOHM+-1%TK100 1206 CHIP RESISTOR	RG 0815.7532.00	PHILIPS_CO	RC 02	
V5	AK BFR93A N 12V 35MA TRANSISTOR	AK 0007.7030.00	VALVO	BFR93A	
V10	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V14	AE BB909B 25/ 3PF CDI TUNING DIODE	AE 0092.9600.00	PHILIPS	BB909B	
V35	AK BFR96S N 15V 100MA TRANSISTOR	0644.0830.00	VALVO	BFR 96S	
V60	AM SST310 N-D 25V JFET JFET	1036.4577.00	SILICONIX	SST310	
V69	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V70	AM SST310 N-D 25V JFET JFET	1036.4577.00	SILICONIX	SST310	
V80	AM SST310 N-D 25V JFET JFET	1036.4577.00	SILICONIX	SST310	
V90	AM SST310 N-D 25V JFET JFET	1036.4577.00	SILICONIX	SST310	
V95	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V105	AL BD439 N 60V 4A0 TRANSISTOR	AL 0010.1645.00	SGS-THOMSO	BD439	
V205	AK BFG97 NPN 15V 100MA TRANSISTOR BFG97	0008.1741.00	PHILIPS	BFG97	
V206	AK BFG97 NPN 15V 100MA TRANSISTOR BFG97	0008.1741.00	PHILIPS	BFG97	
V240	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V255	AK BFG97 NPN 15V 100MA TRANSISTOR BFG97	0008.1741.00	PHILIPS	BFG97	
V260	AK BFG97 NPN 15V 100MA TRANSISTOR BFG97	0008.1741.00	PHILIPS	BFG97	
V262	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
V263	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V265	AK BSR13 N 30V 800MA TRANSISTOR	AK 0007.2209.00	VALVO	BSR 13	
V279	AE 1N4696 9V1 0.3W ZDI ZENER DIODE	AE 0303.9160.00	SEMITRONIC	1N4696	
V280	AK BFG97 NPN 15V 100MA TRANSISTOR BFG97	0008.1741.00	PHILIPS	BFG97	
V285	AK BFG97 NPN 15V 100MA TRANSISTOR BFG97	0008.1741.00	PHILIPS	BFG97	
V290	AE BAR14-1 2X 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1	
V295	AE BAR14-1 2X 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1	
V299	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V320	AK BSR12 P 15V 100MA TRANSISTOR	AK 0007.2067.00	PHILIPS_SE	BSR12	
V321	AK BSR12 P 15V 100MA TRANSISTOR	AK 0007.2067.00	PHILIPS_SE	BSR12	
V322	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V323	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V325	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V361	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V380	AK BFR93A N 12V 35MA TRANSISTOR	AK 0007.7030.00	VALVO	BFR93A	
V383	AE 1N4691 6V2 0.3W ZDI ZENER DIODE	AE 0568.1220.00	AMERICAN_P	1N4691	
V400	AE BBY40 30/05PF CDI TUNING DIODE	AE 0007.2109.00	VALVO	BBY40	
V401	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V402	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V403	AE BBY40 30/05PF CDI TUNING DIODE	AE 0007.2109.00	VALVO	BBY40	
V404	AE BBY40 30/05PF CDI TUNING DIODE	AE 0007.2109.00	VALVO	BBY40	
V405	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V406	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V407	AE BBY40 30/05PF CDI TUNING DIODE	AE 0007.2109.00	VALVO	BBY40	
V408	AM SST310 N-D 25V JFET JFET	1036.4577.00	SILICONIX	SST310	
V418	AE BZV55/C5V1 0.5W ZDI ZENER DIODE	AE 0006.9839.00	PHILIPS_SE	BZV55B5V1 (GEG)	
V420	AK BFS17 N 30V 50MA TRANSISTOR	AK 0010.6460.00	VALVO	BFS17	
V422	AE BZV55/C5V1 0.5W ZDI ZENER DIODE	AE 0006.9839.00	PHILIPS_SE	BZV55B5V1 (GEG)	
V424	AE BZV55/C5V1 0.5W ZDI ZENER DIODE	AE 0006.9839.00	PHILIPS_SE	BZV55B5V1 (GEG)	
V425	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V426	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V435	AK BFQ81 N 16V 30MA TRANSISTOR	0920.1717.00	SIEMENS	BFQ81	
V437	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V460	AE BZV55/C5V1 0.5W ZDI ZENER DIODE	AE 0006.9839.00	PHILIPS_SE	BZV55B5V1 (GEG)	
V466	AE HSMS2813 2XSCHOTTKY DIODE	AE 0824.3542.00	HEWLETT_PA	HSMS2813 L31	
V473	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V475	AK BSR13 N 30V 800MA TRANSISTOR	AK 0007.2209.00	VALVO	BSR 13	
V514	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V518	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
V530	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V531	AE BZV55/C4V7 0.5W ZDI ZENER DIODE	AE 0006.9822.00	PHILIPS	BZV55B4V7	
V535	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V536	AE BZV55/C4V7 0.5W ZDI ZENER DIODE	AE 0006.9822.00	PHILIPS	BZV55B4V7	
V540	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V555	AE BZV55/10V 0,5W ZDI ZENER DIODE	AE 0006.9880.00	PHILIPS_SE	BZV55C10	
V566	AD BAS32 75V UDI DIODE	AD 0006.7288.00	PHILIPS	BAS32 (L)	
V570	AE BZV55/C5V6 0.5W ZDI ZENER DIODE	AE 0006.9845.00	PHILIPS	BZV55B5V6	
V571	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V575	AE BZV55/C3V9 0,5W ZDI ZENER DIODE	AE 0006.9816.00	PHILIPS_SE	BZV55B3V9	
V582	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V583	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V584	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V585	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V586	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V587	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V590	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V660	AE BZV55/C5V6 0.5W ZDI ZENER DIODE	AE 0006.9845.00	PHILIPS	BZV55B5V6	
V697	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V698	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
X70	FP STECKERLEISTE 32POL.	0418.9755.00			
X71 ..75	FJ EINBAUSTECKER F.GS SMB ANGLE CONNECTOR	FJ 0602.8804.00	IMS	81.1524.201	
X77	FJ EINBAUSTECKER F.GS SMB ANGLE CONNECTOR	FJ 0602.8804.00	IMS	81.1524.201	
X330	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
X331	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
X405 ..407	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
X460 ..462	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
X540 ..542	VL EINPRESSSTIFT L=6,8 PIN	VL 0010.7250.00	AMP	1-928776-5	
Z1	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z95	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z100 ..104	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z210	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z280	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z382	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z384	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z390 ..392	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z550	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z560	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
Z600 ..604	LD SMD-T-FILTER 100PF SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z605	LD SMD-T-FILTER 3,3NF SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z650	LD SMD-T-FILTER 100PF SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	

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ROHDE&SCHWARZ

XY-Liste

XY List

Erklärung der Spaltenbezeichnungen:

Part:	Bauelement-Kennzeichen.
Side:	Leiterplatten-Seite, auf der sich das Bauelement befindet.
X/Y:	Koordinaten (Millimeter) des Bauelementes auf der Leiterplatte bezogen auf den Nullpunkt.
SQR, PG:	Planquadrat und Seite des Schaltbildes für das jeweilige Bauelement.

Explanation of column designations:

Part:	Identification of instrument part.
Side:	Side of the PC board on which instrument part is positioned.
X/Y:	Coordinates (millimeter) of the component on the PC board in reference to zero point.
SQR, PG:	Square and page of the diagram for the respective instrument part.

Service-Relevante Bauteile / Service-Relevant Components

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
B20	B	29	126	3D	2	N100	B	91	63	4B	2	P575	B	88	97	12F	6
C400	B	182	58	7D	5	N380	B	164	99	11E	4	P576	B	88	95	12F	6
D31A	B	231	43	4D	4	N570	B	73	114	10E	6	P580	B	82	141	10E	6
D610	B	130	52	5F	7	P10	B	25	107	2E	2	R254	B	284	114	6C	3
K1-A	B	57	23	8C	6	P40	B	23	77	5D	2	R414	B	184	39	8C	5
K1-B				8C	6	P41	B	25	77	5D	2	R441	B	154	61	10E	5
L5	B	37	107	2E	2	P200	B	199	133	2E	3	R469	B	262	95	2D	5
L20	B	38	120	4D	2	P201	B	199	135	2E	3	R588	B	98	138	6E	6
L35	B	22	87	5E	2	P220	B	226	139	3E	3	X70A	B	189	12	7D	6
L206	B	214	133	3E	3	P221	B	226	142	3E	3	X70B	B	189	12	2C	2
L230	B	240	132	4D	3	P250	B	281	142	5E	3	X71	B	17	15	9C	2
L231	B	250	119	4E	3	P251	B	284	142	5E	3	X72	B	29	15	12E	2
L234	B	253	125	4D	3	P255	B	272	47	11E	3	X73	B	42	15	7C	6
L235	B	258	138	5D	3	P256	B	272	50	11E	3	X74	B	55	15	7B	6
L251	B	280	136	5D	3	P265	B	273	111	7E	3	X75	B	245	15	12C	5
L265	B	291	98	8E	3	P266	B	273	114	7E	3	X77	B	271	15	12C	3
L266	B	275	91	8F	3	P360	B	222	107	10D	4	X330	B	247	62	5E	4
L267	B	280	88	8E	3	P361	B	225	107	10D	4	X331	B	250	62	5E	4
L268	B	291	85	8E	3	P390	B	151	111	11E	4	X405	B	193	73	8E	5
L275	B	281	63	9E	3	P391	B	149	111	11E	4	X406	B	196	73	8E	5
L277	B	281	43	11E	3	P450	B	172	36	7A	5	X407	B	198	73	8E	5
L282	B	278	45	11E	3	P451	B	172	38	7A	5	X460	B	231	78	1B	5
L285	B	298	52	8C	3	P460	B	163	90	11E	5	X461	B	231	81	1B	5
L286	B	290	28	8C	3	P461	B	163	88	12E	5	X462	B	231	83	1B	5
L290	B	290	18	9C	3	P465	B	249	88	4E	5	X540	B	57	134	6C	6
L406	B	203	60	7D	5	P466	B	246	88	4E	5	X541	B	54	134	6C	6
L421	B	181	33	8B	5	P520	B	67	67	3C	6	X542	B	51	134	6C	6
L442	B	215	19	9C	5	P525	B	67	74	4C	6						

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Nicht-Service-Relevante Bauteile / Non-Service-Relevant Components

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
1	B	171	142	6D	2	C207	A	222	137	2E	3	C287	A	292	18	9D	3
2	B	11	97	6D	2	C211	B	102	57	5B	2	C288	B	287	26	9C	3
C1	A	18	118	1D	2	C212	B	102	39	5B	2	C289	B	290	25	9C	3
C3	B	27	121	2E	2	C218	A	204	134	3C	3	C290	A	283	21	11B	3
C4	A	24	100	2E	2	C219	A	206	140	3B	3	C291	A	280	27	11B	3
C7	A	15	118	2D	2	C221	A	222	127	3D	3	C292	B	274	23	11C	3
C8	A	14	106	2D	2	C222	A	225	128	3D	3	C293	A	288	41	10D	3
C10	A	27	107	3E	2	C223	B	225	126	3D	3	C294	A	288	28	10C	3
C15	A	14	101	3C	2	C229	B	234	130	4D	3	C295	A	279	15	11C	3
C20	A	43	115	4D	2	C230	B	243	134	4D	3	C296	A	277	37	10C	3
C21	A	44	121	4D	2	C231	B	246	128	4D	3	C297	A	298	35	11C	3
C22	A	36	124	4D	2	C232	B	239	126	4D	3	C298	B	278	25	10B	3
C23	A	41	119	4D	2	C233	B	260	128	4D	3	C299	B	281	21	10C	3
C30	A	31	81	4E	2	C234	B	253	128	4D	3	C311	A	252	34	3E	4
C32	A	29	86	5D	2	C235	B	255	137	5D	3	C312	A	262	43	2E	4
C33	A	37	79	5E	2	C236	A	264	126	4B	3	C313	A	248	44	2E	4
C38	A	37	89	5D	2	C240	B	282	124	5C	3	C315	B	218	67	5E	4
C42	A	18	94	5E	2	C241	B	296	122	5C	3	C319	B	238	73	6E	4
C51	A	187	128	7F	2	C250	B	273	134	5D	3	C320	B	232	60	6D	4
C52	A	183	138	8F	2	C251	B	276	137	5D	3	C321	B	229	60	6D	4
C54	B	185	140	8E	2	C252	A	276	139	6D	3	C322	B	216	60	2A	4
C55	B	188	137	8E	2	C253	B	290	47	10E	3	C323	A	234	29	5F	4
C56	B	173	137	7E	2	C254	A	298	59	10D	3	C324	B	223	66	5D	4
C65	A	183	124	8E	2	C255	A	279	139	6C	3	C325	B	220	64	5E	4
C67	B	185	125	8E	2	C256	B	262	57	9B	3	C326	B	236	77	6E	4
C68	B	188	123	8D	2	C257	A	286	130	7D	3	C327	B	245	69	2C	4
C69	A	21	21	8D	2	C258	A	296	133	6E	3	C328	A	255	31	3F	4
C70	A	59	140	8D	2	C260	A	299	113	7C	3	C329	A	251	28	3F	4
C71	A	12	25	8D	2	C261	A	299	127	7B	3	C330	A	211	58	4A	4
C72	B	173	123	7D	2	C262	B	286	117	7E	3	C331	A	212	43	1A	4
C75	A	20	39	7D	2	C263	B	292	135	6B	3	C350	B	172	106	7C	4
C77	B	15	25	8C	2	C264	B	288	102	8E	3	C351	B	184	104	8C	4
C78	B	12	21	8C	2	C265	B	286	100	8E	3	C352	B	181	104	8C	4
C79	A	18	47	7D	2	C266	B	279	97	8E	3	C353	B	188	98	8C	4
C82	B	18	42	7C	2	C267	B	277	101	8E	3	C354	B	192	104	9C	4
C85	A	18	61	7C	2	C268	B	283	88	8E	3	C355	A	195	98	9D	4
C87	B	24	67	7B	2	C269	B	283	82	8E	3	C356	A	203	100	9D	4
C88	B	27	69	7B	2	C270	B	298	84	9E	3	C357	B	202	98	9C	4
C92	B	13	67	6B	2	C271	B	281	60	10E	3	C358	B	208	105	10C	4
C98	B	19	58	8C	2	C272	B	289	60	10E	3	C359	B	203	101	9C	4
C99	B	46	43	10B	2	C273	A	296	48	10E	3	C360	B	208	102	9C	4
C100	A	40	42	9B	2	C274	A	292	53	10D	3	C361	A	218	100	10C	4
C101	A	101	68	4B	2	C276	B	283	61	10E	3	C362	A	213	107	11C	4
C103	B	114	52	3C	2	C277	B	274	42	11E	3	C363	A	196	108	11C	4
C104	B	114	41	2C	2	C278	A	277	68	11E	3	C366	B	221	102	10C	4
C105	B	114	64	2B	2	C279	A	283	68	11F	3	C367	B	217	105	10C	4
C106	B	112	75	2B	2	C280	B	277	39	11E	3	C368	B	217	100	10C	4
C107	B	100	48	2B	2	C281	B	290	41	8C	3	C380	B	166	122	9E	4
C108	B	109	84	2A	2	C282	B	274	31	8C	3	C381	A	161	127	10F	4
C158	B	56	51	11C	2	C283	B	263	70	8B	3	C382	A	164	122	10F	4
C200	A	199	124	2D	3	C284	B	298	62	7B	3	C383	B	162	125	9E	4
C204	A	201	120	2C	3	C285	B	298	49	8C	3	C384	A	156	126	9E	4
C206	A	216	125	3D	3	C286	A	298	19	9C	3	C385	B	152	134	10E	4

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Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
C386	B	149	138	10E	4	C477	A	170	83	5C	5	C565	B	98	102	10D	6
C387	B	156	118	10E	4	C478	B	184	89	6B	5	C566	A	63	51	8B	6
C388	B	154	99	11E	4	C479	B	178	83	6B	5	C567	A	60	20	8C	6
C401	B	189	66	8D	5	C480	A	255	105	2A	5	C570	A	42	20	8C	6
C402	B	189	59	7D	5	C481	A	247	95	3D	5	C574	A	67	20	10C	6
C404	B	184	50	7D	5	C482	B	203	91	3C	5	C575	B	80	20	9D	6
C406	B	185	46	7D	5	C483	A	254	74	3A	5	C576	A	65	17	10C	6
C408	B	178	44	8C	5	C484	A	241	98	4B	5	C577	A	74	18	11C	6
C410	A	203	47	7C	5	C485	A	178	90	5D	5	C578	B	60	15	8B	6
C411	B	191	44	8C	5	C486	B	186	83	3C	5	C579	A	75	124	10E	6
C413	B	181	42	8B	5	C487	A	241	77	4B	5	C580	B	81	14	8C	6
C414	B	175	36	7B	5	C488	A	177	80	6C	5	C582	B	85	137	6F	6
C417	B	171	33	7B	5	C489	A	203	69	6A	5	C595	B	78	102	11E	6
C418	A	171	43	8C	5	C491	A	228	82	5B	5	C609	A	135	36	4F	7
C420	A	175	46	8C	5	C492	A	214	84	5B	5	C610	A	74	50	2A	7
C421	A	196	31	8A	5	C500	B	52	59	1A	6	C620	A	100	14	1A	7
C423	A	203	34	8B	5	C501	A	38	67	2A	6	C621	B	132	74	6E	7
C424	B	197	47	7C	5	C510	B	54	84	2A	6	C650	B	125	112	3A	7
C431	B	162	42	9E	5	C511	B	34	39	10E	2	C660	B	118	134	3A	7
C432	B	158	47	9E	5	C513	B	29	31	11E	2	C680	B	127	98	4A	7
C434	B	218	19	9C	5	C514	A	29	21	11E	2	C685	B	130	109	10D	7
C435	B	211	31	9C	5	C515	A	29	41	11D	2	C688	B	116	113	11E	7
C436	A	153	63	10E	5	C516	A	29	44	11D	2	C690	A	128	116	6A	7
C437	A	159	68	10F	5	C517	B	42	55	11C	2	C691	B	138	130	6A	7
C439	A	218	29	10D	5	C519	B	38	57	11C	2	C695	B	133	104	10C	7
C440	B	154	56	10E	5	C524	B	58	56	4F	6	C697	B	117	123	11D	7
C441	B	156	67	10E	5	C525	B	65	37	4E	6	C698	A	132	99	11C	7
C443	A	225	16	10D	5	C526	B	63	32	5E	6	C900	B	61	91	3A	6
C445	A	235	19	10C	5	C530	A	56	82	5D	6	C901	A	69	34	4A	6
C447	A	231	17	10C	5	C531	A	51	78	6D	6	D95-A	B	44	46	9E	2
C448	A	234	14	10C	5	C532	A	56	71	6D	6	D95-B				10C	2
C449	B	240	12	11C	5	C535	A	76	66	3B	6	D95-C				10B	2
C450	B	159	80	11E	5	C536	A	74	72	4B	6	D320-A	B	220	50	6E	4
C453	A	255	15	11C	5	C537	A	81	75	4B	6	D320-B				3A	4
C454	A	155	79	11F	5	C538	B	55	95	4C	6	D320-C				2A	4
C455	B	217	88	2C	5	C539	B	59	100	4C	6	D330-A	A	232	70	5C	4
C457	A	243	77	3E	5	C540	A	91	116	5A	6	D330-B				4A	4
C458	A	161	84	11E	5	C541	B	62	107	4B	6	D340-A	A	220	60	5B	4
C459	A	262	95	2D	5	C542	B	59	123	5C	6	D340-B				5A	4
C460	B	233	81	1E	5	C543	B	57	130	6C	6	D430-A	A	250	93	5A	5
C461	A	257	14	11C	5	C544	A	85	119	5A	6	D430-B				5A	5
C462	B	218	79	2C	5	C545	A	63	115	5C	6	D430-C				2D	5
C463	A	263	82	2E	5	C546	A	57	121	5C	6	D430-D				1D	5
C464	A	233	77	3E	5	C547	A	102	122	6A	6	D430-E				2A	5
C465	B	224	100	1D	5	C548	A	97	122	6A	6	D445-A	A	250	77	5A	5
C467	A	257	19	12C	5	C552	B	98	110	10D	6	D445-B				5A	5
C468	A	227	103	3D	5	C555	A	100	130	8E	6	D445-C				2E	5
C469	B	214	81	3C	5	C556	A	105	130	5A	6	D445-D				1E	5
C470	B	231	89	4A	5	C557	A	96	124	5A	6	D445-E				3A	5
C471	B	192	108	4A	5	C558	A	86	124	8E	6	D460-A	A	219	88	6E	5
C472	A	232	74	4E	5	C560	B	77	110	10F	6	D460-B				6E	5
C473	B	200	84	4D	5	C561	B	81	110	10E	6	D460-C				2B	5
C474	A	180	83	6C	5	C562	B	90	101	9E	6	D460-D				2B	5
C475	A	187	83	6A	5	C563	B	75	105	12F	6	D460-E				5B	5
C476	A	194	90	6B	5	C564	B	86	110	9E	6	D500-A	B	39	63	2E	6

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Part	Side	X	Y	Sqr	Pg
D500-B				1A	6
D505-A	A	45	39	10E	2
D505-B				7A	6
D505-C				8A	6
D505-D				10D	2
D505-E				9B	2
D510-A	B	77	50	2D	6
D510-B				3A	6
D515-A	B	54	74	2B	6
D515-B				3E	6
D515-C				2A	6
D520-A	B	77	39	4E	6
D520-B				3A	6
D525-A	B	69	66	3C	6
D525-B				3C	6
D525-C				4A	6
D535-A	B	55	60	3F	6
D535-B				7C	6
D535-C				7D	6
D535-D				9F	6
D535-E				2A	6
D550-A	B	77	83	3D	6
D550-B				2D	6
D550-C				4B	6
D550-D				3D	6
D550-E				4A	6
D555	A	86	127	8E	6
D600-A	A	91	14	2E	7
D600-B				2E	7
D600-C				2D	7
D600-D				2D	7
D600-E				1A	7
D620-A	A	118	100	3C	7
D620-B				5A	7
D630-A	B	69	62	5C	7
D630-B				2A	7
D640-A	A	117	117	8E	7
D640-B				8D	7
D640-C				7B	7
D640-D				11D	7
D640-E				11C	7
D640-F				11E	7
D640-G				4A	7
D650-A	A	118	131	8E	7
D650-B				3A	7
D660-A	A	139	140	8D	7
D660-B				3A	7
D680-A	A	133	102	10E	7
D680-B				11E	7
D680-C				10C	7
D680-D				11C	7
D680-E				4A	7
L1	B	21	100	2E	2
L2	B	51	93	2F	2
L3	B	40	79	2E	2
L15	B	22	113	3D	2
L30	B	43	97	4D	2
L33	B	38	83	5E	2
L50	B	181	132	6F	2
L55	B	181	135	7F	2
L65	B	181	120	7E	2
L73	B	22	47	7D	2
L75	B	20	42	7D	2
L85	B	13	64	7C	2
L96	B	57	40	10F	2
L97	B	48	37	10E	2
L98	B	15	58	9C	2
L100	B	147	16	2C	2
L101	B	125	16	2B	2
L102	B	126	20	2B	2
L103	B	90	7	2B	2
L104	B	114	20	2A	2
L107	B	118	46	3B	2
L108	B	116	77	3B	2
L109	B	90	38	3B	2
L110	B	112	84	3A	2
L209	B	209	119	2B	3
L210	B	95	54	5B	2
L211	B	199	108	3A	3
L215	B	208	138	3C	3
L216	B	198	140	3C	3
L253	B	275	128	6E	3
L256	B	299	133	7E	3
L260	B	299	110	7C	3
L261	B	296	132	6B	3
L262	B	290	117	7E	3
L271-A	B	295	69	9E	3
L271-B				9E	3
L278	B	274	69	11E	3
L280	A	278	55	9C	3
L281	B	263	63	9B	3
L288	B	298	22	9C	3
L291	A	284	44	9D	3
L292	A	284	27	10C	3
L320	A	228	30	5F	4
L322	A	212	46	1A	4
L324	B	225	30	2C	4
L325	B	225	73	6E	4
L326	B	223	69	6E	4
L330	A	211	68	4A	4
L350	B	175	104	8C	4
L351	B	192	101	8C	4
L352	B	172	108	7C	4
L353	B	186	108	8C	4
L359	B	202	105	9C	4
L360	B	210	107	9C	4
L361	B	215	105	10C	4
L380	B	164	125	10E	4
L381	B	140	127	7F	4
L382	B	148	114	8F	4
L383	B	128	112	7E	4
L384	B	151	109	8E	4
L387	B	153	131	10E	4
L388	B	154	115	10E	4
L390	B	137	104	7E	4
L391	B	148	102	8E	4
L392	B	125	84	7E	4
L393	B	152	86	8E	4
L394	B	139	81	7E	4
L395	B	150	73	8E	4
L402	B	198	70	8E	5
L405	B	188	68	7E	5
L408	B	178	52	8D	5
L410	B	192	51	7D	5
L415	B	171	41	8D	5
L418	B	189	36	8B	5
L420	B	194	31	8A	5
L435	B	158	62	10E	5
L436	B	210	34	9C	5
L437	B	237	17	10C	5
L438	B	227	14	11C	5
L439	B	237	11	11C	5
L448	B	156	80	11E	5
L450	A	253	67	3A	5
L463	B	247	75	2E	5
L464	B	243	83	3E	5
L466	A	187	86	6B	5
L467	B	244	102	3D	5
L468	B	247	91	3D	5
L470	B	220	73	2C	5
L475	B	170	90	5C	5
L476	B	173	80	6C	5
L480	A	262	105	2A	5
L500	B	51	65	1A	6
L510	B	57	89	2A	6
L511	B	31	46	10E	2
L513	B	31	31	11E	2
L519	A	39	58	11C	2
L525	B	63	48	4F	6
L526	B	60	42	5F	6
L550	B	70	87	3A	6
L551	B	151	31	8D	7
L552	B	161	16	7D	6
L553	B	161	31	7D	6
L558	B	156	19	11D	6
L565	B	72	102	11F	6
L575	A	75	23	10D	6
L576	B	156	35	10D	6
L580	A	81	19	9C	6
L620	A	92	11	1B	7
L621	B	124	80	6F	7
L630	A	70	53	2B	7
L650	B	121	120	2B	7
N290	A	290	34	10D	3
N350	B	195	101	9C	4

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	05	01.03.94	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	4+

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
N430	B	158	50	9E	5	R58	B	173	135	6E	2	R261	A	281	114	7C	3
N440	B	158	71	11E	5	R59	B	177	140	7E	2	R262	B	296	111	7D	3
N460-A	A	237	91	3E	5	R65	A	188	117	7E	2	R263	B	284	110	7E	3
N460-B				4E	5	R67	A	187	124	7E	2	R264	A	281	117	7C	3
N460-C				4B	5	R68	A	15	25	8D	2	R265	A	285	139	6C	3
N465-A	B	189	83	3C	5	R69	A	51	140	8D	2	R266	A	276	112	6C	3
N465-B				6B	5	R71	B	173	117	6D	2	R267	A	289	112	6C	3
N468-A	B	243	87	5E	5	R72	B	173	120	6D	2	R269	A	285	65	10F	3
N468-B				5E	5	R73	B	177	125	7D	2	R270	B	286	62	9E	3
N468-C				2A	5	R75	A	13	44	7D	2	R271	A	276	15	11C	3
N468-D				2A	5	R77	A	18	41	7D	2	R272	B	286	57	10E	3
N468-E				4A	5	R80	B	13	44	6C	2	R273	B	292	48	10E	3
N470	B	219	87	1C	5	R81	B	15	44	6C	2	R274	A	296	50	10D	3
N530	A	54	115	5C	6	R82	B	15	42	6C	2	R275	A	295	56	10D	3
N550-A	B	95	122	10D	6	R83	B	20	24	7C	2	R276	B	277	57	10E	3
N550-B				6A	6	R85	A	15	58	7C	2	R277	A	280	65	11F	3
N562-A	B	85	119	9E	6	R87	A	17	67	7B	2	R278	B	278	54	11E	3
N562-B				5A	6	R89	B	29	39	9C	2	R279	B	278	32	8C	3
N565-A	B	90	130	8E	6	R91	B	13	55	6B	2	R280	B	292	34	8C	3
N565-B				5A	6	R92	B	19	62	6B	2	R281	B	274	20	11C	3
N585	B	88	138	6E	6	R93	B	17	69	6B	2	R282	B	272	41	11E	3
N680-A	A	133	116	10E	7	R94	A	43	47	9C	2	R283	A	287	12	9D	3
N680-B				10E	7	R96	B	29	60	8B	2	R284	A	292	22	9D	3
N680-C				10C	7	R97	B	30	67	8B	2	R285	B	272	26	10B	3
N680-D				10C	7	R98	B	31	57	8B	2	R286	B	284	41	8C	3
N680-E				6A	7	R99	A	36	43	9E	2	R287	B	277	14	11C	3
P325	B	236	70	6E	4	R100	A	93	52	4B	2	R288	A	295	37	9C	3
P326	B	239	70	6E	4	R101	A	91	66	4B	2	R289	A	292	33	10C	3
R1	A	21	118	2D	2	R105	A	112	37	3C	2	R290	A	280	22	11B	3
R2	B	31	109	2D	2	R200	A	199	130	2D	3	R291	A	276	24	11B	3
R4	A	37	100	2E	2	R201	A	207	116	2D	3	R292	A	277	34	9D	3
R6	A	28	104	2D	2	R202	A	203	130	2C	3	R293	A	280	37	10C	3
R7	A	14	109	2D	2	R204	A	204	120	2D	3	R294	B	284	34	9C	3
R8	A	17	124	2C	2	R206	A	210	122	2D	3	R295	A	292	39	10C	3
R10	A	32	109	2E	2	R207	A	220	137	2D	3	R296	B	278	28	10B	3
R11	A	25	114	2E	2	R208	A	211	128	3D	3	R297	A	280	31	10D	3
R15	A	18	104	3D	2	R209	A	211	131	2D	3	R298	B	284	28	10C	3
R16	A	17	101	3C	2	R210	B	221	133	3E	3	R299	B	284	16	11C	3
R17	A	29	113	3D	2	R212	B	208	124	2C	3	R309	A	263	45	2E	4
R21	A	35	116	4D	2	R213	B	210	124	3C	3	R310	A	255	37	2E	4
R22	A	43	124	4D	2	R217	A	201	134	2C	3	R311	A	255	39	3E	4
R30	A	32	98	4E	2	R223	B	225	136	3D	3	R312	A	252	47	3D	4
R31	A	40	96	4D	2	R240	B	279	128	5D	3	R313	A	244	34	4E	4
R35	A	26	86	5E	2	R241	B	288	124	5C	3	R314	A	248	37	5E	4
R36	A	25	96	5D	2	R249	B	265	46	12E	3	R315	B	222	55	5E	4
R38	A	40	89	5D	2	R250	B	272	141	5D	3	R316	A	252	50	3D	4
R40	A	35	84	5D	2	R251	A	278	130	6D	3	R317	A	238	37	4D	4
R42	A	23	84	5D	2	R252	B	265	52	11E	3	R318	A	231	41	4D	4
R47	A	20	84	5D	2	R253	B	262	48	12E	3	R319	A	234	31	5F	4
R48	A	15	90	6C	2	R255	A	281	133	6D	3	R320	A	243	46	5E	4
R49	A	20	77	6C	2	R256	A	281	135	6C	3	R321	A	240	46	4E	4
R50	A	188	132	7F	2	R257	A	286	128	6D	3	R322	B	226	66	6D	4
R53	A	187	138	7F	2	R258	A	293	130	6D	3	R323	B	232	66	6D	4
R56	B	173	132	6E	2	R259	A	289	133	6D	3	R324	B	234	70	6E	4
R57	B	173	130	6E	2	R260	A	289	128	7D	3	R325	B	233	76	6E	4

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	05	01.03.94	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	5+

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
R326	A	252	42	2E	4	R435	B	214	16	10C	5	R492	A	228	93	1A	5
R327	A	252	44	2E	4	R436	A	156	58	10E	5	R493	B	176	90	4C	5
R328	A	252	52	4C	4	R437	A	159	63	10F	5	R494	A	198	81	6A	5
R329	A	223	46	5F	4	R438	A	221	19	10D	5	R495	A	186	80	6A	5
R330	B	211	51	2A	4	R439	A	227	19	10D	5	R496	A	156	65	9F	5
R331	B	215	67	2A	4	R440	B	151	58	10E	5	R497	A	153	81	11F	5
R333	A	241	62	5E	4	R442	A	247	78	4A	5	R498	A	228	100	1B	5
R334	A	238	105	5D	5	R443	A	218	19	10C	5	R499	A	224	105	1B	5
R335	A	219	66	5D	4	R444	A	252	91	5A	5	R500	A	39	61	2E	6
R336	A	216	67	5C	4	R445	A	257	11	11C	5	R501	A	49	60	2E	6
R337	A	175	108	4D	5	R446	B	225	16	10C	5	R502	A	49	70	2E	6
R338	A	231	105	5D	5	R447	B	228	19	10C	5	R503	A	41	61	2E	6
R339	A	150	138	4D	5	R448	A	261	17	11C	5	R504	A	44	59	2E	6
R341	A	260	45	3D	4	R449	B	224	91	5E	5	R505	A	46	59	2E	6
R342	A	236	34	3D	4	R450	B	223	93	5F	5	R506	A	39	70	2E	6
R343	A	258	49	3D	4	R451	A	159	88	11E	5	R507	B	42	35	10D	2
R350	B	172	98	7C	4	R452	A	155	84	11F	5	R509	B	34	35	7B	6
R351	A	190	100	9D	4	R453	A	231	93	4E	5	R510	A	62	81	3E	6
R352	A	201	98	9D	4	R454	B	159	85	11E	5	R511	B	39	32	10E	2
R355	A	203	103	9D	4	R455	B	161	88	11E	5	R512	B	63	70	1C	6
R357	B	211	98	9C	4	R456	A	233	89	4E	5	R513	B	27	34	11E	2
R360	A	221	105	10D	4	R457	B	161	90	11E	5	R514	A	29	31	11D	2
R362	A	210	101	11C	4	R458	B	154	90	11E	5	R515	A	31	39	11D	2
R363	A	207	107	11C	4	R459	A	215	92	6D	5	R516	B	44	58	11C	2
R380	A	159	123	9F	4	R460	B	240	80	1E	5	R517	A	45	55	11C	2
R381	A	160	130	10F	4	R461	A	259	75	1E	5	R518	B	56	48	11C	2
R382	B	156	128	9E	4	R462	A	259	85	2E	5	R519	B	38	60	11C	2
R383	B	159	119	9E	4	R463	B	262	85	2E	5	R520	A	77	43	2D	6
R384	B	156	121	9E	4	R464	A	232	86	3E	5	R521	A	69	43	2C	6
R385	B	162	128	10E	4	R465	B	228	104	1D	5	R522	A	73	46	2C	6
R388	A	154	107	11E	4	R466	A	258	96	1E	5	R523	A	71	39	4E	6
R400	B	214	91	2C	5	R467	A	262	102	2D	5	R524	B	62	54	4F	6
R401	B	179	50	8D	5	R468	B	257	92	2D	5	R525	A	81	78	2D	6
R405	B	174	47	8D	5	R470	A	234	99	3D	5	R526	A	72	84	2D	6
R406	B	203	47	7C	5	R471	A	238	84	3E	5	R527	A	69	36	4D	6
R407	A	200	44	7C	5	R472	B	196	90	4D	5	R528	A	73	62	3D	6
R411	B	194	41	8C	5	R473	B	214	76	2C	5	R529	A	70	62	3D	6
R412	B	191	41	8C	5	R474	B	199	88	4C	5	R530	A	53	82	5D	6
R415	B	180	30	8A	5	R475	B	217	81	2C	5	R531	A	53	75	6D	6
R416	B	178	30	7A	5	R476	B	203	83	3C	5	R533	A	34	43	8B	6
R417	B	196	35	8B	5	R477	A	173	86	5D	5	R535	A	78	66	3B	6
R418	B	191	30	9B	5	R478	B	233	86	4A	5	R536	A	77	72	4B	6
R419	B	189	34	8B	5	R479	A	215	87	6D	5	R540	B	66	78	4C	6
R422	B	253	85	5F	5	R480	B	253	91	5F	5	R541	A	51	96	4C	6
R424	B	237	104	5D	5	R481	B	250	93	5E	5	R542	A	65	85	4C	6
R425	A	212	98	6F	5	R482	B	233	99	5E	5	R543	A	59	97	4C	6
R426	A	211	90	6E	5	R483	B	240	99	5E	5	R544	A	60	112	4C	6
R427	B	231	101	6E	5	R484	A	241	100	4B	5	R545	A	51	116	5C	6
R428	B	234	19	10C	5	R485	A	175	86	5D	5	R546	A	63	131	5D	6
R429	B	211	16	9C	5	R486	A	236	78	4A	5	R547	A	63	105	4B	6
R430	B	158	44	9E	5	R487	A	225	82	5B	5	R548	A	63	121	5D	6
R431	B	161	48	9D	5	R488	A	217	81	5B	5	R550	A	60	128	5C	6
R432	B	211	85	2C	5	R489	A	231	99	1A	5	R551	B	99	126	9D	6
R433	B	151	51	9D	5	R490	B	189	81	3D	5	R552	B	96	115	10D	6
R434	B	218	26	9C	5	R491	B	195	81	3D	5	R553	B	101	110	10D	6

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	05	01.03.94	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	6+

Part	Side	X	Y	Sqr	Pg
R554	B	71	109	10F	6
R555	A	83	132	7E	6
R556	A	102	134	7E	6
R558	A	88	140	7E	6
R559	A	98	139	7D	6
R560	A	63	64	7E	6
R561	A	95	122	9E	6
R562	A	89	113	9E	6
R563	A	81	121	9E	6
R564	A	63	53	8C	6
R565	A	88	100	9D	6
R566	A	93	100	9D	6
R567	B	53	70	9F	6
R568	A	90	122	9E	6
R569	A	80	124	9E	6
R570	A	57	56	7B	6
R571	A	72	121	10E	6
R573	B	71	99	11F	6
R574	B	83	99	11E	6
R575	B	67	21	8C	6
R576	B	96	97	10D	6
R577	B	48	19	8C	6
R578	B	75	24	9C	6
R579	B	77	20	9D	6
R580	A	65	24	10C	6
R581	A	67	18	10C	6
R582	B	66	16	8B	6
R583	B	75	18	9C	6
R584	B	102	133	6E	6
R587	B	92	141	6E	6
R589	A	85	95	12F	6
R590	B	86	134	6F	6
R591	B	80	99	10E	6
R592	B	65	24	9C	6
R593	B	63	12	8B	6
R597	B	85	95	11E	6
R598	B	74	95	10F	6
R599	B	78	104	11E	6
R600	B	142	20	3F	7
R601	B	123	23	3E	7
R602	B	139	20	3E	7
R603	B	136	24	3D	7
R604	B	113	24	3D	7
R605	B	95	13	2E	7
R607	B	100	17	2D	7
R608	B	95	21	3D	7
R610	B	135	36	3F	7
R611	A	125	37	3E	7
R612	A	135	43	3E	7
R613	A	132	45	3D	7
R614	A	121	45	3D	7
R615	B	133	22	3E	7
R616	A	122	36	3E	7
R619	A	124	58	4D	7
R620	B	120	99	3C	7
R629	A	81	55	5C	7
R630	A	135	50	4E	7
R631	A	141	55	4E	7
R632	A	130	56	4E	7
R633	A	141	57	4E	7
R634	A	141	65	4E	7
R635	A	141	67	4E	7
R636	A	141	70	4E	7
R638	A	133	67	5E	7
R639	A	130	69	5E	7
R640	A	132	62	5E	7
R641	A	127	69	5E	7
R642	A	128	64	5D	7
R643	A	127	59	5D	7
R644	A	124	69	5D	7
R645	A	125	62	5D	7
R649	B	117	117	7B	7
R650	B	124	135	9E	7
R652	B	151	16	8B	7
R653	B	123	88	8D	7
R659	B	124	130	3A	7
R660	B	133	136	9D	7
R661	B	139	140	9C	7
R662	B	130	130	9C	7
R680	B	126	117	10E	7
R681	B	130	119	10E	7
R682	B	124	120	10D	7
R685	B	126	114	10E	7
R687	B	128	101	10E	7
R688	B	120	105	11E	7
R690	A	130	119	6B	7
R691	B	133	121	10C	7
R692	B	135	118	10C	7
R693	B	134	127	10D	7
R694	B	130	107	10D	7
R697	B	128	126	11D	7
R698	A	138	98	11C	7
V5	A	17	115	2D	2
V10	A	35	105	2D	2
V14	B	22	103	3D	2
V35	A	29	93	4D	2
V60	B	182	140	7E	2
V69	A	17	21	8D	2
V70	B	182	125	7D	2
V80	B	19	29	7C	2
V90	B	21	67	7B	2
V95	B	28	63	8B	2
V105	B	118	42	3C	2
V205	A	213	116	2D	3
V206	A	214	129	3D	3
V240	B	285	129	5D	3
V255	A	279	127	6D	3
V260	A	291	127	6D	3
V262	B	292	119	7E	3
V263	B	276	114	7E	3
V265	A	285	114	6C	3
V279	B	284	37	8C	3
V280	B	288	50	11E	3
V285	B	298	42	8C	3
V290	B	282	27	10C	3
V295	B	282	16	11C	3
V299	A	284	17	11B	3
V320	A	244	41	5E	4
V321	A	240	41	4E	4
V322	A	238	44	4E	4
V323	A	247	49	5E	4
V325	B	227	61	5D	4
V361	A	213	102	11C	4
V380	B	160	128	9E	4
V383	B	150	118	9E	4
V400	B	183	64	8E	5
V401	B	185	67	8E	5
V402	B	175	64	8E	5
V403	B	179	64	7E	5
V404	B	172	71	7F	5
V405	B	180	68	7E	5
V406	B	182	68	7E	5
V407	B	176	71	7E	5
V408	B	180	44	7D	5
V418	B	196	37	8C	5
V420	B	194	48	7C	5
V422	B	255	88	5F	5
V424	B	234	108	5D	5
V425	B	227	97	6E	5
V426	B	230	95	6E	5
V435	B	222	17	10C	5
V437	A	252	13	11C	5
V460	A	196	80	6A	5
V466	A	262	87	2E	5
V473	B	174	83	5C	5
V475	A	173	90	5C	5
V514	A	31	25	11E	2
V518	B	47	55	11C	2
V530	A	52	88	5D	6
V531	A	58	74	6D	6
V535	A	81	62	3B	6
V536	A	81	70	3B	6
V540	A	63	137	6C	6
V555	A	102	106	10D	6
V566	A	56	20	8C	6
V570	A	74	117	10E	6
V571	A	77	116	10E	6
V575	B	67	18	9C	6
V582	B	71	24	9C	6
V583	B	60	23	9C	6
V584	B	61	18	9C	6
V585	B	77	99	11E	6
V586	B	84	104	11E	6
V587	A	71	22	10C	6
V590	B	65	12	8B	6

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	05	01.03.94	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	7+

Part	Side	X	Y	Sqr	Pg
V660	B	121	133	4A	7
V697	B	122	123	11D	7
V698	B	132	102	11C	7
X408	B	194	72	8E	5
X463	B	232	77	2B	5
X543	B	53	133	6C	6
Z1	B	44	81	2E	2
Z95	B	49	33	10E	2
Z100	B	110	27	2C	2
Z101	B	95	27	2B	2
Z102	B	105	27	2B	2
Z103	B	90	27	2B	2
Z104	B	100	27	2A	2
Z210	B	202	108	2B	3
Z280	B	265	56	9B	3
Z382	B	140	119	7F	4
Z384	B	140	109	7E	4
Z390	B	140	99	7E	4
Z391	B	143	86	7E	4
Z392	B	143	76	7E	4
Z550	B	161	22	7D	6
Z560	B	156	29	11D	6
Z600	B	141	27	3F	7
Z601	B	126	27	3E	7
Z602	B	136	27	3E	7
Z603	B	131	27	3D	7
Z604	B	116	27	3D	7
Z605	B	121	27	3E	7
Z650	B	151	22	8B	7

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Stromläufe
Bestückungspläne
Circuit diagrams
Components plans
Schémas de circuit
Plans des composants

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