

List of Exhibits

A:

- ID-Label
- Photo of the Equipment
- Photo of Interior Views
Including all PCB's

B:

- Instruction Manual
- Technical Documentation

C:

- Test Report

Technical Characteristics of the A.D.C. Radar System

Issue 1.5

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ACC pulse doppler radar system

Technical Description

Automotive Distance
Control Systems GmbH

1. General Description

The A.D.C. automotive radar system for autonomous intelligent cruise control (AICC) and collision warning monitors the traffic area in front of the vehicle using three stationary independent millimeter wave radar beams.

Moving and stationary objects are detected and their distance and relative velocity is measured and processed continuously.

Sixteen times per second the actual traffic situation is analyzed by a digital signal processor within the ECU supplying information to engine control and brake systems in order to operate the vehicle in a distance controlled mode referenced to the relevant object ahead. In case of critical situations a warning can be given to the driver in order to enhance his reaction time.

Due to its physical nature the radar sensor is offering excellent performance characteristics even in adverse weather conditions (fog, rain and snow).

Additional information of vehicle driving conditions is required from standard or specialized in-vehicle sensors, e.g. speed, steering angle and/or yaw rate. This data is made available to the ECU via a universal car network (e.g. CAN) or specific interface circuits.

System hardware configuration is characterized by a two box design with a radar sensor (front end) mounted in the front of the car, typically behind the radiator, and a related Electronic Control Unit in an arbitrary location. Car specific demands and cost issues may lead to a one box solution in the future.

Packaging of the radar frontend is self-contained and the unit is applicable in space critical vehicle environments. The antenna design is based on a monostatic patented reflector arrangement offering optimum mechanical dimensions.

A block diagram of the system is shown in fig. 1

ACC pulse doppler radar system

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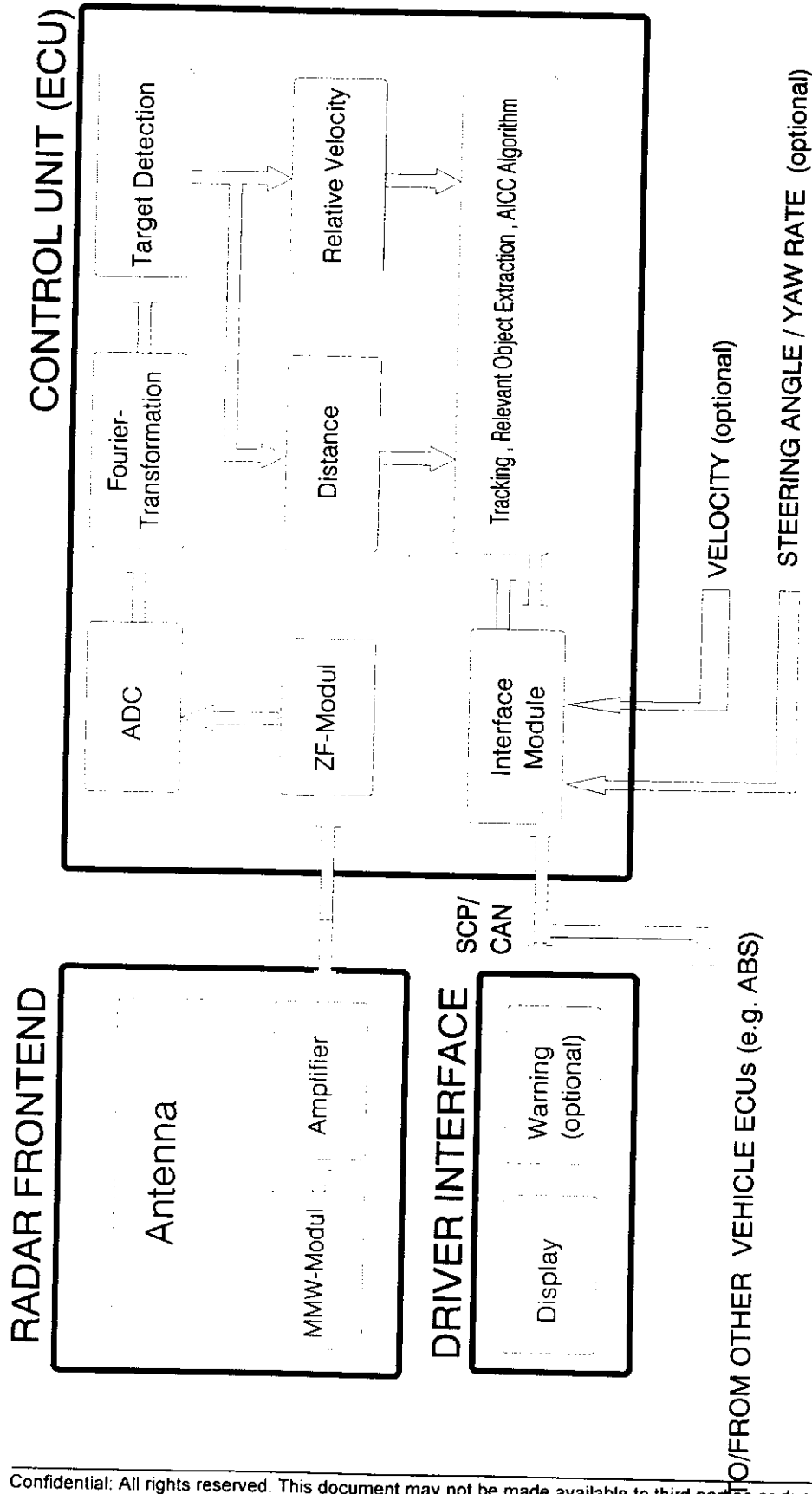


Fig.1 AICC Radar System Functional Block Diagram

2. Technical Characteristics

2.1. System Key Features

Table 1 summarizes technical key features on system level.

Parameter	Value
Operating Frequency	76 ... 77 GHz
Modulation Principle	FM - Pulse Doppler
Average Output Power	200 μ W
Beams	three beams with 3.4 ° each
Number of Objects	up to 20
Range	0.5 150 m
Range resolution	1 m (between 7 and 150 m)
Relative velocity	-50 200 km/h
Velocity resolution	1 km/h
Angle Resolution	0.5 °
Processing cycle time	66 ms

Table 1 : Technical Key Features

2.2. Detection Performance

The basic data detection requirement is to measure distance, relative speed, and reflection signal amplitude of moving and stationary objects in three beams. Angular target position is calculated by interpolation algorithms based on signal levels in adjacent beams.

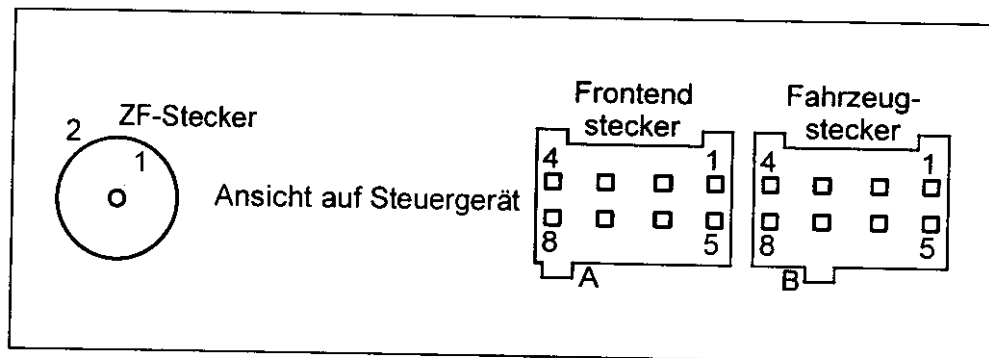
Some technical data of detection performance is summarized in table 2.

Parameter	Value
Antenna beam width azimuth	10.2° (-3dB)
Antenna beam width elevation	3.0° (-3dB)
Range gates	30 per beam , 5m long
Target separation	5 m in longitudinal direction
Multiple target capability	up to 20
Min. detectable radar cross section	100 m : 1 qm ² 150 m : 10 qm ²
Max. detectable radar cross section	50 ... 150 m: 10000 qm ² 5 ... 150 m: 100000 qm ² (saturated)

Table 2 : Detection Performance

2.3. Electrical Interfaces

2.3.1. Electronic Control Unit



Operating input voltage:	9 V ... 32 V
Reverse polarity protection :	Yes
Input current :	< 2A
Short circuit protection :	all inputs/output against ground and V _{batt}
Vehicle data interface:	AMP Micro Quadlock (8 pins)
Frontend data interface:	AMP Micro Quadlock (8pins)

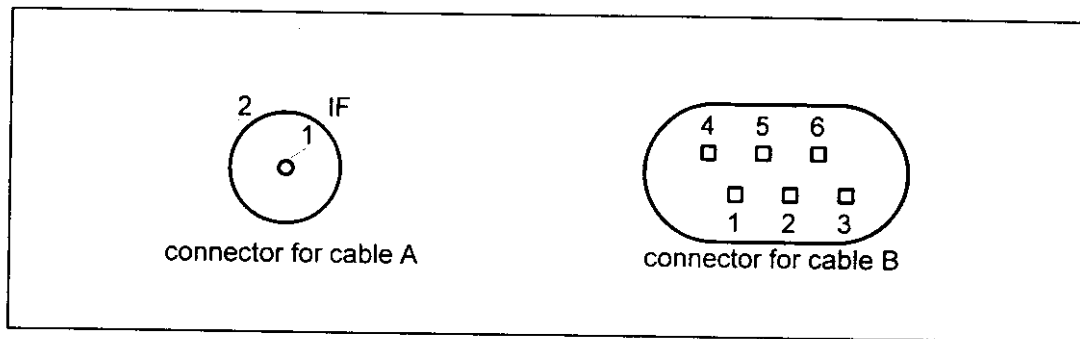
ACC pulse doppler radar system

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2.3.2. Interface Frontend - ECU

Signals between frontend and electronic control unit are transferred via two cables (cable A, cable B). Via cable B additionally the power for the frontend is supplied.



The IF-Signal is transferred from the frontend FE to the electronic control unit ECU.

IF- Signal :	Coaxial (180 MHz) ,
IF-Frequency:	180 MHz \pm 20 MHz
IF-Bandwidth:	60 MHz min
IF-impedance:	50 Ohm
IF Return Loss:	- 15 dB max
IF Peak Power:	+10 dBm max
Data Connector	AMP Micro Quadlock (6 pins)
Data (max. baudrate):	30 kBd
Power Supply:	15 V / .7 A (generated by ECU)
Ripple on VFE:	100 mV, if $C_{FE} > 100\mu F$
Inrush current:	1.0 A max for 1 sec.

2.4. Environmental Conditions

2.4.1. Electronic Control Unit

Operating temperature range: $-25^{\circ}\text{C} \dots +70^{\circ}\text{C}$

Storage temperature range: $-40^{\circ}\text{C} \dots +105^{\circ}\text{C}$ (+125°C for 180 min)

2.4.2. Radar Frontend

Operating temperature range: $-25^{\circ}\text{C} \dots +70^{\circ}\text{C}$ (full performance)

$+70^{\circ}\text{C} \dots +95^{\circ}\text{C}$ (sensor switched off)

Storage temperature range: $-40^{\circ}\text{C} \dots +105^{\circ}\text{C}$ (+125°C for 180 min)

Vibration levels:

- 1g over 1Hz ... 13 Hz
- 5g over 13 Hz ... 30 Hz
- 1g over 30 Hz ... 2 KH

2.5. Self Diagnostic Functions

Self diagnostic information is provided via a serial diagnostics interface under following conditions :

- Frontend performance limitations or failures in different categories

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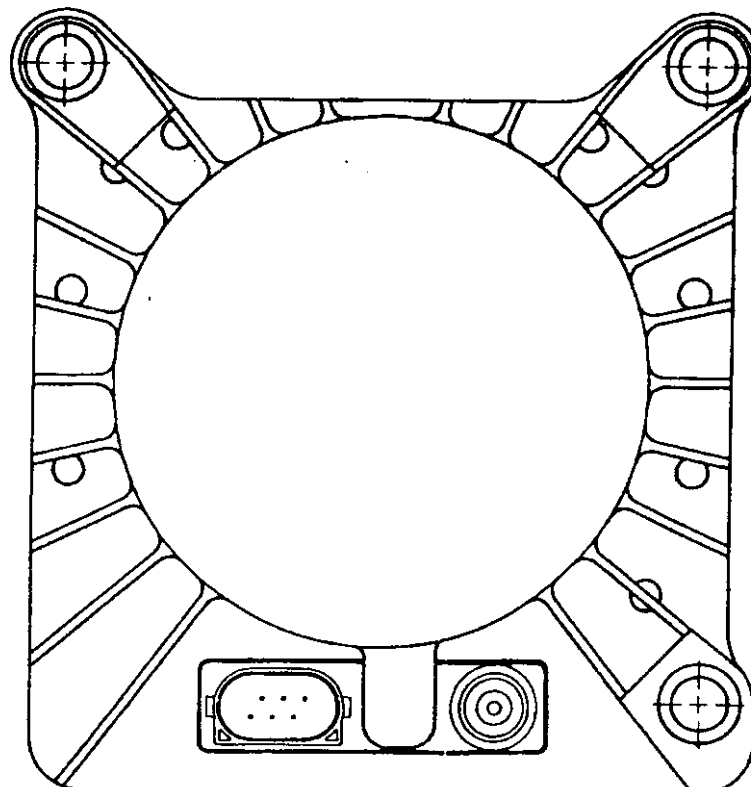
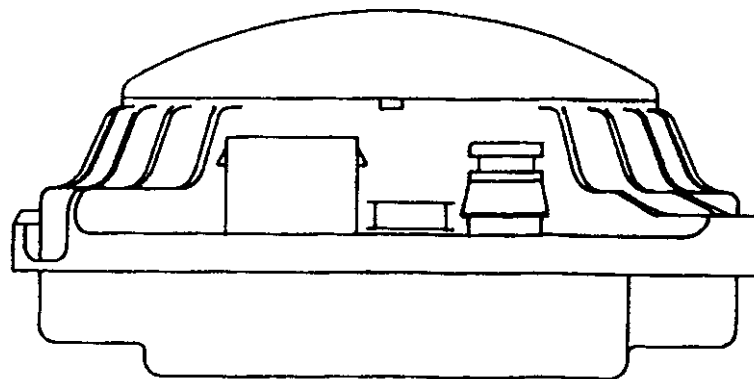
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- Harness defect between Frontend and ECU in different categories
- ECU internal failures

2.6. Mechanical dimensions

2.6.1. Radar frontend



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Technical Description

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Mechanical dimensions :

Circular diameter :	100 mm
Height :	70 mm
Outer dimensions :	132 mm x 132 mm (without brackets)
Packaging requirements :	IP 6k9
Weight :	850 gr.

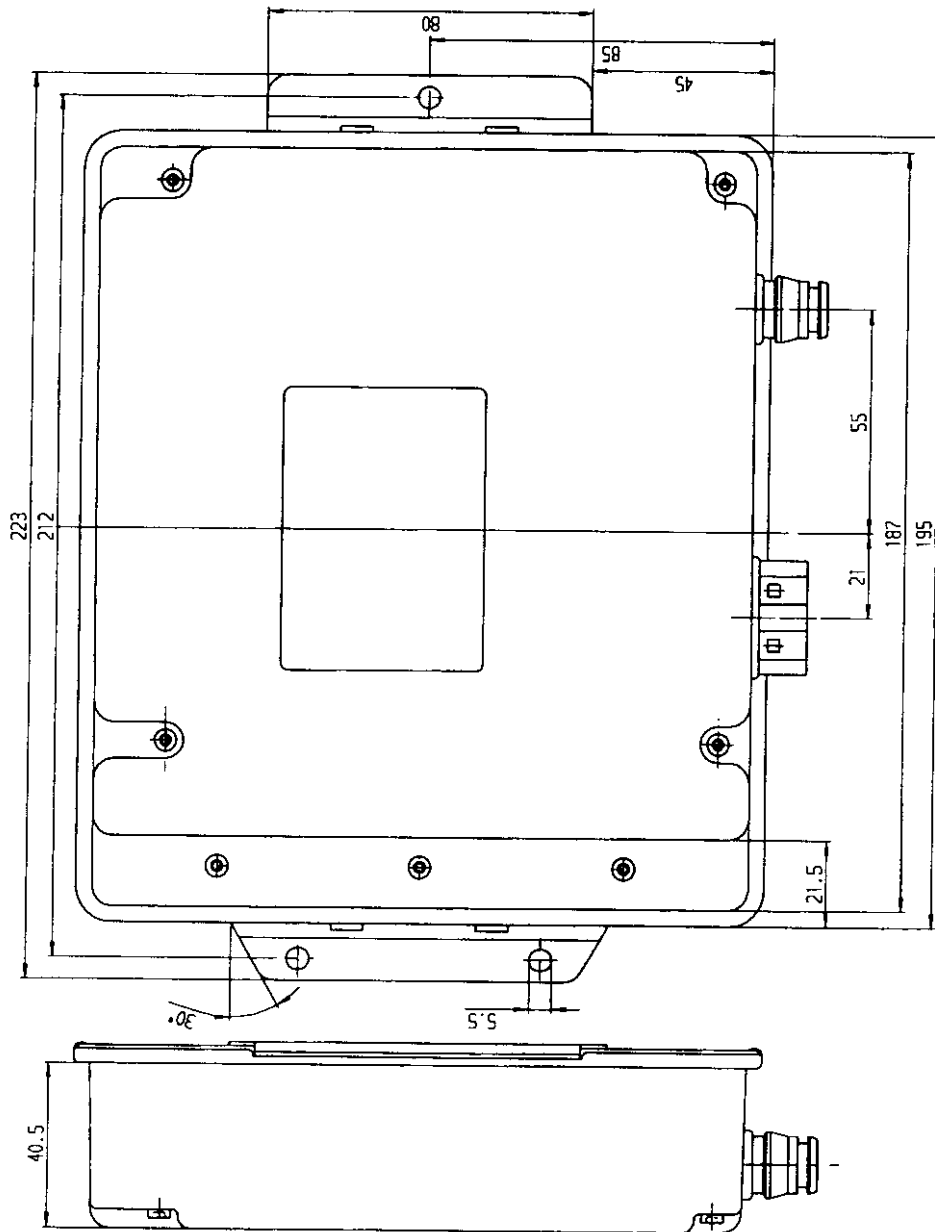
2.6.2. Electronic Control Unit

Mechanical dimensions:	225mm x 195mm x 45mm
Packaging requirements :	IP 6k6
Weight :	805 gr.

ACC pulse doppler radar system

Technical Description

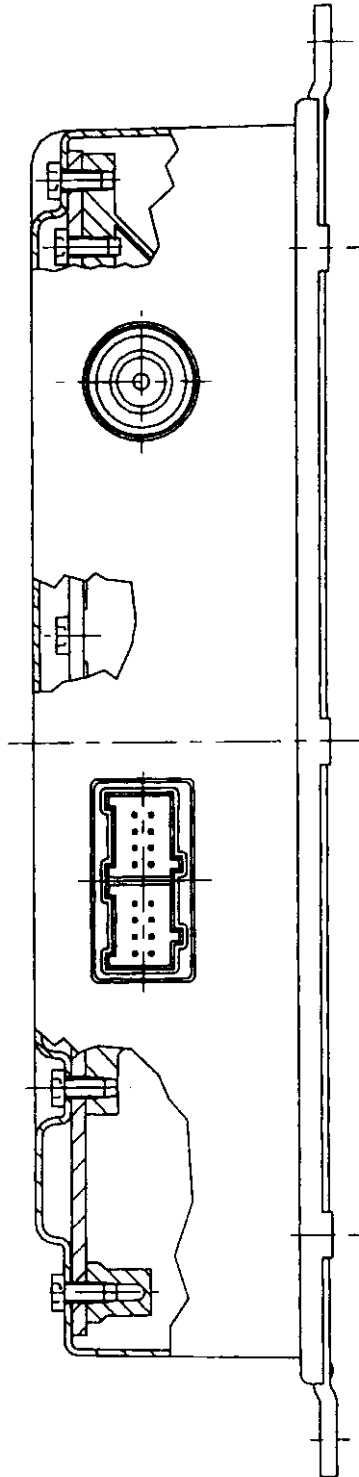
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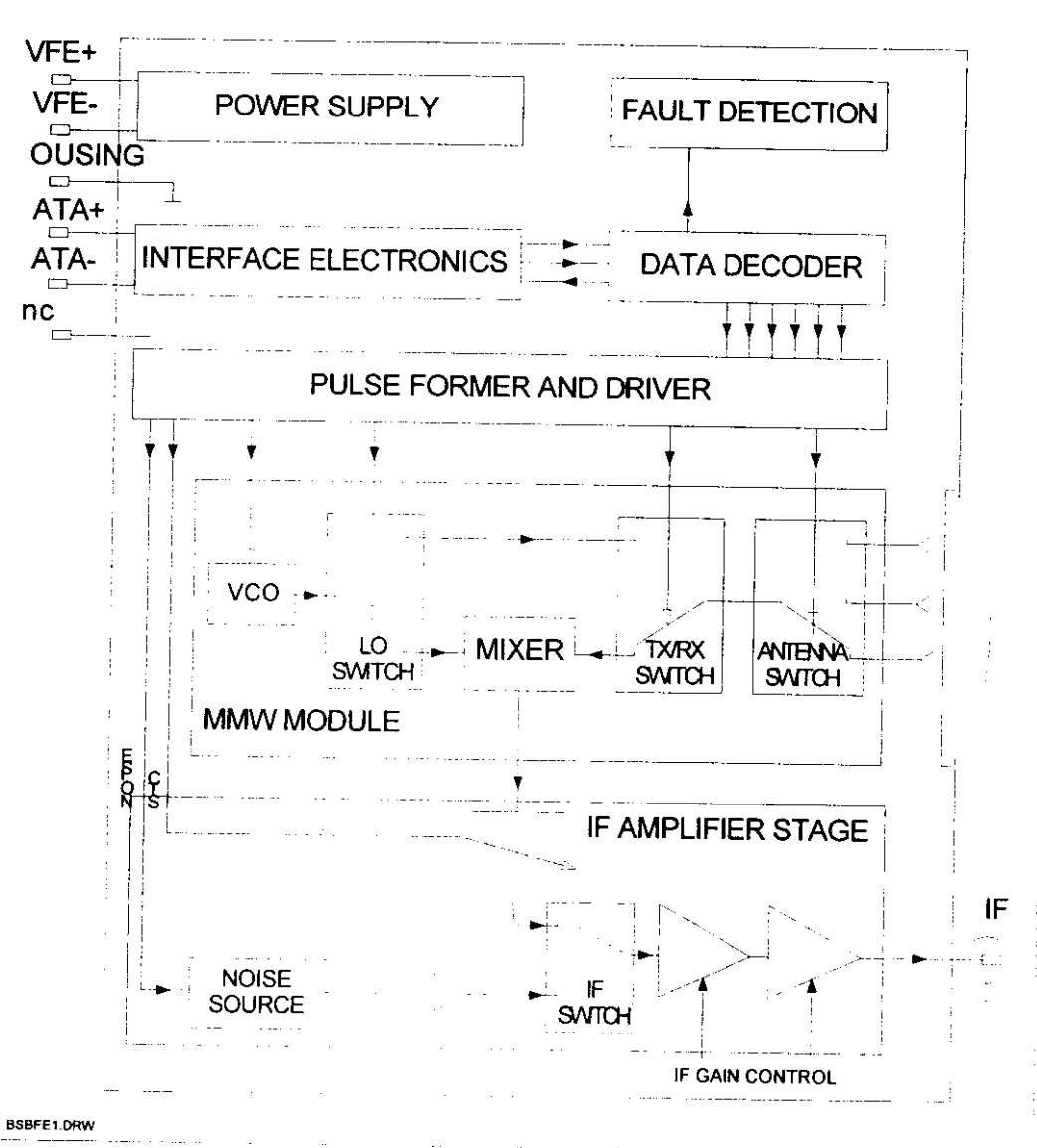
Name	Cod.	Nr.	Name	Beschreibung
Frontend-stecker	A	1	GND	Massebezugspotential für das Frontend
Frontend-stecker	A	2	DATA-	Serielle Schnittstelle zwischen SG und Frontend
Frontend-stecker	A	3	-	Nicht benutzt
Frontend-stecker	A	4	VFE-	Negative Versorgungsspannung für das Frontend
Frontend-stecker	A	5	-	Nicht benutzt
Frontend-stecker	A	6	DATA+	Serielle Schnittstelle zwischen SG und Frontend
Frontend-stecker	A	7	-	Nicht benutzt
Frontend-stecker	A	8	VFE+	Positive Versorgungsspannung für das Frontend

Name	Cod.	Nr.	Name	Beschreibung
Fahrzeug-stecker	B	1	CANH	High Speed CAN-Bus zur Kommunikation
Fahrzeug-stecker	B	2	DIAG	Diagnoseleitung (K-Leitung)
Fahrzeug-stecker	B	3	-	Nicht benutzt
Fahrzeug-stecker	B	4	KL07	Positive Versorgungsspannung
Fahrzeug-stecker	B	5	CANL	High Speed CAN-Bus zur Kommunikation
Fahrzeug-stecker	B	6	-	Nicht benutzt
Fahrzeug-stecker	B	7	-	Nicht benutzt
Fahrzeug-stecker	B	8	KL31	Negative Versorgungsspannung für das Frontend

Schutzart nach DIN 40 050: IP 30

Name	Cod.	Nr.	Name	Beschreibung
ZF-Stecker	ZF	1	ZF+	180MHz-Zwischenfrequenzsignal
ZF-Stecker	ZF	2	ZF-	Hochfrequenzmasseverbindung

P.Glocker, Jan. 11, 1999



Oszillators in the sensor:

Clock generator for controller (11.260MHz)

Stueck	ME	Identnr.	Bezeichnung	Lieferant	Lieferantenbezeichnung	Gesp.	Lager	IN	Lager	MLA
4	ST	195307	BUCHSE	AMP	50462-7.....					
6	ST	191306	CAC* 33U20% 25 BE-D S-12	Nichicon Corp.	UUT1E330MCR1G5.....		0		0	
				Panasonic GMBH	EEV HA 1E 330 P.....		0		0	
1	ST	192996	CKC* 1N 2% 50NPO S-80805	Kemet	C0805C102G5GAC.....		0		0	
				TDK Electronics	C2012COG1H102GT.....		0		0	
3	ST	194888	CKC* 1N10% 50COG S-80603	AVX Ceramics	0603 5A 102 K AT2A.....		0		0	
17	ST	192910	CKC* 1N10% 63X7R S-80603	Kemet	.....		0		0	
				Murata Elek.	.....		0		0	
				Philips Compon.	2222 58616 614.....		0		0	
				TDK Electronics	.....		0		0	
6	ST	192251	CKC* 1U10% 16X7R S-81206	Kyocera	CM316 X7R 105K 16.....		0		36570	
				TDK Electronics	C3216X7R1C105KT.....		0		36570	
2	ST	192932	CKC* 10N10% 63X7R S-80603	Kemet	C0603C103K5RAC.....		0		0	
				Murata Elek.	GRM39X7R103K50PT.....		0		0	
				Philips Compon.	2222 58616 627.....		0		0	
				TDK Electronics	C1608X7R1H103KT.....		0		0	
6	ST	194285	CKC* 12P 5% 63NPO S-80603	Kemet	.....		0		0	
				Murata Elek.	.....		0		0	
				Philips Compon.	2222 867 15129.....		0		0	
				TDK Electronics	.....		0		0	
16	ST	190953	CKC* 22N10% 50X7R S-80805	Kemet	C0805C223K5RAC.....		0		172000	
				TDK Electronics	C2012X7R1H223KT.....		0		172000	
2	ST	190574	CKC* 22P 5% 63COG S-80805	Kemet	C0805C220J5GAC.....		0		8000	
				Philips Compon.	2222-861-15-229.....		0		8000	
				Siemens AG	B37940-K5220-J62.....		0		8000	
				TDK Electronics	C2012COG1H220JT.....		0		8000	
18	ST	190573	CKC*100N10% 50X7R S-80805	Kemet	C0805C104K5RAC.....		270000		328000	
				TDK Electronics	C2012X7R1H104KT.....		270000		328000	
				Vitramon GMBH	VJ0805Y104KXAT.....		270000		328000	
16	ST	191770	CKC*100P 5% 50NPO S-80603	Kemet	.....		0		20000	
				ROHM Electro.	MCH185A101JK.....		0		20000	
				TDK Electronics	C1608 CH 1H 101 JT.....		0		20000	
1	ST	194766	CKC*2,2P ** 50COG S-80603	Kemet	C0603C229C5GAC.....		0		0	
				Murata Elek.	GRM39COG2R2C50PT.....		0		0	
				TDK Electronics	C1608COG1H2R2CT.....		0		0	
1	ST	194159	CKC*470P 2% 50COG S-80805	Kemet	C0805C471G5GAC.....		0		0	
				Murata Elek.	GRM40COG471G50PT.....		0		0	
				TDK Electronics	C2012COG1H471GT.....		0		0	
				Vitramon GMBH	VJ0805A471GXAT.....		0		0	
1	ST	191480	CTC* 10U20% 10 S-8TNTB	Kemet	T4918106K010AS.....		0		8000	
1	ST	195227	CTC* 47U20% 20 S-8TNTB	Kemet	T494X476M020AS.....		330		0	
				Siemens AG	B45197-A4476-M50.....		330		0	
2	ST	190958	DSC*LS4148 D0213 S-8	TEMIC	LS4148.....		40000		667500	
2	ST	191766	DZC*BZT55C5V1*00213 S-8	Philips Compon.	BZT55C5V1.....		12500		5000	
				TEMIC	BZT55C5V1.....		12500		5000	
				TEMIC	TZM55C5V1.....		12500		5000	
1	ST	192492	DZC*BZT55C9V1 D0213 S-8	TEMIC	BZT55C9V1.....		0		0	
1	ST	191070	DZC*P6SMB20* SMB S-8	Motorola GMBH	P6SMB20AT3.....		2500		0	
4	ST	194765	FHF*BLM11A601SPT S-12	Murata Elek.	BLM11A601SPT.....		120		0	
5	ST	194918	FHF*NFM41P11C* 4516S-12	Murata Elek.	NFM41P11C204T1.....		0		0	
1	ST	190286	IC *74HC00 SO-14 S-16	Motorola GMBH	MC74HC00AD.....		0		0	
				Philips Compon.	PC74HC00T.....		0		0	
1	ST	192560	IC *LM2941S* T0263 S-24	National Semi.	LM2941S.....		0		0	
1	ST	195564	IC *MAX810L* SOT23 S-8	Maxim GMBH	MAX810LEUR-T.....		0		0	
1	ST	190918	IC *X24C08S8I SO-8 S-8	Xicor GMBH	.....		0		0	
1	ST	192118	ICC*65ALS180* SO-14 S-14	Texas Instrum.	SN65ALS180D.....		0		0	
3	ST	194361	ICC*74AC11000*SO-16 S-16	Texas Instrum.	74AC11000DR.....		0		0	
1	ST	194343	ICC*74AC11008*SO-16 S-16	Texas Instrum.	74AC11008DR.....		0		0	
1	ST	194167	ICC*74AC11032*SO-16 S-16	Texas Instrum.	74AC11032DR.....		0		0	
1	ST	194344	ICC*74AC11086*SO-16 S-16	Texas Instrum.	74AC11086DR.....		0		0	
2	ST	194168	ICC*74AC11244*SO-24 S-24	Texas Instrum.	74AC11244DR.....		0		0	
1	ST	194166	ICC*74ACT11000*SO-16 S-16	Texas Instrum.	74ACT11000DR.....		0		0	
1	ST	194360	ICC*74HCT4538*SO-16 S-16	Harris Semicon.	CD74HCT4538M.....		0		0	
				Philips Compon.	PC74HCT4538D.....		0		0	
1	ST	194165	ICC*AD8402AR* SO-14 S-14	Analog Devices	AD8402AR10.....		0		0	
1	ST	194218	ICC*B101312U *SO-20 S-24	Atmel	B101312U.....		0		0	
1	ST	190260	ICC*LM2904M SO-8 S-8	National Semi.	LM2904M.....		0		5000	
				Philips Compon.	LM2904D.....		0		5000	
1	ST	194190	ICC*LM75* SO-8 S-8	National Semi.	LM75CIMX-5.....		0		0	
2	ST	194020	ICC*MC7805BD2*D2PAK S-24	Motorola GMBH	MC7805BD2TR4.....		0		3200	
1	ST	195426	ICM*87C54-16* PROGRAM.	EBV Elektronik	AN87C54-16 / SW = 2.1.....		0		0	
4	ST	191343	LSD* 1U SIMID S-8	Siemens AG	B82432-A1102-M.....		0		0	
1	ST	190895	LSD* 51U 0,5A S-12	Siemens AG	B82790-S0513-N201.....		13500		195925	
1	ST	194217	LSD*PLM250S40*SMD	Murata Elek.	PLM250S40.....		0		0	
23	ST		NICHT BESTUECKT				0		0	
1	ST	195027	QUARTZ 11 360KHz				0		0	

Stueck ME Identnr.	Bezeichnung	Lieferant	Lieferantenbezeichnung	Gesp. Lager	IN Lager	MLA
1 ST 191200	RCM* 10K 1%,10W0805S-8	Deut. Vitrohm	503-0 10K 1% TK100 V5.....	0	255000	
		First Resistor	CP-016 F 10K 100 TR8P50.....	0	255000	
		ROHM Electro.	MCR10 EZH FX103.....	0	255000	
		TAI Electronic	RM10 FT 103.....	0	255000	
13 ST 193696	RCM* 10K 5%,06W0603S-8	First Resistor	.....	0	35000	
		Philips Compon.	2322 702 60103.....	0	35000	
		ROHM Electro.	MCR03 EZH J103.....	0	35000	
		TAI Electronic	.....	0	35000	
5 ST 193624	RCM* 10R 5%,06W0603S-8	First Resistor	.....	0	0	
		Philips Compon.	2322 702 6010R.....	0	0	
		ROHM Electro.	MCR03 EZH J10R.....	0	0	
		TAI Electronic	.....	0	0	
1 ST 193402	RCM* 15K 1%,06W0603S-8	First Resistor	.....	0	0	
		Philips Compon.	2322 704 61503.....	0	0	
		ROHM Electro.	MCR03 EZH FW153.....	0	0	
		TAI Electronic	.....	0	0	
1 ST 191514	RCM* 15K 1%,10W0805S-8	Deut. Vitrohm	.....	0	0	
		Draloric Elec.	.....	0	0	
		First Resistor	.....	0	0	
		Panasonic GMBH	.....	0	0	
		ROHM Electro.	.....	0	0	
		TAI Electronic	.....	0	0	
1 ST 190679	RCM* 16R 5%,10W0805S-8	First Resistor	.....	0	0	
		ROHM Electro.	.....	0	0	
		TAI Electronic	.....	0	0	
1 ST 191403	RCM* 18K 1%,10W0805S-8	First Resistor	.....	0	11000	
		ROHM Electro.	.....	0	11000	
		TAI Electronic	.....	0	11000	
1 ST 193416	RCM* 21K 1%,06W0603S-8	First Resistor	.....	0	0	
		ROHM Electro.	.....	0	0	
		TAI Electronic	.....	0	0	
5 ST 193704	RCM* 22K 5%,06W0603S-8	First Resistor	.....	0	0	
		Philips Compon.	2322 702 60223.....	10000	15000	
		ROHM Electro.	MCR03 EZHWJ 223.....	10000	15000	
		TAI Electronic	.....	10000	15000	
3 ST 190691	RCM* 51R 5%,10W0805S-8	First Resistor	.....	10000	15000	
		ROHM Electro.	CP-016 J 51R 200 TR8P50.....	5000	0	
		TAI Electronic	MCR10 EZH (FZH)JW510.....	5000	0	
1 ST 190571	RCM* 100K 1%,10W0805S-8	Deut. Vitrohm	RM10 JT 510.....	5000	0	
		First Resistor	.....	0	165000	
		ROHM Electro.	.....	0	165000	
		TAI Electronic	.....	0	165000	
2 ST 193720	RCM* 100K 5%,06W0603S-8	First Resistor	.....	0	165000	
		Philips Compon.	.....	0	141000	
		ROHM Electro.	.....	0	141000	
		TAI Electronic	.....	0	141000	
18 ST 193648	RCM* 100R 5%,06W0603S-8	First Resistor	.....	0	141000	
		Philips Compon.	.....	0	80000	
		ROHM Electro.	.....	0	80000	
		TAI Electronic	.....	0	80000	
1 ST 190699	RCM* 120R 5%,10W0805S-8	First Resistor	.....	0	80000	
		ROHM Electro.	.....	5000	0	
		TAI Electronic	.....	5000	0	
5 ST 190701	RCM* 150R 5%,10W0805S-8	First Resistor	.....	5000	0	
		ROHM Electro.	.....	0	0	
		TAI Electronic	.....	0	0	
5 ST 190146	RCM* 2,2K 5%,10W0805S-8	First Resistor	CP-016.....	0	0	
		Philips Compon.	.....	5000	125000	
		ROHM Electro.	MCR10 EZH (FZH)J222.....	5000	125000	
		TAI Electronic	.....	5000	125000	
1 ST 193510	RCM* 200K 1%,06W0603S-8	First Resistor	.....	5000	125000	
		ROHM Electro.	.....	0	0	
		TAI Electronic	.....	0	0	
1 ST 193658	RCM* 270R 5%,06W0603S-8	First Resistor	.....	0	0	
		Philips Compon.	.....	0	0	
		ROHM Electro.	.....	0	0	
		TAI Electronic	.....	0	0	
2 ST 192361	RCM* 3,3K 1%,13W0805S-8	Deut. Vitrohm	.....	0	0	
		First Resistor	.....	0	0	
		ROHM Electro.	.....	0	0	
		TAI Electronic	.....	0	0	
1 ST 193660	RCM* 330R 5%,06W0603S-8	First Resistor	.....	0	0	
		Philips Compon.	.....	10000	150000	
		ROHM Electro.	.....	10000	150000	
		TAI Electronic	.....	10000	150000	
3 ST 193661	RCM* 360R 5%,06W0603S-8	First Resistor	.....	10000	150000	
		.....	.....	0	0	

Stueck ME Identnr.	Bezeichnung	Lieferant	Lieferantenbezeichnung	Gesp. Lager	IN Lager	MLA
3 ST 193661	RCM* 360R 5%,06W0603S-8	ROHM Electro.	.....	0	0	
1 ST 191491	RCM* 4,7K 1%,10W0805S-8	TAI Electronic	.....	0	0	
		First Resistor	.....	0	65000	
		ROHM Electro.	.....	0	65000	
1 ST 192593	RCM* 470R 1%,10W0805S-8	TAI Electronic	.....	0	65000	
		Deut. Vitrohm	.....	0	0	
		First Resistor	.....	0	0	
		ROHM Electro.	.....	0	0	
1 ST 193664	RCM* 470R 5%,06W0603S-8	TAI Electronic	.....	0	0	
		First Resistor	.....	0	35000	
		Philips Compon.	.....	0	35000	
		ROHM Electro.	.....	0	35000	
1 ST 192650	RCM* 750R 1%,10W0805S-8	TAI Electronic	.....	0	35000	
		First Resistor	.....	0	0	
		ROHM Electro.	.....	0	0	
5 ST 194392	RCN* 51R 1%,50W2010S-12	TAI Electronic	.....	0	0	
		Deut. Vitrohm	508-0 51R 1% V5.....	0	0	
		Draloric Elec.	CR2010 100 51R0 F B4.....	0	0	
3 ST 195390	RCN* 62R10%.25W1206S-8	ROHM Electro.	MCR50JZHUFX51R0.....	0	0	
		Deut. Vitrohm	RGC 502-0.....	0	0	
		Endrich GMBH	CRA1206 62R +/-10%-TK50-GEGURTET....	0	0	
4 ST 195346	RCN* 300R10%.25W1206S-8	Philips Compon.	RC02TR.....	0	0	
		Deut. Vitrohm	RGC 502-0.....	0	0	
		Endrich GMBH	CRA1206 300R +/-10%-TK50-GEGURTET....	0	0	
1 ST 194387	TS *2N2219A TO-5 * *	Philips Compon.	RC02TR.....	0	0	
		Motorola GMBH	2N2219A.....	0	0	
3 ST 190181	TSC*BC846B SOT23 S-8	National Semi.	2N2219A / NICHT MEHR LIEFERBAR.....	0	0	
		General Instru:	BC846B.....	1010000	151184	
		Intermetall	BC846B.....	X 1010000	151184	
		Motorola GMBH	BC846BLT1.....	1010000	151184	
		Philips Compon.	BC846B.....	1010000	151184	
3 ST 190780	TSC*BSS123 SOT23 S-8	SGS Thomson	BC846B / NOT DELIVERY.....	1010000	151184	
		Motorola GMBH	.....	0	0	
1 ST 192700	TSC*SI9407DY* SO-8 S-8	Siemens AG	.....	0	0	
		TEMIC	SI9407DY.....	0	0	

*** Ende der Stueckliste ***

ME Pos.	Identnr.	Ausf.	Bezeichnung	Bemerkung	LASPreis	NT Lieferant	Lieferantenbezeichnung	Gesp.
1	ST C214	191770	CKC*100P 5% 50NPO S-80603		1.27	TDK Electronics	C1608 CH 1H 101 JT	
1	ST C215	191770	CKC*100P 5% 50NPO S-80603		1.27	Kemet		
1	ST C216	191770	CKC*100P 5% 50NPO S-80603		1.27	TDK Electronics	C1608 CH 1H 101 JT	
						ROHM Electro.	MCH185A101JK	
1	ST C223	192251	CKC* 1U10% 16X7R S-81206		9.44	ROHM Electro.	MCH185A101JK	
1	ST C224	192251	CKC* 1U10% 16X7R S-81206		9.44	TDK Electronics	C1608 CH 1H 101 JT	
1	ST C225	194285	CKC* 12P 5% 63NPO S-80603		9.44	Kyocera	CM316 X7R 105K 16	
						TDK Electronics	C3216X7R1C105KT	
						Kyocera	CM316 X7R 105K 16	
						TDK Electronics	C3216X7R1C105KT	
1	ST C226	194285	CKC* 12P 5% 63NPO S-80603		1.27	Kemet		
						TDK Electronics		
						Murata Elek.		
						Philips Compon.	2222 867 15129	
1	ST C227	194285	CKC* 12P 5% 63NPO S-80603		1.27	Kemet		
1	ST C228	192251	CKC* 1U10% 16X7R S-81206		9.44	Murata Elek.		
1	ST C229	192251	CKC* 1U10% 16X7R S-81206		9.44	Philips Compon.	2222 867 15129	
1	ST C230	191770	CKC*100P 5% 50NPO S-80603		9.44	TDK Electronics		
						Kyocera	CM316 X7R 105K 16	
						TDK Electronics	C3216X7R1C105KT	
						Kyocera	CM316 X7R 105K 16	
1	ST C231	194285	CKC* 12P 5% 63NPO S-80603		1.27	TDK Electronics	C3216X7R1C105KT	
						Kemet		
						ROHM Electro.	MCH185A101JK	
						TDK Electronics	C1608 CH 1H 101 JT	
ST C232	191770		CKC*100P 5% 50NPO S-80603		1.27	Kemet		
						Philips Compon.	2222 867 15129	
						Murata Elek.		
						TDK Electronics		
ST C233	192910		CKC* 1M10% 63X7R S-80603		1.27	Kemet		
						ROHM Electro.	MCH185A101JK	
						TDK Electronics	C1608 CH 1H 101 JT	
ST C234	192910		CKC* 1M10% 63X7R S-80603		1.27	Kemet		
						Philips Compon.	2222 58616 614	
						Murata Elek.		
						Philips Compon.	2222 58616 614	
						TDK Electronics		
						Murata Elek.		
ST C235	194888		CKC* 1N10% 50COG S-80603		1.27	AVX Ceramics	0603 5A 102 K AT2A	
ST C236	194888		CKC* 1N10% 50COG S-80603		1.27	AVX Ceramics	0603 5A 102 K AT2A	
ST C237	191770		CKC*100P 5% 50NPO S-80603		1.27	Kemet		
						TDK Electronics	C1608 CH 1H 101 JT	
						ROHM Electro.	MCH185A101JK	

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ck ME Pos.	Identnr.	Ausf.	Bezeichnung	Bemerkung	LASPreis NT	Lieferant	Lieferantenbezeichnung	Gesp.
1	ST C238	190573	CKC*100N10% 50X7R S-80805		1.95	Kemet	C0805C104K5RAC	
1	ST C239	191770	CKC*100P 5% 50NPO S-80603		1.27	Vitramon GMBH TDK Electronics	VJ0805Y104KXAT C2012X7R1H104KT	
1	ST C240	190573	CKC*100N10% 50X7R S-80805		1.95	TDK Electronics ROHM Electro.	C1608 CH 1H 101 JT MCH185A101JK	
1	ST C241	191770	CKC*100P 5% 50NPO S-80603		1.27	Kemet Vitramon GMBH TDK Electronics	C0805C104K5RAC VJ0805Y104KXAT C2012X7R1H104KT	
1	ST C242	190573	CKC*100N10% 50X7R S-80805		1.95	TDK Electronics ROHM Electro.	C1608 CH 1H 101 JT MCH185A101JK	
1	ST C243	191770	CKC*100P 5% 50NPO S-80603		1.27	Kemet Vitramon GMBH TDK Electronics	C0805C104K5RAC VJ0805Y104KXAT C2012X7R1H104KT	
1	ST C244	190573	CKC*100N10% 50X7R S-80805		1.95	ROHM Electro. TDK Electronics	MCH185A101JK C1608 CH 1H 101 JT	
1	ST C245	194766	CKC*2,2P *% 50COG S-80603 -55 C bis +125 C		1.95	Kemet Vitramon GMBH TDK Electronics	C0805C104K5RAC VJ0805Y104KXAT C2012X7R1H104KT	
1	ST C246	194285	CKC* 12P 5% 63NPO S-80603			Murata Elek. TDK Electronics	GRM39COG2R2C50PT C1608COG1H2R2CT C0603C229C5GAC	
1	ST C247	194285	CKC* 12P 5% 63NPO S-80603			Philips Compon. TDK Electronics Murata Elek.	2222 867 15129	
1	ST C248	194888	CKC* 1N10% 50COG S-80603			Murata Elek. TDK Electronics	2222 867 15129	
1	ST C249	190573	CKC*100N10% 50X7R S-80805		1.95	AVX Ceramics Kemet	0603 5A 102 K AT2A C0805C104K5RAC	
1	ST C250	191770	CKC*100P 5% 50NPO S-80603		1.27	TDK Electronics Vitramon GMBH Kemet	C2012X7R1H104KT VJ0805Y104KXAT	
1	ST C303	192910	CKC* 1N10% 63X7R S-80603			TDK Electronics ROHM Electro.	C1608 CH 1H 101 JT MCH185A101JK	
1	ST C304	192910	CKC* 1N10% 63X7R S-80603			Murata Elek. TDK Electronics Philips Compon. Kemet	2222 58616 614	
1	ST C305	191480	CTC* 10U20% 10 S-8TNTB			Philips Compon. Murata Elek.	2222 58616 614	
1	ST C306	190953	CKC* 22N10% 50X7R S-80805		10.10 .99	TDK Electronics Kemet Kemet TDK Electronics	T491B106K010AS C0805C223K5RAC C2012X7R1H223KT	

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1 ST C307 190574	CKC* 22P 5% 63COG S-80805	.78	Kemet	C0805C220J5GAC	
1 ST C308 190574	CKC* 22P 5% 63COG S-80805	.78	Siemens AG Philips Compon. TDK Electronics Kemet	B37940-K5220-J62 2222-861-15-229 C2012COG1H220JT C0805C220J5GAC	
1 ST C309 190953	CKC* 22N10% 50X7R S-80805	.99	Philips Compon. TDK Electronics Siemens AG	2222-861-15-229 C2012COG1H220JT B37940-K5220-J62	
1 ST C310 190953	CKC* 22N10% 50X7R S-80805	.99	Kemet TDK Electronics Kemet	C0805C223K5RAC C2012X7R1H223KT C0805C223K5RAC	
1 ST C313 192910	CKC* 1N10% 63X7R S-80603		TDK Electronics Kemet	C2012X7R1H223KT C0805C223K5RAC	
1 ST C314 192910	CKC* 1N10% 63X7R S-80603		Murata Elek. Philips Compon. TDK Electronics Kemet	2222 58616 614	
1 ST C315 192910	CKC* 1N10% 63X7R S-80603		Murata Elek. TDK Electronics Philips Compon. Kemet	2222 58616 614	
1 ST C316 192910	CKC* 1N10% 63X7R S-80603		Murata Elek. Philips Compon. TDK Electronics Kemet	2222 58616 614	
1 ST C317 192910	CKC* 1N10% 63X7R S-80603		Murata Elek. TDK Electronics Philips Compon. Kemet	2222 58616 614	
1 ST C318 192910	CKC* 1N10% 63X7R S-80603		Murata Elek. Philips Compon. TDK Electronics Kemet	2222 58616 614	
1 ST C319 192910	CKC* 1N10% 63X7R S-80603		Murata Elek. TDK Electronics Philips Compon. Kemet	2222 58616 614	
1 ST C320 192910	CKC* 1N10% 63X7R S-80603		Murata Elek. Philips Compon. TDK Electronics Kemet	2222 58616 614	
1 ST C321 190953	CKC* 22N10% 50X7R S-80805		Murata Elek. Philips Compon. TDK Electronics	2222 58616 614	
1 ST C322 192910	CKC* 1N10% 63X7R S-80603	.99	Kemet TDK Electronics Kemet	C0805C223K5RAC C2012X7R1H223KT	
			TDK Electronics Philips Compon. Murata Elek.	2222 58616 614	

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Stk	ME Pos.	Identnr.	Ausf.	Bezeichnung	Bemerkung	LASPreis NT	Lieferant	Lieferantenbezeichnung	Gesp.
1	ST	C323	192910	CKC* 1N10% 63X7R S-80603		-	Kemet		
1	ST	C324	192910	CKC* 1N10% 63X7R S-80603		-	Philips Compon. Murata Elek. TDK Electronics Kemet	2222 58616 614	
1	ST	C325	192910	CKC* 1N10% 63X7R S-80603		-	Murata Elek. TDK Electronics Philips Compon. Kemet	2222 58616 614	
1	ST	C351	190953	CKC* 22N10% 50X7R S-80805		.99	Philips Compon. Murata Elek. TDK Electronics	2222 58616 614	
1	ST	C352	190573	CKC*100N10% 50X7R S-80805		1.95	Kemet TDK Electronics	C0805C223K5RAC C2012X7R1H223KT C0805C104K5RAC	
1	ST	C353	190573	CKC*100N10% 50X7R S-80805		1.95	Vitramon GMBH TDK Electronics Kemet	VJ0805Y104KXAT C2012X7R1H104KT C0805C104K5RAC	
1	ST	C354	192910	CKC* 1N10% 63X7R S-80603		-	Vitramon GMBH Kemet	C2012X7R1H104KT VJ0805Y104KXAT	
1	ST	C355	190573	CKC*100N10% 50X7R S-80805		1.95	Philips Compon. TDK Electronics Murata Elek. Kemet	2222 58616 614	
1	ST	C356	192251	CKC* 1U10% 16X7R S-81206		9.44	Vitramon GMBH TDK Electronics	C0805C104K5RAC VJ0805Y104KXAT C2012X7R1H104KT	
1	ST	C357	195227	CTC* 47U20% 20 S-8TNT E		-	Kyocera TDK Electronics Kemet	CM316 X7R 105K 16 C3216X7R1C105KT T494X476M020AS	
1	ST	D101	191070	DZC*P6SMB20* SMB S-8		24.96	Siemens AG	B45197-A4476-M50	
1	ST	D151	192492	DZC*BZT55C9V1 D0213 S-8		3.40	Motorola GMBH	P6SMB20AT3	
1	ST	D152	191766	DZC*BZT55C5V1*00213 S-8		2.50	TEMIC Philips Compon. TEMIC	BZT55C9V1 BZT55C5V1 TZM55C5V1	
1	ST	D153	191766	DZC*BZT55C5V1*00213 S-8		2.50	Philips Compon. TEMIC	BZT55C5V1 BZT55C5V1	
1	ST	D235	190958	DSC*LS4148 00213 S-8		1.50	TEMIC	TZM55C5V1 LS4148	
1	ST	D236	190958	DSC*LS4148 00213 S-8		1.50	TEMIC	LS4148	
1	ST	I111	194020	ICC*MC7805B02*D2PAK S-24		59.18	Motorola GMBH	MC7805BD2TR4	
1	ST	I121	194020	ICC*MC7805B02*D2PAK S-24		59.18	Motorola GMBH	MC7805BD2TR4	
1	ST	I141	192560	IC *LM2941S* T0263 S-24	-40 C / +125 C	-	National Semi.	LM2941S	
1	ST	I151	192118	ICC*65ALS180* SO-14 S-14	-40 C bis +125 C	-	Texas Instrum.	SN65ALS180D	
1	ST	I161	194360	ICC*74HCT4538*SO-16 S-16	-40 C bis +125 C	-	Harris Semicon.	CD74HCT4538M	
1	ST	I201	194166	ICC*74ACT11000*SO-16 S-16	-40 C bis +85C	-	Philips Compon.	PC74ACT11000DR	
1	ST	I202	194343	ICC*74ACT11000*SO-16 S-16	-40 C bis +85C	-	Texas Instrum.	74ACT11000DR	
1	ST	I203	194361	ICC*74ACT11000*SO-16 S-16	-40 C bis +85 C	-	Texas Instrum.	74ACT11000DR	

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1	ST	I204	194361	ICC*74AC11000*SO-16 S-16	-40 C bis +85 C			Texas Instrum.	74AC11000DR	
1	ST	I205	194344	ICC*74AC11086*SO-16 S-16	-40 C bis +85C			Texas Instrum.	74AC11086DR	
1	ST	I206	194167	ICC*74AC11032*SO-16 S-16	-40 C bis +85C			Texas Instrum.	74AC11032DR	
1	ST	I207	194361	ICC*74AC11000*SO-16 S-16	-40 C bis +85 C			Texas Instrum.	74AC11000DR	
1	ST	I221	194168	ICC*74AC11244*SO*24 S-24	-40 C bis +85C			Texas Instrum.	74AC11244DR	
1	ST	I222	194168	ICC*74AC11244*SO*24 S-24	-40 C bis +85C			Texas Instrum.	74AC11244DR	
1	ST	I231	194218	ICC*8101312U *SO-20 S-24	-25 C bis +105 C			Atmel	8101312U	
1	ST	I301	195426	ICM*87C54-16* PROGRAM.	-40 C / +125 C			EBV Elektronik	AN87C54-16 / SW = 2.1	
1	ST	I303	194190	ICC*LM75* SO-8 S-8	-55 C bis +125 C	125.76		National Semi.	LM75C1MX-5	
1	ST	I304	190918	IC *X24C08581 SO-8 S-8		24.79		Xicor GMBH		
1	ST	I305	190286	IC *74HC00 SO-14 S-16				Motorola GMBH	MC74HC00AD	
1	ST	I306	195564	IC *MAX810L* SOT23 S-8	-40C +105C			Philips Compon.	PC74HC00T	
1	ST	I351	194165	ICC*AD8402AR* SO-14 S-14	-40 C bis +85 C			Maxim GMBH	MAX810LEUR-T	
1	ST	I352	190260	ICC*LM2904M SO-8 S-8		22.00		Analog Devices	AD8402AR10	
1	ST	L101	194217	LSD*PLM250540*SMD	-25 C bis +85 C			National Semi.	LM2904M	
1	ST	L102	194918	FHF*NFM*1P11C* 4516S-12		48.60		Philips Compon.	LM2904D	
1	ST	L111	191343	LSD* 1U SIMID S-8				Murata Elek.	PLM250540	
1	ST	L112	194918	FHF*NFM*1P11C* 4516S-12				Murata Elek.	NFM*1P11C204T1	
1	ST	L113	194918	FHF*NFM*1P11C* 4516S-12				Siemens AG	882432-A1102-M	
1	ST	L121	191343	LSD* 1U SIMID S-8				Murata Elek.	NFM*1P11C204T1	
1	ST	L122	194918	FHF*NFM*1P11C* 4516S-12		48.60		Murata Elek.	882432-A1102-M	
1	ST	L123	194918	FHF*NFM*1P11C* 4516S-12				Siemens AG	NFM*1P11C204T1	
1	ST	L131	191343	LSD* 1U SIMID S-8				Murata Elek.	882432-A1102-M	
1	ST	L141	191343	LSD* 1U SIMID S-8				Murata Elek.	NFM*1P11C204T1	
1	ST	L151	190895	LSD* 51U 0,5A S-12		48.60		Siemens AG	882790-S0513-N201	
1	ST	L231	194765	FHF*BLM1A601SPT S-12		48.60		Siemens AG	BLM1A601SPT	
1	ST	L232	194765	FHF*BLM1A601SPT S-12		59.00		Siemens AG	BLM1A601SPT	
1	ST	L233	194765	FHF*BLM1A601SPT S-12				Siemens AG	BLM1A601SPT	
1	ST	L234	194765	FHF*BLM1A601SPT S-12				Siemens AG	BLM1A601SPT	
1	ST	Q301	195027	QUARZ* 11,260MHZ S-24	-40 C bis +125 C ; 100ppm			Murata Elek.	CPT2A / 11,26 MHZ / 100PPM	
1	ST	R131	193696	RCM* 10K 5%,06W*0603S-8		.28		First Resistor	CX5FW / 11,26 MHZ / 100PPM	
1	ST	R140	192650	RCM* 750R 1%,10W*0805S-8				First Resistor	MCR03 EZH J103	
1	ST	R141	192361	RCM* 3,3K 1%,13W*0805S-8				Philips Compon.	2322 702 60103	
1	ST	R142	193696	RCM* 10K 5%,06W*0603S-8		.75		First Resistor		
1	ST	R143	193704	RCM* 22K 5%,06W*0603S-8		.28		ROHM Electro.	2322 702 60103	
1	ST	R143	193704	RCM* 22K 5%,06W*0603S-8		.28		ROHM Electro.	MCR03 EZH J103	
1	ST	R143	193704	RCM* 22K 5%,06W*0603S-8		.28		Philips Compon.	2322 702 60223	

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ST R143	193704		RCM* 22K 5%,06w0603S-8		.28		ROHM Electro.	MCR03 EZHUJ 223	
ST R144	193720		RCM* 100K 5%,06w0603S-8		.00		TAI Electronic First Resistor		
ST R145	192361		RCM* 3,3K 1%,13w0805S-8		.75		Philips Compon. ROHM Electro. Deut. Vitrohm ROHM Electro. TAI Electronic First Resistor		
ST R147			NICHT BESTUECKT				Deut. Vitrohm TAI Electronic First Resistor		
ST R148	192593		RCM* 470R 1%,10w0805S-8		.28		ROHM Electro. First Resistor		
ST R151	193696		RCM* 10K 5%,06w0603S-8		.28		Philips Compon. TAI Electronic First Resistor		
ST R152	190699		RCM* 120R 5%,10w0805S-8		.25		Philips Compon. ROHM Electro. First Resistor	2322 702 60103 MCR03 EZH J103	
ST R153	190146		RCM* 2,2K 5%,10w0805S-8		.36		ROHM Electro. TAI Electronic First Resistor	CP-016....	
ST R154	193696		RCM* 10K 5%,06w0603S-8		.28		Philips Compon. ROHM Electro. TAI Electronic	MCR10 EZH (FZH)J222	
ST R155	193696		RCM* 10K 5%,06w0603S-8		.28		Philips Compon. ROHM Electro. TAI Electronic First Resistor	2322 702 60103 MCR03 EZH J103	
ST R156	190146		RCM* 2,2K 5%,10w0805S-8		.36		Philips Compon. ROHM Electro. TAI Electronic First Resistor	CP-016....	
ST R157	193696		RCM* 10K 5%,06w0603S-8		.28		Philips Compon. ROHM Electro. TAI Electronic First Resistor	MCR10 EZH (FZH)J222	
ST R158	193720		RCM* 100K 5%,06w0603S-8		.00		Philips Compon. TAI Electronic ROHM Electro. First Resistor	2322 702 60103 MCR03 EZH J103	
ST R160	193696		RCM* 10K 5%,06w0603S-8		.28		Philips Compon. ROHM Electro. First Resistor TAI Electronic	2322 702 60103 MCR03 EZH J103	

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1	ST R162	190571	RCM* 100K 1%, 10*0805S-8		.74		Deut. Vitrohm ROHM Electro.		
1	ST R163	191514	RCM* 15K 1%, 10*0805S-8		.43		TAI Electronic First Resistor Deut. Vitrohm Panasonic GMBH First Resistor Draloric Elec. ROHM Electro. TAI Electronic First Resistor TAI Electronic ROHM Electro. Philips Compon. First Resistor ROHM Electro. TAI Electronic		
1	ST R164	193624	RCM* 10R 5%, 06*0603S-8					MCR03 EZH J10R 2322 702 6010R	
1	ST R165	191491	RCM* 4,7K 1%, 10*0805S-8		.74		First Resistor ROHM Electro. TAI Electronic		
1	ST R171		NICHT BESTUECKT						
1	ST R172		NICHT BESTUECKT						
1	ST R173		NICHT BESTUECKT						
1	ST R221	190701	RCM* 150R 5%, 10*0805S-8		.45		First Resistor TAI Electronic ROHM Electro. First Resistor ROHM Electro. TAI Electronic First Resistor ROHM Electro. TAI Electronic		
1	ST R222	190701	RCM* 150R 5%, 10*0805S-8		.45		First Resistor TAI Electronic ROHM Electro. First Resistor ROHM Electro. TAI Electronic		
1	ST R223	190701	RCM* 150R 5%, 10*0805S-8		.45		First Resistor TAI Electronic ROHM Electro. First Resistor ROHM Electro. TAI Electronic		
1	ST R224	190701	RCM* 150R 5%, 10*0805S-8		.45		First Resistor TAI Electronic ROHM Electro. First Resistor ROHM Electro. TAI Electronic		
1	ST R225	193624	RCM* 10R 5%, 06*0603S-8					MCR03 EZH J10R 2322 702 6010R	
1	ST R226	193624	RCM* 10R 5%, 06*0603S-8					MCR03 EZH J10R 2322 702 6010R	
1	ST R227	193624	RCM* 10R 5%, 06*0603S-8					MCR03 EZH J10R 2322 702 6010R	
1	ST R228	193696	RCM* 10K 5%, 06*0603S-8		.28		ROHM Electro. Philips Compon. First Resistor Philips Compon. TAI Electronic ROHM Electro. First Resistor Philips Compon.		
1	ST R229	193696	RCM* 10K 5%, 06*0603S-8		.28		ROHM Electro. Philips Compon. First Resistor Philips Compon. TAI Electronic ROHM Electro. First Resistor Philips Compon.		

ME Pos.	Identnr.	Ausf.	Bezeichnung	Bemerkung	LASPreis NT	Lieferant	Lieferantenbezeichnung	Gesp.
ST R229	193696	RCM*	10K 5%, 06W0603S-8		.28	TAI Electronic		
ST R230	193346	RCN*	300R10%, 25W1206S-8	Tk-50 / Abgl.-Widerst. in Dicksch. Techn.	1.68	ROHM Electro. Deut. Vitrohm Endrich GmbH Philips Compon. First Resistor	MCR03 EZH J103 RGC 502-0 CRA1206 300R +/-10%-TK50-GEGURTET RC02TR	
ST R231	193658	RCM*	270R 5%, 06W0603S-8		.00	TAI Electronic		
ST R232	193624	RCM*	10R 5%, 06W0603S-8			ROHM Electro. Philips Compon. First Resistor		
ST R233	193648	RCM*	100R 5%, 06W0603S-8		.00	TAI Electronic		
ST R234	193648	RCM*	100R 5%, 06W0603S-8		.00	ROHM Electro. Philips Compon. First Resistor	MCR03 EZH J10R 2322 702 6010R	
ST R235	190691	RCM*	51R 5%, 10W0805S-8		.25	TAI Electronic		
ST R236	190691	RCM*	51R 5%, 10W0805S-8		.25	Philips Compon. ROHM Electro. First Resistor	CP-016 J 51R 200 TR8P50 RM10 JT 510 MCR10 EZH (FZH)JW510	
ST R237	193660	RCM*	330R 5%, 06W0603S-8		.28	ROHM Electro. Philips Compon. First Resistor	CP-016 J 51R 200 TR8P50 RM10 JT 510 MCR10 EZH (FZH)JW510	
ST R238	193664	RCM*	470R 5%, 06W0603S-8		.28	Philips Compon. ROHM Electro. First Resistor		
ST R240	190701	RCM*	150R 5%, 10W0805S-8		.45	TAI Electronic		
ST R241	195390	RCN*	62R10%, 25W1206S-8	Tk-50 / Abgl.-Widerst. in Dicksch. Techn.	1.68	ROHM Electro. Philips Compon. Endrich GmbH Deut. Vitrohm	RGC 502-0 RC02TR CRA1206 62R +/-10%-TK50-GEGURTET RGC 502-0	
ST R242	195346	RCN*	300R10%, 25W1206S-8	Tk-50 / Abgl.-Widerst. in Dicksch. Techn.	1.68	Philips Compon. Endrich GmbH Deut. Vitrohm	CRA1206 300R +/-10%-TK50-GEGURTET RC02TR RGC 502-0	
ST R243	195390	RCN*	62R10%, 25W1206S-8	Tk-50 / Abgl.-Widerst. in Dicksch. Techn.	1.68	Philips Compon. Endrich GmbH Deut. Vitrohm	CRA1206 62R +/-10%-TK50-GEGURTET RC02TR RGC 502-0	
ST R244	195346	RCN*	300R10%, 25W1206S-8	Tk-50 / Abgl.-Widerst. in Dicksch. Techn.	1.68	Philips Compon. Endrich GmbH	CRA1206 300R +/-10%-TK50-GEGURTET RC02TR	

Stk ME Pos.	Identnr.	Ausf.	Bezeichnung	Bemerkung	LASPreis NT	Lieferant	Lieferantenbezeichnung	Gesp.
1	ST R245	195390	RCM* 62R10%,25W1206S-8	TK-50 / Abgl.-Widerst. in Dicksch.Techn.		Deut. Vitrohm	RGC 502-0	
1	ST R246	195346	RCM* 300R10%,25W1206S-8	TK-50 / Abgl.-Widerst. in Dicksch.Techn.	1.68	Endrich GmbH Philips Compon.	CRA1206 62R +/-10%-TK50-GEGURTET RC02TR	
1	ST R248	190691	RCM* 51R 5%,10W0805S-8		.25	Deut. Vitrohm Endrich GmbH Philips Compon.	RGC 502-0 CRA1206 300R +/-10%-TK50-GEGURTET RC02TR	
1	ST R302	193704	RCM* 22K 5%,06W0603S-8		.28	ROHM Electro. TAI Electronic First Resistor	CP-016 J 51R 200 TR8P50 MCR10 EZH (FZH)JW510 RM10 JT 510	
1	ST R303	193648	RCM* 100R 5%,06W0603S-8		.00	ROHM Electro. Philips Compon. First Resistor	MCR03 EZHUJ 223 2322 702 60223	
1	ST R304	193648	RCM* 100R 5%,06W0603S-8		.00	Philips Compon. ROHM Electro. TAI Electronic First Resistor		
1	ST R305	193704	RCM* 22K 5%,06W0603S-8		.28	TAI Electronic Philips Compon. First Resistor	MCR03 EZHUJ 223	
1	ST R306	193704	RCM* 22K 5%,06W0603S-8		.28	Philips Compon. First Resistor	2322 702 60223	
1	ST R307	193704	RCM* 22K 5%,06W0603S-8		.28	Philips Compon. ROHM Electro. TAI Electronic First Resistor	2322 702 60223 MCR03 EZHUJ 223	
1	ST R308	190146	RCM* 2,2K 5%,10W0805S-8		.36	Philips Compon. First Resistor	2322 702 60223 CP-016...	
1	ST R309	190146	RCM* 2,2K 5%,10W0805S-8		.36	Philips Compon. ROHM Electro. TAI Electronic First Resistor	MCR03 EZHUJ 223	
1	ST R310	190146	RCM* 2,2K 5%,10W0805S-8		.36	ROHM Electro. TAI Electronic Philips Compon. First Resistor	MCR10 EZH (FZH)J222 CP-016...	
1	ST R314	193648	RCM* 100R 5%,06W0603S-8		.00	ROHM Electro. Philips Compon. First Resistor	MCR10 EZH (FZH)J222 CP-016...	
1	ST R315	193648	RCM* 100R 5%,06W0603S-8		.00	Philips Compon. ROHM Electro. TAI Electronic First Resistor	MCR10 EZH (FZH)J222	

ME Pos.	Identnr.	Ausf.	Bezeichnung	Bemerkung	LASPreis	NT	Lieferant	Lieferantenbezeichnung	Gesp.
1	ST R315	193648	RCH* 100R 5%,06W0603S-8		.00		ROHM Electro.		
1	ST R316	193648	RCH* 100R 5%,06W0603S-8		.00		TAI Electronic Philips Compon. First Resistor		
1	ST R317	193648	RCH* 100R 5%,06W0603S-8		.00		ROHM Electro. Philips Compon. TAI Electronic First Resistor		
1	ST R318	193648	RCH* 100R 5%,06W0603S-8		.00		Philips Compon. TAI Electronic		
1	ST R319	193648	RCH* 100R 5%,06W0603S-8		.00		ROHM Electro. First Resistor		
1	ST R320	193648	RCH* 100R 5%,06W0603S-8		.00		ROHM Electro. First Resistor		
1	ST R321	193648	RCH* 100R 5%,06W0603S-8		.00		Philips Compon. TAI Electronic		
1	ST R322	193661	RCH* 360R 5%,06W0603S-8		.00		Philips Compon. TAI Electronic ROHM Electro. First Resistor		
1	ST R323	193661	RCH* 360R 5%,06W0603S-8		.00		Philips Compon. TAI Electronic ROHM Electro. First Resistor		
1	ST R324	193661	RCH* 360R 5%,06W0603S-8		.00		Philips Compon. TAI Electronic ROHM Electro. First Resistor		
ST	R325	193648	RCH* 100R 5%,06W0603S-8		.00		Philips Compon. TAI Electronic First Resistor		
ST	R326	193648	RCH* 100R 5%,06W0603S-8		.00		Philips Compon. TAI Electronic First Resistor		
ST	R327	193648	RCH* 100R 5%,06W0603S-8		.00		Philips Compon. TAI Electronic ROHM Electro. First Resistor		

Stk	ME Pos.	IdenInr.	Ausf.	Bezeichnung	Bemerkung	LASPreis	NT	Lieferant	Lieferantenbezeichnung	Gesp.
1	ST	R327	193648	RCM* 100R 5%,06W0603S-8		.00		Philips Compon.		
1	ST	R328	193648	RCM* 100R 5%,06W0603S-8		.00		First Resistor		
1	ST	R330	193696	RCM* 10K 5%,06W0603S-8		.28		Philips Compon.	2322 702 60103	
1	ST	R331	193696	RCM* 10K 5%,06W0603S-8		.28		ROHM Electro.	MCR03 EZH J103	
1	ST	R332	193696	RCM* 10K 5%,06W0603S-8		.28		Philips Compon.	2322 702 60103	
1	ST	R333	193696	RCM* 10K 5%,06W0603S-8		.28		ROHM Electro.	MCR03 EZH J103	
1	ST	R351	193510	RCM* 200K 1%,06W0603S-8		.00		Philips Compon.	MCR03 EZH J103	
1	ST	R352	193402	RCM* 15K 1%,06W0603S-8		.43		ROHM Electro.	2322 704 61503	
1	ST	R353	193648	RCM* 100R 5%,06W0603S-8		.00		Philips Compon.	MCR03 EZH J103	
1	ST	R354	191200	RCM* 10K 1%,10W0805S-8		.43		Deut. Vitrohm	503-0 10K 1% TK100 V5	
1	ST	R355	191403	RCM* 18K 1%,10W0805S-8		.43		ROHM Electro.	MCR10 EZH FX103	
1	ST	R356	193416	RCM* 21K 1%,06W0603S-8		.00		Philips Compon.	RM10 FT 103	
1	ST	R357		NICHT BESTUECKT					CP-016 F 10K 100 TR8P50	
1	ST	R358	193648	RCM* 100R 5%,06W0603S-8		.00		Philips Compon.		
1	ST	R359	194392	RCM* 51R 1%,50W2010S-12				Philips Compon.	508-0 51R 1% V5	
								ROHM Electro.	CR2010 100 51R0 F B4	
								TAI Electronic	MCR50JZHUFX51R0	
								Deut. Vitrohm		
								Dratoric Elec.		
								ROHM Electro.		

ME Pos.	Identnr.	Ausf.	Bezeichnung	Bemerkung	LASPreis	NT Lieferant	Lieferantenbezeichnung	Gesp.
ST	R360	194392	RCM* 51R 1%, 50W2010S-12			Deut. Vitrohm	508-0 51R 1% V5	
ST	R361	194392	RCM* 51R 1%, 50W2010S-12			Draloric Elec.	CR2010 100 51R0 F B4	
ST	R362	194392	RCM* 51R 1%, 50W2010S-12			ROHM Electro.	MCR50JZHUFX51R0	
ST	R363	194392	RCM* 51R 1%, 50W2010S-12			Deut. Vitrohm	508-0 51R 1% V5	
ST	R364	190679	RCM* 16R 5%, 10W0805S-8			Draloric Elec.	CR2010 100 51R0 F B4	
ST	R366		NICHT BESTUECKT			ROHM Electro.	MCR50JZHUFX51R0	
ST	T131	192700	TSC*S194070Y* 50-8 S-8		2.71	TEMIC	S19407DY	
ST	T141	190181	TSC*BC8468 SOT23 S-8			General Instru.	BC8468	
ST	T142	190780	TSC*BSS123 SOT23 S-8		33.09	Philips Compon.	BC8468	
ST	T151	190780	TSC*BSS123 SOT23 S-8		33.09	Motorola GMBH	BC8468LT1	
ST	T152	190780	TSC*BSS123 SOT23 S-8		33.09	SGS Thomson	BC8468 / NOT DELIVERY	
ST	T153	190181	TSC*BC8468 SOT23 S-8		2.71	Intermetall	BC8468	X
ST	T154	190181	TSC*BC8468 SOT23 S-8			Motorola GMBH	BC8468	
ST	T351	194387	TS *2N2219A TO-5 * *		2.71	General Instru.	BC8468	X
ST	X101		NICHT BESTUECKT			Intermetall	BC8468	
ST	X110	195307	BUCHSE			Motorola GMBH	BC8468LT1	
ST	X111	195307	BUCHSE			Philips Compon.	BC8468	
ST	X210	195307	BUCHSE			SGS Thomson	BC8468 / NOT DELIVERY	
ST	X211	195307	BUCHSE			General Instru.	BC8468	
ST	Z053		NICHT BESTUECKT			Intermetall	BC8468	
ST	Z079		NICHT BESTUECKT			Motorola GMBH	BC8468LT1	
ST	Z081		NICHT BESTUECKT			Philips Compon.	BC8468	
ST	Z102		NICHT BESTUECKT			SGS Thomson	BC8468 / NOT DELIVERY	
ST	Z107		NICHT BESTUECKT			Motorola GMBH	2N2219A	
						National Semi.	2N2219A / NICHT MEHR LIEFERBAR	
						AMP	50462-7	
						AMP	50462-7	
						AMP	50462-7	
						AMP	50462-7	

datum: 28.09.98 15:16
seraete-Typ: ART*SENSOR-SCH01

Entwickler-Stueckliste fuer ISTVANF . Z36001

Seite: 15
Kundenbezeichnung:

Stk	ME	Pos.	Identnr.	Ausf.	Bezeichnung	Bemerkung	LASPreis	NT	Lieferant	Lieferantenbezeichnung	Gesp.
1	ST	Z110			NICHT BESTUECKT						
1	ST	Z124			NICHT BESTUECKT						
1	ST	Z200			NICHT BESTUECKT						
1	ST	Z300			NICHT BESTUECKT						
1	ST	Z301			NICHT BESTUECKT						
1	ST	Z302			NICHT BESTUECKT						
1	ST	Z303			NICHT BESTUECKT						
1	ST	Z304			NICHT BESTUECKT						
1	ST	Z305			NICHT BESTUECKT						
1	ST	Z306			NICHT BESTUECKT						
1	ST	Z307			NICHT BESTUECKT						

ende der Stueckliste ***

C110	0-B3	C111	0-B3	C112	0-A3	C113	0-A3	C101	0-C1	C103	0-C1	C104	0-C1
C131	0-A3	C140	0-C5	C141	0-05	C142	0-E4	C121	0-B4	C122	0-A4	C123	0-A4
C153	0-D1	C155	0-E1	C156	0-E1	C157	0-E1	C144	0-E4	C151	0-C1	C152	0-D1
C171	0-C2	C201	0-E2	C202	0-E2	C203	0-E2	C162	0-C5	C163	0-C5	C164	0-C5
C207	0-D2	C208	0-C2	C209	0-02	C210	0-E3	C204	0-C2	C205	0-C1	C206	0-D1
C214	0-D2	C215	0-E2	C216	0-D2	C223	0-C2	C211	0-E2	C212	0-02	C213	0-E2
C227	0-E3	C228	0-05	C229	0-05	C230	0-E2	C224	0-C2	C225	0-C2	C226	0-C2
C234	0-B2	C235	0-B2	C236	0-B1	C237	0-B2	C231	0-B2	C232	0-B2	C233	0-B2
C241	0-B2	C242	0-B1	C243	0-B2	C244	0-B1	C238	0-B2	C239	0-B2	C240	0-B2
C248	0-B1	C249	0-B1	C250	0-B1	C303	0-05	C245	0-B2	C246	0-B2	C247	0-B2
C307	0-B5	C308	0-B5	C309	0-B4	C310	0-B4	C304	0-05	C305	0-A5	C306	0-B5
C316	0-C4	C317	0-C4	C318	0-C5	C319	0-C5	C313	0-C4	C314	0-C4	C315	0-C4
C323	0-C4	C324	0-C5	C325	0-C5	C351	0-C5	C320	0-C5	C321	0-C5	C322	0-B4
C355	0-D4	C356	0-E3	C357	0-D4	D101	0-C1	C352	0-05	C353	0-D4	C354	0-D4
D235	0-B1	D236	0-B1	I111	0-A2	I121	0-A4	D151	0-E1	D152	0-E1	D153	0-E1
I201	0-E3	I202	0-E2	I203	0-E2	I204	0-D2	I141	0-E4	I151	0-E1	I161	0-C5
I221	0-C2	I222	0-05	I231	0-B2	I301	0-B5	I205	0-D2	I206	0-C2	I207	0-C2
I306	0-A5	I351	0-05	I352	0-D4	L101	0-C1	I303	0-B3	I304	0-B4	I305	0-C4
L113	0-B2	L121	0-A4	L122	0-A4	L123	0-A4	L102	0-C1	L111	0-A3	L112	0-B2
L231	0-B2	L232	0-B2	L233	0-B1	L234	0-B1	L131	0-A4	L141	0-D5	L151	0-D1
R141	0-E3	R142	0-E4	R143	0-E4	R144	0-E4	Q301	0-B5	R131	0-A4	R140	0-E4
R151	0-E1	R152	0-E1	R153	0-E1	R154	0-E1	R145	0-D4	R147	0-E4	R148	0-E4
R158	0-E2	R160	0-E1	R162	0-C5	R163	0-C5	R155	0-E1	R156	0-D1	R157	0-E1
R172	0-E4	R173	0-E4	R221	0-C2	R222	0-C2	R164	0-C5	R165	0-E1	R171	0-E4
R226	0-C2	R227	0-C1	R228	0-D1	R229	0-E2	R223	0-C2	R224	0-C2	R225	0-C2
R233	0-B3	R234	0-B3	R235	0-B1	R236	0-B1	R230	0-D1	R231	0-B2	R232	0-B2
R241	0-E2	R242	0-D2	R243	0-E2	R244	0-D2	R237	0-B2	R238	0-B2	R240	0-D1
R302	0-B5	R303	0-C5	R304	0-05	R305	0-B4	R245	0-E2	R246	0-D2	R248	0-B1
R309	0-B4	R310	0-B4	R314	0-C4	R315	0-C4	R306	0-B4	R307	0-B4	R308	0-B4
R319	0-C5	R320	0-C5	R321	0-C5	R322	0-C4	R316	0-C4	R317	0-C4	R318	0-C4
R326	0-C4	R327	0-C5	R328	0-C5	R330	0-B3	R323	0-C4	R324	0-C4	R325	0-B3
R351	0-05	R352	0-D5	R353	0-D4	R354	0-D4	R331	0-B3	R332	0-B4	R333	0-B4
R358	0-D4	R359	0-D3	R360	0-D3	R361	0-E3	R355	0-D4	R356	0-D4	R357	0-D4
R366	0-D4	T131	0-A3	T141	0-E4	T142	0-E4	R362	0-D3	R363	0-D4	R364	0-D4
T154	0-E1	T351	0-D4	X101	U-C1	X110	0-E4	T151	0-E1	T152	0-E1	T153	0-D1
Z053	0-C5	Z079	0-C2	Z081	0-C2	Z102	0-C1	X111	0-E4	X210	0-D4	X211	0-D4
Z200	0-03	Z300	0-C4	Z301	0-C4	Z302	0-C4	Z107	0-B2	Z110	0-B2	Z124	0-B1
Z306	0-C3	Z307	0-C3					Z303	0-D3	Z304	0-B3	Z305	0-B3

450 Bauteil(e)

					Dat/Date	Name	ART Sensor LP vollst. bestückt Bauteil Koordinaten Liste	
				Bearb. Drawn	30.9.88	Schluch		
				Bear. Chk.				
				Ein. Seen				
				Freigabe Release				
				CAD Stored				
TEMIC								