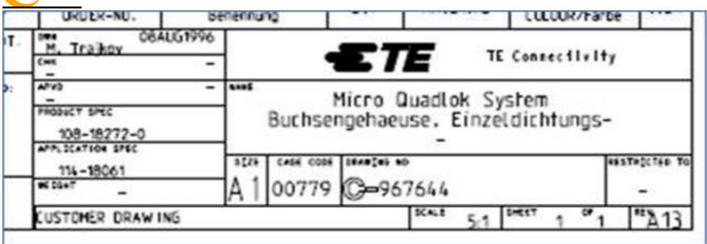
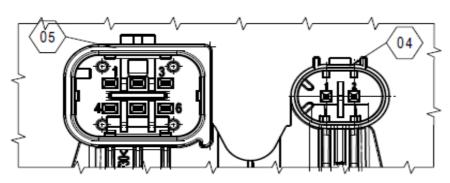


ARS548 Ethernet Interface

Date	Version	Comment
11.04.2022	1.0	Initial release version
13.04.2022	1.1	Fixed some errors in the signal description and physical limits
11.05.2022	1.2	Added default IP addresses in document. Set vertical minimum mounting position to 0,01m
28.06.2022	1.3	Added new signals in status message







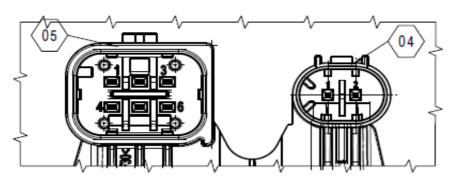
Main Co	nnector
NO.	Pinning
1	UBATT
2	POS_CODO
3	GND
4	HEAT_OUT
5	UBATT_HEAT
6	POS_COD1

Eth	Con	Pinning FTHO P						
NO.		Pinning						
1		ETHO_P						
2		ETHO_M						

Detail K Scale: 2:1







Main Co	nnector
NO.	Pinning
1	UBATT
2	POS_CODO
3	GND
4	HEAT_OUT
5	UBATT_HEAT
6	POS_COD1

03	Eth Con	nector
03/	NO.	Pinning
	1	ETHO_P
	2	ETHO M

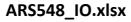
Detail K Scale: 2:1

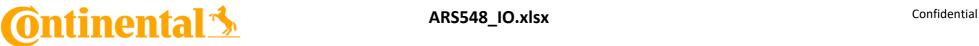


																				IP - Payloa	d							
																					ι	JDP Payloa	ad					
				IP	- Header													н	eader (16	Bytes)							Payload	
		(20 Bytes)					UDP - Header			Header 1st Part			SOME/IP Header (8 Bytes)				E2E P07 Header			E2E P07 Payload								
												(8 By	tes)									no l l .		1			1 data for 600 and	La della d
															Mes	sage ID		Req	uest ID	Inpu	it data for C	.KC caicula	tion			Inpu	ut data for CRC ca	iculation
	IP Version & Header Length	Type of Service	Total Length		Fragmen- tation	TTL	Protocol	Header Checksum	Source IP	Destination IP	Source Port	Destination Port	Length	Checksum	Service ID	Method ID	Length	Client	Session ID	Protocol Version	Interface Version	Message Type	Return Code	CRC	Length	sqc	Data ID	Payload
Length [Bytes]	1	1	2	2	2	1	1	2	4	4	2	2	2	2	2	2	4	2	2	1	1	1	1	8	4	4	4	n

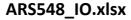
<- Signal Bit position reference (bit position refers to last bit of first byte of the signal)</p>

Section	Field	Value	Comment
Section	IP Version	IPv4	Comment
	Header Length	20 Bytes	
	Type of Service	0	
	Total Length	~	Length of IP Header + IP Payload.
	Identification	~	Length of the leader + the rayload.
	Fragmentation	0	
	TTL	3	
IP Header	Protocol	UDP	
	Header Checksum	~	
	rieduei Checksuili		
	Source IP	Tx: 10.13.1.113 Rx: 10.13.1.166	Tx: May change according to pinning.
	Destination IP	Tx: 224.0.2.2 Rx: 10.13.1.113	Tx: Radar sends messages to multicast IP-Address 224.0.2.2 Rx: Radar expects messages on its own IP-Adress (Unicast)
	Source Port	Tx: 42402 Rx: 42401	
UDP Header	Destination Port	Tx: 42102 Rx: 42101	-
	Length	Messages> UDP Length	
	Checksum	~	
	Service ID	Messages> Service ID	
	Method ID	Messages> Method ID	
	Length	Messages> PDU Length	Payload [Bytes] + 8.
Header 1st Part	Client ID	0	
SOME/IP Header	Session ID	0	
SOIVIE/IF HEAUEI	Protocol Version	1	
	Interface Version	1	
	Message Type	2	
	Return Code	0	
E2E P07 Header	E2E P07 CRC	~	CRC-64 (ECMA) Poly: 0x42F0E1EBA9EA3693 Input Data for CRC: SOME/IP Header, SOME/IP Payload (without CRC field).
ricadei	E2E P07 Length	Messages> E2E P07 Length	Identical with Length in Header.
	E2E P07 SQC	~	Sequence counter incremented with each message.





Direction	Message	Source Port	Destination Port	Service ID	Method ID	Message ID	PDU Length	SOME/IP Payload [Bits]	SOME/IP Payload [Bytes]	E2E P07 Length [Bytes]	SOME/IP Length [Bytes]	UDP Payload [Bytes]	UDP Length [Bytes]	E2E P07 Data ID (Hex)	E2E P07 Data ID (Dec)	Comment
Tx	DetectionList	42402	42102	0	336	336	35328	-	-	Reserved	Reserved	35336	35344	Reserved	Reserved	
Tx	<u>ObjectList</u>	42402	42102	0	329	329	9393	-	-	Reserved	Reserved	9401	9409	Reserved	Reserved	
Tx	<u>SensorStatus</u>	42402	42102	0	380	380	76	No SOME/IP	-	No E2E	-	84	92	No E2E	-	Only Header 1st Part. No SOME/IP or E2E.
Rx	SensorConfiguration	42401	42101	0	390	390	56	No SOME/IP	-	No E2E	-	64	72	No E2E	-	Only Header 1st Part. No SOME/IP or E2E.
Rx	AccelerationLateralCog	42401	42101	0	321	321	32	No SOME/IP	-	No E2E	-	40 / (*)	48 / (*)	No E2E		Only Header 1st Part. No SOME/IP or E2E. (*) Multiple messages may be placed in one UDP packet
Rx	AccelerationLongitudinalCog	42401	42101	0	322	322	32	No SOME/IP	-	No E2E	-	40 / (*)	48 / (*)	No E2E	-	Only Header 1st Part. No SOME/IP or E2E. (*) Multiple messages may be placed in one UDP packet
Rx	CharacteristicSpeed	42401	42101	0	328	328	11	No SOME/IP	-	No E2E	-	19 / (*)	27 / (*)	No E2E	-	Only Header 1st Part. No SOME/IP or E2E. (*) Multiple messages may be placed in one UDP packet
Rx	<u>DrivingDirection</u>	42401	42101	0	325	325	22	No SOME/IP	-	No E2E	-	30 / (*)	38 / (*)	No E2E	-	Only Header 1st Part. No SOME/IP or E2E. (*) Multiple messages may be placed in one UDP packet
Rx	<u>SteeringAngleFrontAxle</u>	42401	42101	0	327	327	32	No SOME/IP	-	No E2E	-	40 / (*)	48 / (*)	No E2E	-	Only Header 1st Part. No SOME/IP or E2E. (*) Multiple messages may be placed in one UDP packet
Rx	<u>VelocityVehicle</u>	42401	42101	0	323	323	28	No SOME/IP	-	No E2E	-	36 / (*)	44 / (*)	No E2E	-	Only Header 1st Part. No SOME/IP or E2E. (*) Multiple messages may be placed in one UDP packet
Rx	<u>YawRate</u>	42401	42101	0	326	326	32	No SOME/IP	-	No E2E	-	40 / (*)	48 / (*)	No E2E	-	Only Header 1st Part. No SOME/IP or E2E. (*) Multiple messages may be placed in one UDP packet



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ARS548 - Detection List

Bit pos relative to end of header 1st part

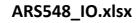
PDU	Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Туре	Lower	Upper	Unit	Texttable
DetectionList	CRC	Checksum (E2E Profile 7) (Reserved)	1	71	64	BigEndian	uint64	-	-	-	-
DetectionList	Length	Len (E2E Profile 7) (Reserved)	1	135	32	BigEndian	uint32	-	-	-	-
DetectionList	SQC	SQC (E2E Profile 7) (Reserved)	1	167	32	BigEndian	uint32	-	-	-	-
DetectionList	DataID	Data ID (E2E Profile 7) (Reserved)	1	199	32	BigEndian	uint32	-	-	-	-
DetectionList	Timestamp_Nanoseconds	Timestamp Nanoseconds	1	231	32	BigEndian	uint32	0	99999999	ns	-
DetectionList	Timestamp_Seconds	Timestamp Seconds	1	263	32	BigEndian	uint32	0	4294967295	S	-
DetectionList	Timestamp_SyncStatus	Timestamp Sync Status	1	295	8	BigEndian	uint8	0	3	-	1: SYNC_OK 2: SYNC_NEVERSYNC 3: SYNC_LOST
DetectionList	EventDataQualifier	Event Data Qualifier (unused)	1	303	32	BigEndian	uint32	0	4294967295	-	-
DetectionList	ExtendedQualifier	Extended Qualifier (unused)	1	335	8	BigEndian	uint8	0	255	-	-
DetectionList	Origin_InvalidFlags	Sensor Position Invalid flags (unused)	1	343	16	BigEndian	uint16	0	65535	-	-
DetectionList	Origin_Xpos	Sensor X Position with reference to rear axle	1	359	32	BigEndian	float32	-10	10	m	-
DetectionList	Origin_Xstd	Sensor X Position STD (unused)	1	391	32	BigEndian	float32	0	tbd	m	-
DetectionList	Origin_Ypos	Sensor Y Position with reference to rear axle	1	423	32	BigEndian	float32	-10	10	m	-
DetectionList	Origin_Ystd	Sensor Y Position STD (unused)	1	455	32	BigEndian	float32	0	tbd	m	-
DetectionList	Origin_Zpos	Sensor Z Position with reference to rear axle	1	487	32	BigEndian	float32	-10	10	m	-
DetectionList	Origin_Zstd	Sensor Z Position STD (unused)	1	519	32	BigEndian	float32	0	tbd	m	-
DetectionList	Origin_Roll	Sensor Roll Angle (unused)	1	551	32	BigEndian	float32	-3.14	3.14	rad	-
DetectionList	Origin_Rollstd	Sensor Roll Angle STD (unused)	1	583	32	BigEndian	float32	0	0.1	rad	-
DetectionList	Origin_Pitch	Sensor Pitch Angle with alignment correction	1	615	32	BigEndian	float32	-3.14	3.14	rad	-
DetectionList	Origin_Pitchstd	Sensor Pitch Angle STD	1	647	32	BigEndian	float32	0	0.1	rad	-
DetectionList	Origin_Yaw	Sensor Yaw Angle with alignment correction	1	679	32	BigEndian	float32	-3.14	3.14	rad	-
DetectionList	Origin_Yawstd	Sensor Yaw Angle STD	1	711	32	BigEndian	float32	0	0.1	rad	-
DetectionList	List_InvalidFlags	Invalid flags (unused)	1	743	8	BigEndian	uint8	0	255	-	-
DetectionList	List_Detections	Detection Array	800	751	352	BigEndian	Detection	-	-	-	-
DetectionList	List_RadVelDomain_Min	Ambiguity free Doppler velocity range Min	1	282351	32	BigEndian	float32	-100	100	m/s	-
DetectionList	List_RadVelDomain_Max	Ambiguity free Doppler velocity range Max	1	282383	32	BigEndian	float32	-100	100	m/s	-
DetectionList	List_NumOfDetections	Number of Detections	1	282415	32	BigEndian	uint32	0	800	-	-
DetectionList	Aln_AzimuthCorrection	Azimuth Alignment Correction	1	282447	32	BigEndian	float32	-3.14	3.14	rad	-
DetectionList	Aln_ElevationCorrection	Elevation Alignment Correction	1	282479	32	BigEndian	float32	-3.14	3.14	rad	-
DetectionList	Aln_Status	Status of alignment	1	282511	8	BigEndian	uint8	0	2		0: ALIGNMENT_INIT 1: ALIGNMENT_OK 2: ALIGNMENT_NOTOK

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ARS548 - Detection

Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Type	Lower	Upper	Unit	Texttable
f_AzimuthAngle	Unaligned Detection Azimuth Angle	1	751	32	BigEndian	float32	-3.14	3.14	rad	-
f_AzimuthAngleSTD	Azimuth Angle Std	1	783	32	BigEndian	float32	0	1	rad	-
u_InvalidFlags	Detection Invalid Flags	1	815	8	BigEndian	uint8	0	255	-	0x01 = Invalid Distance 0x02 = Invalid Distance Std 0x04 = Invalid Azimuth 0x08 = Invalid Azimuth Std 0x10 = Invalid Elevation 0x20 = Invalid Elevation Std 0x40 = Invalid Range Rate 0x80 = Invalid Range Rate Std
f_ElevationAngle	Unaligned Detection Elevation Angle	1	823	32	BigEndian	float32	-3.14	3.14	rad	-
f_ElevationAngleSTD	Elevation Angle Std	1	855	32	BigEndian	float32	0	1	rad	-
f_Range	Detection Radial Distance	1	887	32	BigEndian	float32	0	1500	m	-
f_RangeSTD	Radial Distance Std	1	919	32	BigEndian	float32	0	1	m	-
f_RangeRate	Detection Radial Velocity	1	951	32	BigEndian	float32	-100	100	m/s	-
f_RangeRateSTD	Radial Velocity Std	1	983	32	BigEndian	float32	0	1	m/s	-
s_RCS	Detection RCS	1	1015	8	BigEndian	sint8	-128	127	dBm²	-
u_MeasurementID	Detection ID	1	1023	16	BigEndian	uint16	0	65535	-	-
u_PositivePredictiveValue	Existence Probability	1	1039	8	BigEndian	uint8	0	100	%	-
u_Classification	Detection Classification	1	1047	8	BigEndian	uint8	0	255	-	 0 = NoClassification 1 = Noise 2 = Ground 3 = TraversableUnder 4 = Obstacle 255 = Invalid
u_MultiTargetProbability	Multi-Target Probability	1	1055	8	BigEndian	uint8	0	100	%	-
u_ObjectID	Associated Object ID	1	1063	16	BigEndian	uint16	0	65535	-	-
u_AmbiguityFlag	Probability for resolved velocity ambiguity	1	1079	8	BigEndian	uint8	0	100	%	-
u_SortIndex	tbd	1	1087	16	BigEndian	uint16	0	65535	-	-



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ARS548 - Object List

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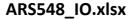
Bit pos relative to end of header 1st part

Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Туре	Lower	Upper	Unit	Texttable
CRC	Checksum (E2E Profile 7) (Reserved)	1	71	64	BigEndian	uint64	-	-	-	-
Length	Len (E2E Profile 7) (Reserved)	1	135	32	BigEndian	uint32	-	-	-	-
SQC	SQC (E2E Profile 7) (Reserved)	1	167	32	BigEndian	uint32	-	-	-	-
DataID	Data ID (E2E Profile 7) (Reserved)	1	199	32	BigEndian	uint32	-	-	-	-
Timestamp_Nanoseconds	Timestamp Nanoseconds	1	231	32	BigEndian	uint32	0	99999999	ns	-
Timestamp_Seconds	Timestamp Seconds	1	263	32	BigEndian	uint32	0	4294967295	S	-
Timestamp_SyncStatus	Timestamp Sync Status	1	295	8	BigEndian	uint8	0	3	-	1: SYNC_OK 2: SYNC_NEVERSYNC 3: SYNC_LOST
EventDataQualifier	Event Data Qualifier (unused)	1	303	32	BigEndian	uint32	0	4294967295	-	+
ExtendedQualifier	Extended Qualifier (unused)	1	335	8	BigEndian	uint8	0	255	-	-
ObjectList_NumOfObjects	Number of Objects	1	343	8	BigEndian	uint8	0	50	-	-
ObjectList_Objects	Object Array	50	351	1496	BigEndian	<u>Object</u>	-	-	-	•
	CRC Length SQC DataID Timestamp_Nanoseconds Timestamp_Seconds Timestamp_SyncStatus EventDataQualifier ExtendedQualifier ObjectList_NumOfObjects	CRC Checksum (E2E Profile 7) (Reserved) Length Len (E2E Profile 7) (Reserved) SQC SQC (E2E Profile 7) (Reserved) DataID Data ID (E2E Profile 7) (Reserved) Timestamp_Nanoseconds Timestamp Nanoseconds Timestamp_Seconds Timestamp Seconds Timestamp_SyncStatus Timestamp Sync Status EventDataQualifier Event Data Qualifier (unused) ExtendedQualifier Extended Qualifier (unused) ObjectList_NumOfObjects Number of Objects	CRC Checksum (E2E Profile 7) (Reserved) 1 Length Len (E2E Profile 7) (Reserved) 1 SQC SQC (E2E Profile 7) (Reserved) 1 DataID Data ID (E2E Profile 7) (Reserved) 1 Timestamp_Nanoseconds Timestamp Nanoseconds 1 Timestamp_Seconds Timestamp Seconds 1 Timestamp_SyncStatus Timestamp Sync Status 1 EventDataQualifier Event Data Qualifier (unused) 1 ExtendedQualifier Extended Qualifier (unused) 1 ObjectList_NumOfObjects Number of Objects 1	CRC Checksum (E2E Profile 7) (Reserved) 1 71 Length Len (E2E Profile 7) (Reserved) 1 135 SQC SQC (E2E Profile 7) (Reserved) 1 167 DataID Data ID (E2E Profile 7) (Reserved) 1 199 Timestamp_Nanoseconds Timestamp Nanoseconds 1 231 Timestamp_Seconds Timestamp Seconds 1 263 Timestamp_SyncStatus Timestamp Sync Status 1 295 EventDataQualifier Event Data Qualifier (unused) 1 303 ExtendedQualifier Extended Qualifier (unused) 1 335 ObjectList_NumOfObjects Number of Objects 1 343	CRC Checksum (E2E Profile 7) (Reserved) 1 71 64 Length Len (E2E Profile 7) (Reserved) 1 135 32 SQC SQC (E2E Profile 7) (Reserved) 1 167 32 DataID Data ID (E2E Profile 7) (Reserved) 1 199 32 Timestamp_Nanoseconds 1 231 32 Timestamp_Seconds 1 263 32 Timestamp_SyncStatus 1 295 8 EventDataQualifier Event Data Qualifier (unused) 1 303 32 ExtendedQualifier Extended Qualifier (unused) 1 335 8 ObjectList_NumOfObjects Number of Objects 1 343 8	CRC Checksum (E2E Profile 7) (Reserved) 1 71 64 BigEndian Length Len (E2E Profile 7) (Reserved) 1 135 32 BigEndian SQC SQC (E2E Profile 7) (Reserved) 1 167 32 BigEndian DataID Data ID (E2E Profile 7) (Reserved) 1 199 32 BigEndian Timestamp_Nanoseconds Timestamp Nanoseconds 1 231 32 BigEndian Timestamp_Seconds Timestamp Seconds 1 263 32 BigEndian Timestamp_SyncStatus Timestamp Sync Status 1 295 8 BigEndian EventDataQualifier Event Data Qualifier (unused) 1 303 32 BigEndian ExtendedQualifier Extended Qualifier (unused) 1 335 8 BigEndian ObjectList_NumOfObjects Number of Objects 1 343 8 BigEndian	CRC Checksum (E2E Profile 7) (Reserved) 1 71 64 BigEndian uint64 Length Len (E2E Profile 7) (Reserved) 1 135 32 BigEndian uint32 SQC SQC (E2E Profile 7) (Reserved) 1 167 32 BigEndian uint32 DataID Data ID (E2E Profile 7) (Reserved) 1 199 32 BigEndian uint32 Timestamp_Nanoseconds Timestamp Nanoseconds 1 231 32 BigEndian uint32 Timestamp_Seconds Timestamp Seconds 1 263 32 BigEndian uint32 Timestamp_SyncStatus Timestamp Sync Status 1 295 8 BigEndian uint32 EventDataQualifier Event Data Qualifier (unused) 1 303 32 BigEndian uint32 ExtendedQualifier Extended Qualifier (unused) 1 335 8 BigEndian uint8 ObjectList_NumOfObjects Number of Objects 1 343 8 BigEndian uint8	CRC Checksum (E2E Profile 7) (Reserved) 1 71 64 BigEndian uint64 - Length Len (E2E Profile 7) (Reserved) 1 135 32 BigEndian uint32 - SQC SQC (E2E Profile 7) (Reserved) 1 167 32 BigEndian uint32 - DataID Data ID (E2E Profile 7) (Reserved) 1 199 32 BigEndian uint32 - Timestamp_Nanoseconds Timestamp Nanoseconds 1 231 32 BigEndian uint32 0 Timestamp_Seconds Timestamp Seconds 1 263 32 BigEndian uint32 0 Timestamp_SyncStatus Timestamp Sync Status 1 295 8 BigEndian uint8 0 EventDataQualifier Event Data Qualifier (unused) 1 303 32 BigEndian uint32 0 ExtendedQualifier Extended Qualifier (unused) 1 335 8 BigEndian uint8 0 ObjectList_NumOfObjects Number of Objects 1 343 8 BigEndian uint8 0	CRC Checksum (E2E Profile 7) (Reserved) 1 71 64 BigEndian uint64 Length Len (E2E Profile 7) (Reserved) 1 135 32 BigEndian uint32 SQC SQC (E2E Profile 7) (Reserved) 1 167 32 BigEndian uint32 DataID Data ID (E2E Profile 7) (Reserved) 1 199 32 BigEndian uint32 Timestamp_Nanoseconds Timestamp Nanoseconds 1 231 32 BigEndian uint32 0 99999999999999999999999999999999999	CRC Checksum (E2E Profile 7) (Reserved) 1 71 64 BigEndian uint64



ARS548 - Object

Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Type	Lower	Upper	Unit	Texttable
u_StatusSensor	tbd	1	351	16	Big Endian	uint16	0	65535	-	-
ı ID	Unique ID of object	1	367	32	Big Endian	uint32	0	4294967295	-	-
 ı_Age	Age of object	1	399	16	Big Endian	uint16	0	65535	ms	
ı_Status Measurement	Object Status	1	415	8	Big Endian	uint8	0	255	-	0 = Measured 1 = New 2 = Predicted 255 = Invalid
ı_StatusMovement	Object Movement Status	1	423	8	Big Endian	uint8	0	255	-	0 = Moved 1 = Stationary 255 = Invalid
Position_InvalidFlags	tbd	1	431	16	Big Endian	uint16	0	65535	-	-
u_Position_Reference	Reference point position	1	447	8	Big Endian	uint8	0	255	-	0 = Corner Front Left 1 = Middle Front 2 = Corner Front Right 3 = Middle_Side Right 4 = Corner Rear Right 5 = Middle Rear 6 = Corner Rear Left 7 = Middle Side Left 255 = Signal Unfilled
_Position_X	X Position of reference point	1	455	32	Big Endian	float32	-1600	1600	m	-
_Position_X_STD	X Position Std	1	487	32	Big Endian	float32	0	TBD	m	-
_Position_Y	Y Position of reference point	1	519	32	Big Endian	float32	-1600	1600	m	
_Position_Y_STD	Y Position Std	1	551	32	Big Endian	float32	0	TBD	m	-
_Position_Z	Z Position of reference point	1	583	32	Big Endian	float32	-1600	1600	m	-
_Position_Z_STD	Z Position Std	1	615	32	Big Endian	float32	0	TBD	m	-
_Position_CovarianceXY	Covariance X Y	1	647	32	Big Endian	float32	0	TBD	m²	-
_Position_Orientation	Object Orientation	1	679	32	Big Endian	float32	-3.141	3.141	rad	-
_Position_Orientation_STD	Orientation Std	1	711	32	Big Endian	float32	0	TBD	rad	-
_Existence_InvalidFlags	unused	1	743	8	Big Endian	uint8	0	255	-	-
_Existence_Probability	Probability of Existence	1	751	32	Big Endian	float32	0	100	%	-
_Existence_PPV	unused	1	783	32	Big Endian	float32	0	100	%	-
_Classification_Car	Car Classification Probability	1	815	8	Big Endian	uint8	0	100	%	-
_Classification_Truck	Truck Classification Probability	1	823	8	Big Endian	uint8	0	100	%	-
Classification_Motorcycle	Motorcycle Classification Probability	1	831	8	Big Endian	uint8	0	100	%	-
_Classification_Bicycle	Bicycle Classification Probability	1	839	8	Big Endian	uint8	0	100	%	-
_Classification_Pedestrian	Pedestrian Classification Probability	1	847	8	Big Endian	uint8	0	100	%	-
_Classification_Animal	Animal Classification Probability	1	855	8	Big Endian	uint8	0	100	%	-
_Classification_Hazard	Hazard Classification Probability	1	863	8	Big Endian	uint8	0	100	%	-
_Classification_Unknown	Unknown Classification Probability	1	871	8	Big Endian	uint8	0	100	%	-
_Classification_Overdrivable	unused	1	879	8	Big Endian	uint8	0	100	%	-
_Classification_Underdrivable	unused	1	887	8	Big Endian	uint8	0	100	%	-
_Dynamics_AbsVel_InvalidFlags	unused	1	895	8	Big Endian	uint8	0	255	-	-
_Dynamics_AbsVel_X	X Absolute Velocity	1	903	32	Big Endian	float32	-	-	m/s	-
_Dynamics_AbsVel_X_STD	X Absolute Velocity Std	1	935	32	Big Endian	float32	0	-	m/s	



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f_Dynamics_AbsVel_Y	Y Absolute Velocity	1	967	32	Big Endian	float32	-	-	m/s	
f_Dynamics_AbsVel_Y_STD	Y Absolute Velocity Std	1	999	32	Big Endian	float32	0	-	m/s	-
_Dynamics_AbsVel_CovarianceXY	Covariance Absolute Velocity X Y	1	1031	32	Big Endian	float32	0	-	(m/s) ²	-
u_Dynamics_RelVel_InvalidFlags	unused	1	1063	8	Big Endian	uint8	0	255	-	+
f_Dynamics_RelVel_X	X Relative Velocity	1	1071	32	Big Endian	float32	-	-	m/s	-
f_Dynamics_RelVel_X_STD	X Relative Velocity Std	1	1103	32	Big Endian	float32	-	-	m/s	Ŧ
f_Dynamics_RelVel_Y	Y Relative Velocity	1	1135	32	Big Endian	float32	-	-	m/s	-
f_Dynamics_RelVel_Y_STD	Y Relative Velocity Std	1	1167	32	Big Endian	float32	-	-	m/s	-
f_Dynamics_RelVel_CovarianceXY	Covariance Relative Velocity X Y	1	1199	32	Big Endian	float32	0	-	(m/s) ²	-
u_Dynamics_AbsAccel_InvalidFlags	unused	1	1231	8	Big Endian	uint8	0	255	-	Ŧ
f_Dynamics_AbsAccel_X	X Absolute Acceleration	1	1239	32	Big Endian	float32	-	-	m/s ²	-
f_Dynamics_AbsAccel_X_STD	X Absolute Acceleration Std	1	1271	32	Big Endian	float32	0	-	m/s ²	-
f_Dynamics_AbsAccel_Y	Y Absolute Acceleration	1	1303	32	Big Endian	float32	-	-	m/s ²	-
f_Dynamics_AbsAccel_Y_STD	Y Absolute Acceleration Std	1	1335	32	Big Endian	float32	0	-	m/s ²	-
f_Dynamics_AbsAccel_CovarianceXY	Covariance Absolute Acceleration X Y	1	1367	32	Big Endian	float32	0	-	$(m/s^2)^2$	-
u_Dynamics_RelAccel_InvalidFlags	unused	1	1399	8	Big Endian	uint8	0	255	-	-
f_Dynamics_RelAccel_X	X Relative Acceleration	1	1407	32	Big Endian	float32	-	-	m/s ²	-
f_Dynamics_RelAccel_X_STD	X Relative Acceleration Std	1	1439	32	Big Endian	float32	0	-	m/s ²	-
f_Dynamics_RelAccel_Y	Y Relative Acceleration	1	1471	32	Big Endian	float32	-	-	m/s ²	-
f_Dynamics_RelAccel_Y_STD	Y Relative Acceleration Std	1	1503	32	Big Endian	float32	0	-	m/s ²	-
f_Dynamics_RelAccel_CovarianceXY	Covariance Relative Acceleration X Y	1	1535	32	Big Endian	float32	0	-	$(m/s^2)^2$	-
u_Dynamics_Orientation_InvalidFlags	unused	1	1567	8	Big Endian	uint8	0	255	-	Ŧ
u_Dynamics_Orientation_Rate_Mean	Object Orientation Rate	1	1575	32	Big Endian	float32	-	-	rad/s	-
u_Dynamics_Orientation_Rate_STD	Orientation Rate Std	1	1607	32	Big Endian	float32	0	-	rad/s	-
u_Shape_Length_Status	Shape Length Status (unused)	1	1639	32	Big Endian	uint32	0	255	-	0 = Completely Visible 1 = Partially Occluded 2 = Completely Occluded 255 = Invalid
u_Shape_Length_Edge_InvalidFlags	Invalid Flags Shape Length (unused)	1	1671	8	Big Endian	uint8	0	255	-	-
u_Shape_Length_Edge_Mean	Mean Shape Length	1	1679	32	Big Endian	float32	-	-	m	-
u_Shape_Length_Edge_STD	Shape Length Std (unused)	1	1711	32	Big Endian	float32	-	-	m	+
u_Shape_Width_Status	Shape Width Status (unused)	1	1743	32	Big Endian	uint32	0	255	-	0 = Completely Visible 1 = Partially Occluded 2 = Completely Occluded 255 = Invalid
u_Shape_Width_Edge_InvalidFlags	Invalid Flags Shape Width (unused)	1	1775	8	Big Endian	uint8	0	255	-	-
u_Shape_Width_Edge_Mean	Mean Shape Width	1	1783	32	Big Endian	float32	-	-	m	-
u Shape Width Edge STD	Shape Width Std (unused)	1	1815	32	Big Endian	float32	-	-	m	-

1847

ARS548 - Status Bit pos relative to

PDU	Signal	Description	ArrayLen	end of header 1st part BitPos	BitSize	Endianess	Type	Lower	Hanas	Unit	Texttable
			ArrayLen	BITPOS					Upper		Texttable
Status	Timestamp_Nanoseconds	Timestamp Nanoseconds	1	/	32	BigEndian	uint32	0	999999999	ns	-
Status	Timestamp_Seconds	Timestamp Seconds	1	39	32	BigEndian	uint32	0	4294967295	S	-
Status	Timestamp_SyncStatus	Timestamp Sync Status	1	71	8	BigEndian	uint8	1	3	-	1: SYNC_OK 2: SYNC_NEVERSYNC 3: SYNC_LOST
Status	SWVersion_Major	Software version (major)	1	79	8	BigEndian	uint8	0	255	-	
Status	SWVersion_Minor	Software version (minor)	1	87	8	BigEndian	uint8	0	255	-	
Status	SWVersion Patch	Software version (patch)	1	95	8	BigEndian	uint8	0	255	-	
Status	Longitudinal	Longitudinal sensor position (AUTOSAR)	1	103	32	BigEndian	float32	-100	100	m	
Status	Lateral	Lateral sensor position (AUTOSAR)	1	135	32	BigEndian	float32	-100	100	m	
Status	Vertical	Vertical sensor position (AUTOSAR)	1	167	32	BigEndian	float32	0,01	10	m	
Status	Yaw	Sensor yaw angle (AUTOSAR)	1	199	32	BigEndian	float32	-3,14159	3,14159	rad	
			1	231	32					rad	
Status Status	Pitch PlugOrientation	Sensor pitch angle (AUTOSAR) Orientation of plug	1	263	8	BigEndian BigEndian	float32 uint8	-1,5707 0	1,5707	rad -	0 = PLUG_RIGHT
											1 = PLUG_LEFT
Status	Length	Vehicle length	1	271	32	BigEndian	float32	0,01	100	m	
Status	Width	Vehicle width	1	303	32	BigEndian	float32	0,01	100	m	
Status	Height	Vehicle height	1	335	32	BigEndian	float32	0,01	100	m	
Status	Wheelbase	Vehicle wheelbase	1	367	32	BigEndian	float32	0,01	100	m	
Status	MaximumDistance	Maximum detection distance	1	399	16	BigEndian	uint16	93	1514	m	
Status	FrequencySlot	Center frequency	1	415	8	BigEndian	uint8	0	2	-	0 = Low (76.23 GHz) 1 = Mid (76.48 GHz) 2 = High (76.73 GHz)
Status	CycleTime	Cycle time	1	423	8	BigEndian	uint8	50	100	ms	2 - High (70.75 GHz)
Status	TimeSlot	Cycle offset	1	431	8	BigEndian	uint8	0	255	ms	
Julius	Timesiot	cycle onset	-			Digerialari	unito	· ·	233	1113	1 = Worldwide
Status	нсс	Country code	1	439	8	BigEndian	uint8	1	2	-	2 = Japan
Status	Powersave_Standstill	Power saving in standstill	1	447	8	BigEndian	uint8	0	1	-	0 = Off 1 = On
Status	SensorIPAddress_0	Sensor IP address	1	455	32	BigEndian	uint32	0	3758096383	-	
Status	SensorIPAddress_1	Reserved	1	487	32	BigEndian	uint32	0	3758096383	-	
Status	Configuration counter	Counter that counts up if new configuration has been received and accepted	1	519	8	BigEndian	uint8	0	255	-	
Status	Status_LongitudinalVelocity	Signals if current VDY is OK or timed out	1	527	8	BigEndian	uint8	0	1	-	0: VDY_OK 1: VDY_NOTOK
Status	Status_LongitudinalAcceleration	Signals if current VDY is OK or timed out	1	535	8	BigEndian	uint8	0	1	-	0: VDY_OK 1: VDY_NOTOK
Status	Status_LateralAcceleration	Signals if current VDY is OK or timed out	1	543	8	BigEndian	uint8	0	1	-	0: VDY_OK 1: VDY_NOTOK
Status	Status_YawRate	Signals if current VDY is OK or timed out	1	551	8	BigEndian	uint8	0	1	-	0: VDY_OK 1: VDY_NOTOK
Status	Status_SteeringAngle	Signals if current VDY is OK or timed out	1	559	8	BigEndian	uint8	0	1	-	0: VDY_OK 1: VDY_NOTOK
Status	Status_DrivingDirection	Signals if current VDY is OK or timed out	1	567	8	BigEndian	uint8	0	1	-	0: VDY_OK 1: VDY_NOTOK
Status	Status_CharacteristicSpeed	Signals if current VDY is OK or timed out. (Unused)	1	575	8	BigEndian	uint8	0	1	-	0: VDY_OK 1: VDY_NOTOK
Status	Status_RadarStatus	Signals if Radar Status is OK	1	583	8	BigEndian	uint8	0	2	-	0: STATE_INIT 1: STATE_OK 2: STATE_INVALID
Status	Status_VoltageStatus	Bitfield to report under- and overvoltage errors	1	591	8	BigEndian	uint8	0	255	-	0x01: Current undervoltage 0x02: Past undervoltage 0x04: Current overvoltage 0x08: Past overvoltage
Status	Status_TemperatureStatus	Bitfield to report under- and overtemperature errors	1	599	8	BigEndian	uint8	0	255	-	0x01: Current undertemperature 0x02: Past undertemperature 0x04: Current overtemperature 0x08: Past overtemperature
Status	Status_BlockageStatus	Current blockage state and blockage self test state.	1	607	8	BigEndian	uint8	0	255	-	Blockage state (mask 0x0F) 0x00: Blind 0x01: High 0x02: Mid 0x03: Low 0x04: None Selftest state (mask 0xF0) 0x00: Selftest failed 0x10: Selftest passed 0x20: Selftest ongoing

				end of header 1st part							
PDU	Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Type	Lower	Upper	Unit	Texttable
Configuration	Longitudinal	Longitudinal sensor position (AUTOSAR)	1	7	32	BigEndian	float32	-100	100	m	-
Configuration	Lateral	Lateral sensor position (AUTOSAR)	1	39	32	BigEndian	float32	-100	100	m	-
Configuration	Vertical	Vertical sensor position (AUTOSAR)	1	71	32	BigEndian	float32	0,01	10	m	-
Configuration	Yaw	Sensor yaw angle (AUTOSAR)	1	103	32	BigEndian	float32	-3,14159	3,14159	rad	-
Configuration	Pitch	Sensor pitch angle (AUTOSAR)	1	135	32	BigEndian	float32	-1,5707	1,5707	rad	-
Configuration	PlugOrientation	Orientation of plug	1	167	8	BigEndian	uint8	0	1	-	0 = PLUG_RIGHT 1 = PLUG_LEFT
Configuration	Length	Vehicle length	1	175	32	BigEndian	float32	0,01	100	m	
Configuration	Width	Vehicle width	1	207	32	BigEndian	float32	0,01	100	m	-
Configuration	Height	Vehicle height	1	239	32	BigEndian	float32	0,01	100	m	-
Configuration	Wheelbase	Vehicle wheelbase	1	271	32	BigEndian	float32	0,01	100	m	-
Configuration	MaximumDistance	Maximum detection distance	1	303	16	BigEndian	uint16	93	1514	m	-
Configuration	FrequencySlot	Center frequency (if MaximumDistance < 190 m only Mid can be selected)	1	319	8	BigEndian	uint8	0	2	-	0 = Low (76.23 GHz) 1 = Mid (76.48 GHz) 2 = High (76.73 GHz)
Configuration	CycleTime	Cycle time	1	327	8	BigEndian	uint8	50	100	ms	-
Configuration	TimeSlot	Cycle offset	1	335	8	BigEndian	uint8	10	90	ms	-
Configuration	нсс	Country code	1	343	8	BigEndian	uint8	1	2	-	1 = Worldwide 2 = Japan
Configuration	Powersave_Standstill	Power saving in standstill	1	351	8	BigEndian	uint8	0	1	-	0 = Off 1 = On
Configuration	SensorIPAddress_0	Sensor IP address	1	359	32	BigEndian	uint32	0	4294967295	-	-
Configuration	SensorIPAddress_1	Reserved (Configure as 2852025457 or 169.254.116.113)	1	391	32	BigEndian	uint32	0	4294967295	-	-
Configuration	NewSensorMounting	Flag if new sensor mounting position shall be configured	1	423	8	BigEndian	uint8	0	1	-	0 = Ignore parameters 1 = Use parameters
Configuration	NewVehicleParameters	Flag if new vehicle parameters position shall be configured	1	431	8	BigEndian	uint8	0	1	-	0 = Ignore parameters 1 = Use parameters
Configuration	NewRadarParameters	Flag if new radar parameter shall be configured	1	439	8	BigEndian	uint8	0	1	-	0 = Ignore parameters 1 = Use parameters
Configuration	NewNetworkConfiguration	Flag if new IP address shall be configured	1	447	8	BigEndian	uint8	0	1	-	0 = Ignore parameters 1 = Use parameters



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ARS548 - Acceleration Lateral CoG

Bit pos relative to

Messages

				end of neader 1st part							
PDU	Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Туре	Lower	Upper	Unit	Texttable
AccelerationLateralCog	AccelerationLateralErrAmp	Error Amplitude of Lateral Acceleration (Unused)	1	7	32	BigEndian	float32	-	-	-	-
AccelerationLateralCog	AccelerationLateralErrAmp_InvalidFlag	Invalid Flags AccelLatErrAmp (Unused)	1	39	8	BigEndian	uin8	-	-	-	-
AccelerationLateralCog	QualifierAccelerationLateral	Lateral Acceleration Qualifier (Unused)	1	47	8	BigEndian	uint8	-	-	-	-
AccelerationLateralCog	AccelerationLateral	Lateral Acceleration	1	55	32	BigEndian	float32	-65	65	m/s²	-
AccelerationLateralCog	AccelerationLateral_InvalidFlag	Invalid Flag Lateral Acceleration (Unused)	1	87	8	BigEndian	uint8	-	-	-	-
AccelerationLateralCog	AccelerationLateralEventDataQualifier	Event Data Qualifier Lateral Acceleration (Unused)	1	95	8	BigEndian	uint8	-	-	-	-
AccelerationLateralCog	Reserved	Reserved	1	103	160	BigEndian	-	-	-	-	-
				256							



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Messages ARS548 - Acceleration Longitudinal CoG Bit pos relative to end of header 1st part

PDU	Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Туре	Lower	Upper	Unit	Texttable
AccelerationLongitudinalCog	AccelerationLongitudinalErrAmp	Error Amplitude of Longitudinal Acceleration (Unused)	1	7	32	BigEndian	float32	-	-	-	-
AccelerationLongitudinalCog	AccelerationLongitudinalErrAmp_InvalidFlag	Invalid Flags AccelLongErrAmp (Unused)	1	39	8	BigEndian	uin8	-	-	-	-
AccelerationLongitudinalCog	QualifierAccelerationLongitudinal	Longitudinal Acceleration Qualifier (Unused)	1	47	8	BigEndian	uint8	-	-	-	/ -
AccelerationLongitudinalCog	AccelerationLongitudinal	Longitudinal Acceleration	1	55	32	BigEndian	float32	-65	65	m/s²	-
AccelerationLongitudinalCog	AccelerationLongitudinal_InvalidFlag	Invalid Flag Longitudinal Acceleration (Unused)	1	87	8	BigEndian	uint8	-	-	-	-
AccelerationLongitudinalCog	AccelerationLongitudinalEventDataQualifier	Event Data Qualifier Longitudinal Acceleration (Unused)	1	95	8	BigEndian	uint8	-	-	-	-
AccelerationLongitudinalCog	Reserved	Reserved	1	103	160	BigEndian	-	-	-	-	/ -
				256							



ARS548 - CharacteristicSpeed

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Bit pos relative to Messages end of header 1st part

				part							
PDU	Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Type	Lower	Upper	Unit	Texttable
CharacteristicSpeed	CharacteristicSpeedErrAmp	Error Amplitude of CharacteristicSpeed (Unused)	1	7	8	BigEndian	uint8	-	-	-	A -
CharacteristicSpeed	QualifierCharacteristicSpeed	CharacteristicSpeed Qualifier (Unused)	1	15	8	BigEndian	uint8	-	-	-	-
CharacteristicSpeed	CharacteristicSpeed	CharacteristicSpeed	1	23	8	BigEndian	uint8	0	255	km/h	/-
CharacteristicSpeed	Reserved	Reserved	1	31	64	BigEndian	-	-	-	-	
				88							



ARS548 - DrivingDirection

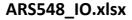
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Messages

Bit pos relative to end of header 1st part

PDU	Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Туре	Lower	Upper	Unit	Texttable
DrivingDirection	DrivingDirectionUnconfirmed	Unconfirmed Driving Direction (Unused)	1	7	8	BigEndian	uint8	-	-	-	-
DrivingDirection	DrivingDirectionConfirmed	Confirmed Driving Direction	1	15	8	BigEndian	uin8	-	-	-	0: Standstill 1: Forward 2: Backwards
DrivingDirection	Reserved	Reserved	1	23	160	BigEndian	-	-	-	-	-
				176							



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ARS548 - SteeringAngleFrontAxle Bit pos relative to Messages end of header 1st part

				end of neader 13t part							
PDU	Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Туре	Lower	Upper	Unit	Texttable
SteeringAngleFrontAxle	QualifierSteeringAngleFrontAxle	SteeringAngleFrontAxle Qualifier (Unused)	1	7	8	BigEndian	uint8	-	-	-	-
SteeringAngleFrontAxle	SteeringAngleFrontAxleErrAmp	Error Amplitude of SteeringAngleFrontAxle (Unused)	1	15	32	BigEndian	float32	-	-	-	-
SteeringAngleFrontAxle	SteeringAngleFrontAxleErrAmp_InvalidFlag	Invalid Flag SteeringAngleFrontAxleErrAmp (Unused)	1	47	8	BigEndian	uin8	-	-	-	-
SteeringAngleFrontAxle	SteeringAngleFrontAxle	SteeringAngleFrontAxle	1	55	32	BigEndian	float32	-90	90	deg	-
SteeringAngleFrontAxle	SteeringAngleFrontAxle_InvalidFlag	Invalid Flag SteeringAngleFrontAxle (Unused)	1	87	8	BigEndian	uint8	-	-	-	-
SteeringAngleFrontAxle	SteeringAngleFrontAxleEventDataQualifier	Event Data Qualifier SteeringAngleFrontAxle (Unused)	1	95	8	BigEndian	uint8	-	-	-	-
SteeringAngleFrontAxle	Reserved	Reserved	1	103	160	BigEndian	-	-	-	-	/ -



ARS548 - VelocityVehicle

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Bit pos relative to Messages end of header 1st part

				end of neader 13t part							
PDU	Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Туре	Lower	Upper	Unit	Texttable
VelocityVehicle	StatusVelocityNearStandstill	Velocity Near Standstill Status (Unused)	1	7	8	BigEndian	uint8	-	-	-	/ -
VelocityVehicle	QualifierVelocityVehicle	VelocityVehicle Qualifier (Unused)	1	15	8	BigEndian	uint8	-	-	-	-
VelocityVehicle	VelocityVehicleEventDataQualifier	Event Data Qualifier VelocityVehicle (Unused)	1	23	8	BigEndian	uint8	-	-	-	/ -
VelocityVehicle	VelocityVehicle	VelocityVehicle	1	31	32	BigEndian	float32	0	350	km/h	-
VelocityVehicle	VelocityVehicle_InvalidFlag	Invalid Flag VelocityVehicle (Unused)	1	63	8	BigEndian	uint8	-	-	-	-
VelocityVehicle	Reserved	Reserved	1	71	160	BigEndian	-	-	-	-	-
				224							



ARS548 - Yaw Rate

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Bit pos relative to Messages end of header 1st part

PDU	Signal	Description	ArrayLen	BitPos	BitSize	Endianess	Type	Lower	Upper	Unit	Texttable
YawRate	YawRateErrAmp	Error Amplitude of YawRate (Unused)	1	7	32	BigEndian	float32	-	-	-	-
YawRate	YawRateErrAmp_InvalidFlag	Invalid Flags AccelLatErrAmp (Unused)	1	39	8	BigEndian	uin8	-	-	-	-
YawRate	QualifierYawRate	YawRate Qualifier (Unused)	1	47	8	BigEndian	uint8	-	-	-	-
YawRate	YawRate	YawRate	1	55	32	BigEndian	float32	-163,84	163,83	deg/s	-
YawRate	YawRate_InvalidFlag	Invalid Flag Yaw Rate(Unused)	1	87	8	BigEndian	uint8	-	-	-	-
YawRate	YawRateEventDataQualifier	Event Data Qualifier YawRate (Unused)	1	95	8	BigEndian	uint8	-	-	-	-
YawRate	Reserved	Reserved	1	103	160	BigEndian	-	-	-	-	-