

Technical Description

Key: **3BO 825 381 A**



Hella KGaA Hueck & Co
59552 Lippstadt

Function Description

PLL Fold-Away RF Transmitter

Bugatti 5B0 825 381A

2005-07-25			New Document	K. Bödeker
Amend. date	Amend. No.	Page	Amendment	Gr./Name/Chkd
Date: 2005-07-25	Processed: K. Bödeker EE-324		Checked:	Bugatti_5B0 825 381.A_techn_description

Replacement for version dated :

Page 1 of 3



Function description: PLL fold-away RF transmitter Bugatti 5B0 825 381A

The transmitter operates at a nominal operating frequency of 315.0 MHz. The frequency-determining element is a quartz crystal-stabilised PLL circuit. The reference quartz crystal oscillates with a nominal frequency of 9.84375 MHz, the maximum frequency deviation is ± 100 ppm.

A type U2741B single-chip transmitter (Atmel) is used as the active transmitter element. This module also contains all active PLL components. The loop filter (C4, C5 and R5), the quartz crystal (Q1) and the adaptations to the integrated circuit board antenna (C8,C10 and C11) are required as external elements.

The transmitter is amplitude-modulated (Amplitude Shift Keying [ASK], ON Off Keying [OOK]). The transmitter is modulated via the **AM** input of the IC2 U2741B. The modulation signal is supplied by microcontroller IC1 (ROM versions ATAR890 or ATAR892 or identically functioning MTP versions, Atmel).

The clock signal for the microcontroller is provided by the PLL- IC U2741B.

The transmitter is equipped with 2 buttons (see "Technical data" table). If no button is pressed, the microcontroller is in "sleep mode", and the transmitter's RF stage is disabled. When a button is pressed, the microcontroller wakes up and switches on the PLL circuit. After stabilisation of the PLL the microcontroller outputs a coded signal to the RF transmitter. Transmission of the RF signal continues until all buttons are released, but not longer than 60 seconds.

Coding is accomplished using a combination of fixed and rolling code.

The transmitter is supplied by one lithium battery (type CR2032, nominal voltage 3V).

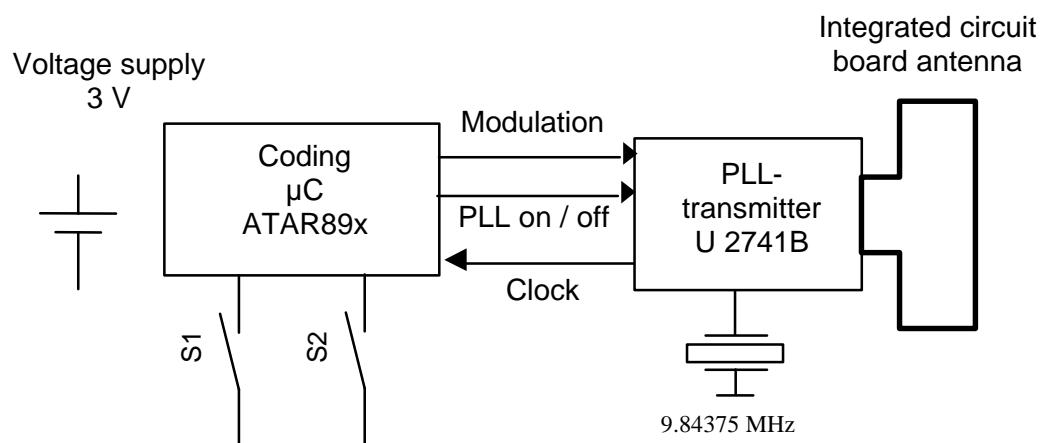


Figure 1: Block diagram of the transmitter



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Technical data:

Model designation	Buttons	Function
5B0 825 381A (2 Buttons)	S1 S2	"Lock" "Unlock"
Operating voltage	3V nominal (1 lithium battery CR2032)	
Current consumption	approx. 8 mA	
Operating frequency	315.0 MHz ± 100 ppm	
Frequency synthesis	quartz crystal-stabilised PLL	
PLL reference frequency	9.84375 MHz	
Modulation	pulse modulation (ASK)	
Type of transmission/operation (ITU designation)	A1D / Simplex	
Modulation frequency	approx. 1 kHz	
Signal strength	approx. 520 uV/m @ 3m	
Operating temperature range	-20 °C ... +60 °C	
Antenna	integrated circuit board antenna	

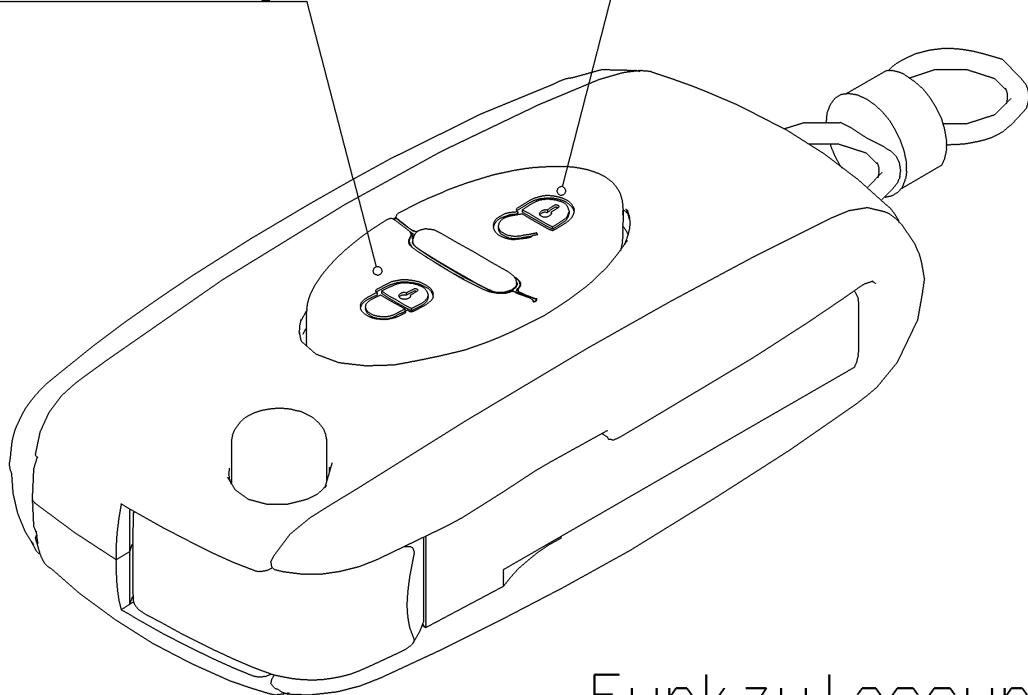
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2005-07-25

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Checked:

Verriegelungstaste
button for closing

Entriegelungstaste
button for opening



Funkzulassung
Radio approval
Bugatti
5B0 825 381 A

part dimension:

ca. 87mm x 35mm x 20mm

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Maszstab Scale	2:1	Datum Date	Name	 HELLA Hella KGaA Hueck & Co.
Projektionsmethode Projection	Drawn	05-07-20	Dreger	
3    1	Freigegeben Checked			
	Konstr.-Gr. Department	EE-322		
Benennung FUNKSENDER 2T 315 MHz		Ordnungs-Nr. Ordering-No.	Material-Nr. Material-No.	Revision
Title RADIO TRANSMITTER 2T 315 MHz		5B0 825 381 A		
Ersatz fuer Replaces		Zeichnungs-Nr. Drawing No.	Drawing No.	Format Size
Erstverwendung: First Project No.:		5B0 825 381 A		A4
CATIA:		Blatt: Page:		Blattzahl: Of:



Zulassungs-Etikett im Funksender Approval-Label inside Radio Transmitter

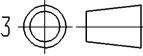
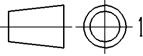
Statement in the user manual of the vehicle:

This device complies with part 15 of the FCC rules and with RSS-210 of the IC rules. Operation is subject to the following two conditions:
 (1) This device may not cause harmful interference, and
 (2) this device must accept any interference received,
 including interference that may cause undesired operation.

Note:
 The manufacturer is not responsible for ANY RADIO OR TV
 interference caused by unauthorized modifications to this equipment.
 Such modifications could void the users authority to operate the equipment.

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Maszstab Scale	2:1	Datum Date	Name	 Hella KGaA Hueck & Co.
Projektionsmethode Projection	3   1	Erstellt/Entw. Drawn	05-07-20	
		Freigegeben Checked		
		Konstr.-Gr. Department	EE-322	
Benennung	ZULASSUNGSBESCHRIFTUNG		Ordnungs-Nr. Ordering-No.	Material-Nr. Material-No.
Title	APPROVAL MARKING (EXAMPLES)		5B0 825 381 A	Revision
Ersatz fuer Replaces			Blatt: Page:	Blattzahl: Of:
Erstverwendung: First Project No.:				
CATIA:	Dok. -Status:			