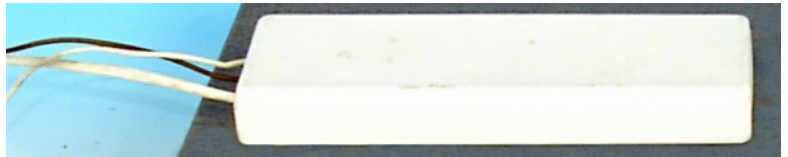




LWE 7-3* 12V receiver (33800*, E7-s) normally used at an Operational Support Point.



TF-B (2C) tx transmitter 33800-11* which required a separate microphone.

TF-B TX (2C) Doorbell/dooropener

33800

(GDR line bugs IX)

Country of origin: GDR

(To be read in conjunction with Chapter 163.)

DATA SUMMARY

- Organisation:** MfS, Abt. 26.
- Design/manufacturer:** MfS, OTS Abt. 33.
- Year of Introduction:** 1981.
- Purpose:** Using an existing doorbell/dooropener cable for routing the output of a TF-B tx (2C) bug at an Operational Object to an Operational Support Point.
- FM carrier frequencies:** Ch.1 24kHz, Ch.2 40kHz, Ch.3 104kHz; $\pm 1/2$ kHz.
- Modulation frequency deviation F3:** Max. ± 2.8 kHz.
- Associated receiver:** LWE 7* (E7-s).
- Microphone:** e.g. Knowles type BT 1751.
- Power Supply:** 12V AC derived from doorbell system.

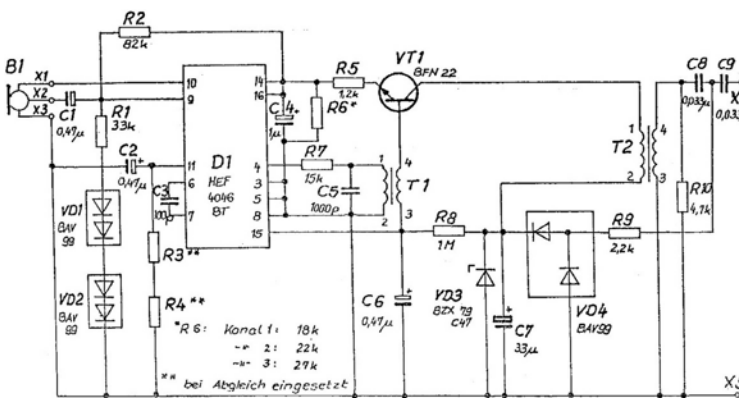
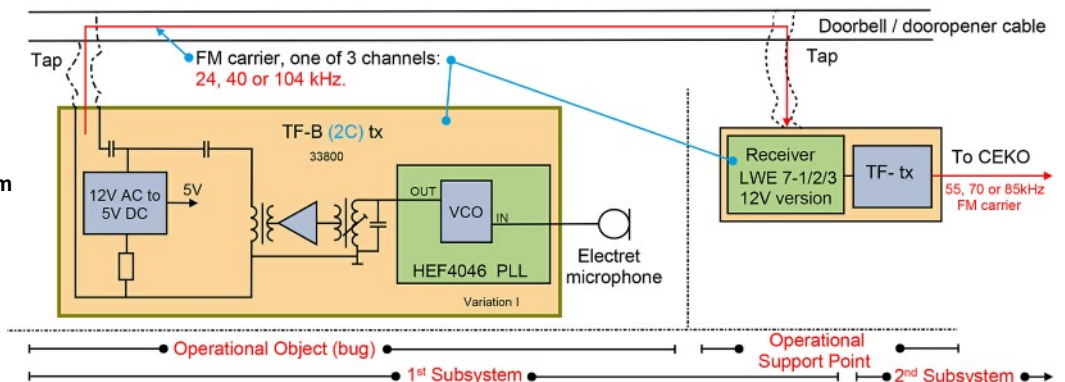
REMARKS

A 12V AC door bell or door opener cable was tapped at two places, used to route the output of a TF-B tx (2C) transmitter at the Operational Object to a TF-B rx LWE 7-1, 2 or 3 receiver at an Operational Support Point. The system was known as '12V Technik' as it received its power from the 12V AC doorbell system. The individual units TF-B tx (2C) transmitter and receiver LWE 7 12V differed not very much from those used with TF-B tx (2A); mainly in the output circuits with power arrangement. The system operated on one of three FM carrier channels: 24, 40 or 104kHz, hence three versions of the units.

Currently known covert numbers of TF-B (2C).

- 33800-101/102/103* TF-B tx Transmitter with microphone.
 - 33800-111/112/113* TF-B tx Transmitter only.
 - 33800-131/131/133* TF-B rx Receiver LWE 7-1/2/3 12V (E7-s).
- *) 3 different channels.

Functional block diagram of the TF-B (2C) system.



Circuit diagram of TF-B tx (2A) transmitter 33603* which was nearly identical to the TF-B tx (2C) 33800*. Differences might have been in the values of the output circuit R9-R10 and C8-C9.

There were, as far as could be traced, five different variations in the design of the TF-B tx (2) bugs, functionally similar but built with different components, used for specific purposes.

- Variation 1 [in TF-B tx (2A) and TF-B tx (2C)] used a HEF 4046 PLL.
 - Variation 2 [in TF-B tx (2B)] used a CD 4046A PLL.
 - Variation 3 [in TF-B tx (2D)] used a VCO 30 PLL.
 - Variation 4 [in TF-B tx (2A)] OSA version with unknown components.
 - Variation 5 [in TF-B tx (2B)] 33014 with unknown thick film chip.
- Apart from a different type PLL, there were numerous changes in the circuits, required for each application, e.g. input circuit, power requirement, FM carrier frequency and remote on-off switching.

References:

- With thanks to Detlev Vreisleben, DC7KG, Germany for permission to use his excellent photographs and scans, and providing further technical and historical information.