

Pschola bug. (Variant with two transistors)



Bodil-B1 bug 33343-1.

TF-B (5) Passive bugs

(GDR line bugs XI)

Country of origin: GDR

(To be read in conjunction with Chapter 163.)

DATA SUMMARY

Organisation: MfS, Abt. 26.

Design/manufacturer: UDS (Bulgarian secret service)

Year of Introduction: 1980s.

Purpose: Covert room overhearing using an existing private branch exchange line as transmission medium. The concealed bug was powered by a carrier sent from the receiver at the Operational Support Point.

Carrier frequencies:

- Pschola/Peperuda: 35kHz in; 35kHz PhM out.
- Bodil-B: 30kHz in; 60kHz PhM out.

Frequency response (Bodil-B): 300-5000Hz.

Dimensions Bodil-B1 bug: 45mm long, 10mm thick.

REMARKS

The TF-B (5) sub-miniature passive line based Pschola/Peperuda and Bodil-B systems were developed and produced in Bulgaria, imported into the GDR. Power for the TF-B tx (5) Pschola and Bodil-B1 passive transmitter (bug) was derived from the up going carrier from the receiver. The bugs were therefore activated only when a carrier was received. Both systems were principally used in hotels and institutes with a private branch exchange (PBX) and good quality local lines. Other applications for this system were limited. One of the merits of the passive system was its capability of operation even if the telephone line was occupied which was a drawback of TF-B (2B) systems. Apart from using lines of a private branch exchange, a CATV cable system could also be used as transmission medium with a line matching adapter fitted at each side.

Pschola/Peperuda passive system.

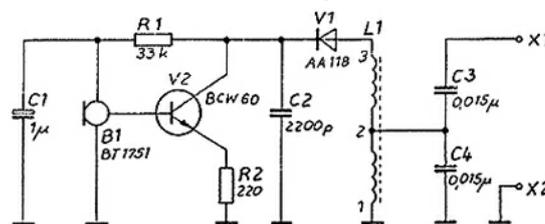
The Bulgarian passive TF-B (5) system was comprised of transmitter Pschola (Bee) and receiver Peperuda (Butterfly). Unlike the Bodil-B system, which used a frequency doubled 60kHz PhM return-carrier, the 35kHz carrier which powered the bug, was sent back phase modulated by the microphone audio.



TF-B tx (5) Pschola transmitter (bug) 33020-11 fitted in a Variant terminal box (left) and Peperuda receiver (right).



Internal view of Peperuda receiver.



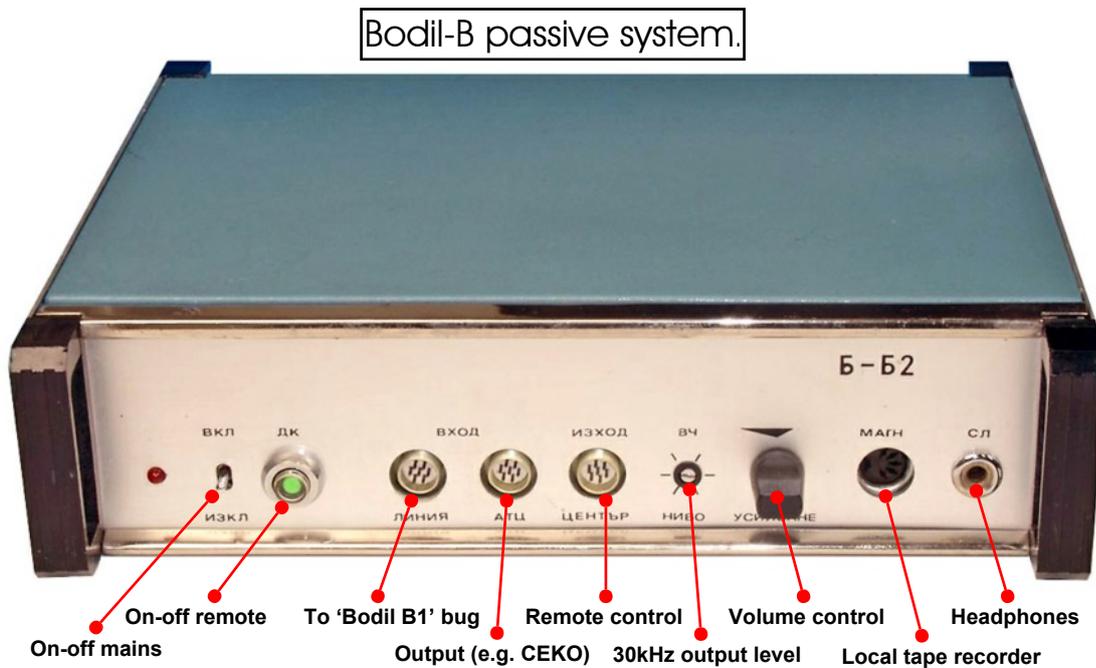
Circuit diagram Pschola transmitter (probably early version with one transistor).

Currently known covert numbers of TF-B (5) Passive line systems.

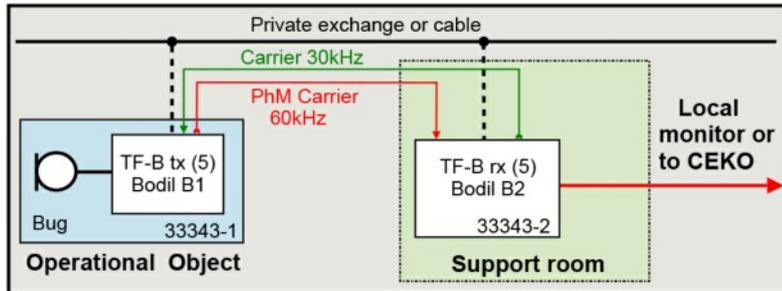
- | | | |
|-------------|----------------------------------|-------------|
| - 33343-1 | TF-B tx (5) Bodil-B1 | Transmitter |
| - 33343-2 | TF-B tx (5) Bodil-B2 | Receiver |
| - Not known | TF-B tx (5) Peperuda | Transmitter |
| - Not known | TF-B tx (5) Peperuda | Receiver |
| - 33020-10 | Masking | |
| - 33020-11 | Peperuda in Variant terminal box | |

References:

- With thanks to Detlev Vreisleben, DC7KG, Germany for taking excellent photographs and scans, and providing further technical and historical information.
- MfS documents:
 - OTS Abt. 33, Erprobungsbericht System 'Bodil-B', Jun.1981.
 - Beschreibung 'Bodil', handwritten document, n.d.
 - Beschreibung des Vorschlages 'Bodil - anpassung', n.d.
 - Bulgarian document: Bodil-B, technical description, Jan. 1979.



TF-B2 rx (5) Bodil-B2 receiver 33343-2.

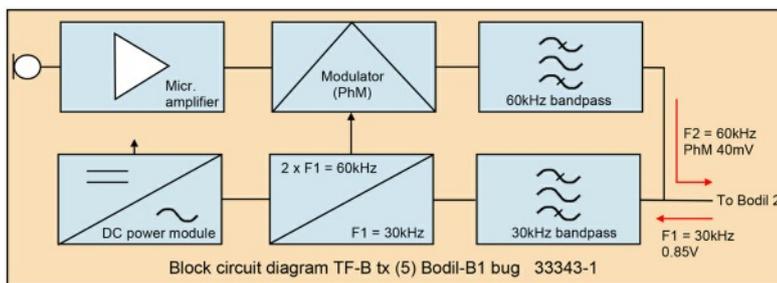


Block diagram of the TF-B (5) Bodil passive system.

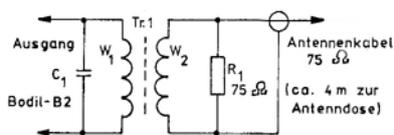
A TF-B (5) Bodil-B2 receiver produced a 30kHz carrier on the line. This carrier was received at the TF-B (5) Bodil-B1 bug which used it for powering. Doubled to 60kHz, it was phase modulated by the microphone in the bug, received back in the Bodil-B2, filtered and demodulated.

The Bodil-B2 was usually located in an Operational Support Point, known as 'basiszimmer' (support room) along with a tape recorder for local monitoring, or/and line equipment for transmission to the CEKO system.

Knowles BT 1751/1752 Microphone.



CATV adaption.



CATV cable systems could be used as a transmission medium between TF-B (5) Bodil-B2 and -B1. The circuit board of a Bodil-B1 bug was removed and fitted in a CATV contact block along with a miniature matching transformer, using an external microphone.

