



Early UHF bug fitted in a metal tube. (Above) Note the external miniature Sennheiser MM-301* microphone.

Enlarged internal view of this band V bug. (Below).



Introduction to radio based bugs

Country of origin: GDR

DATA SUMMARY

Organisation: MfS, Abt 26, GDR. ¹⁾
Design/Manufacturer: MfS, OTS Abt 33, GDR.
Year of Introduction: 1950s onwards.
Purpose: Interception of speech in rooms using radio as part of transmission.
Frequency: Initially Band I and III, later Band V. FM. Dual FM for speech concealment and masking hum on later models.

REMARKS

This introduction and the following 10 chapters cover the application of radio based bugs, also known as ‘wireless bugs’, and ancillary equipment. Radio as (part) transmission medium from a concealed bug to a central recording location was used for non-permanent overhearing, when speed of installation of a bug was required and/or no line could easily be arranged. It should be noted that in most cases the recording of the intercepted speech was routed to and done centrally in the so called CEKO system. See Chapter 163 for details. The first generations of radio bugs operated in Band I and III, (VHF 1 and 3), later radio bugs were exclusively located in Band V (UHF 5).

Interception (sometimes referred to as overhearing) systems (*German: Abhörtechnik*) in the GDR were divided into **6 different Measures** (*German: Maßnahmen*) This introduction chapter and the following chapters deal exclusively with **Measure B 3: radio based room interception systems**. Measures **B 1, 2, 4 and 5** were covered in other chapters in this WfW 4 Supplement. *The individual numbering and sub-dividing of Measure B systems was not official but a personal addition for ease of identification.*

Interception Measures (Abhörtechnik)

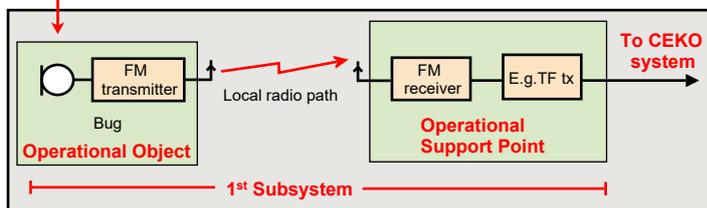
- Measure A - Telephone tap interception
- **Measure B - Room interception** ●
- Measure L - Radio, Microwave links, Satellite
- Measure R - ISDN, Datanet and Teletype (Telex)
- Measure V - Line
- Measure X - Countermeasures to above

Measure B, Room interception.

- B 1 Audio frequency (line based) NF-B systems
- B 2 Carrier frequency (line based) TF-B systems
- **B 3 Radio based systems (VHF/UHF)**
- B 4 Infrared based systems
- B 5 Passive (line based) systems

Definitions:

- 1) The location of a bug, concealed microphone or tapped telephone was known as **Operational Object**.
- 2) An **Operational Support Point**, was used when no direct connection of a B measure Operational Object to a District CEKO could be arranged. In the case of radio based systems (B 3), it was usually in a nearby (or the same) building restricted by the relative short range of the transmitter in a radio bug.
- 3) An Operational Object to the Operational Support Point formed the **1st Subsystem**.



Block diagram of the 1st subsystem radio structure in Measure B 3

Due to the rather low RF levels of a radio bug and walls obstructing the RF path, a short range of a few hundred meters (much depending on the type of bug and local circumstances) was to be expected, hence the need of an Operational Support Point within range.

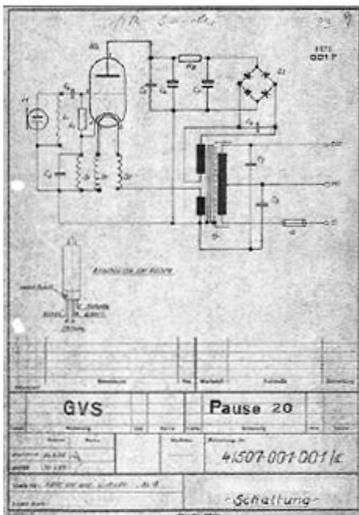
The Operational Support Point comprised a receiver and for example a line unit. Most of the later receivers at the Operational Support Point were designed to be remotely controlled from the 2nd subsystem. See chapters 123, 126, 130 and 131.

¹⁾ Ministry of Security, Department 26, Telefon- und Fernschreib überwachung, akustische und optische Raumüberwachung. (Telephone and telex interception, acoustical and optical room interception).

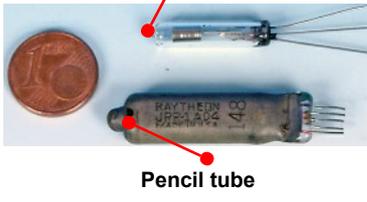
^{*)} With thanks to Paul Reuvers of the Crypto Museum who attended me to the incorrect type of microphone used with the early UHF bug, and an unknown ‘Band III’ bug (previously in this chapter). The latter appeared to be a Band V bug known as Botond 31217-132, recently acquired and investigated by the museum, was moved to Chapter 128.

Examples of early radio based bugs

Circuit diagram of a very early radio bug (1955) powered from AC mains.



A subminiature pencil valve, compared in size to an early germanium transistor with lacquer scraped off. (Below)



Early transistor

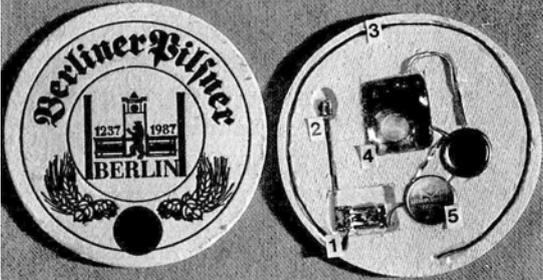
Pencil tube



First generation transistorised radio based bug operating on VHF, probably early 1960s.

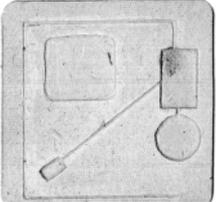


Miniature transistorised tracking transmitter operating in the 130MHz band modulated with a 1kHz tone.

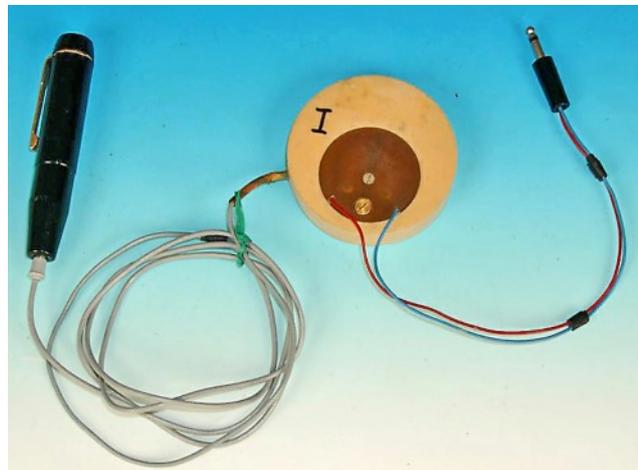


1 Transmitter 2 Microphone 3 Aerial
4 Magnetic switch 5 Batteries

Battery operated VHF subminiature radio bug concealed in a beer mat. It was constructed by MfS HA II/16 in 1988 and operated on 136.8MHz, with a range of 10-50m and a life of 3-5 hours. A built in magnetic switch activated the bug.



Another example beer mat bug. (right)



Body wearable bug used with a covert microphone hidden in a fountain pen. The actual transmitter module was the same as used in the ladies wrist-watch below.



Third generation Band V bugs. Comparison of sizes between the three main standardised versions of the later Band V subminiature wireless bugs: 31218-1 (top), 31216-1 (left) and 31217-1 (right).



Luxury ladies wrist-watch enclosing a wireless bug, the metal bracelet acting as aerial. The maker is not known.

References:

- With many thanks to Detlev Vreisleben, DC7KG, Germany for taking excellent photographs and scans, and providing all technical and historical information for this chapter.
- *The Telephone Interception System of the Stasi*, a manuscript by Detlev Vreisleben, Enigma 2000 Newsletter 87, March 2017.