

# Recommendation R87-1996

## Use of ghost cancellation reference (GCR) signals

<i>EBU Committee</i>	<i>First issued</i>	<i>Revised</i>	<i>Re-issued</i>
BMC	1996		

**Keywords:** Transmission

Project Group B/ECS of the EBU Broadcasting Management Committee has coordinated field tests and studies on the transmission of a ghost cancellation reference (GCR) signal in accordance with ITU-R Recommendation BT.1124 (System C), and on its effectiveness for 625-line PAL/SECAM systems.

*Considering:*

- a) that results of practical field tests have shown that an echo canceller can reduce or eliminate the visible effects of multipath reception;
- b) that results of field tests have shown that an echo canceller can improve the eye height of received teletext data, and thereby reduce or eliminate errors in teletext decoding caused by multipath reception;
- c) that results of field tests have shown that an echo canceller can offer an improvement in picture quality by providing equalization of the received vision signal;
- d) that the above improvements are applicable to the PAL, PALplus and SECAM<sup>1</sup> systems;
- e) that the inclusion of the GCR signal on line 318 has been found to be compatible with existing transmission systems and receiving equipment;
- f) that the addition of the GCR signal to a transmission is straightforward and relatively inexpensive;
- g) that costs to the consumer will be reduced by the adoption of common parameters for transmission of the GCR signal among all 625-line countries;
- h) that European consumer industry anticipates the introduction of echo cancellers to the consumer market in 1996;

the EBU *recommends:*

- that Members wishing to offer echo cancelling for reception of PAL/SECAM systems should make use of the GCR signal defined as System C in ITU-R Recommendation BT.1124 [1] and in European Telecommunication Standard ETS 300 732 [2];
- that where used, transmission of the GCR signal should take place on line 318 (and that line 317 should contain non time-varying information).

## Bibliography

- [1] ITU-R Recommendation BT.1124: **Reference signals for ghost cancelling in television**
- [2] European Telecommunication Standard ETS 300 732: **Television systems; Enhanced 625-line PAL/SECAM television; Ghost Cancellation Reference (GCR) signals**

---

<sup>1</sup>. Field tests remain to be carried out in a SECAM environment and await the availability of suitable ghost cancellation equipment.

---