

Title (en)

Synchronizing device for the useful signals of a common frequency broadcasting system.

Title (de)

Synchronisiereinrichtung für Nutzsignale eines Gleichwellenfunksystems.

Title (fr)

Dispositif de synchronisation pour les signaux utiles d'un système de radiodiffusion sur fréquence commune.

Publication

EP 0118710 A1 19840919 (DE)

Application

EP 84100933 A 19840131

Priority

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Abstract (en)

1. Synchronising equipment for intelligence signals of a common frequency broadcasting system, in which carrier oscillations of substantially equal frequency are radiatable by way of several transmitting stations each with a respective intelligence signal transmitter (Sn1), which from an exchange station (Z) and by way of modulation feeders (M1) receive the intelligence signals to be emitted synchronously, and are modulated by these intelligence signals for reception by intelligence signal receivers (En), with the following features : a) a common synchronising signal radio transmitter (Ss) for the repeated and automatic emission of a synchronising signal is associated with the transmitting stations (S1), b) a respective synchronising signal radio receiver (Es1) is co-ordinated with each of the transmitting stations (S1), c) the transmitting stations (S1) each display a respective trackable delay equipment (V3) for the intelligence signals as well as a store for the retention of the respectively tracked delay between successive tracking operations, d) the intelligence signal transmitters (Sn1) with trackable delay equipments (V3) are each associated with a respective transit time comparator (K) for the control of the delay equipment (V3) concerned in dependence on the transit time difference between the radio transmission on the one hand and the transmission by way of a modulation feeder (M1) on the other hand, in such a manner that a largely synchronous intelligence signal radiation by these intelligence signal transmitters (Sn1) is made possible, characterized by the following features : e) the exchange (Z) is equipped with an equipment for the feeding-in of the synchronising signal on modulation feeders (M1), and namely for the feeding-in co-ordinated with the radio emission of the synchronising signal, f) the transmit time comparator (K) serves for the determination of the variable component of the transit time difference between the radio-received synchronising signal itself and the same synchronising signal transmitted by way of the modulation feeder (M1) to the transmitting stations (S1) concerned, g) the synchronising signal transmitter (Ss) and the synchronising signal receivers (Es1) operate on the operating frequency of the common frequency broadcasting system for the transmission of the intelligence signals, wherein an intelligence signal receiver (En) can serve as synchronising signal receiver (Es1) and an intelligence signal transmitter (Sn1) can serve as synchronising signal transmitter (Ss), h) the synchronising signal emission and the feeding-in of the synchronising signal on modulation feeders (M1) takes place each time at a fixed time spacing before the beginning of certain, in particular each of the intelligence signal emissions, and i) a respective phase-synchronous, envelope-curve-modulated carrier oscillation train, the envelope curve of which serves in the transit time comparator (K) for the derivation of a coarse control signal and the carrier oscillation of which serves for the derivation of a fine control signal for the control of the delay equipment (V3) gets to the synchronising signal emission.

Abstract (de)

Zur Synchronisierung eines Gleichwellenfunksystems mit mehreren Sendestationen (S1, S2, ...), welche auszusendende Nutzsignale über Modulationszubringer (M1, M2, ...) von einer Zentrale (Z) erhalten, werden Synchronsignale sowohl über die Modulationszubringer als auch drahtlos über einen systemeigenen Synchronsignalsender (Ss) zu jeder Sendestation übertragen, dort bezüglich ihrer Laufzeitunterschiede in einem Laufzeitkomparator (K) miteinander verglichen, wonach das Vergleichsergebnis zur Steuerung einer Verzögerungseinrichtung (V3) dient, die jeweils zwischen den betreffenden Modulationszubringern (M1) und den Nutzsignalsendern (Sn1) der Sendestationen (S1) eingefügt ist. Die drahtlose Übertragung der Synchronsignale erfolgt auf der Betriebsfrequenz des Gleichwellenfunksystems, auf der auch die Nutzsignale übertragen werden, so daß für den Synchronsignalsender (Ss) der gleiche Sender wie für die Nutzsignalausendung benutzt werden kann. Ebenso kann als Synchronsignalempfänger (Es1) in den Sendestationen jeweils der gleiche Empfänger verwendet werden wie für den Nutzsignalempfang (En).

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- [A] EP 0042144 A1 19811223 - LICENTIA GMBH [DE]
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- [A] EP 0072984 A1 19830302 - LICENTIA GMBH [DE]
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