TR-0731

UHF TRANSMITTER UNIT

The Transmitter Unit is designed to transpose the TV picture and sound signals to the corresponding channel of the UHF television band. It is actuated by a modulated picture and sound IF signal as well as by an 1 MHz reference square-wave signal provided TR-0770/N016 TV IF modulator. The condition of correct operation is the common application of the two devices.

A transmitter unit produces a particular fixed channel frequency according to the OIRT and CCIR standards. The channel band-width is a 8 MHz. The transmitter unit produces a 0.5 W output.

The transmitter unit is a professional device. It produces the modulated high-frequency signal at a very high accuracy, with sufficient suppression of spurious radiations. In this way, it is excellent for use as television test transmitter. Its field of application covers also the television receiver plants where it used in the television monitoring and test equipment. Dimensions are determined by the international 19" rack system. Height: 3 modules (440×132×476 mm).

Technical data

Input data

Input signals
IF input
vestigial, upper sideband amplitude-modulated signal (IF-AM VSB) superimposed frequency-modulated sound signal
standard K, G
IF picture carrier frequency 38 MHz
IF sound carrier frequency 31.5 MHz
Input signal levels picture carrier signal level
1 V_{pp} measured rated 75 Ohms sync peak
picture-sound power output
ratio max. 5:1
level control range min. between $^{+1.5}_{-4}$ dB

Input impedance 75 Ohms
Standing wave ratio
1.3 in the 30—40 MHz band

Reference signal input

Input signal 1 MHz square (or pulse) signal
Input signal level 2 V_{pp} measured at 75 Ohms
Input impedance 75 Ohms ±10%

Output data

Frequency band
IV/V.470 to 790 MHz any channel frequency of the UHF band required by the buyer (see Ordering Data)
Accuracy of picture carrier frequency
complying with the accuracy of 1 MHz reference source when applying the TR-0770/NO16 type IF modulator $\pm 2.10^{-6}$
Intercarrier frequency
6.5 MHz ±50 Hz/5.5 MHz
Output powers
max. picture carrier output measured at 75 Ohms max. 1.3
S.W.R. termination 0.5 W/sync peak
max. sound carrier output 0.1 W
devation of picture sound carrier power ratio from value adjusted at input signal source (TR-0770/NO16 IF modulator) max. ±0.5 dB

Spurious radiations

Harmonic frequency level max. −60 dB
Out of channel frequencies max. −55 dB
Combination frequency level of picture and sound carrier in the adjacent channels max. −40 dB
in other channels max. −60 dB
Combination frequency level transmission channel
max. −57 dB

Transmission features

Linearity
minimum and maximum slope ratio of modulation characteristics better than 0.9
Differential phase
distortion at 12.5/87.5% modulation at 4.43 MHz
less than 1.5°
(measured with Nyquist demodulator)
Differential amplitude
distortion at 12.5/87.5% modulation at 4.43 MHz
less than 8%
(measured with Nyquist demodulator)
Transmission characteristic (measured at 1.05 S.W.R. termination at max. 70% modulation See Fig. 1.
Overall transmission characteristic/together with TR-0770/NO16 IF modulator See Fig. 2.
Pulse transmission droop (measured with Nyquist demodulator at 1.05 S.W.R. Nyquist demodulator at 1.05 S.W.R. termination at 10/70% modulation) for 50 Hz square signal supplied with blanking and sync signal max. 1.5%
for 15.625 Hz square signal max. 1%
Video interference level interference voltage from peak to peak as referred to black-and-white transident measured with Nyquist demodulator max. −43 dB

Control output

output power min. 10 mV

General data

Operation period continuous
Warm-up time 30 min.
Mains voltage
110, 127, 220, 240 V,
−10 to +5%/50 Hz
Power consumption max. 75 VA
Dimensions 440 × 132 × 472 mm
Mass appr. 15 kg

Permissible environmental conditions

Operating temperature +5 to +40° C
relative humidity max. 80%

Odering data

UHF Transmitter Unit TR-0731/... (after the fraction line, specify the required UHF channel between 20 to 60)

Safety specifications

In compliance with IEC 348

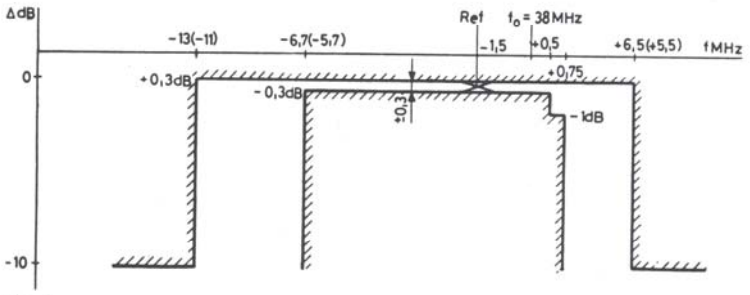

Fig. 1

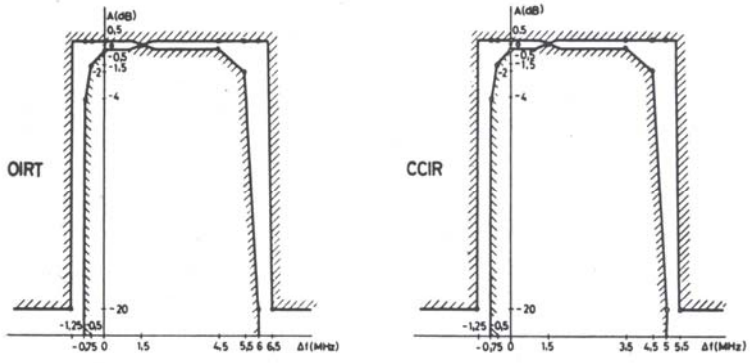

Fig. 2