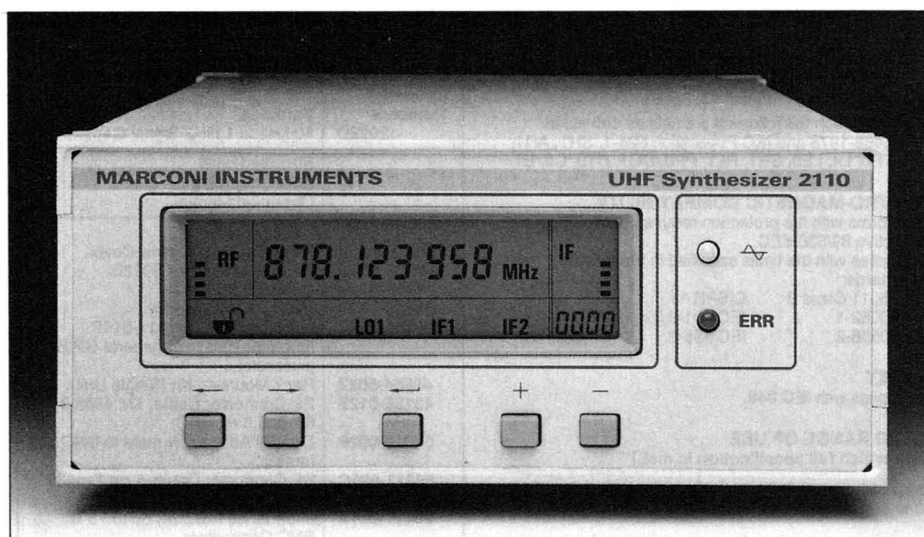


Band IV-V Synthesizers for TV Networks

2110 & 2111



■ 2110 for Transmitters

■ 2111 for Transposers

■ Direct UHF output frequency

■ Precision offset capability with 1 Hz resolution

■ Multistandard PAL, SECAM or NTSC

■ Choice of IF outputs (2110 only)

The 2110 and 2111 TV synthesizers are suitable for transmitters and transposers in band IV and V, operating on PAL, SECAM or NTSC systems. They have been specifically designed to meet the demanding requirements for quality television transmissions and offer a number of unique features.

The 2110 synthesizer provides a single UHF and two intermediate frequency outputs to drive TV transmitters and the 2111 provides two separate UHF outputs for the up and down conversion processes of a TV transposer.

Frequency Resolution

1 Hz resolution is provided over the entire UHF range of 435 to 895 MHz to meet the most stringent demands of 525 and 625 line equipment working in bands IV-V, with either upper or lower frequency conversion.

Precision Offset

The 1 Hz resolution also complies with the requirement for precision offset on both 525 and 625 line systems to avoid interference between nearby transmitters operating on the same channel frequency.

Network Synchronization

The synchronization of different transmitters in a TV network can be carried out by

■ Network synchronization

■ Lockable to vision IF or external 5 or 10 MHz frequency standards

■ High stability and spectral purity

■ RS 232 remote control

■ Automatic self test and error signalling

locking all the carriers to a high-stability frequency standard at the main transmitter. The 2110 and 2111 feature a patented locking capability using either a 5 or 10 MHz standard, or the vision IF of the network.

Versatility

These compact, low cost synthesizers offer greater efficiency and flexibility. The use of highly integrated technologies provides outstanding specifications, small size and high reliability. The rear panel remote control port allows remote programming and permits the status of the synthesizer to be determined at a remote terminal if required.

High Stability and Spectral Purity

The low noise option provides the FM residual and jitter performance required for main transmitters. The long term stability is defined by the type of internal reference used and may be improved by locking the synthesizer to an external frequency standard, either continuously or by carrying out automatic realignment at regular intervals.

Error Signalling

2110 and 2111 can provide an indication on the front panel display or at a remote

terminal using the RS-232 port to show the status of the synthesizer. A range of internal operational conditions are continuously monitored and alarms set if problems are detected.

SPECIFICATION

FREQUENCY

Range
435 MHz to 895 MHz.

Resolution
1 Hz.

Stability
Better than ± 0.5 ppm from 0 to 50°C.
Option 001 – Better than ± 0.05 ppm from 0 to 50°C
Equal to external standard if selected.

Total Drift
Better than ± 2 ppm/year.
Better than ± 0.5 ppm/year (option 001).
(after one months continuous use)

RF OUTPUT

Level
Adjustable over at least the range +7 dBm to +13 dBm into 50 Ω with 8 adjustment levels (uncalibrated).

UHF outputs
2110: 1.
2111: 2.

SPECTRAL PURITY

Harmonics
At a nominal level of +10 dBm.
Better than -20 dBc for even harmonics.
Better than -30 dBc for third harmonic.
Better than -40 dBc for other harmonics.
Note for 2111 only LO1 and LO2 must be separated by at least 1 MHz for the spectral purity specification to apply.

Spurious signals
Better than -60 dBc, typically better than -70 dBc, at offsets from the carrier frequency of greater than 1 kHz with LO output at +10 dBm.

SSB phase noise
Better than -70 dBc/Hz at 1 kHz offset.
Better than -90 dBc/Hz at 1 kHz offset with low sideband noise option 002.

IF OUTPUT (2110 only)

Frequencies
32.7, 39.2 MHz (SECAM L).
33.4, 38.9 MHz (PAL B/G).
33.5, 39.5 MHz (PAL I).
41.25, 45.75 MHz (NTSC M).
Other options available to order.

Level
Adjustable from +7 dBm to +15 dBm into 50 Ω with 8 adjustment levels (uncalibrated).

Impedance
50 Ω nominal.

PROGRAMMING

Two-way RS-232 interface Alarm relays.

FREQUENCY STANDARD

External standard input
Either 5, 10 MHz at 0 to +20 dBm or vision IF at -20 to +20 dBm.

Frequency standard output
BNC socket provides 1, 5 or 10 MHz at 0 dBm nominal into 50 Ω nominal impedance.

POWER REQUIREMENTS

AC supply
90 to 264 volts, 45 to 65 Hz.
Less than 30 W consumption.

2110 & 2111

RADIO FREQUENCY INTERFERENCE

Conforms with the requirements of EEC directive 76/889 and VDE 0871 as to limits of RF interference.

CONDITIONS OF STORAGE AND TRANSPORT**Temperature**

-40°C to +70°C.

Humidity

Up to 90% relative humidity at 40°C.

Altitude

Up to 2500m (pressurized freight at 27 kPa differential, i.e. 3.9 lbf/in²).

SAFETY

Complies with IEC 348, BS 4743.

RATED RANGE OF USE

(Over which full specification is met.)

Temperature

0°C to 50°C.

DIMENSIONS AND WEIGHT

Height	Width	Depth	Weight
88 mm	213 mm	356 mm	4.6 kg
(3.5 in)	(8.4 in)	(14 in)	(10.1 lb)

VERSIONS AND ACCESSORIES

When ordering please quote full order numbers.

Ordering Numbers	Versions
2110	UHF synthesizer for TV transmitter.
2111	UHF synthesizer for TV transposer.
Options	
001	High stability reference oscillator.
002	Low sideband noise.
010	LO1 shutdown system (2110 only).
IF options (2110 only)*	
003	Secam L.
004	Pal B/G.
005	Pal I.
006	NTSC M.
	* Specify which IF option (3 to 6) is required at time of ordering.
	Combination of options 3 to 5 and other IF options are available.
	Contact sales office for details.
Supplied with	
43129-003W	AC supply lead.
46882-153H	Operating manual.
46882-152Z	Summary card.
46832-205W	Restricted operating procedures.
Accessories	
46880-003M	Service manual.
46884-552W	Rack mounting kit (single unit).
46884-554T	Rack mounting kit (double unit).
43137-985V	Cable assembly, 25-way to 25-way RS-232 null modem.
43137-984G	Cable assembly, 9-way to 25-way RS-232 null modem.
43138-397C	Cable assembly for use with shutdown system (if fitted) SMA male to BNC male, 1 metre.