

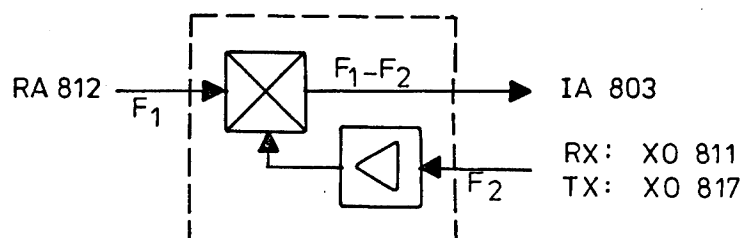
1. Scope.

This specification covers the description and tests of the mixer MX 811, which is a subunit in the FS 800.

2. Description.2.1. Functional.

MX 811 is a mixer in a thick film plug-in micromodule. It converts the injection signal from the receiver- and transmitter VCO to the synthesizer frequency. The mixer module contains part of the isolation amplifier, which prevents the reverse transmission of the XO- and VCXO signals.

Block diagram of MX 811.

2.2. Circuit.

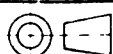
The module contains the mixer and part of the isolation amplifier. The active element used in the mixer is a junction FET biased near pinch-off. Both signals are injected into the gate. The series connection of the two signals is obtained by transformer coupling the VCO signal, into the gate, and feeding the XO signal to a small resistor in series with the gate lead.

The isolation amplifier is used to prevent the reverse transmission of the XO-signal. The two stages in this module are two common base stages. Transistors with a low collector-emitter feedback capacitance are used. The module also provides the power supply for the remaining stages in RA 812. The MX 811 will only perform correct when connected to a RA 812.

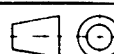
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REVISIONS

THIRD ANGLE PROJECTION



FIRST ANGLE PROJECTION



SI-METRIC

PRINTS TO

APPV	DATE	TITLE	FIRST MADE FOR
HG	80 OCT 30	TEST SPECIFICATION	MX 811
		MADE BY	F.C.F.O. 19M905118
		ISSUED	19J706492
		KAJ 80 SEP 17	CONT ON SHEET 3 SH NO. 2
		1980 OCT. 31	
		GENERAL ELECTRIC	
		Storno	

3. Specifications.3.1. Interface.

Power supply 7.5 V \pm 0.15V
 Current consumption less than 3 mA.

1. Input (through RA 812)
 Frequency range 122. - 174 MHz.
 Input level 0 dBm \pm 1 dB.
 Input impedance 50 Ω .

2. Input
 Frequency 122 - 174 MHz.
 Input level - 6 dBm \pm 1 dB.
 Input impedance 50 Ω .

3.2. Mechanical.

In accordance with the 800 build standard for hybrid thick film.

Substrate size: 19 x 17.8 mm².
 Modular peckage: 21 x 19 x 3.5 mm³.

3.3. Environmental.

Temperature range - 30°C to + 60°C.

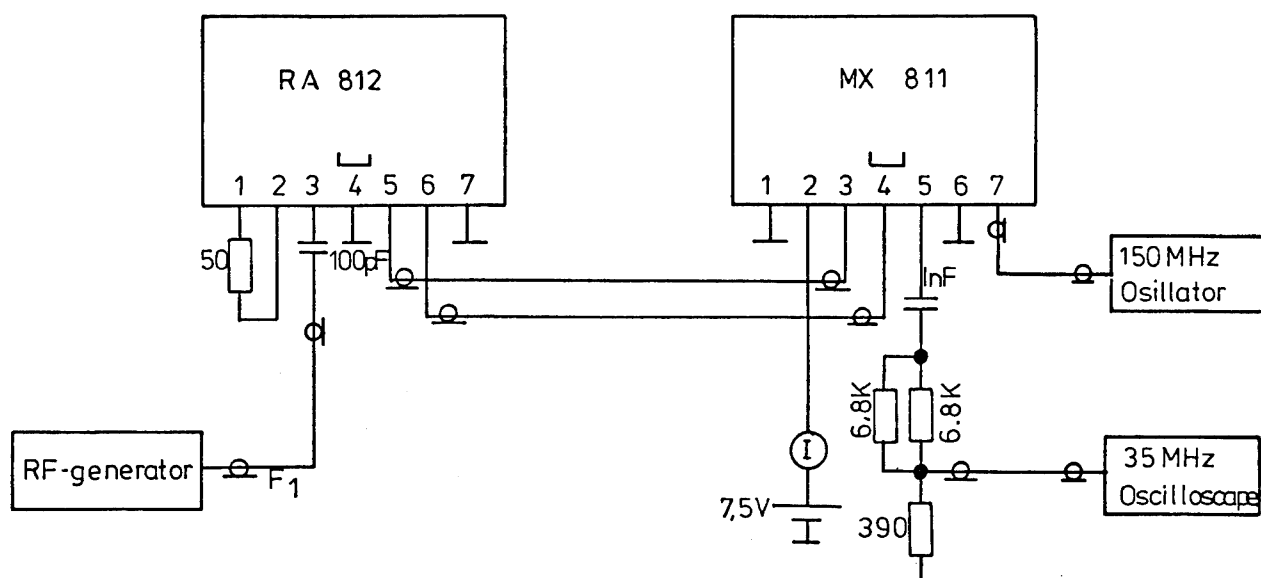
4. Applicable drawings.

Part list 19M905118
 Circuit diagram 19J706367
 Component placing }
 Assembly drawing 19M905118P1.

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APPV				DATE		TITLE		PRINTS TO	
MA				80 OCT 30		TEST SPECIFICATION		FIRST MADE FOR MX 811	
MADE BY				KAJ 80 SEP 17.		GENERAL ELECTRIC		19J706492	
ISSUED				1980 OCT. 31		Storno		CONT ON SHEET 4 SH NO. 3	

5. Test equipment.

1	Synthesizer buffer amplifier RA 812.	
1	Power supply	7.5 V \pm 0.15V
1	Milliamperemeter range	0 - 10 mA.
1	RF generator	150.5 - 156 MHz, 0 dBm, 50 Ω .
1	RF oscillator	150 MHz, - 6 dBm, 50 Ω .
1	Oscilloscope	35 MHz, $R_{in} > 1 \text{ M}\Omega$, $C_{in} < 40 \text{ pF}$.

6. Test set - up.

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MG	80 OCT 30	TEST SPECIFICATION	MX 811
		MADE BY KAJ 80 SEP. 17.	F.C.F.O. 19M905118
		ISSUED 1980 OCT. 31	19J706492
		GENERAL ELECTRIC Storno	CONT ON SHEET 5 SH NO. 4

7. Alignment and test procedure.

1. Switch on the power supply.
2. Set the RF - generator output power to 0 dBm.
3. Set the RF - generator frequency to 150.5 MHz.
4. Measure the mixer output voltage.
5. Set the RF - generator frequency to 156 MHz.
6. Measure the mixer output voltage.

Requirements:

Output voltage $\geq 7 \text{ m V}_{pp}$.

7. Measure the current consumption:
current consumption $\leq 2.9 \text{ mA}$.
typical value 2.8 mA.

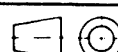
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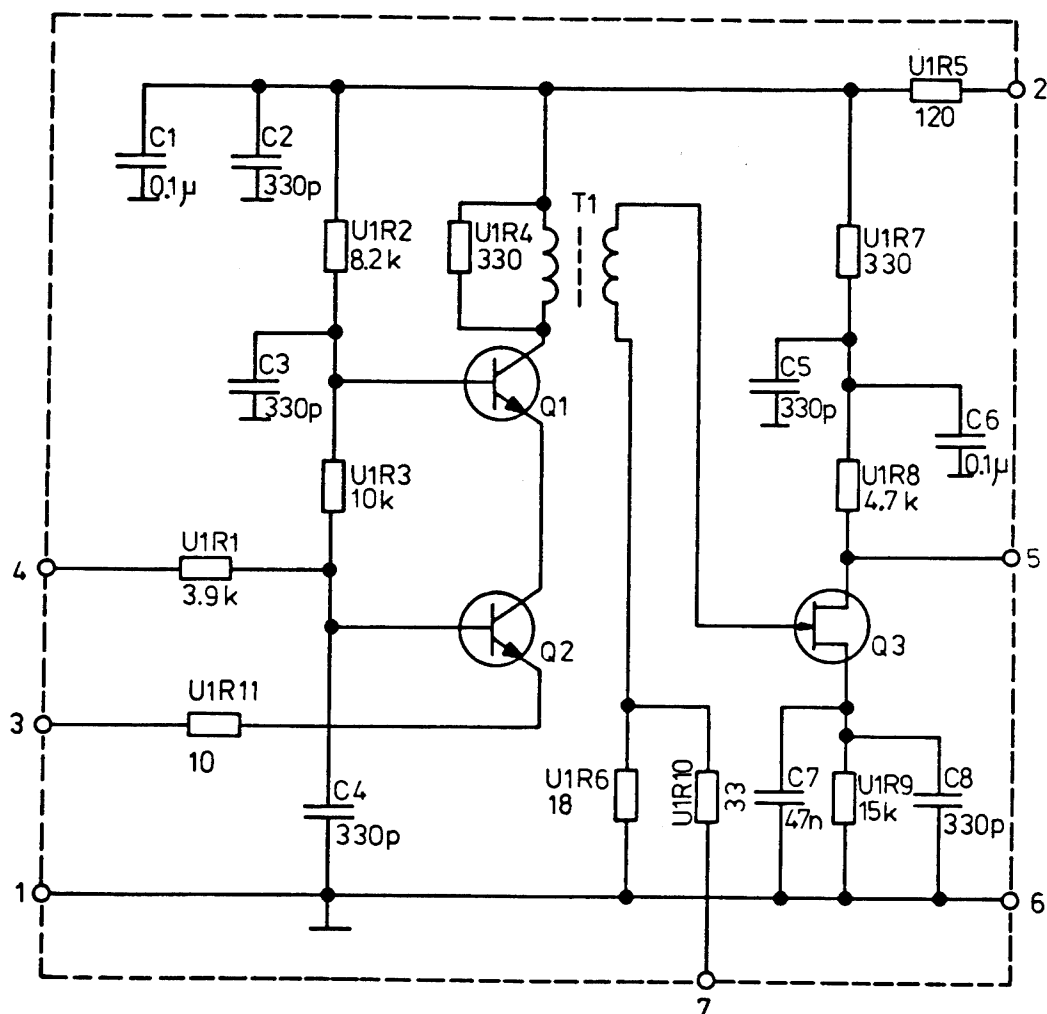
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APPV	DATE	TITLE	FIRST MADE FOR
H6	80 Oct 30	TEST SPECIFICATION	MX 811
		MADE BY	F.C.F.O. 19M905118
		ISSUED	19J706492
		KAJ 80 SEP. 17.	CONT ON SHEET F SH NO. 5
		1980 OCT. 31	
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		Storno	

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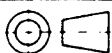
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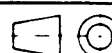


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PRINTS TO

APPV

DATE

TITLE

DIAGRAM

FIRST MADE FOR MX 811

F.C.F.O. 19M905118

MG

80
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