

**DECLARACION DE CONFORMIDAD
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Fabricante
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Nom du fabricant

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Declara que el producto: Transmodulador QPSK/QAM
Declares that the product: QPSK/QAM Transmodulator
Déclare que le produit: Transmodulateur QPSK/QAM

Modelo: SDT 6000 N / SDT 7000 N
Model:
Modèle:


Es conforme con los requerimientos de las Directivas:
Comply with the requirements set out in the Council Directive:
Est conforme avec les spécifications des Directives:

EMC	89/336/EEC
LVD	73/23/EEC

Para su evaluación se han aplicado las normas:
For the evaluation regarding the Directives, the following standards were applied:
Pour l'évaluation on a appliqué les normes:

EN 50083-1
EN 50083-2

Fecha: Mayo 2004
Date:

Firma: 
Signature: J.M. Saiz

SDT 6000 N

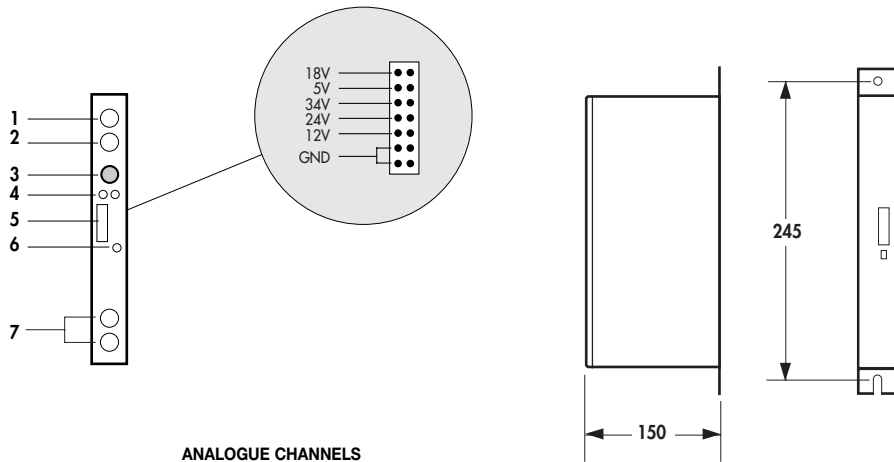


SDT 7000 N



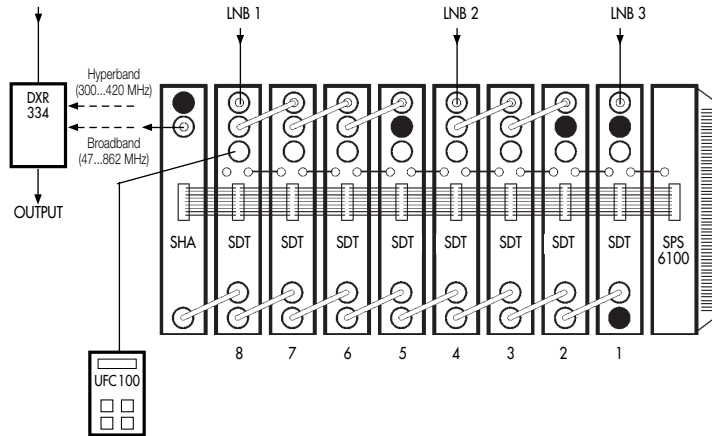
● Transmodulator QPSK / QAM

JJK/FAGOR...SDT 6000 N/SDT 7000 N M.61/5.04 • 02179993



- CONTROLS**
1. LNB Input
 2. LNB Output
 3. MINI DIN 8 for UCF 100 Control Unit
 4. Supply 5V
 5. Supply BUS
 6. Power Supply LED
 7. RF Channel Output

ANALOGUE CHANNELS
(BI, FM, BIII, S,UHF)
(15, 230, 470, 862 MHz)



■ **Main specifications**

MODEL	SDT 6300 N SDT 7300 N		SDT 6400 N SDT 7400 N
	Input frequency	(Δ1 MHz)	
Input level	950 ÷ 2150 MHz (QPSK)		
Input through losses	44 ÷ 84 dBμV		
QPSK "Baud Rate"	1,5 ÷ 45 Mbaud		
"Code Rate" automatic	(1/2, 2/3, 3/4, 5/6, 7/8)		
Output frequency	47 ÷ 306 MHz	306 ÷ 862 MHz	
QAM modulation type	16 / 32 / 64 / 128 / 256		
Output level	65 ÷ 85 dBμV		
Operating temperature	0 -40° C		

■ **INSTALLATION AND START-UP**

1. Connecting up

- Install the modules on the frame in the order shown in the example application.
- Carry out the signal distribution from the LNB(s) by means of the F-F coaxial bridge from the LNB(s) and load the free output(s) with 75 W (Ref. 84011).
- Join the RF Channel Outputs (7) by means of the F-F coaxial bridge and with 75 W the free SDT-N 1 output next to the power supply.
- Connect the LNB leads to the corresponding LNB (1) inputs.
- Connect then supply bus (4) between the modules and the power supply.
- Connect the 5V Supply bridges (5).
- Plug the power supply into the mains.

2. Programming

- Connect the UCF 100 Control Unit (Ref. 85100) to the MINI DIN 8 (3) of the SDT-N to be programmed; "Inic" (initialization) will be displayed. Once initialization has been completed, 4 horizontal segments "- - -" will appear (MODE 0, see associate Menu's Flow Chart).
- There are two programming modes for the SDT-N:
 - Normal Mode
 - Extended Mode
 By default the unit comes programmed in Normal Mode.

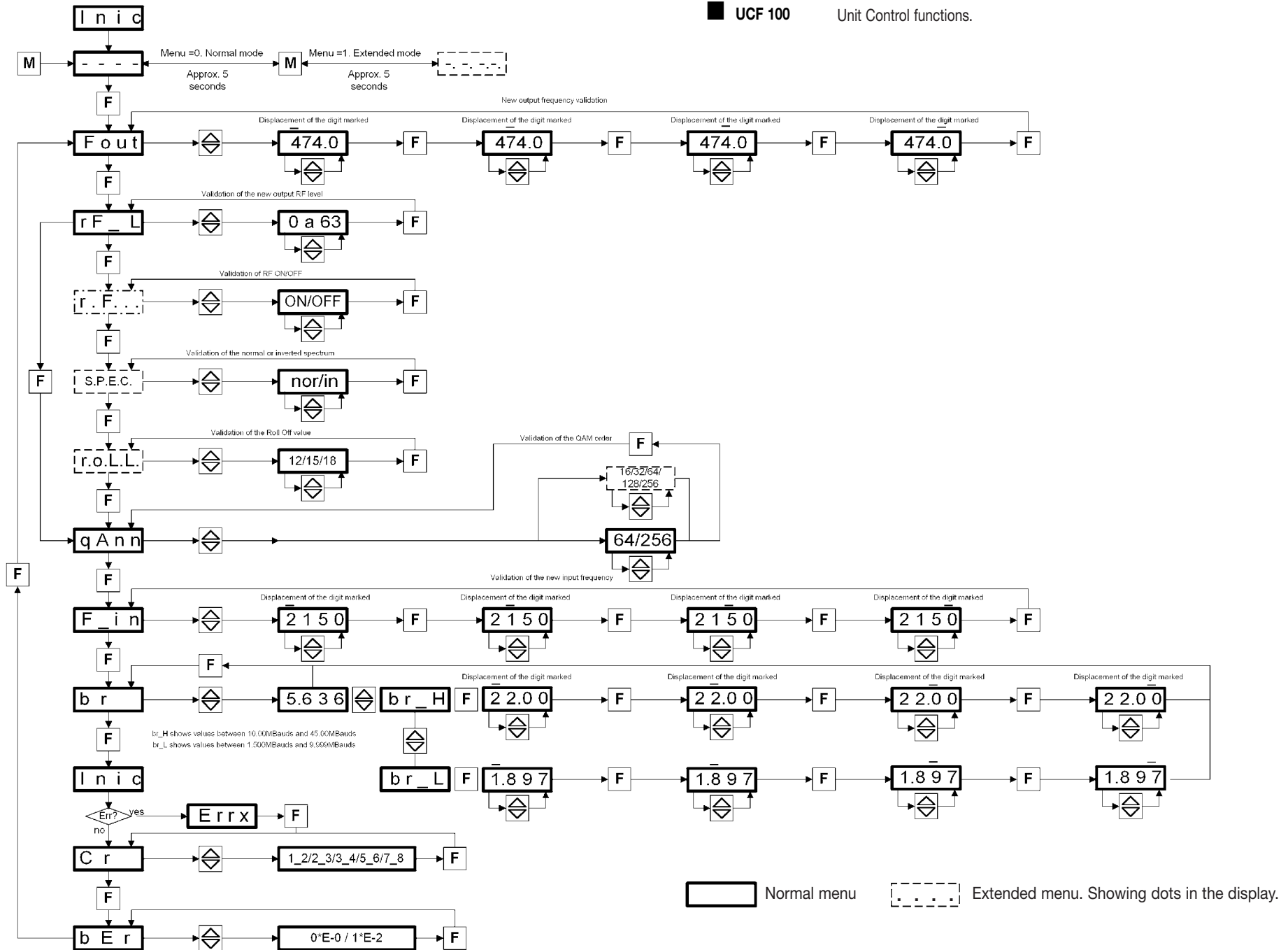
2.1 Normal Mode

- Pressing the **[F]** key the Unit control's display shows the principal options that the user must select to program the module.
- 2.1.1 Press the **[F]** (Function) key and the "Fout" message will appear (output frequency, MODE 1).
 - Press the **[▲]** or **[▼]** key to select the output frequency required.
 - With each press of the **[F]** key you will program each digit of the frequency, that will blink. The precision of this frequency adjustment is 125 kHz, then the last digit will display the following values:

- xxx.0: xxx.000 MHz
- xxx.1: xxx.125 MHz
- xxx.2: xxx.250 MHz
- xxx.3: xxx.375 MHz
- xxx.5: xxx.500 MHz
- xxx.6: xxx.625 MHz
- xxx.7: xxx.750 MHz
- xxx.8: xxx.875 MHz

Once all the digits are programmed the program will return to the main menu.

- 2.1.2 Press the **[F]** key again and then "rf_L" message will appear (level or the output signal, MODE2).
 - Press the **[▲]** or **[▼]** key to see the actual RF level and change this value. The range of this parameter is from 0 to 63, varying the output level from minimum output level up to 85 dBmV.
 - Press the **[F]** key to return to the main menu.
- 2.1.3 Press the **[F]** key again and then "qAnn" message will appear (order of QAM, MODE6).
 - Press the **[▲]** or **[▼]** key to see the order of QAM selected (64 or 256) and change it to the desired order.
 - Press the **[F]** key to return to the main menu.
- 2.1.4 Press the **[F]** key again and the "F_in" message will appear (1st SAT IF input frequency, MODE7).
 - Press the **[▲]** or **[▼]** key to select the input frequency required: 950 ... 2150 MHz. *Input freq. = SAT freq. - LNB Local Osc. Freq.*
 - With each press of the **[F]** key you will program each digit of the input frequency, that will blink. The frequency precision adjustment is 1MHz. Once all the digits are programmed the program will return to the main menu. If there has been any changes in this parameter the module is initialized.
- 2.1.5 Press the **[F]** key again and the "br" message will appear (Baud Rate).
 - Press the **[▲]** or **[▼]** key to see the actual value of this parameter. The program has two modes of Baud Rate, depending on the range. If the value is lower than 10 Mbaud the program enter in the mode "Br_L". In other case the mode is "Br_H".
 - Pressing the **[F]** key we menu shows this two messages.
 - To change this value press the **[▲]** or **[▼]** key in the desired mode.
 - The program shows the actual value and with each press of the **[F]** key you will program each digit of the BR value, that will blink. The precision on this adjustment depends of the selected mode. In the mode "Br_L" the precision is 1kBaoud while in the mode "Br_H" the precision is 10KBaud. When each digit is programmed the program returns to the main menu.
- 2.1.6 At this moment if there has been any change in the value of the Baud Rate the program initializes the module. The "Inic" message appears. If the module has any problem a few seconds later will appear an error message that inform about the possible cause of the problem (see error messages explanation later in this manual). If there is no problem the "Inic" message will be followed a few seconds later by "Cr" (the Code Rate that has been detected automatically).



Normal menu Extended menu. Showing dots in the display.

- Press the **▲** or **▼** key to find out the “Cr” (1/2, 2/3, 3/4, 5/6, 7/8).

- Press the **F** key to return to the main menu.

2.1.7 Press the **F** key again and the “bEr” message will appear (Bit Error Ratio).

- Press the **▲** or **▼** key to display the bit error ratio.

Min.	Operative Value	Max.
0 * E - 8	1 * E - 3	3 * E - 2

2.1.8 At any time press the **M** key (Memory) to memorize the parameters. Four horizontal segments “- - - -” will appear and the program will return to the start point.

2.2 Error Messages

- When the UCF 100 displays the message “Err” you should:
- Check the signal level from the LNB to the SDT-N head end input (at least 65 dBmV in the 75 W loaded input of the last module).
- Check that the “F_in” (Input frequency) and “br” (Baud Rate) parameters correspond to the transponder required.

DISPLAY	DESCRIPTION
Err0	There is no signal in the input or the input frequency selected is not correct.
Err1	The Baud Rate selected is not correct.
Err2	The QAM chip doesn't locked the signal.
Err3	The output QAM Baud Rate is higher than 7 MHz

2.3 Extended Mode

- To change mode, keep the **M** key pressed for 5 seconds. “- - - -” will appear on the display.

2.3.1 Carry out steps 2.1.1 and 2.1.2 to adjust the parameters output frequency and RF output level.

2.3.2 Press the **F** key again and then ‘rF’ message will appear (rF output control, MODE3).

- Press the **▲** or **▼** key for select “On” or “OFF”. In this last case there will be no output signal from the module.
- Press the **F** key to return to the main menu.

2.3.3 Press the **F** key again and “S.P.E.C.” will appear (Output spectrum, MODE4).

- Press the **▲** or **▼** key to select the spectrum “nor” or “In” (I, Q or I-Q).
- Press the **F** key to return to the main menu.

2.3.4 Press the **F** key again and “r.o.L.L.” will appear (Roll-off, MODE5).

- Press the **▲** or **▼** key to select the values 12%, 15% or 18%.

- Press The **F** key to return to the main menu.

2.3.5 Press the **F** key to show the order of QAM (MODE6).

- Press the **▲** or **▼** key to select the order of QAM (16, 32, 64, 128 or 256).
- Press the **F** key to return to the main menu.

2.3.6 Continue with steps 2.1.4, 2.1.5, 2.1.6, 2.1.7 and 2.1.8.

2.4 Reprogramming

- The parameters programmed are stored in the internal memory of the module. In some cases in the moment of connect the module it detects that this parameters can have been corrupt and the module can't work properly. At the moment of the connection of the module the unit control's display shows “P.r.o.g” value instead the “Inic” value and the module is initialized in the extended mode. It may be necessary to check the value of the parameters defined by the user to reprogram correctly the module.

3. Level Adjustment

- Remove the coaxial bridge from the SDT-N 1 RF Channel Output (7) next to the power supply.
- Adjust the power level to 85 dBuV by means of the level control (6) (see Table 1).
- Reconnect the 75 Ω F-F coaxial bridge.
- Measuring at the Amplifier output, set the levels for the other SDT-Ns, in order to equalize them to the SDT-N 1 level already set.
- Adjust the Amplifier gain, bearing in mind that the QAM channel levels must be below the analog channels in the distribution networks according the Table 1.

Table 1

QAM channels / Analog Channel	256 QAM	64 QAM	16 QAM
	-7 dB	-13 dB	-19 dB

MODEL	BAND	CHANNEL	CENTRAL FREQ. (MHz)		
SDT 6 3 0 0 N / SDT 7 3 0 0 N	I	E02	50.5		
		E03	57.5		
		E04	64.5		
	SDT 7 3 0 0 N	S	S11	233.5	
			S12	240.5	
			S13	247.5	
			S14	254.5	
			S15	261.5	
			S16	268.5	
			S17	275.5	
			S18	282.5	
			S19	289.5	
S20			296.5		
SDT 6 4 0 0 N / SDT 7 4 0 0 N			H	S21	306
				S22	314
	S23	322			
	S24	330			
	S25	338			
	S26	346			
	S27	354			
	S28	362			
	S29	370			
	S30	378			
	S31	386			
	S32	394			
	S33	402			
	S34	410			
	S35	418			
	S36	426			
	S37	434			
	S38	442			
	S39	450			
	S40	458			
	S41	466			

MODEL	BAND	CHANNEL	CENTRAL FREQ. (MHz)
SDT 6 4 0 0 N / SDT 7 4 0 0 N	UHF	21	474
		22	482
		23	490
		24	498
		25	506
		26	514
		27	522
		28	530
		29	538
		30	546
		31	554
		32	562
		33	570
		34	578
		35	586
		36	594
		37	602
		38	610
		39	618
		40	626
		41	634
		42	642
		43	650
		44	658
		45	666
		46	674
		47	682
		48	690
		49	698
		50	706
		51	714
		52	722
		53	730
54	738		
55	746		
56	754		
57	762		
58	770		
59	778		
60	786		
61	794		
62	802		
63	810		
64	818		
65	826		
66	834		
67	842		
68	850		
69	858		