



Frequency synthesizer

- Double loop with DDS
- Wide bandwidth
- Low phase noise
- 3 wire serial frequency control
- Programmable power up frequency

Option

- RS232
- Single DC Supply Operation
- Other frequency on request

Performance Specifications

Electrical specifications		Unit
Frequency Range	100 - 200	MHz
Bandwith	100	MHz
Step size	1	kHz
Output Power	12	dBm
Output Power Flatness (max)	1	dB
Phase Noise@100Hz	-75	dBc/Hz
Phase Noise@1KHz	-80	dBc/Hz
Phase Noise@10KHz	-85	dBc/Hz
Spurious (offset >50 KHz)	<-65	dBc typ
Harmonics	<-30	dBc typ
External Reference (3dBm typ.)	10	MHz
Frequency Accuracy	same as reference	
Frequency Control (enable,clock,data)	3 wire serial TTL	
Alarm	high level TTL=locked	
Supply Voltage		
Voltage 1	5+/-0.3	V
Typical Current	230	mA
Voltage 2	12 to 15	V
Typical Current	50	mA
Mechanical specifications		
Size (MEC069-A rev C)	120 x 85 x 29	mm
RF and REF connectors	SMA female	
Control	10 pin 2mm connector	
Environnement		
Operating temperature	0 to +50	°C
Storing temperature	-20 to +70	°C

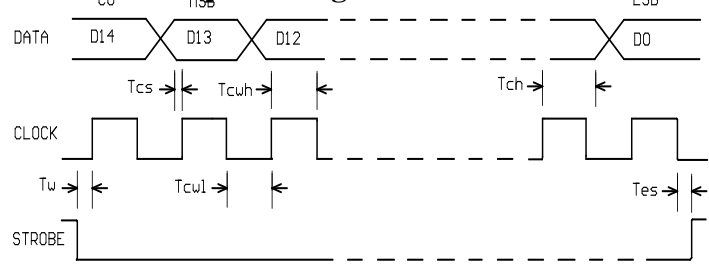
Programming frequency synthesizer model AMG039-004

Frequency control : serial 3 wire TTL binary : Strobe/Clock/Data (= Freq Num)

$F_{out} = F_{low} + (Freq\ Num \times Step\ size)$

Tcs	50µs mini
Tch	50µs mini
Tcwh	50µs mini
Tcwl	50µs mini
Tes	50µs mini
Tw	1000µs mini

Serial data input timing



Serial data format

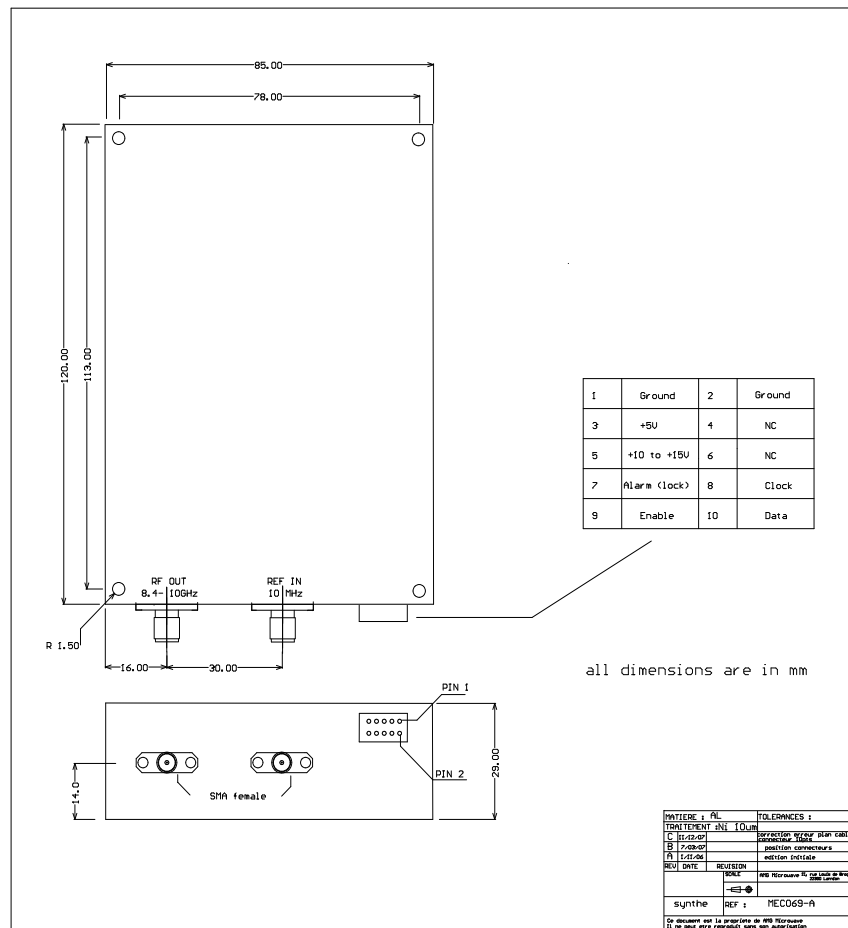
Output Frequency	Number	C	MSB												LSB	
		14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8400.000 MHz	3200	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0
8400.125 MHz	3201	0	0	0	1	1	0	0	1	0	0	0	0	0	0	1
10000.000 MHz	16000	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Control bit 0 = do not save as power up frequency

Control bit 1 = save as power up frequency

Data is shifted MSB first

Outline Drawing



DISCLAIMER :

Different technical specifications are possible upon request, AMG reserves the right to make modifications to the design and characteristic of the product at any times and without prior notice