Esercitazione:
Schede di acquisizione Dati

1000 €

360 €

Caratteristiche principali

AI

- Number of channels 8 differential or 16 single ended
- ADC resolution 16 bits
- Sample rate Single channel maximum 250 kS/s
- Input range: ±0.2 V, ±1 V, ±5 V, ±10 V

AO

- Number of channels 2
- DAC resolution 16 bits
- Maximum update rate
- 1 channel 250 kS/s
- 2 channels 250 kS/s per channel

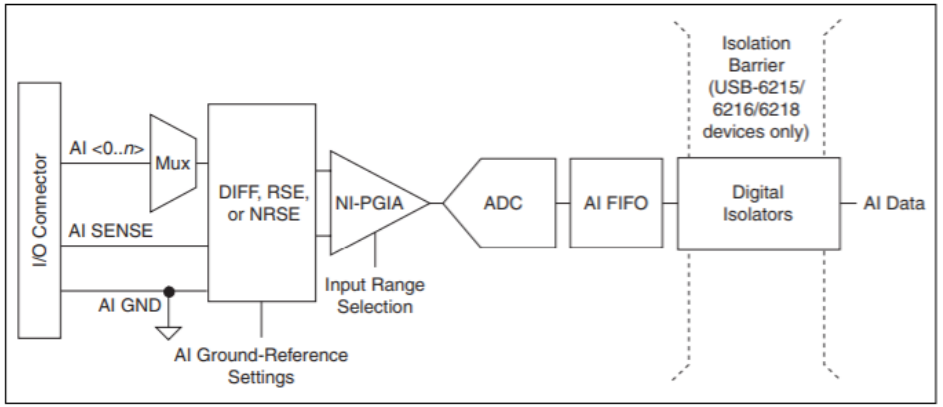


Figure 4-1. USB-621*x* Analog Input Circuitry

Caratteristiche principali

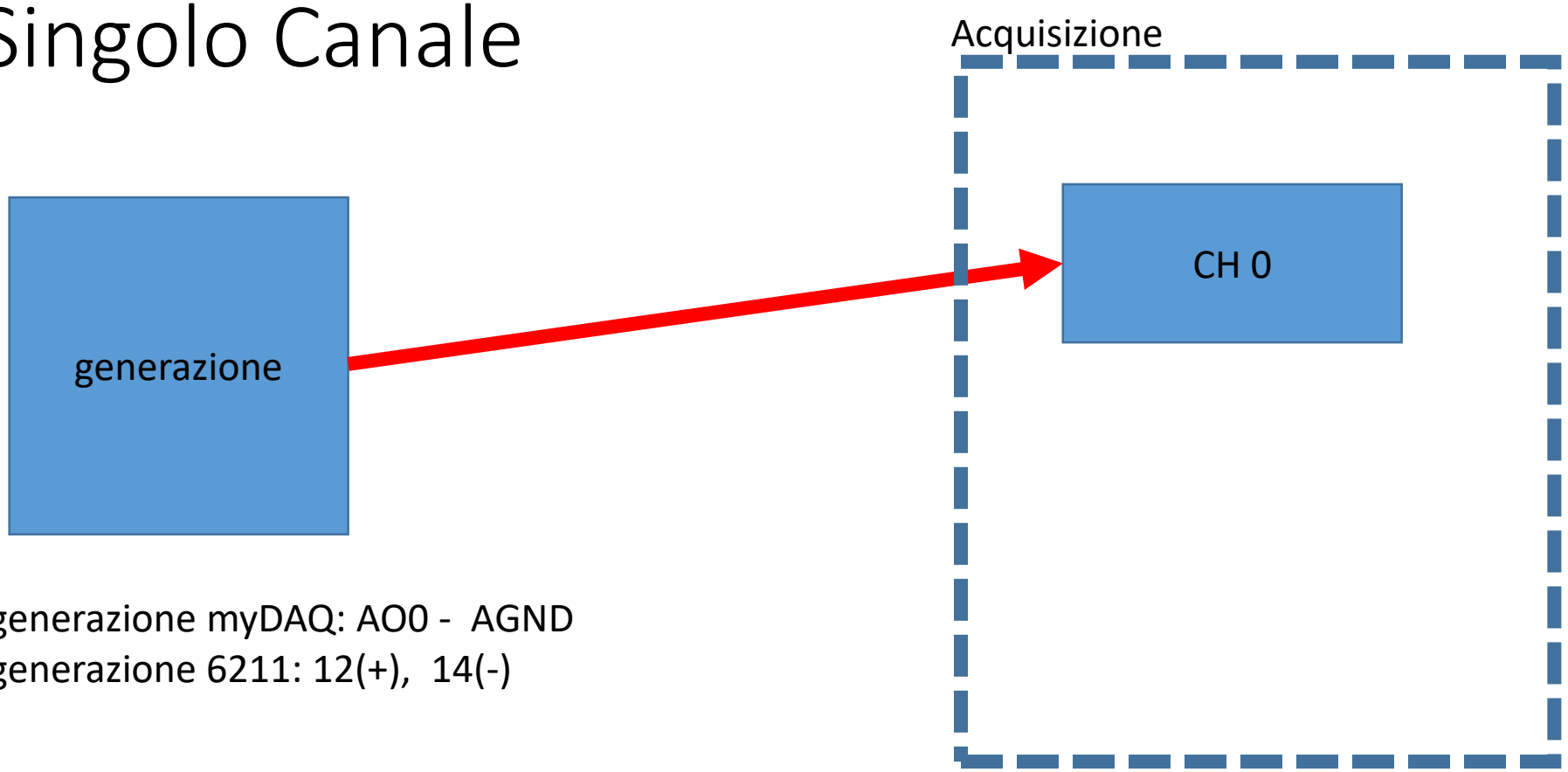
AI

- Number of channels: 2 differential or 1 stereo audio input
- ADC resolution 16 bits
- Sample rate Single channel maximum 200 kS/s
- Input range: ±2 V, ±10 V

AO

- Number of channels 2
- DAC resolution 16 bits
- Maximum update rate
- channel 200 kS/s

Singolo Canale



Pin generazione myDAQ: AO0 - AGND
Pin generazione 6211: 12(+), 14(-)

Pin Acquisizione myDAQ: 0+ , 0-
Pin Acquisizione 6211: 15+, 16-

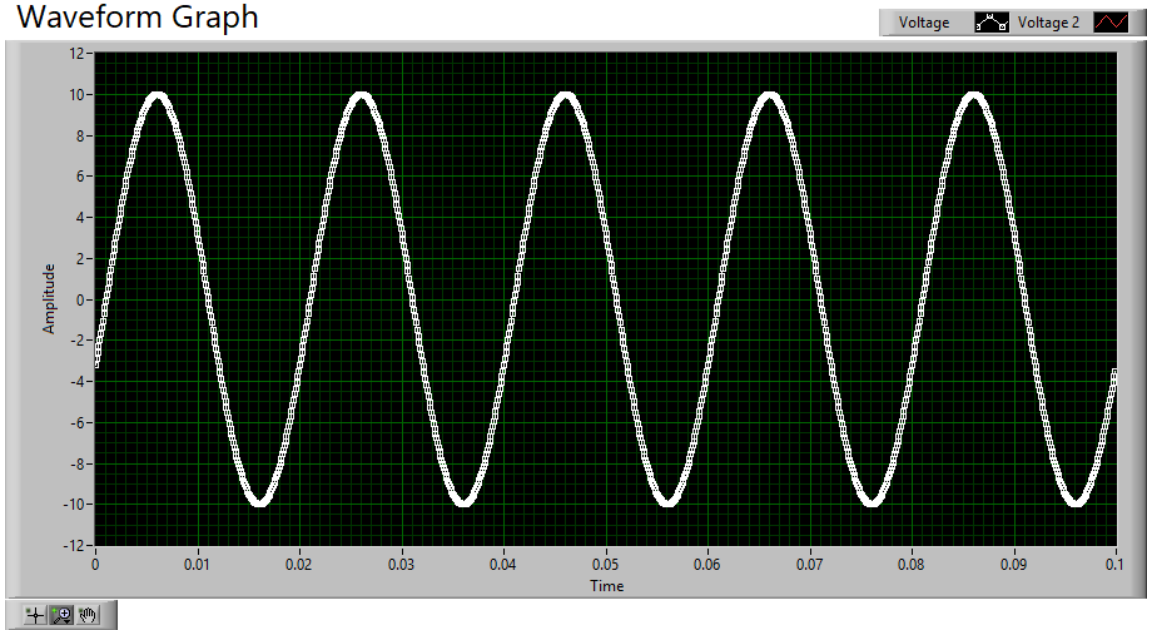
Esercizio 1 – Acquisizione e verifica del corretto FSR

Generazione Segnale

- Sinusoidale
- 10 V
- 50 Hz

Acquisizione

- Numero campioni: 1000 S
- Frequenza campionamento 10000 S/s



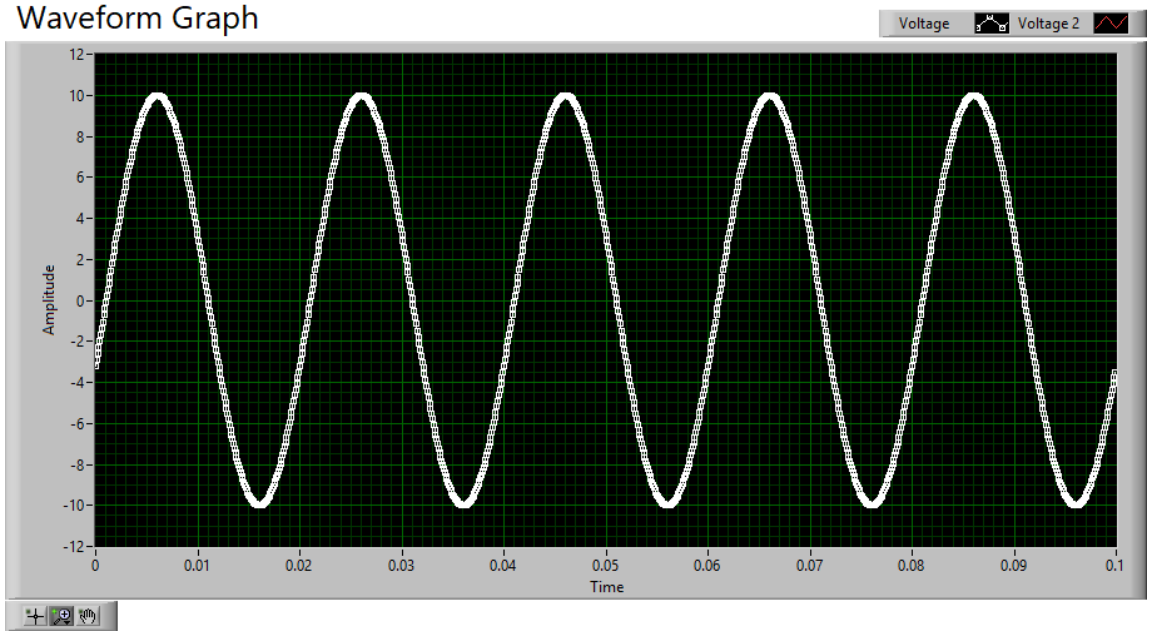
Esercizio 1 – Acquisizione e verifica del corretto FSR

Generazione Segnale

- Sinusoidale
- 10 V
- 51 Hz
- 49 Hz

Acquisizione

- Numero campioni: 1000 S
- Frequenza campionamento 10000 S/s



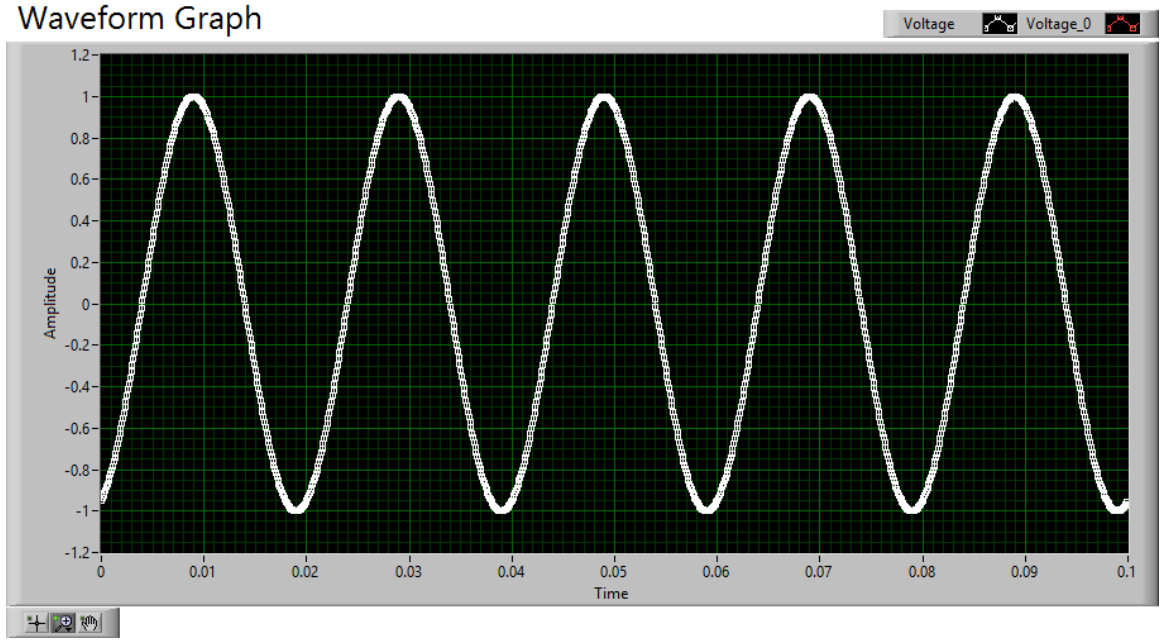
Esercizio 1 – Acquisizione e verifica del corretto FSR

Generazione Segnale

- Sinusoidale
- 1 V
- 50 Hz

Acquisizione

- Numero campioni: 1000 S
- Frequenza campionamento 10000 S/s



Esercizio 1 – Acquisizione e verifica del corretto FSR

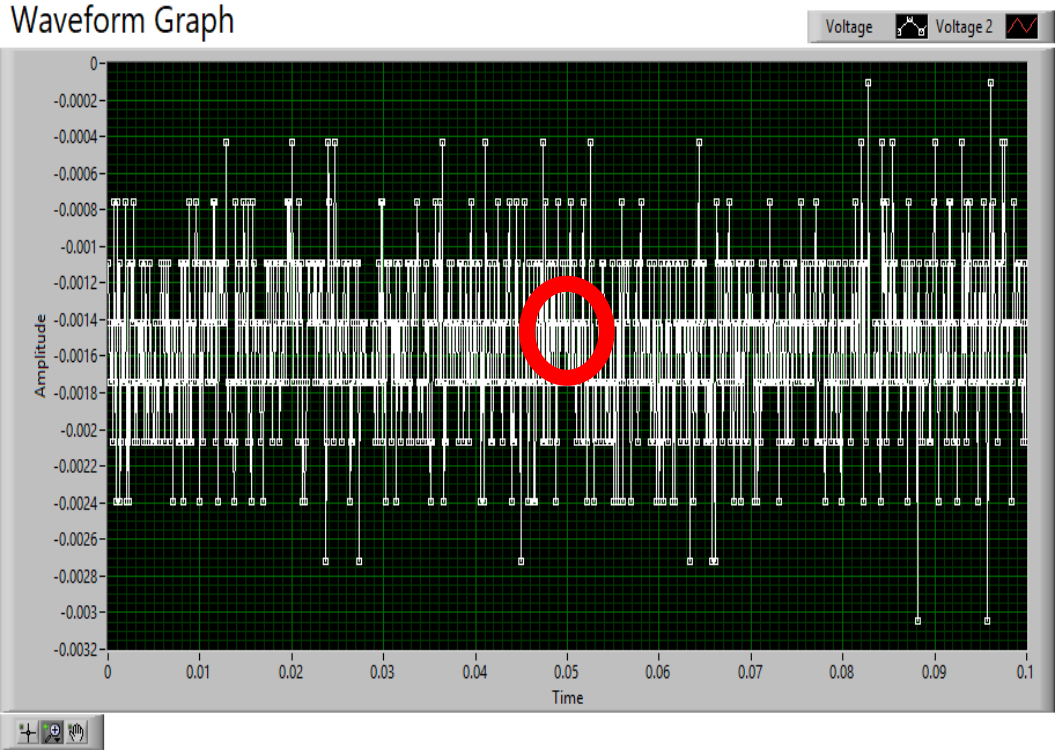
Generazione Segnale

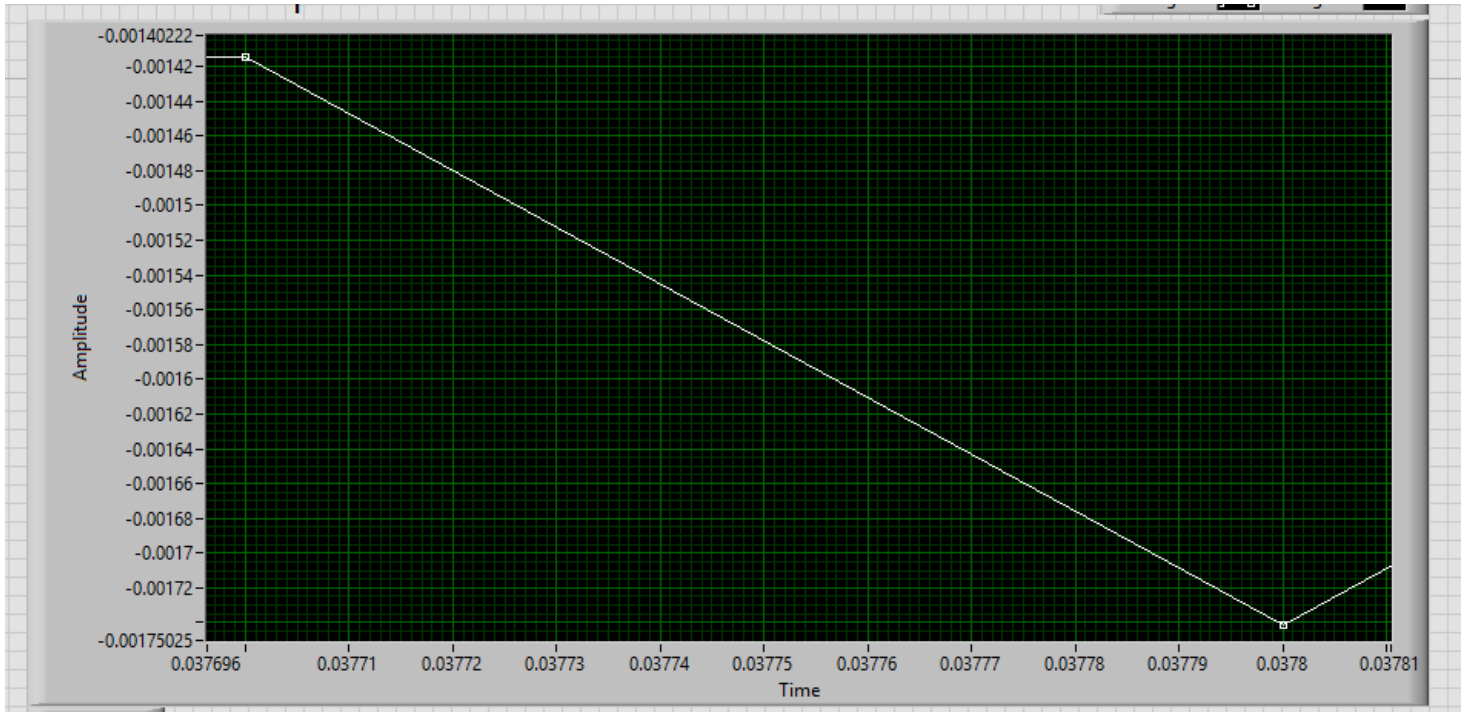
- Sinusoidale
- 0 V

Acquisizione

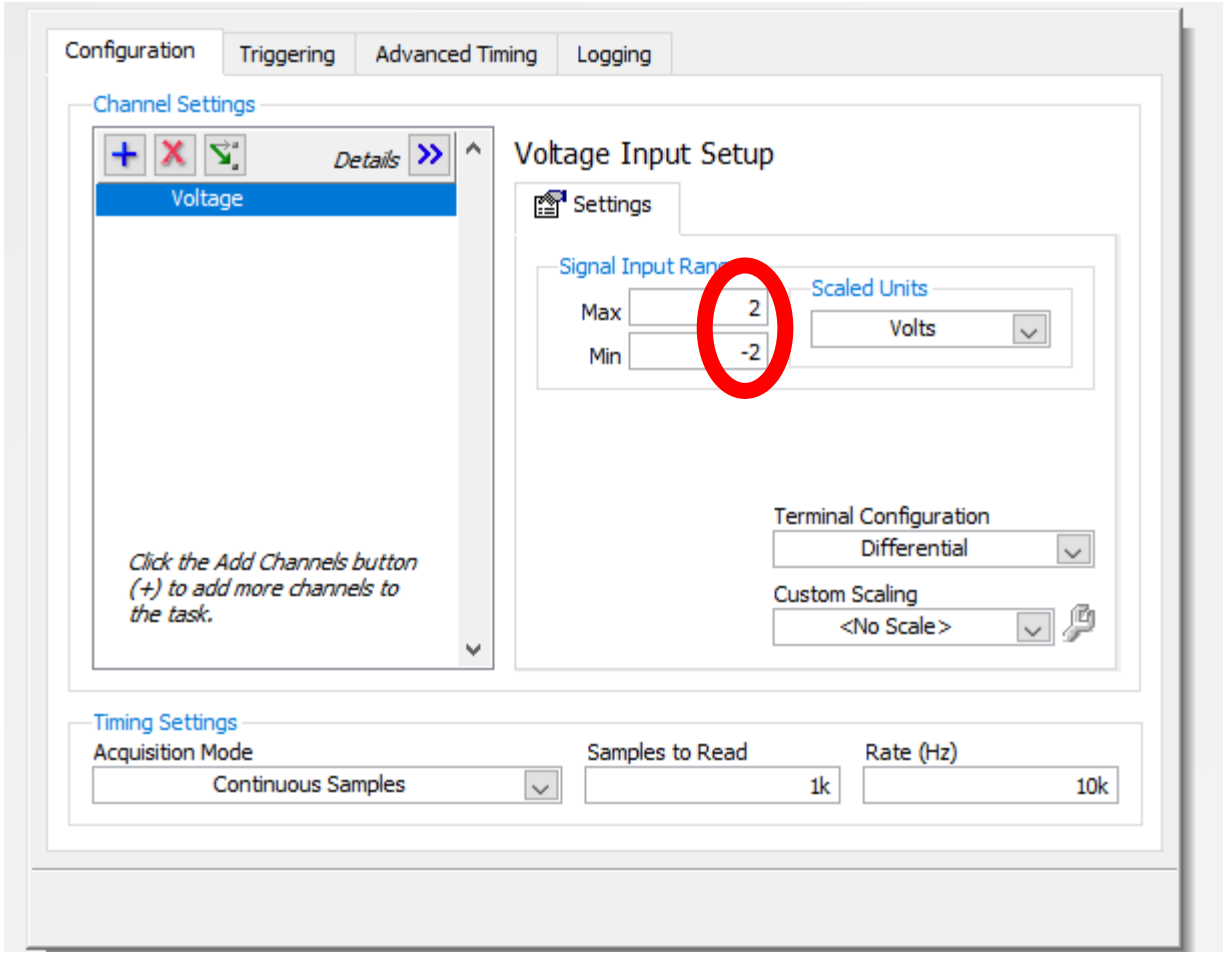
- Numero campioni: 1000 S
- Frequenza campionamento 10000 S/s

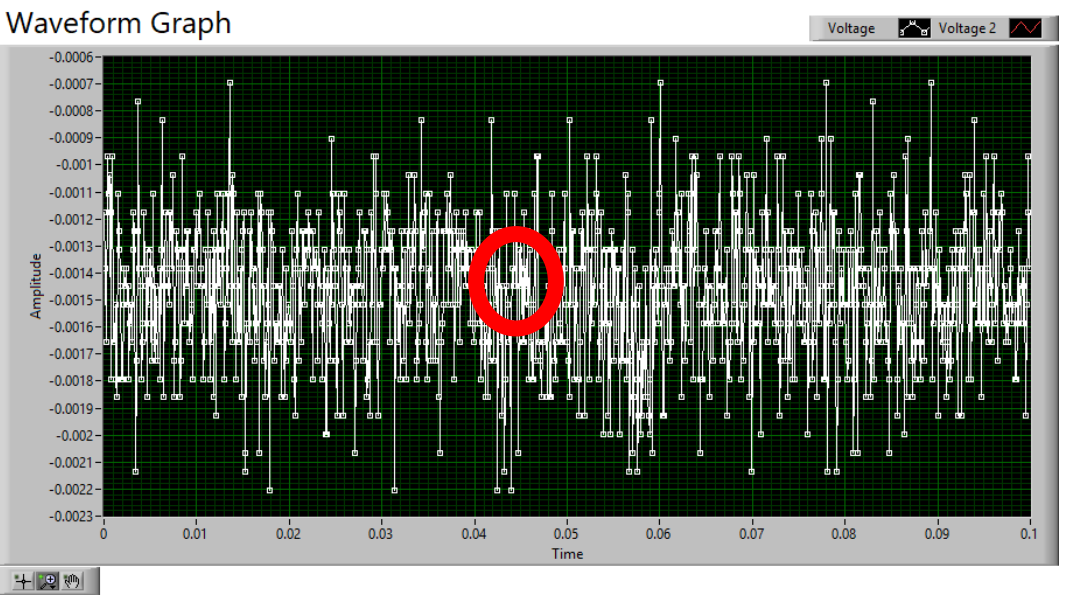
verifica del corretto FSR

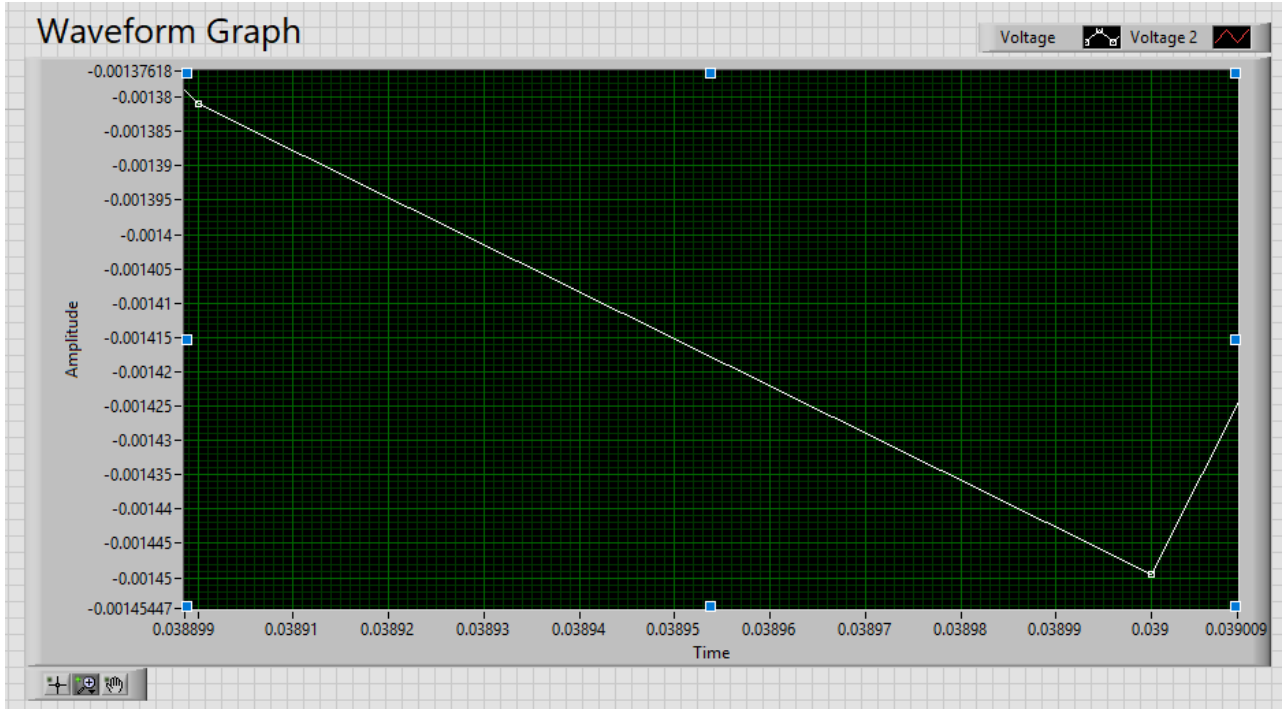




$q = FSR/2^n$ $q = 0.3$ mV $q = 0.00172-0.00142$ V $= 0.3$ mV


Configuration
Triggering
Advanced Timing
Logging
Channel Settings
Details
Voltage
Click the Add Channels button (+) to add more channels to the task.
Voltage Input Setup
Settings
Signal Input Range
Max
2
Min
-2
Scaled Units
Volts
Terminal Configuration
Differential
Custom Scaling
<No Scale>
Timing Settings
Acquisition Mode
Continuous Samples
Samples to Read
1k
Rate (Hz)
10k





$q = FSR/2^n$ $q = 0.061$ mV $q = 0.00145-0.00138$ V $= 0.07$ mV

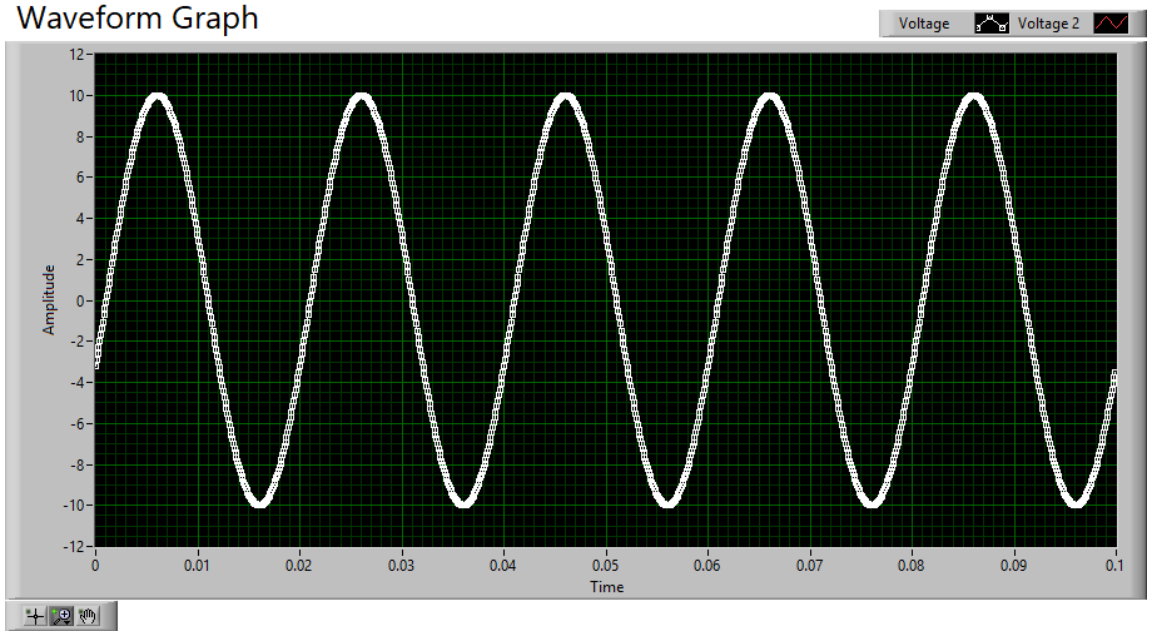
Esercizio 1 – Acquisizione e verifica del corretto FSR

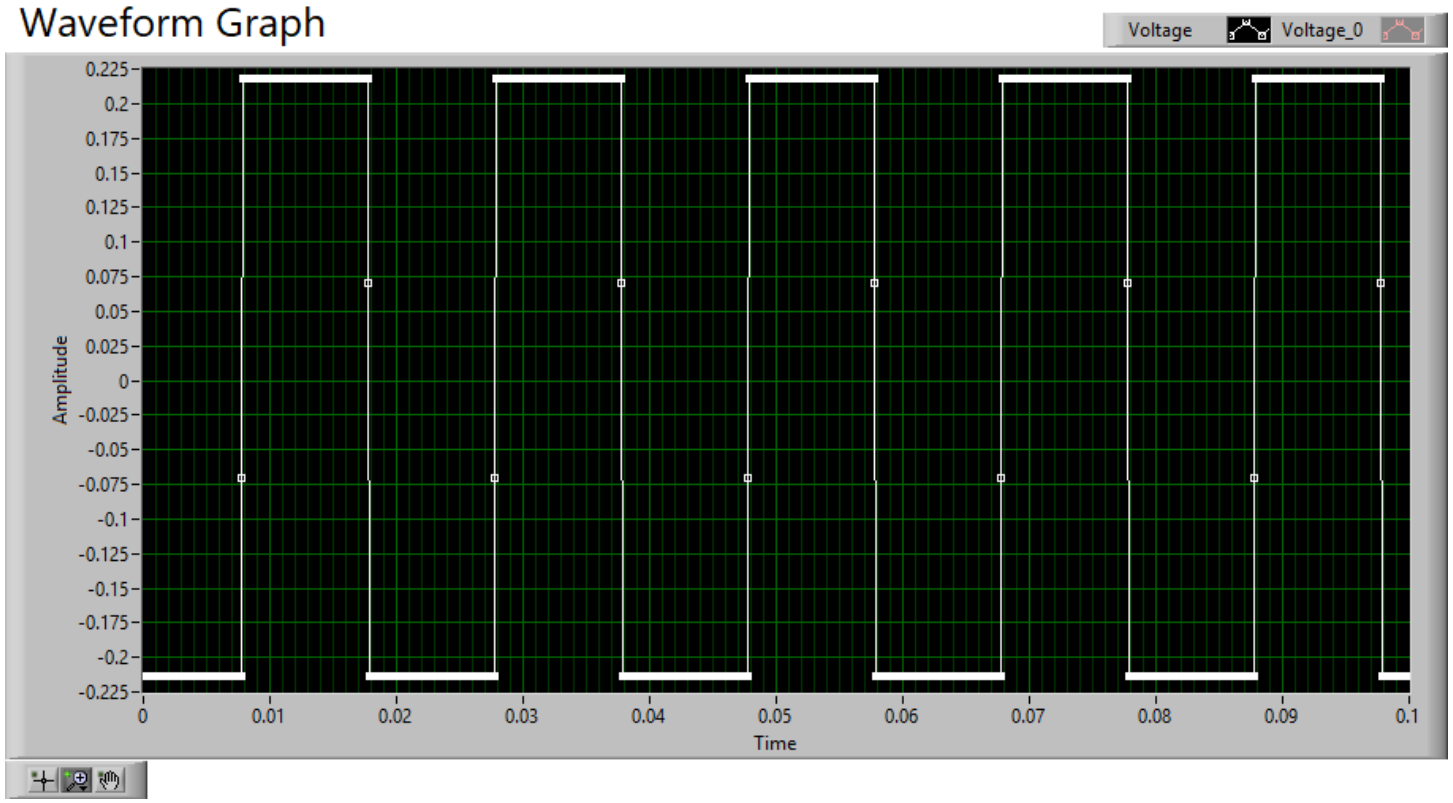
Generazione Segnale

- Sinusoidale
- 10 V
- 50 Hz

Acquisizione

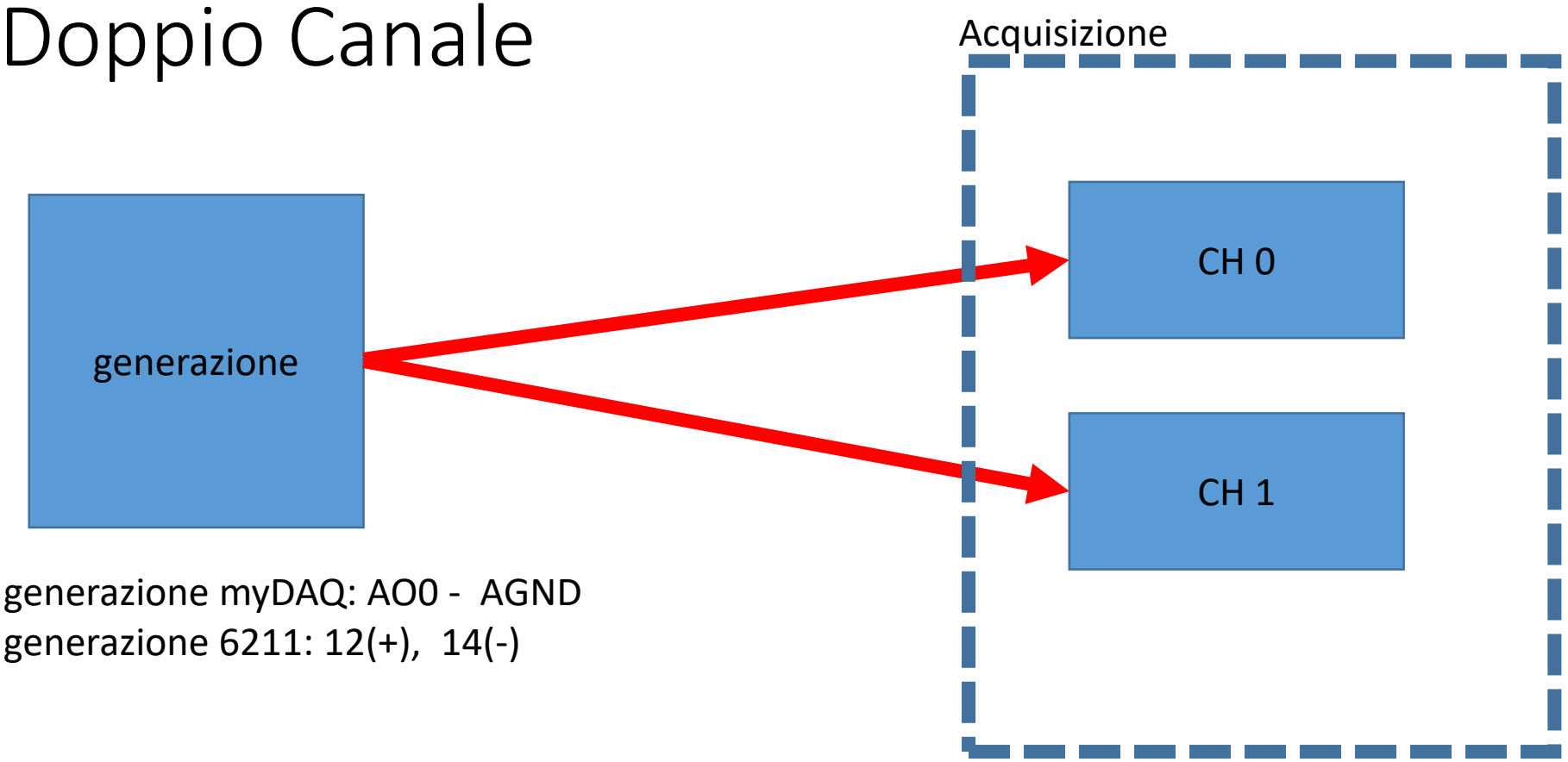
- Numero campioni: 1000 S
- Frequenza campionamento 10000 S/s





Saturazione ?

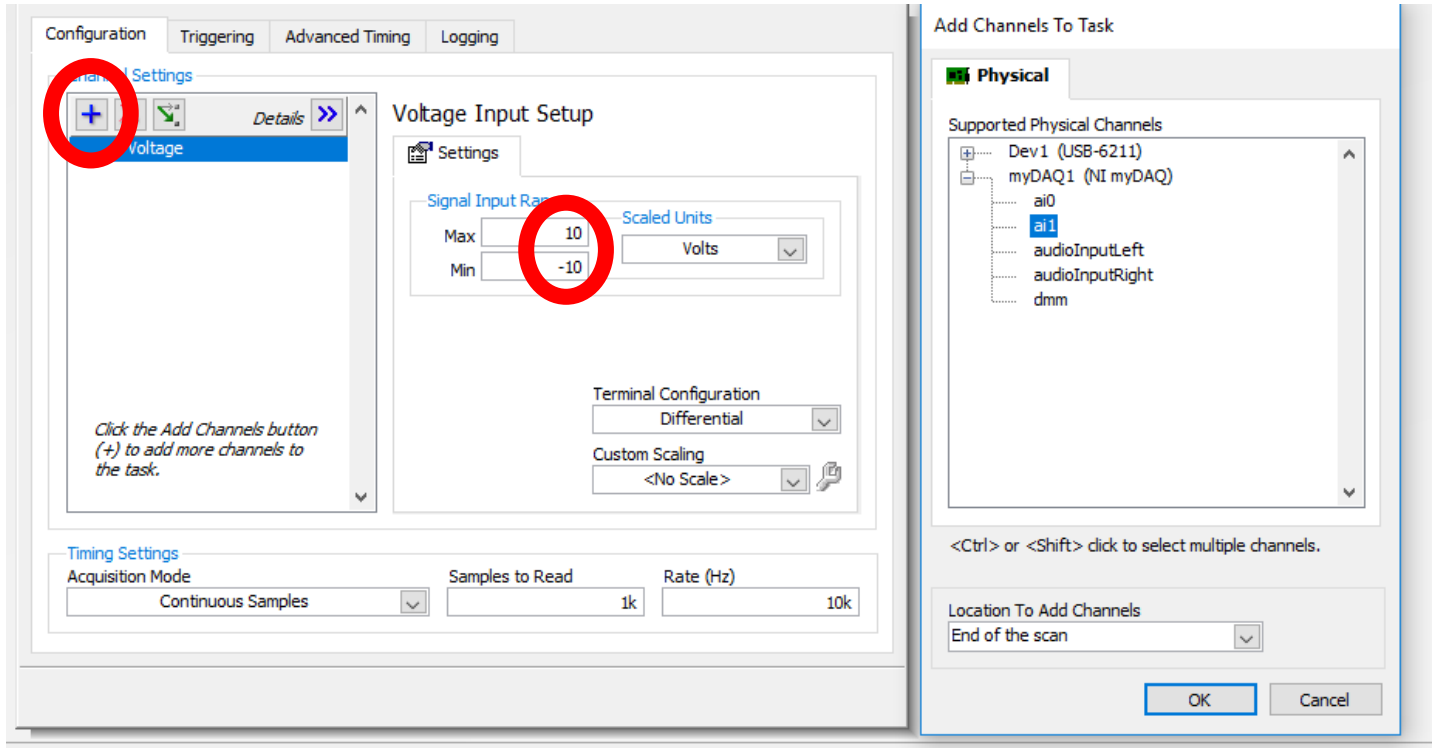
Doppio Canale



Pin generazione myDAQ: AO0 - AGND
Pin generazione 6211: 12(+), 14(-)

Pin Acquisizione myDAQ: 0+ , 0-
1+, 1-
Pin Acquisizione 6211: 15+, 16-
17+, 18-

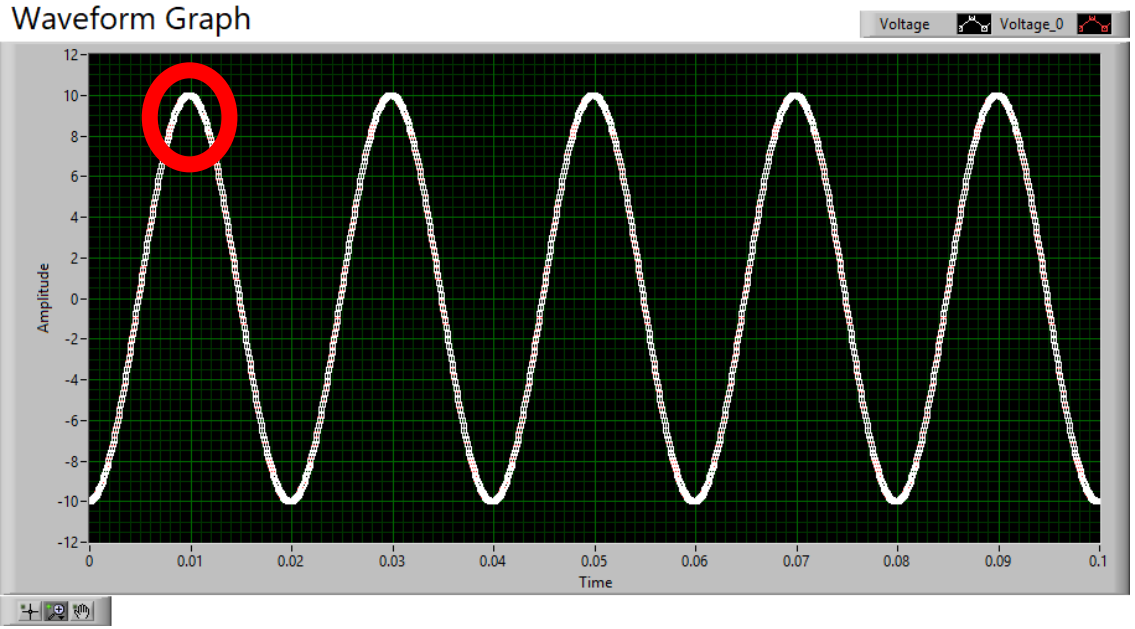
Doppio Canale

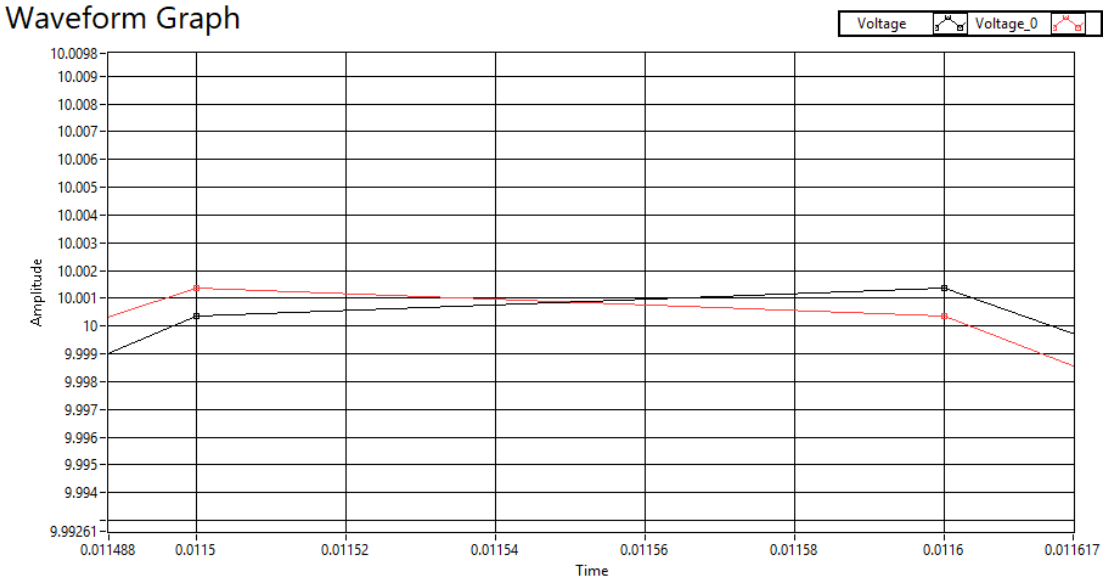


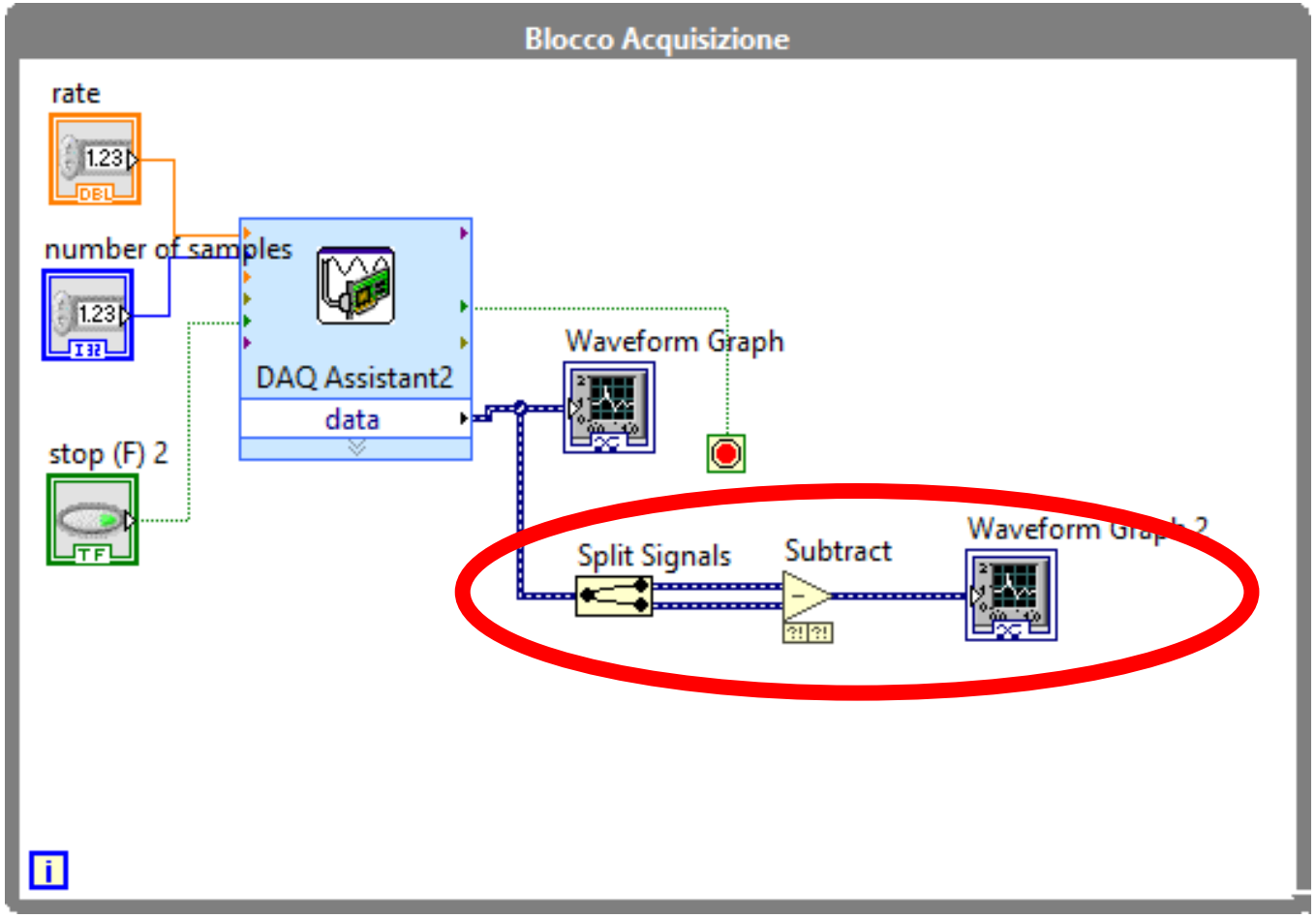
Ripristinare il Signal Input range +- 10 V

Aggiungere un canale

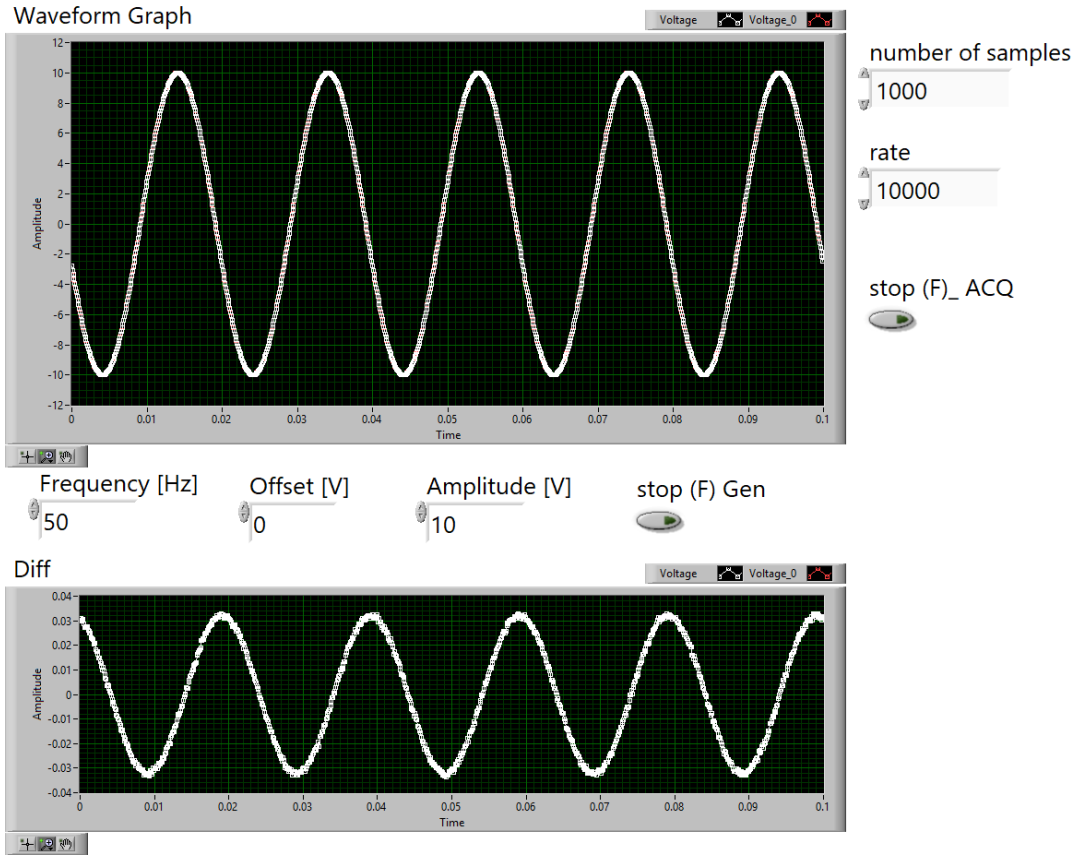
Doppio Canale






Blocco Acquisizione
rate
1.23
DBL
number of samples
1.23
I32
DAQ Assistant2
data
Waveform Graph
stop (F) 2
TF
Split Signals
Subtract
Waveform Graph 2

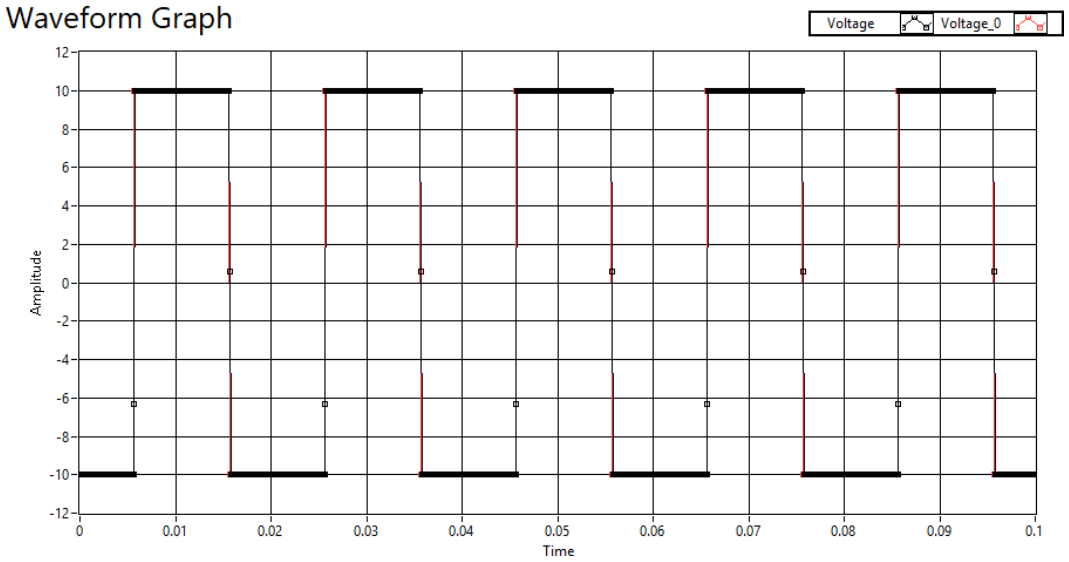
Doppio Canale

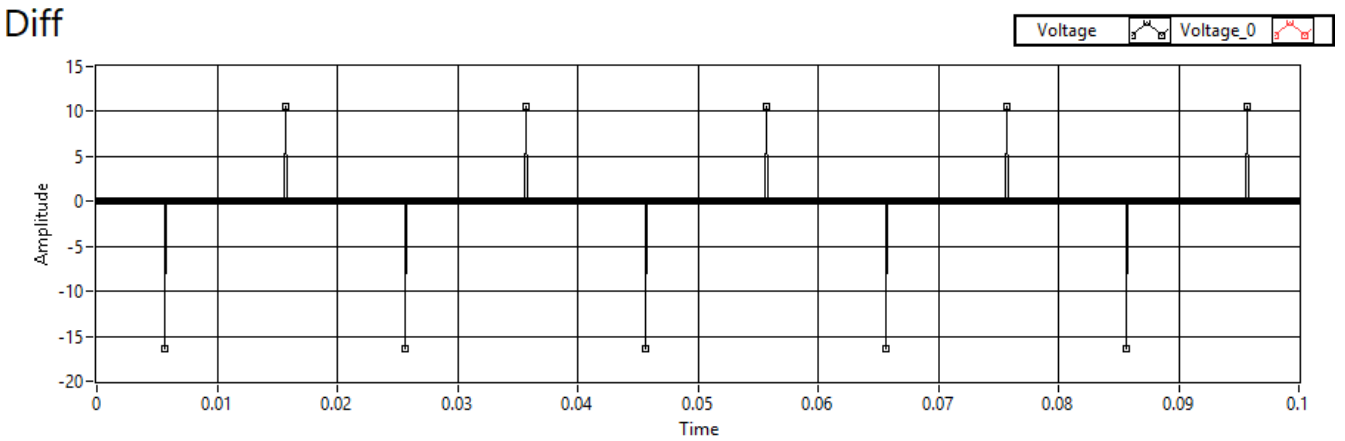


Verificare la differenza tra i due canali modificando la frequenza del segnale

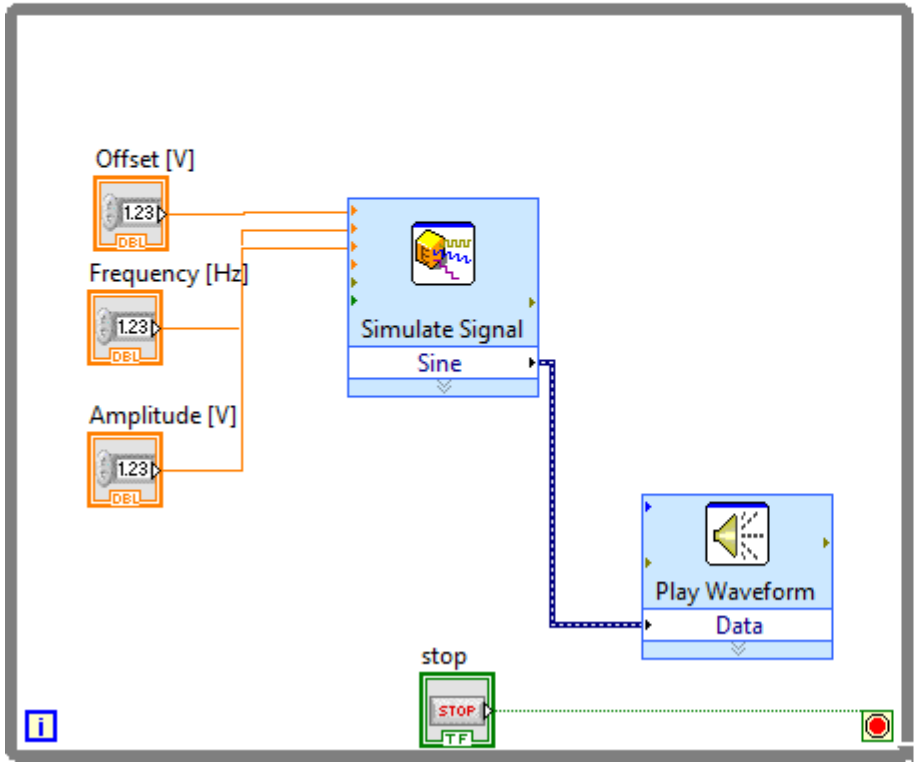
- 50 Hz
- 500 Hz
- 1kHz

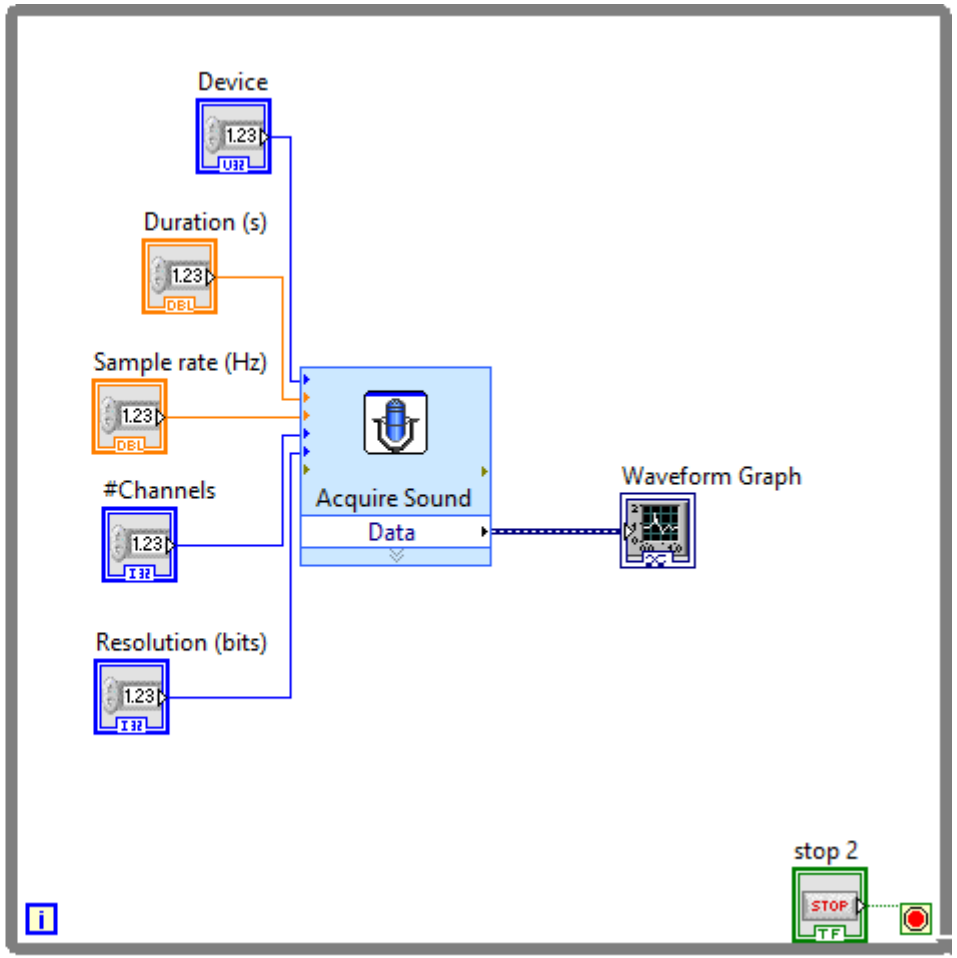
Doppio Canale, Multiplexer e onda rettangolare



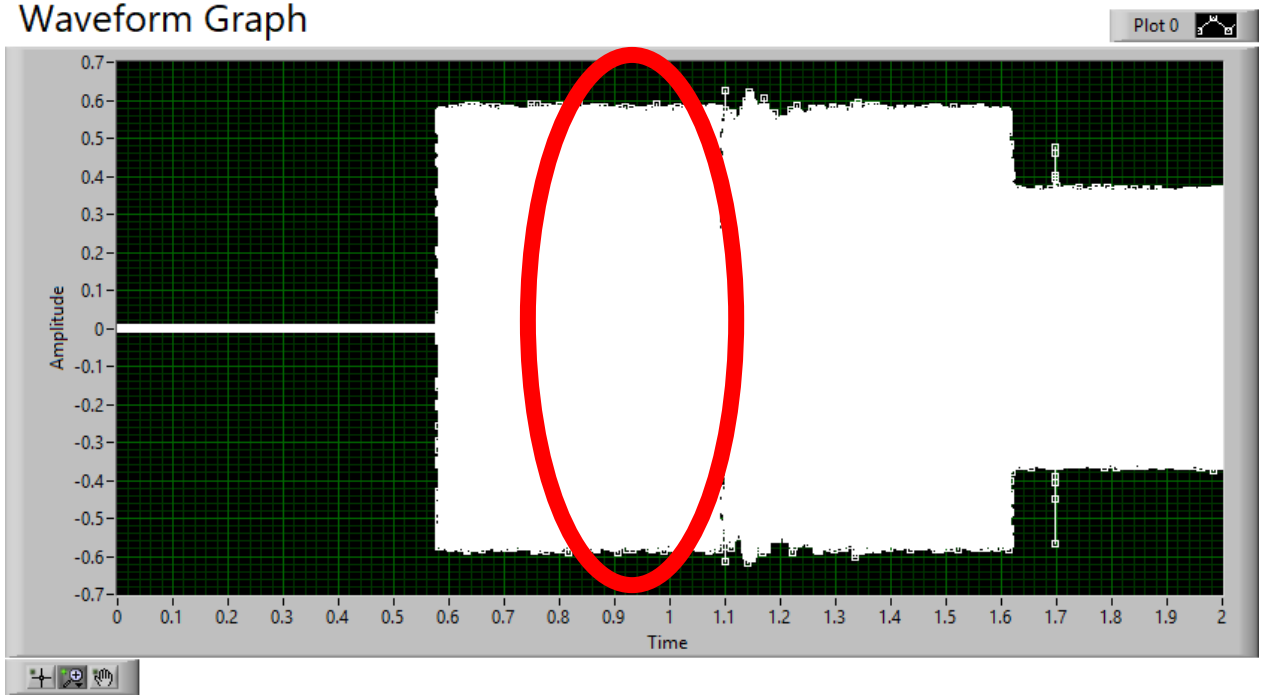


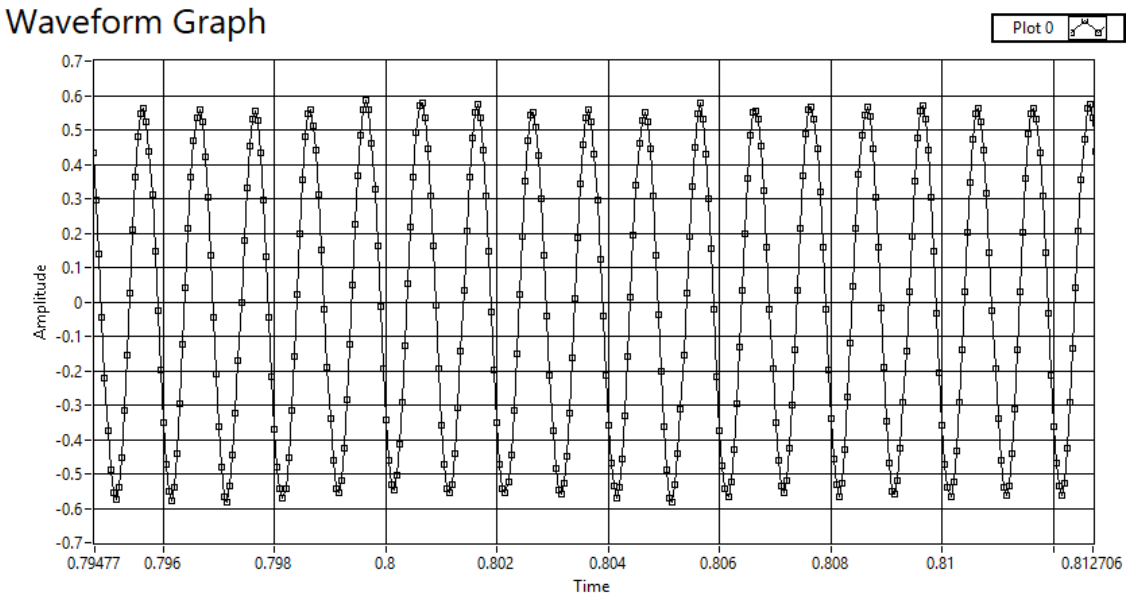
Extra


Offset [V]
Frequency [Hz]
Amplitude [V]
Simulate Signal
Sine
Play Waveform
Data
stop
STOP

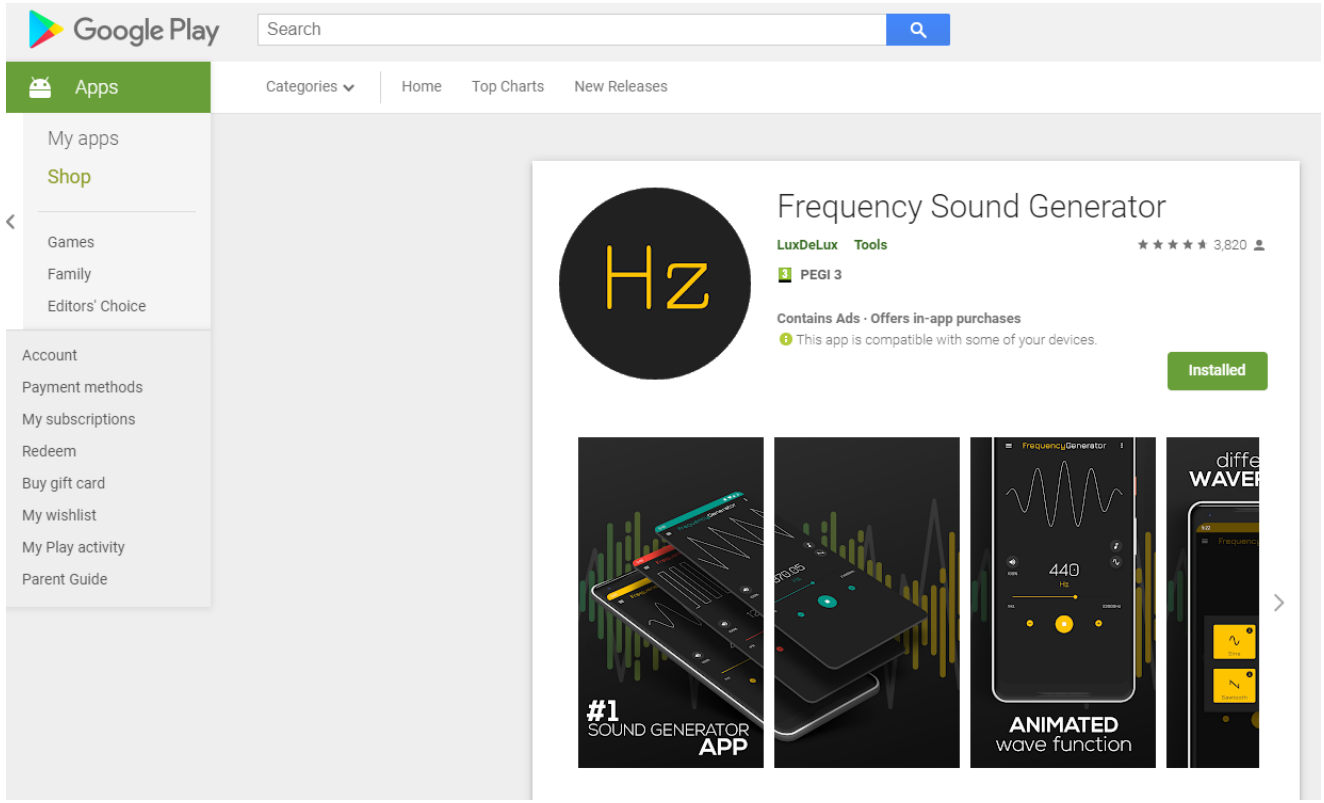

Device
Duration (s)
Sample rate (Hz)
#Channels
Resolution (bits)
Acquire Sound
Data
Waveform Graph
stop 2
STOP

Acquisizione tramite scheda audio





Generazione tramite telefono cellulare



Acquisizione del segnale tramite scheda audio