Scullcom Hobby Electronics - Build a Function Generator

Case

The case is a "183x133x60MM ABS Grey Project Box Case Enclosure Housing & Red EndPanels Z112R" which I purchased on eBay at a cost of £5.45 plus £3.60 delivery costs. The link to the eBay item/supplier is below:http://www.ebay.co.uk/itm/183x133x60MM-ABS-Grey-Project-Box-Case-Enclosure-Housing-Red-EndPanels-Z112R-/251880890929?pt=LH_DefaultDomain_3&hash=item3aa5456231

Power Supply

1 x 1.5 Amp Bridge Rectifier (MULTICOMP DI152 Bridge Rectifier Diode, Single, 200 V, 1.5 A, DIP or similar such as 4 x 1N4002)
1 x 12 volt 1 Amp Voltage Regulator (LM7812CT or similar)
1 x 5 volt 1 Amp Voltage Regulator (LM7805CT or similar)
1 x 330 uF 25 volt electrolytic capacitor
1 x 100 uF 16 volt electrolytic capacitor
1 x 100 uF 10 volt electrolytic capacitor
3 x 100 nF 63 volt capacitors (5mm pitch metallised polyester capacitors) working voltage can be lower
1 x single pole on/off switch

Main Function Generator Circuit

XR2206 – Function Generator IC
2 x 100 Kohm Linear potentiometer (BOURNS PDB181-K220K-104B Rotary potentiometer or similar)
Option in series with frequency potentiometer 1 x 10 K Kohm Linear potentiometer (BOURNS PDB181-K220K-103B Rotary potentiometer or similar) – This is for fine tune of frequency adjustment.
1 x 500 ohm preset potentiometer (BOURNS 3296W-1-501LF or similar)
1 x 25 Kohm preset potentiometer (BOURNS 3296W-1-253LF or similar)
2 x 50 Kohm preset potentiometer (BOURNS 3296W-1-503LF or similar)
1 x 100 nF 63 volt capacitors (5mm pitch metallised polyester capacitors) working voltage can be lower
3 x 1 Kohm 1% resistor
1 x 2.2 Kohm 1% resistor
2 x 10 Kohm 1% resistors
2 x 10uF electrolytic capacitor
0.02 uF capacitor
0.22 uF capacitor
2 x DPDT Miniature toggle switch (Salecom T8013 series or similar)

Output Stage

2 x NE5532P (TEXAS INSTRUMENTS Dual Operational Amplifier)
2 x 25 Kohm preset potentiometer (BOURNS 3296W-1-253LF or similar) – or 20Kohm
2 x 220uF 25 volt electrolytic capacitor
2 x 10 Kohm 1% resistors
2 x 1 Kohm 1% resistor
2 x 100 ohm 1% resistor
1 x SPDT Miniature toggle switch (Salecom T8013 series or similar)
1 x 10 Kohm Linear potentiometer (BOURNS PDB181-K220K-103B Rotary potentiometer or similar)
1 x BNC socket

Display & Frequency Counter

1 x 8 Digit LED Module – available on eBay (MAX7219 Red Module 8-Digit 7 Segment Digital LED Display Tube For Arduino MCU)
1 x Arduino Nano
74HC14 – Hex Schmitt Trigger Inverter IC
1 x 5.1 volt Zener (BZX55C5V1 or similar)
1 x 100 nF 63 volt capacitors (5mm pitch metallised polyester capacitors) working voltage can be lower

Alternative Power Pack Option

12 volt 5 amp Encapsulated Power Pack (from www.powerpax.co.uk) – Model STD1250PA (Part No. SW3101A)
(Check eBay for Power Adapter, 12 Volt 5 Amp)

Other Items

1 x Prototyping Matrix / Perforated Board (available on eBay)
http://www.ebay.co.uk/itm/Prototyping-Matrix-Perforated-Boards-All-Sizes-/262145479198?var=&hash=item3d0916921e:m:mbEpqFb_lRlBcqTdVaq3QZw
3 x small control knobs