
SM-FX500 ULTIMA

PROFESSIONAL MIXER



OWNER'S MANUAL

171.129

The SM-FX500 Ultima Professional Mixing Desk

The new SM-FX500 Ultima is a 4-Channel 19" Rack mixer with a built-in DSP. Its compact 5U design houses features that you would normally only find in much higher priced units. Designed with both small installations and mobile DJ's in mind it also has a few little extras to protect your system and maintain a high quality sound production.

The SM-FX500 Ultima has 3 microphone inputs, two of which are controlled with the dedicated Mic channel and one assigned to the 4th channel as a switchable option. Mic's 1 & 2 share a 3-band EQ and Mic override system. Each of the 4 music channels has an individual gain control and 3-band EQ offering +10dB of Boost and -30dB of Kill. Each channel is also easily assignable to the crossfader A or B.

The unit has a built in digital signal processor offering 8 effects which are assignable to each music channel, microphone channel, master or crossfade A or B. The effects are linked to the mixers built in BPM counter to allow the DJ to 'Beat-Sync' the effects at the touch of a button, Alternatively the effects can be manually adjusted using the independent parameter time control and the parameter ratio control. The SM-FX500 Ultima also has effects specifically for the crossfade, when selected 3 different effects can be activated and controlled by moving the crossfade from A-B using the effects to mix from one channel to the next.

The crossfade on the SM-FX500 Ultima is VCA controlled as well as being able to assign effects the user can adjust the curve of the fader from a smooth mix to sharp mix. It also has fader start, this will start a compatible CD-Player and also stop it return it to the Cue point, this can be a very creative tool when combined with the effects.

The SM-FX500 Ultima also has a few installer friendly options. The user can easily replace the channel faders and crossfader by removing just a few screws. For the outputs there is a choice of balanced XLR or Unbalanced Phono, the unit also offers a booth output, record output and digital output all recessed into the rear of the unit. There is also a master trim level on the rear; this allows the installer to set the maximum output of the mixer.

Features

- 4 Channel 10 Input Digital Mixer
- 4 Line – 3 Phono/Aux(shared) – 3 Microphone
- Built in DSP with 8 Digital Effects
- 3 Assignable Effects to the VCA Crossfade
- Fully Assignable Crossfade
- Crossfade Curve Adjustable
- Separate Gain Controls on All Channels
- 3 band EQ with -30dB CUT Per Music Channel
- Microphone Channel with 3 Band EQ shared with 1 & 2
- Booth Output
- Full Cue editing Facilities including effects Cue
- Split Cue
- Easily Replacable Crossfade and Channel Faders
- Master and Cue selectable LED Monitor
- Digital Output
- Crossfader start for CD-players
- Installer Output Trim Feature
- Built in Rumble Filter

Important Safety Information

Warnings:

All the safety and operating instructions should be read before the appliance is operated.

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

To reduce the risk of electric shock, do not remove the cover (or back). There are no serviceable parts inside. Always refer servicing to qualified service personnel.

Cautionary Notes:

Handle the power supply cord carefully. Do not damage or deform the power supply cord. If it is damaged or deformed, it may cause electric shock or malfunction when used. When removing from wall outlet, be sure to remove by holding the plug attachment and not by pulling the cord.

In order to prevent electric shock; do not open the top cover. If a problem occurs, contact your dealer.

Do not place metal objects or spill liquid inside the mixer. Electric shock or malfunction may result.

Any use of the controls, or any adjustment, or the performance of any procedure other than those specified herein may result in serious damage to your health.

The mixer should not be opened or repaired by anyone except properly qualified service personnel.

Double insulated - when servicing, use only identical replacement parts.

WARNING: - THIS MIXER MUST BE EARTHED FOR SAFETY AND GOOD GROUNDING PRACTICES IN MIXING.

In the event of ground - loop problems in the audio system, DO NOT disconnect the AC supply earth to any equipment before consulting equipment instruction manuals. For example most power amplifiers have audio ground lift switches, or are designed specifically to avoid ground - loop problems connected to 'earthed' mixers. Ensure the mixer has a 'clean' AC supply from a wall socket that is not used for other equipment that would lead to interference - such as lights, refrigerators etc.

The SM-FX500 Ultima is available in AC supply standard:

200 - 240V AC - UK, EUROPE, KOREA & CHINA

General Do's & Don'ts

There are a few general Do's and Don'ts thoughts that you should become familiar with if you have not had a great deal of experience with professional audio systems.

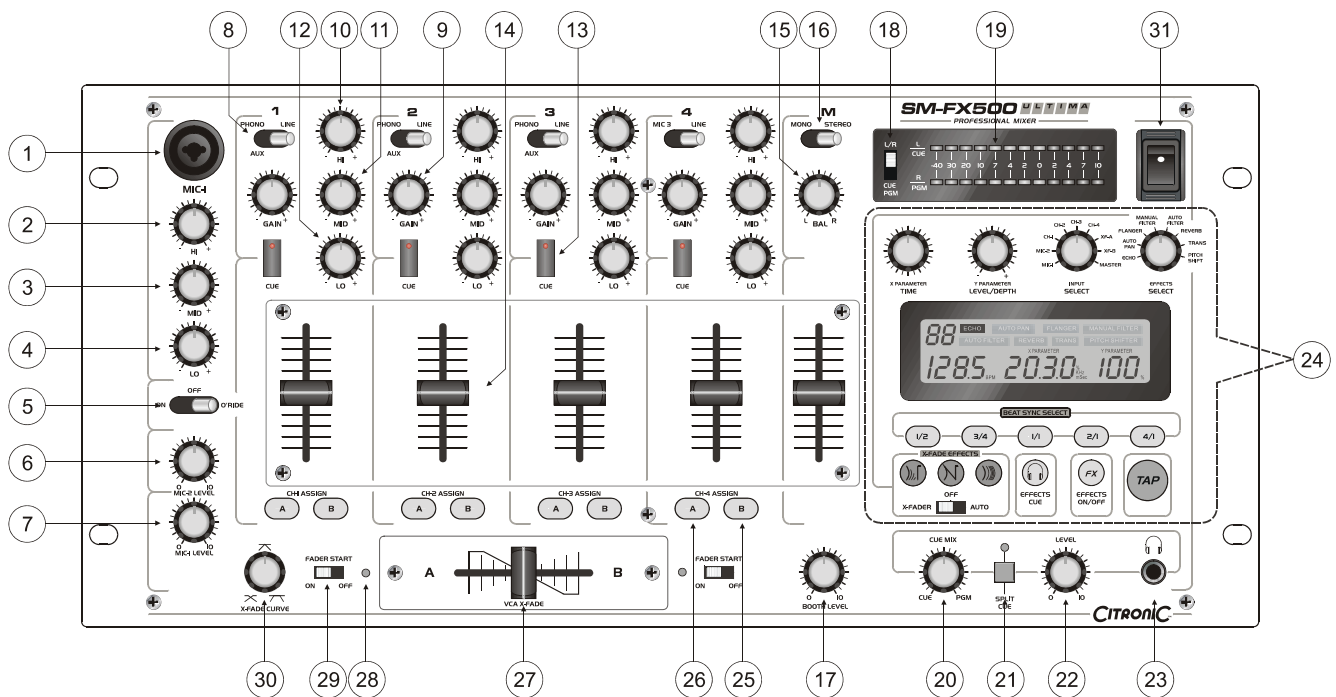
Cables & Connectors - Always use good quality cables and connectors. It might seem expensive when you first look at it, but the first time you have a problem in front of an audience you'll curse the day you didn't make that small investment. Over 30 years in the business has taught us that over 75% of all problems with DJ systems are simple connector ones. Don't get caught out.

Switching on your system - Get into the habit of turning on the mixer and all the inputs to it before you turn on the amplifiers. Play safe; always turn on your amplifiers last.

Power Supply - The power supply for your SM-FX500 Ultima is built into the mixer and will be fitted with a mains plug specifically for the mains supply in your country. If it does not match the power socket you wish to use check with your dealer before you plug it in. It is possible you could damage your mixer if it is not the correct version for your mains power supply. Worse still, it could be unsafe. Don't take chances with Mains Power - it can kill.

Crossfader - The crossfader is the most used feature on your mixer and great care has been taken in the choice of components for this function. Even so, it is the most likely thing to wear out first on your mixer, so we've made it quick and easy to replace. Don't get caught out, always carry a spare.

Front Panel Illustration



Features & Functions Top Panel

Microphone Section

1. Microphone Input

Two combination XLR & 1/4" jack sockets are mounted on the front face of the mixer for connecting your balanced microphones.

Balanced Input wiring:

Tip: Pin2: Positive (HOT)
 Ring: Pin3: Negative (COLD)
 Sleeve: Pin1: Ground (SHIELD)
 Input Impedance: 2.2K Ohm
 Input Sensitivity: -55.4dBV (1.7mV)

2. Microphone EQ – Hi

This control allows 12dB of cut or boost to the high frequencies and is shared between Mic 1 & Mic 2.

3. Microphone EQ – Mid

This control allows 12dB of cut or boost to the mid frequencies and is shared between Mic 1 & Mic 2.

4. Microphone EQ – Lo

This control allows 12dB of cut or boost to the low frequencies and is shared between Mic 1 & Mic 2

5. Microphone On/Off & Override Switch

This switch is used to activate or deactivate Mic 1 and 2. When switched to 'o'ride' position the sound level for everything other than Mic 1 & 2 will decrease by 14dB.

6. Microphone 2 Level Control

This controls the gain of microphone 2 giving the user maximum control. Set the gain to the desired level then use the On/Off or O'ride switch (5) to activate the mic.

7. Microphone 1 Level Control

This controls the gain of microphone 1 giving the user maximum control. Set the gain to the desired level then use the On/Off or O'ride switch (5) to activate the mic.

Music Channels 1-4 Section

8. Input Select Control

This control selects the input source for its respective channel. Channel 1, 2 & 3 are Line or Phono/Aux switchable, (rear panel) Channel 4 is Microphone 3 or Line.

9. Input Gain Controls

Each main input channel has a gain control offering infinity to +10dB gain range allowing compensation for differing input levels.

10. Music EQ Control – Hi

This control allows 10dB of boost and –30dB of Kill to the high frequencies.

11. Music EQ Control – Mid

This control allows 10dB of boost and –30dB of Kill to the mid frequencies.

12. Music EQ Control – Lo

This control allows 10dB of boost and –30dB of Kill to the low frequencies.

13. Cue Switches

The pre-fade input signal from each of the four main music channels can be routed to the headphone and when selected the VU display section of the mixer.

14. Channel Fader

45mm quality faders control each channel program level to the EQ and crossfader.

Replacement of the Channel Faders

When a channel fader has worn out it is very easy to replace. The SM-FX500 Ultima has been fitted with a quick access panel, which can be changed in a matter of seconds, even while the mixer is in use. Follow these simple steps:

1. Remove the knobs from all the channel faders
2. Unscrew the 4 pozi-head screw on each corner of the removable panel
3. Lift out the removable panel to expose the channel faders
4. Remove the 2 pozi-head screws from the worn fader
5. lift out the fader from its hotswap plug
6. Plug in the new fader taking care not to damage the circuit

Replace the screws, panel, screws and knobs

Output Controls Section

15. Master Balance

This control is used to adjust the left and right balance from the master output.

16. Master Stereo/Mono Switch

This switch is used to switch the Stereo output of the mixer to Mono. When switched to Mono it gives a true mono mix of the main mixer channels that are presented onto both the balanced and unbalanced outputs.

17. Booth Level

This rotary knob controls the overall output of the unbalanced Booth Output. The program content of the booth Output is the same as the master output but unaffected by the master volume control or master balance control.

Music Monitoring Section

18. Monitor Selector Switch

This switch is used to select either L/R Stereo master output level or CUE PGM Split between Cue level and Output level.

19. LED Monitor

This 12 –bar LED monitor allows the user to view the output levels of the master or master/cue

20. Monitor Pan Control (Cue Mix)

Varies the mix between the cued input and main output, ideal for accurate beat mixing. Full left will give cued input, full right will give main output program.

21. Split Cue

Disables the CUE PAN CONTROL and gives a mono sum of cued I/P's to the left and a mono sum of the O/P mix to the right, channels of the headphones and led display.

22. Headphone Level Control

Sets desired level to headphones. Headphone program depends on the position of the monitor pan control and split cue switch.

23. Headphone Socket

(Standard Stereo 1/4" Jack)

L/H Channel	- Tip
R/H Channel	- Ring
Ground	- Sleeve
Minimum Load Impedance	- 32 Ohms
Power Output	- 316 mW

24. See Separate DSP Section

Crossfader Section

25. Crossfade Assign B

This button will assign the selected channel to the right hand side 'B' of the crossfade. The button will illuminate blue when selected.

26. Crossfade Assign A

This button will assign the selected channel to the left hand side 'A' of the crossfade. The button will illuminate blue when selected.

27. VCA X-Fade

This smooth action crossfader is VCA (Voltage Control Amplifier) controlled this allows the user to adjust the curve of fade from one side to the other.

Replacement of the Crossfader

When the crossfader has worn out it is very easy to replace. The SM-FX500 Ultima has been fitted with a quick access panel, which can be changed in a matter of seconds, even while the mixer is in use. Follow these simple steps:

1. Remove the crossfader panel using a Pozi-head screw driver
2. Lift out the removeable panel
3. Disconnect the crossfader assembly
4. Refit the connector to the new crossfader
5. Replace the panel and re-fit the screws

28. Fader Indicators

When the X-Fade effect switch (43) is in the 'X-FADER' or 'AUTO' position, these LED's will light indicating which side of the crossfade is supplying the output signal. As the crossfade is moved toward the opposite side the LED will begin to flash, just before the music output changes to the opposite side the LED will flash quickly.

29. Fader Start Selector

This switch will allow a compatible CD-Player to be started using the crossfader. The control cables need to be connected from (50) to the back of the CD-Player. If crossfade 'A' is switched on, when the fader is moved from 'B' to 'A' the CD will play, when the crossfader is moved back from 'A' to 'B' the CD will return to its Cue point. Therefore moving the fader left to right quickly will give a stutter effect.

30. X-Fade Curve Control

This rotary knob controls the curve of the VCA crossfade. The Curve can be set from a smooth fade for mixing to a sharp cut for scratching.



Selecting this symbol gives a sharp curve on the crossfade. With the crossfader in the 'B' position moving the crossfade 2mm to the left will bring in the channel assigned to 'A' at full volume, this is ideal for scratching.



Selecting this symbol gives a fade without any drop in sound level. At the centre point both channel will be at their full volume. There will be a slight increase in volume at the centre point as the two outputs overlap.

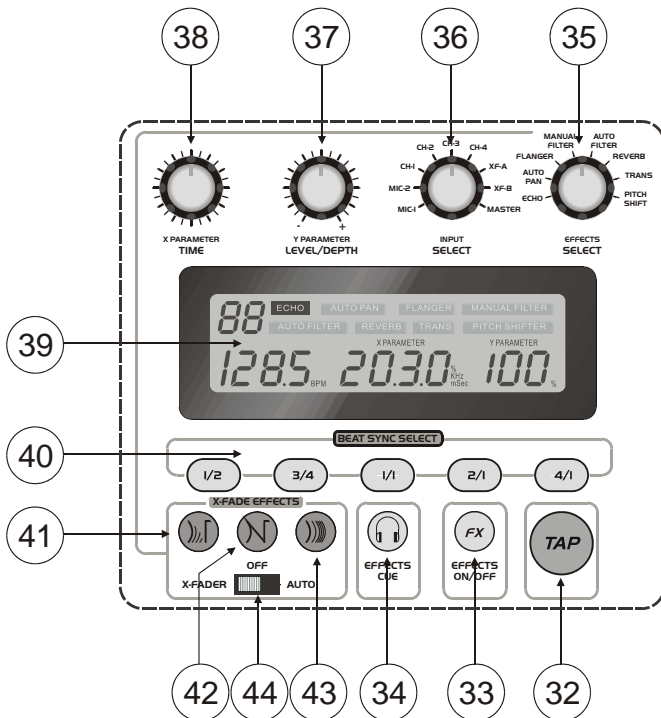


Selecting this symbol gives a fade with a drop in the music level of 2dB at the centre point the music from the opposite channel will come in at this level also. This should give a mix with no increase in the master volume if the gains from both channels are at an equal dB.

31. Power Switch

Use this switch to turn the power on/off to the mixer.

Note: Be sure to switch on the power to your mixer before the amplification system.



DSP Effects Section

32. TAP Button

Should the auto-BPM feature not pick up the correct BPM of a certain style of music the user can manually 'TAP' in the BPM in using this button

33. Effects 'FX' On/Off

Use this button to turn the main effects on (illuminated) of Off.

34. Effects Cue

This button gives a pre-fade indication of the selected effect in the headphones prior to the user switching the effects on using the Effects ON/OFF button (33).

35. Effects Selector Switch

This switch is used to select the desired effect choose between:

Echo – This will give a delay-based effect in which copies of the music are heard trailing off to silence; similar to shouting from a mountaintop and hearing your voice repeat.

Auto Pan – This will move the stereo sound automatically from the left to the right speaker repeatedly.

Flanger – This is an effect that generates a swirling sound by adding a slightly delayed copy of the signal in which the copy's delay time fluctuates.

Manual Filter – The Filter effect removes certain frequencies from the music. Use the Time and Level/Depth knobs to manually fade through the removal of each frequency.

Auto Filter - The Filter effect removes certain frequencies from the music automatically.

Reverb – This is an effect in which the ambience of a physical space is simulated.

Trans – This effect gives the impression of the sound dropping out, making it stutter.

Pitch Shift – This effect allows you to increase or decrease the pitch of the music without increasing or decreasing the tempo.

36. Input Select Switch

This switch allows the user to select the input source for the effects to be added to.

37. Level/Depth Control

This rotary knob is used to adjust the 'Y Parameter' (mix ratio, resonance or feedback) of the selected effect.

38. Time Array Control

This rotary knob is used to adjust the 'X Parameter' (Time) of the selected effect.

39. LCD Display Screen

This screen gives the user a visual display of the selections that have been made within the DSP module.

Working from the top left hand corner it shows the input that is selected, the effect that is selected, the BPM of the track playing, the 'X Parameter' and finally the 'Y Parameter'.

40. Beat-Sync Select

These buttons are used to select which beat the effect will be on i.e. if the ½ button is selected the effects time parameter will match in time with the music every 2 beats.

X-Fade Effects Section

41. Echo Select

This button will assign an echo effect to the crossfade, so if the music assigned to X-Fade 'B' is playing moving the x-fade to the left will take a sample of the music playing add an echo and fade it into the music playing on X-Fade 'A'.

42. Platter Effect

This button will assign a platter effect to the crossfade, so if the music assigned to X-Fade 'B' is playing moving the X-Fade to the left will give the same effect as switching a turntable off as the fader is moved across the music's pitch will drop.

43. Stutter Effect

This button will assign a stutter effect to the crossfade, so if the music assigned to X-Fade 'B' is playing moving the x-fade to the left will take a sample and stutter it the more the X-Fade is moved to the left the faster the stutter will become.

44. X-Fader Effects Select Switch

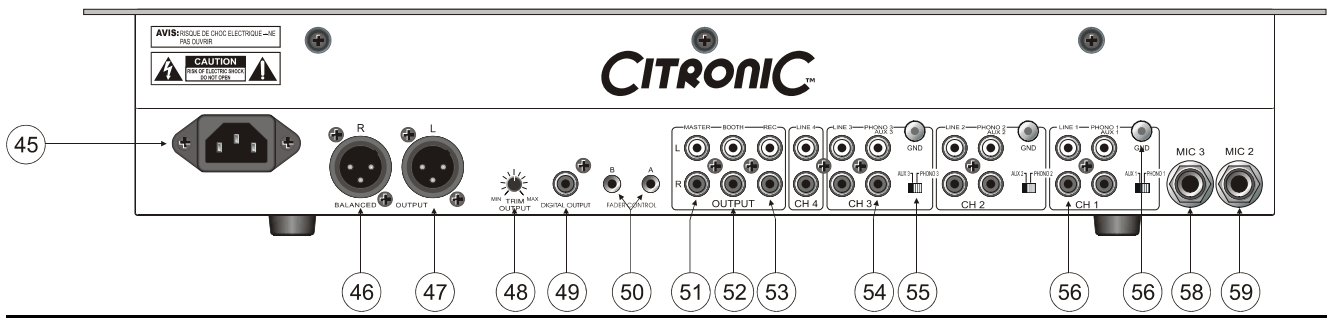
This switch is used to enable the X-Fade effects:

X-Fader – When the switch is in the X-Fader position the effects will be assigned to the crossfader as explained in 41, 42 & 43).

Off – this disables the X-Fader effects

Auto – This enables the X-fade effects to be activated in synchronisation with the Beat Sync Select buttons (40).

Assign the crossfade (e.g. CH1 – X-Fade A and CH4 – X-Fade B) with the crossfader in position A or B press the desired effect button (41, 42 or 43) the effect will then be played in the time selected by the Beat Sync Select buttons (40) once the effect is complete the output will automatically change to the opposite channel of the crossfade without the crossfade physically being moved.



Rear Panel Section

45. AC Mains Socket

The SM-FX500 is supplied with an IEC type mains lead with a 3A fuse.

46 & 47. Master Balanced Outputs

Main stereo program output provided by 3 pin Male XLR sockets:

Output wiring (Balanced)

Pin 1 - Ground

Pin 2 - Positive

Pin 3 - Negative

(Unbalanced)

- Ground (sleeve)

- Positive

- Connect to Ground

- 0dB (775mV)

- Minimum Load 600 Ohm

Nominal Output Level:

Balanced & Unbalanced

Impedance:

Output <50 Ohm

48. Output Trim

This knob can be used to decrease the master output to protect the connected system from excessive input.

49. Digital Output

This RCA Jack provides digital output data for digital recording.

50. Fader Control Connectors

These 3.5mm stereo mini cord jacks are used to connect to a compatible CD-Player i.e. CD-6 & CD-S6 allowing the function of fader start (29).

51. Master Unbalanced Outputs

Main stereo program output provided by standard unbalanced phono sockets:

Level = 0dB (775mV)

Output Impedance = <50 Ohm

Load Impedance (MIN) = 5K Ohm

52. Booth Output

Stereo program output that is not affected by the master level control, design for monitoring in the DJ booth.

Level = 0dB (775mV)

Output Impedance = <50 Ohm

Load Impedance (MIN) = 5K Ohm

53. Record Output

Output for recording is provided by standard unbalanced RCA sockets at a level of 380mV RMS.

54. Phono/Aux Inputs

These Stereo unbalanced RCA jack inputs are for a Phono (RIAA) or Aux line level (selectable)

55. Phono/Aux Select Switch

This switch selects whether the input (54) is for Phono (Turntables) or Aux line level (CD-Player etc)

56. Line Inputs

These stereo inputs are used for any line level device such as a CD-Player.

57. Earth Stud

Star point earth connection for turntable ground wires to prevent hum.

58. Microphone 3 Input

This 1/4" jack input is for the 3rd microphone which is selectable on music channel 4

59. Microphone 2 Input

This 1/4" jack input is for the 2nd microphone which has a separate gain (6) and a shared EQ with Mic 1

Technical Specification

Parameter	Mic 1	Mic 2/3	Phono	CD/Line	Aux
Sensitivity	-55.4dBV (1.7mV)	-55.4dBV (1.7mV)	-49.4dBV (3.4mV)	-9.4dBV (340mV)	-9.4dBV (340mV)
Input Impedance	2.2k	3K	47K	20K	47K
S/N Ratio*	-60dB	-60dB	-64dB	-82dB**	-82dB**
T.H.D.***				<0.05%	<0.05%

* Measured 0dBV, 1KHz, max Gain

** Measured with effects on

***Measured 0dBV, 25-20KHz, Max Gain

Microphone Equalisation

Hi	=	±12dB @ 13KHz
Mid	=	±12dB @ 1KHz
Lo	=	±12dB @ 70Hz
MicrophoneTalkover	=	-14dB, ±1.5dB

Music Channel Equalisation

Hi	=	+ 10dB @ 13KHz - 30dB @ 13KHz
Mid	=	+ 10dB @ 1KHz - 30dB @ 1KHz
Lo	=	+ 10dB @ 70Hz -30dB @ 70Hz

Outputs

Balanced Master XLR	=	9.5dBV (3.5dBV single to GND)/200Ω
Unbalanced Master phono	=	3.8dBV (1.55V)/100Ω
Digital Output	=	0.5V/75Ω
Headphones	=	3V @ 32 Ohms
Power Consumption	=	35VA max

Weights & Dimensions

Width	=	482mm(19")
Height	=	221mm(5U)
Depth	=	87.5mm
Weight	=	5.25Kg

Cutout Required

Width	=	442mm
Height	=	215mm

Power Requirements

Power Supply	=	AC240, 50Hz
--------------	---	-------------

N.B. Citronic reserves the right to alter these specifications at any time and for any reason without liability. Errors and Omissions Excepted.

CD-6 Ultima Dual CD-Player – 170.651

The new CD-6 Ultima dual CD-Player is the ultimate DJ machine, with built in DSP technology the interactive touch sensitive jog wheels allows you to scratch in real time just like vinyl. The unit also has built in effects allowing the creative DJ to open a whole new world of possibilities, along with all the standard features you would expect from today's CD-Player making the CD-6 Ultima an awesome mixing machine.

Features

- Interactive Touch Sensitive Jog Wheels
- Effects – Echo, Filter, Brake, Flanger, Phase, Pan, Transform
- 10 Seconds of Anti-Shock Memory Per Deck
- Instant Start
- Seamless Loop
- Pitch Range Selectable ± 4 , 8, 16 & 100%
- Auto/Manual BPM (effects Linked)
- Reverse Play
- Master Tempo
- 3 Memory banks for Sampler & Cue
- S/PDIF Digital Audio RCA Coaxial Output
- Relay Play Allows Consecutive Playback between Two Decks
- Single/Continuous Play
- Selectable Elapsed, Remain and Total Time Display
- Auto Cue Function
- 6 Effect-sync Parameter Sets
- Volume Balance Between Music & Sampler

Technical Specification

Power Source:	AC 230V, 50Hz, 25W
Dimensions:	Main Unit: 482(W) x 262(D) x 88.8(H)mm Control Unit: 482(W) x 177(D) x 65.5(H)mm
Weight:	Main Unit: 5.6Kg Control Unit: 3kg



To see more products in the range visit....

www.citronic.com

CITRONIC™