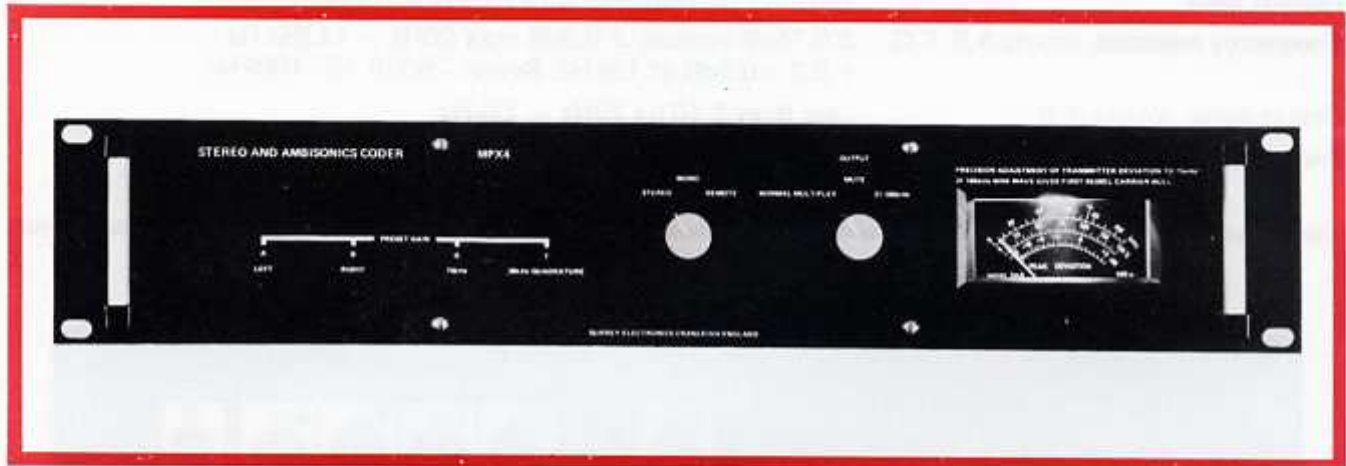


# STEREO AND AMBISONICS CODER – MPX4

- HIGH PERFORMANCE CODER
- CLEAN OUTPUT SPECTRUM
- SILENT PILOT FADE-UP AND FADE-DOWN
- PEAK DEVIATION METER AND BESSEL NULL OSCILLATOR



MPX4 incorporates a thirty-second order Walsh wave generator which allows digital synthesis of the 19kHz pilot signal and other signal components without unwanted low order harmonics. This results in less stringent requirements for the output filtering and the resultant low phase and amplitude ripple contribute to the very high and stable channel separation figures. In addition to stereo the unit will code 38kHz quadrature (Ambisonic T, front/back) and 76kHz suppressed carrier (Ambisonic Q, height) as well as accepting wideband and Radio Data System inputs.

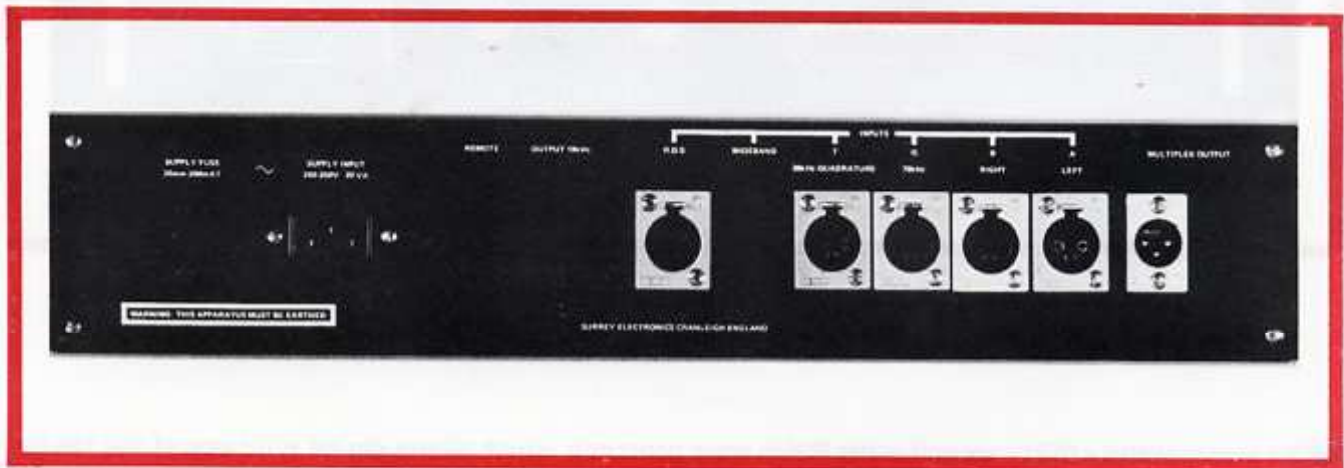
There are several unique features in the MPX4 which allow the best to be achieved from any fm transmission system. An internal oscillator produces a low distortion peak level sine wave at 31.185kHz which provides the first Bessel carrier null at 75kHz deviation and allows precision setting of the transmitter modulator based on fundamental principles. The illuminated deviation meter on the front panel monitors the bipolar true peak amplitude of the composite multiplex output signal.

Mono or stereo selection can be made remotely or with the front panel switch and the 19kHz pilot signal fades up and down, instead of switching, and allows completely clickless change-over between modes. The essential 15kHz brick wall filters on all audio inputs are group delay compensated and this, together with an exceptional in band ripple of  $\pm 0.15\text{dB}$ , provides unusually good preservation of waveshape.

The audio inputs are a truly floating electronic design, as is the multiplex output, and balanced or unbalanced sources and loads may be connected. The signal to noise ratio of the unit is such as to justify use with fm modulators having a very low phase noise specification. MPX4 is mains powered and meets IEC65-2, BS415 safety requirements.

## SPECIFICATION

<b>Inputs</b> , electronically balanced, floating	XLR 3 pole female
<b>Input impedance and sensitivity</b>	20kOhm. Adjustable +6/+11dBV.7 for peak level
<b>Line balance</b> , 20Hz – 20kHz	Better than –60dB from 600Ohm source
<b>Common mode rejection</b> , 20Hz – 20kHz	Better than –45dB
<b>Output</b> , electronically balanced, floating	XLR 3 pole male, signal polarity non-inverting
<b>Output level</b>	+8dBV.7 corresponding to 75kHz deviation
<b>Frequency response</b> , inputs A,B,T,Q	$\pm 0.15$ dB typical, $\pm 0.3$ dB max 20Hz – 14.95kHz + 0.3/–0.5dB at 15kHz. Below –60dB 16–100kHz
<b>Group delay</b> , inputs A,B	Less than $\pm 10 \mu$ s 20Hz – 13kHz
<b>Pre-emphasis</b>	50 $\mu$ s (75 $\mu$ s U.S.A., Japan)



<b>Pilot frequency and amplitude</b>	19kHz $\pm 1$ Hz; $-20.9 \pm 0.3$ dB ref. 75kHz deviation (6.75kHz)
<b>Suppression of 38kHz carrier</b>	Below –55dB, with or without modulation
<b>Sideband, carrier and pilot harmonics</b>	Below –65dB; Below 80dB above 180kHz
<b>Crosstalk between A and B</b>	Below –66dB at 1kHz; Below –50dB 20Hz – 15kHz
<b>Total harmonic and beat tone distortion</b> A,B,M or S overdriven 3dB, 20Hz – 15kHz	Below –55dB
<b>Signal to noise</b> , reference decoder, 50 $\mu$ s de-emphasis, stereo	82dB CCIR 468–2 weighting and peak meter
<b>Peak Deviation Meter— rise time response</b> to isolated bursts of sine wave whose steady state amplitude deflects to 0dB, 75kHz	5, 10 or 100ms of 5kHz $-0.5 \pm 0.5$ dB 250 $\mu$ s of 20kHz $-3 \pm 0.75$ dB 100 $\mu$ s of 50kHz $-8 \pm 1.0$ dB
<b>Peak Deviation Meter— fallback time</b>	8.7dB/s
<b>31.185kHz oscillator</b> , frequency and amplitude stability	$\pm 2\%$ , $\pm 0.2$ dB
<b>Supply input</b>	IEC connector 90–120V or 200–250V 50–60Hz, 15VA
<b>Safety</b>	Complies with IEC65–2, BS415
<b>Dimensions and weight</b>	W483mm, H 88mm, D 300mm; 3.5kg
2.5 metres supply lead to BS6500 with IEC connector supplied along with instructions and servicing details.	