

BA712/713 INFORMATIONGENERAL

BA712 and BA713 are fixed together to form a sandwich assembly at the top end of each channel module. They select and amplify the microphone, line, or tape inputs up to the nominal -10dBu level used prefade. The assembly also regulates the power supplies for the whole channel module, RF filters each input, and has a phase inversion facility.

USER CONTROLS

Mic/Line/Tape input selection, Phase, Mic gain (20dB to 80dB in 6dB steps). Gain Trim (0dB \pm 10dB continuously variable).

DETAIL

SEE ET10207 (Circuit Diagram) AND EB20364
(Channel module block diagram)

The upper left-hand part of EB20364 shows the major functions of the BA712/713 assembly in relation to the rest of the channel strip. The circuit diagram ET10207 shows both PCB's (enclosed in chain-dotted line) and their interconnecting flexistrip.

Direct connections between connectors on the PCB are shown as "tie lines" in the bottom left-hand table, if they do not involve any circuitry.

BRIEF DESCRIPTION

All three inputs (Microphone, Line, and Tape) are received from XLR connectors on a bracket at the top of the channel strip. They each pass through an L-C RF filter and into an input amplifier. The microphone amplifier (see below) has variable gain from 10dB to 70dB in 6dB steps, while the line and tape amplifiers (see below) have fixed gains.

Microphone or Line amplifier outputs are selected by S1 ("LINE") on BA712 the chosen signal passing through the \pm 10dB "TRIM" circuit consisting of RV1, R1, and R2 on BA713 (which gives an attenuation of 0dB to -20dB with -10dB at 50% rotation) followed by IC1c on BA712 (which gives 10dB of gain). Trim (from IC1c) or Tape outputs are selected by S3 ("TAPE") which is mechanically interlocked with S1 to give the following:-

Both "LINE" and "TAPE" unpressed	: Mic selected
"LINE" only pressed	: Line selected
"TAPE" only pressed	: Tape selected
"LINE" and "TAPE" both pressed (interlock defeated)	: Tape selected

From S3 the signal goes directly to S4 ("PHASE") and to a phase inverting amplifier (IC1b) which is also connected to S4. With "PHASE" unpressed the assembly has non-inverted output, when pressed the output is inverted.

The BA712/713 main output signal is taken from S4 and is called; "CHANNEL TO FILTERS". The output of the Tape input amplifier (IC1a) is also sent to the filters ("TAPE O/P TO FILTERS SWITCH") and to the console track meters ("TAPE O/P TO METERS").

MICROPHONE INPUT AMPLIFIER

This consists of a 10dB step-up transformer (T1 on BA712) followed by a non-inverting amplifier (IC1 on BA713) with switched gain. The transformer input is balanced and floating and has phantom power applied from a +48V supply via two 1% high stability resistors R1 and R2 on BA712. Input impedance is $1K2 \pm 10\%$ from 40Hz to 15kHz. IC1 is a high performance operational amplifier with D.C. operating conditions set by R3 and R4, and A.C. gain set by the switched potentiometer chain formed by the 11 - position S1, RP1, and RP2, all on BA713. RP1 and RP2 each contain precision 0.1% ratio-matched resistors ensuring accurate and reliable gain settings. S1 selects what proportion of the output signal is fed back to the op amp from the RP1/2 resistor string and thus sets the gain between 0dB and 60dB. Taking into account the transformer voltage gain and the subsequent 10dB gain in the channel strip, the microphone amplifier has a gain range of +20 to +80dB.

LINE AND TAPE INPUT AMPLIFIERS

These are electronically balanced input amplifier (IC1a and d on BA712) with transient overvoltage protection provided by four diodes on each. Gain is -10dB to bring the level down to that required prefade in the channel strip. The Line input has an alternative -14dB gain setting selected by a DIL switch on the PC board (S2 on BA712). Precision 0.1% ratio-matched resistor packs RP1, 2, 3 on BA712 are used to assure the performance of these amplifiers.

POWER REGULATORS

Integrated three-terminal devices (IC2, 3 on BA712) are used to regulate the raw +22V input power to +18V at up to 500mA for the BA712/713 assembly and the rest of the channel strip. C17 and 18 ensure stability, D9, 10 prevent reversed output polarities under fault conditions, R18, 19 and C15, 16 improve noise performance. IC2 and 3 are heat-sunk onto the XLR bracket.

D.C. SUPPLIES

BA712/713 runs from +22V unregulated power, and also uses +48V regulated power for phantom powering microphones.

TEST POINTS

Test points are provided as follows on BA712:

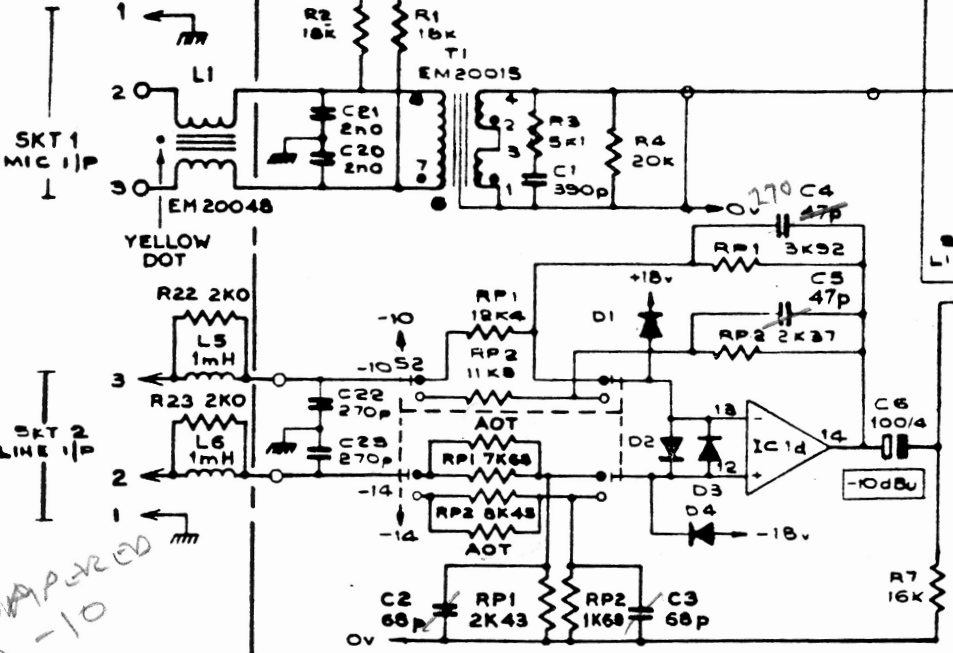
TP1	Regulated +18V
TP2	0V reference
TP3	Regulated -18V
TP4	"TAPE OUTPUT" signal
TP5	Main "CHANNEL" output signal

Chip

PHANTOM CONN. 48V SUPPLY IN

BA712

FSP1 FLEX STRIP



JUMPED TO -10

TIE LINES

FUNCTION	PL1	ST1
CH FROM FILTERS	10	5
FILTER IN MULTITRACK	9	6
LED ANODES	8	7
MIXDOWN FROM FILTERS	7	8
FILTER LEDS COMMON	6	9
CH POST INS	5	10
MODE SELECT		

SKT 1 LINE

SWITCH METALV

PCB PILLAR

CAPTIVE SCREW

SWITCH BRACK

-20dBu

-10dBu

SKT 3 TAP

SKT 4 TAP

