

TEAC®

SERVICE MANUAL

EU-66ST

66cm CTV

MODEL: EU-51/80 ST
PROBLEM: Power supply problem

File: EU51-80 chopper tb.doc

The chopper transistor Q802 is damaged as a consequence of a fault in D816. This problem normally occurs when a diode type UF5407 is used in the position D816.

Instructions

Replace damaged components. Use only a diode type BMY36D for the position D816.

Regards,

Alcides Berta
TEAC Australia Pty Ltd.

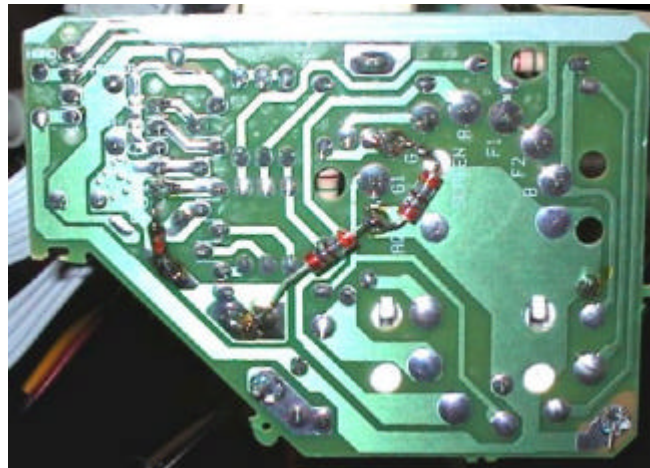
MODEL:	EU 51 / 66 / 68 / 80 ST
PROBLEM:	CRT output IC protection

File: EU51-80 spgap tb.doc

This is a tentative solution to avoid damages to the output video amplifier IC901 (TDA6107) caused by electric discharges between electrodes of the CRT. The modification should be applied to units found with damaged video amplifier IC.

Instructions

Add the following components to the CRT board. Refer to the figure and table below for parts location and specifications.



<i>Components information</i>					
<i>Item</i>	<i>Part Number</i>	<i>Description</i>	<i>From</i>	<i>To</i>	<i>Comments</i>
1	EUSPARK	300V Spark gap	Point G	Aqua	Spark gap devices have no polarity
2	EUSPARK	300V Spark gap	Ground	Aqua	
3	QDTBOUZ6R2BS	Zenner diode 6V2 400 mW	1-PL901 (Cathode)	Ground (Anode)	

Regards,

Alcides Berta
TEAC Australia Pty Ltd.

SERVICE MANUAL

TELEVISION COLOUR

CHASSIS 11AK19

FOR ALL MODELS

DO NOT CHANGE ANY MODULE UNLESS THE SET IS SWITCH OFF

The mains supply side of the switch mode power supply transformer is live.

Use an isolating transformer.

The receivers fulfill completely the safety requirements.

Safety precautions:

Servicing of this TV should only be carried out by a qualified person.

- Components marked with the warning symbol on the circuit diagram are critical for safety and must only be replaced with an identical component.

- Power resistor and fusible resistors must be mounted in an identical manner to the original component.

- When servicing this TV, check that the EHT does not exceed 26kV.

TV Set switched off:

Make short-circuit between HV-CRT clip and CRT ground layer.

Short C804 (150mF) before changing IC802 or other components in primary side of SMPS.

Measurements:

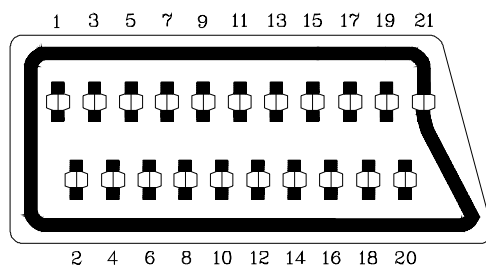
Voltage readings and oscilloscope traces are measured under following conditions.

Antenna signal 60dB from colourbar generator. (100% white, 75% colour saturation)

Brightness, contrast, colour set for a normal picture.

Mains supply, 220VAC, 50Hz.

PERI-TV SOCKET



SCART 1 (SC050)

1	Audio right output	0.5Vrms / 1K
2	Audio right input	0.5Vrms / 10K
3	Audio left output	0.5Vrms / 1K
4	Ground AF	
5	Ground Blue	
6	Audio left input	0.5Vrms / 10K
7	Blue input	0.7Vpp / 75ohm
8	AV switching input	0-12VDC /10K
9	Ground Green	
10	-	
11	Green input	0.7Vpp / 75ohm
12	-	
13	Ground Red	
14	Ground Blanking	
15	Red input	0.7Vpp / 75ohm
16	Blanking input	0-0.4VDC, 1-3VDC / 75ohm
17	Ground CVS output	
18	Ground CVS input	
19	CVS output	1Vpp / 75ohm
20	CVS input	1Vpp / 75ohm
21	Ground	

SCART 2 (SC051)

1	Audio right output	0.5Vrms / 1K
2	Audio right input	0.5Vrms / 10K
3	Audio left output	0.5Vrms / 1K
4	Ground AF	
5	Ground Blue	
6	Audio left input	0.5Vrms / 10K
7	Blue input	0.7Vpp / 75ohm
8	AV switching input	0-12VDC /10K
9	Ground Green	
10	-	
11	-	
12	-	
13	Ground Red	
14	Ground Blanking	
15	-	
16	-	
17	Ground CVS output	
18	Ground CVS input	
19	CVS output	1Vpp / 75ohm
20	CVS input	1Vpp / 75ohm
21	Ground	

**** ALL WIRES TO FRONT PANEL & LOUD SPEAKERS MUST BE ZIP-TIED TOGETHER AFTER ANY KIND OF REPAIRMENT**

1. INTRODUCTION

11AK19 is a 90ø and 110ø chassis capable of driving 20-21",24",25",28-29",32",33" tubes at appropriate currents.

The chassis is capable of working in both PAL and SECAM. The sound system is capable of giving 6watts

RMS output into a load of 8ohms.

One 8 page simple TELETXT, TOPTXT and FASTEXT is provided.

The chassis is equipped with 21-pin scart connectors which can accept via scart the SVHS format from VCRs so equipped.

2. SMALL SIGNAL PART WITH TDA884X

The TDA8840/8842/8844 combine all small signal functions required for a colour TV receiver, except tuning.

2.1. Vision IF amplifier

The IF-amplifier contains 3 AC-coupled control stages with a total gain control range which is higher than 66dB.

The sensitivity of the circuit is comparable with that of modern IF-IC' s. The video signal is demodulated by means of a PLL carrier regenerator. This circuit contains a frequency detector and a phase detector. The AFC output is obtained by using the VCO control voltage of the PLL and can be read via the I²C-bus. For fast search tuning systems the window of the AFC can be increased with a factor 3. The setting is realised with the AFW bit.

Depending on the type the AGC-detector operates on top-sync level (single standard versions) or on top sync and top white-level (multi standard versions). The demodulation polarity is switched via the I²C-bus. The AGC detector time-constant capacitor is connected externally. This mainly because of the flexibility of the application. The time-constant of the AGC system during positive

modulation is rather long to avoid visible variations of the signal amplitude. To improve the speed of the AGC system a circuit has been included which detects whether the AGC detector is activated every frame period. When during 3 frame periods no action is detected the speed of the system is increased. For signals without peak white information the system switches automatically to a gated black level AGC. Because a black level clamp pulse is required for this way of operation the circuit will only switch to black level AGC in the internal mode.

The circuits contain a video identification circuit which is independent of the synchronisation circuit. Therefore search tuning is possible when the display section of the receiver is used as a monitor. The ident output is supplied to the tuning system via the I²C-bus. The video ident circuit can be made less sensitive by means of the STM bit. This mode can be used during search tuning to avoid that the tuning system will stop at very weak input signals.

2.2. Video Switches

The circuits have two CVBS inputs (internal and external CVBS) and Y/C input. When the Y/C input is not required the Y input can be used as third CVBS input. The selection of the various sources is made via the I²C-bus. The circuit has one CVBS output.

2.3. Sound Circuit

The sound band pass and trap filters have to be connected externally. The filtered intercarrier signal is fed to a limiter circuit and is demodulated by means of a PLL demodulator. This PLL circuit tunes itself automatically to the incoming carrier signal so that no adjustment is required.

The volume is controlled via the I²C-bus. The deemphasis capacitor has to be connected externally. The non-controlled audio signal can be obtained from this pin. The FM demodulator can be muted via the I²C-bus. This function can be used to switch-off the sound during a channel change so that high output peaks are prevented. The TDA8840/8842 contain an automatic volume levelling (AVL) circuit which automatically stabilises the audio output signal to a certain level which can be set by the viewer by means of the volume control. This function prevents big audio output fluctuations due to variations of the modulation depth of the transmitter. The AVL function can be activated via the I²C-bus.

2.4. Synchronisation circuit

The sync separator is preceded by a controlled amplifier which adjusts the sync pulse amplitude to a fixed level. These pulses are fed to the slicing stage which is operating at 50% of the amplitude. The separated sync pulses are fed to the first phase detector and to the coincidence detector. This coincidence detector is used to detect whether the line oscillator is synchronised and can also be used for transmitter identification. The first PLL has a very high statical steepness so that the phase of the picture is independent of the line frequency.

The horizontal output signal is generated by means of an oscillator which is running at twice the line frequency. Its frequency is divided by 2 to lock the first control loop to the incoming signal. The time-constant of the loop can be forced by the I²C-bus (fast or slow). If required the IC can select the time-constant depending on the noise content of the incoming video signal.

To protect the horizontal output transistor, the horizontal drive is immediately switched off when a power-on-reset is detected.

The drive signal is switched-on again when the normal switch-on procedure is followed.

Via the I²C-bus, adjustments can be made of the horizontal and vertical geometry. The vertical sawtooth generator drives the vertical output drive circuit which has a differential output current. For the EW drive a single ended current output is available.

When the horizontal scan is reduced to display 4 : 3 pictures on a 16 : 9 picture tube an accurate video blanking can be switched on to obtain well defined edges on the screen.

Overvoltage conditions can be detected via the EHT tracking pin. When an overvoltage condition is detected the horizontal output drive signal will be switched-off via the slow stop procedure but it is also possible that the drive is not switched-off and that just a protection indication is given in the I²C-bus output byte. The choice is made via the input bit PRD.

2.5. Chroma and Luminance processing

The circuits contain a chroma bandpass and trap circuit. The filters are realised by means of gyrator circuits and they are automatically calibrated by comparing the tuning frequency with the X-tal frequency of the decoder.

The luminance delay line and the delay for the peaking circuit are also realised by means of gyrator circuits.

The centre frequency of the chroma bandpass filter is switchable via the I²C-bus so that the performance can be optimised for "front-end" signals and external CVBS signals.

During SECAM reception the centre frequency of the chroma trap is reduced to get a better suppression of the SECAM carrier frequencies.

2.6. Colour Decoder

The decoder contains an alignment-free X-tal oscillator, a killer circuit and two colour difference demodulators. The 90° phaseshift for the reference signal is made internally.

The IC contains an automatic colour limiting (ACL) circuit which prevents that oversaturation occurs when signals with a high chroma-to-burst ratio are received. The ACL circuit is designed such that it only reduces the chroma signal and not the burst signal. This has the advantage that the colour sensitivity is not affected by this function.

The base-band delay line is integrated in the PAL/SECAM IC's.

The demodulated colour difference signals are internally supplied to the delay line. The matrixed signals are externally available.

The colour difference matrix switches automatically between

PAL/SECAM and NTSC, however, it is also possible to fix the matrix in the PAL standard.

Which colour standard the IC can decode depends on the external X-tals. The X-tal to be connected to pin 34 must have a frequency of 3.5 MHz (NTSC-M, PAL-M or PAL-N) and pin 35 can handle X-tals with a frequency of 4.4 and 3.5 MHz. To prevent calibration problems of the horizontal oscillator the external switching between the 2 X-tals should be carried out when the oscillator is forced to pin 35. For a reliable calibration of the horizontal oscillator it is very important that the X-tal indication bits (XA and XB) are not corrupted. For this reason the X-tal bits can be read in the output bytes so that the software can check the I²C-bus transmission.

2.7. RGB output circuit and black-current stabilisation

The colour-difference signals are matrixed with the luminance signal to obtain the RGB-signals. The TDA 884X device has one linear RGB input. This RGB signal can be controlled on contrast and brightness.

The output signal has an amplitude of about 2 volts black-to-white at nominal input signals and nominal settings of the controls.

To increase the flexibility of the IC it is possible to insert OSD and/or teletext signals directly at the RGB outputs.

This insertion mode is controlled via the insertion input (pin 26 in the S-DIP 56- and pin 38 in the QFP-64 level). This blanking action at the RGB outputs has some delay which must be compensated externally.

To obtain an accurate biasing of the picture tube a "Continuous Cathode Calibration" circuit has been developed.

This function is realised by means of a 2-point black level stabilisation circuit.

When the TV receiver is switched-on, the RGB output signals are blanked and the black current loop will try to set the right picture tube bias levels. Via the AST bit a choice can be made between automatic start-up or a start-up via the m-processor.

3. TUNER

Either a PLL or a VST tuner is used as a tuner.

UV1316 (VHF/UHF) is used as a PLL tuner. For only PALM/N, NTSC M applications UV 1336 is used as the PLL tuner. UV 1315 (VHF/ UHF) is used as a VST Tuner.

Channel coverage of UV1316:

BAND	OFF-AIR CHANNELS		CABLE CHANNELS	
	CHANNELS RANGE (MHz)	FREQUENCY	CHANNELS	FREQUENCY RANGE (MHz)
Low Band	E2 to C	48.25 to 82.25 (1)	S01 to S08	69.25 to 154.25
Mid Band	E5 to E12	175.25 to 224.25	S09 to S38	161.25 to 439.25
High Band	E21 to E69	471.25 to 855.25 (2)	S39 to S41	447.25 to 463.25

(1). Enough margin is available to tune down to 45.25 MHz.

(2). Enough margin is available to tune up to 863.25 MHz.

Noise	Typical	Max.	Gain	Min.	Typical	Max.
Low band	: 5dB	9dB	All channels	: 38dB	44dB	52dB
Mid band	: 5dB	9dB	Gain Taper (of-air channels)	: -	-	8dB
High band	: 6dB	9dB				

Channel Coverage UV1336:

BAND	CHANNELS	FREQUENCY RANGE (MHz)
Low Band	2 to D	55.25 to 139.25
Mid Band	E to PP	145.25 to 391.25
High Band	QQ to 69	397.25 to 801.25

Noise is typically 6dB for all channels. Gain is minimum 38dB and maximum 50dB for all channels.

Channel Coverage of UV1315:

BAND	OFF-AIR CHANNELS		CABLE CHANNELS	
	CHANNELS	FREQUENCY RANGE (MHz)	CHANNELS	FREQUENCY RANGE (MHz)
Low Band	E2 to C	48.25 to 82.25 (1)	S01 to S10	69.25 to 168.25
Mid Band	E5 to E12	175.25 to 224.25	S11 to S39	231.25 to 447.25
High Band	E21 to E69	471.25 to 855.25 (2)	S40 to S41	455.25 to 463.25

(1). Enough margin is available to tune down to 45.25 MHz.

(2). Enough margin is available to tune up to 863.25 MHz.

Noise	Typ.	Max.	Gain	Min.	Typ.	Max.
Low band	: 6dB	9dB	All Channels	38dB	44dB	50dB
Mid band	: 6dB	10dB	Gain Taper	-	-	8dB
High band	: 6dB	11dB	(off-air channels)			

4.VIDEO SWITCH TEA6415C

In case of three or more external sources are used, the video switch IC TEA6415C is used. The main function of this device is to switch 8 video input sources on the 6 outputs.

Each output can be switched on only one of each input. On each input an alignment of the lowest level of the signal is made (bottom of sync. top for CVBS or black level for RGB signals).

Each nominal gain between any input and output is 6.5dB. For D2MAC or Chroma signal the alignment is switched off by forcing, with an external resistor bridge, 5VDC on the input. Each input can be used as a normal input or as a MAC or Chroma input (with external resistor bridge). All the switching possibilities are changed through the BUS.

Driving 75ohm load needs an external resistor.

It is possible to have the same input connected to several outputs.

5. AM DEMODULATOR TDA9830

The TDA9830 is designed for AM-sound demodulation used in L and L' standard.

Sound IF Input:

The sound IF amplifier consists of three AC-coupled differential amplifier stages each with approximately 20dB gain. At the output of each stage is a multiplier for gain controlling. The overall control range is approximately -6 to +60dB and the frequency response (-3dB) of the IF amplifier is approximately 6 to 70MHz. The steepness of gain control is approximately 10mV/dB.

IF AGC:

The automatic gain control voltage to maintain the AM demodulator output signal at a constant level is generated by a mean level detector. The AGC-detector charges and discharges the capacitor at pin 3 controlled by the output signal of the AM-demodulator compared to an internal reference voltage. The maximum charge/discharge current is approximately 5 mA.

AM-demodulator

The IF amplifier output signal is fed to a limiting amplifier (two stages) and to a multiplier circuit. However the limiter output signal (which is not any more AM modulated) is also fed to the multiplier, which provides AM demodulation (in phase demodulation). After lowpass filtering (fg @ 400kHz) for carrier rejection and buffering, the demodulator output signal is present at pin 6.

Audio Switch

This circuit is an operational amplifier with three input stages and internal feedback network determining gain (0dB) and frequency response (fg @ 700kHz). Two of the input stages are connected to pin 7 and pin 9, the third input stage to an internal reference voltage. Controlled by the switching pins 10 and 12, one of the three input stages can be activated and a choice made between two different AF signals or mute state. The selected signal is present at pin 8. The decoupling capacitors at the input pins are needed, because the internally generated bias voltage for the input stages must not be influenced by the application in order to avoid DC-plop in case of switching.

Reference Circuit:

This circuit is a band gap stabiliser in combination with a voltage regulation amplifier, which provides an internal reference voltage of about 3.6V nearly independent from supply voltage and temperature. This reference voltage is filtered by the capacitor at pin 4 in order to reduce noise. It is used as a reference to generate all important voltages and currents of the circuit. For application in 12V power supply concepts, there is an internal voltage divider in combination with a Darlington transistor in order to reduce the supply voltage for all IC function blocks to approximately 6V.

6. DIGITAL TV SOUND PROCESSOR TDA9875

The TDA9875 is a single-chip Digital TV Sound Processor. Supported standards are M, B/G, D/K, I and L.

Description of the demodulator and decoder section:**SIF Input:**

Two input pins are provided, SIF1 e.g. for terrestrial TV and SIF2 e.g. for a satellite tuner. The selected signal is passed through an AGC circuit and then digitized by an 8-bit ADC operating at 24.576MHz.

AGC:

The gain of the AGC amplifier is controlled from the ADC output by means of a digital control loop employing hysteresis. The AGC has a fast attack behaviour to prevent ADC overloads and slow decay behaviour AGC oscillations. For AM demodulation AGC must be switched off.

Mixer

The digitized input signal is fed to the mixers, which mix one or both input sound carriers down to zero IF. A 24-bit control word for each carrier sets the required frequency.

FM and AM Demodulation

An FM or AM input signal is fed via a band-limiting filter to a demodulator that can be used for either FM or AM demodulation. Apart from the standard (fixed) de-emphasis characteristic, an adaptive de-emphasis is available for encoded satellite programs. A stereo decoder recovers the left and right signal channels from the demodulated sound carriers.

FM Identification:

The identification of the FM sound mode is performed by AM synchronous demodulation of the pilot signal and narrow-band detection of the identification frequencies. The result is available via the I²C-bus interface.

NICAM Demodulation:

The NICAM signal is transmitted in a DQPSK code at a bit rate of 728 kbit/s. The NICAM demodulator performs DQPSK demodulation and feeds the resulting bitstream and clock signal onto the NICAM decoder and, for evaluation purposes, to PCLK (pin 1) and NICAM (pin 2).

NICAM Decoder:

The device performs all decoding functions in accordance with the "EBU NICAM 728 specification". After locking to the frame alignment word, the data is descrambled by applying the defined pseudo-random binary sequence; the device will then synchronise to the periodic frame flag bit C0.

The status of the NICAM decoder can be read out from the NICAM status register by the user. The OSB bit indicates that the decoder has locked to the NICAM data. The VDSP bit indicates that the decoder has locked to the NICAM data and that the data is valid sound data.

7. SOUND OUTPUT STAGE TDA2614/TDA2615/TDA2616Q

TDA2614 is used as the AF output amplifier for mono applications. It is supplied by ±12VDC coming from a separate winding in the SMPS transformer. An output power of 2*6W (THD=0.5%) can be delivered into an 8ohm load.

TDA2615 is used as the AF output amplifier for stereo applications. It is supplied by ±12VDC coming from a separate winding in the SMPS transformer. An output power of 2*6W (THD=0.5%) can be delivered into an 8ohm load.

TDA2616Q is used as the AF output amplifier for stereo and dolby prologic applications. It is supplied by ±16VDC coming from a separate winding in the SMPS transformer. An output power of 2*12W (THD=0.5%) can be delivered into an 8ohm load.

8. VERTICAL OUTPUT STAGE WITH TDA8351/8356

The TDA8351/8356 vertical deflection circuit can be used in 90° and 110° deflection systems with field frequencies from 50 up to 120Hz. With its bridge configuration the deflection output can be DC coupled with few external components. Only a single supply voltage for the scan and a second supply for the flyback are needed. The TDA8356 is intended for 90° systems and the TDA8351 is intended for 110° systems.

The drive voltage is amplified by an amplifier and fed to two amplifiers, one is inverting and the other is a non inverting amplifier. The outputs (pins 7 and 4) are connected to the series connection of the vertical deflection coil and feedback resistor Rsense (R702//R703). The voltage across Rsense is fed via pin 9 to correction amplifier, to obtain a deflection current which is proportional to the drive voltage. The supply voltage for the TDA8351/8356 is 15VDC at pin 3. The supply voltage generator has a separate supply voltage of 45VDC at pin 6.

9. VIDEO OUTPUT AMPLIFIER TDA6107Q

The TDA6107Q consists of three monolithic video output amplifiers. The amplifier can be seen as an operational amplifier with negative feedback.

The advantage of negative feedback is that the amplifier characteristics do not play an important role up to certain frequencies. The internal flash diodes protect the amplifiers against flash over in the picture tube.

The only protections required at the cathode outputs are a flash resistor and a sparkgap.

The TDA6107Q has an internal thermal protection circuit which gives a decrease of the slew rate at high temperatures.

Furthermore, the device needs only one power supply voltage (Vdd).

In contrast to previous types of DMOS video amplifiers, all the external resistors (Rf, Ri and Ra) are integrated, so the gain is fixed and saves 9 resistors.

Furthermore, the reference voltage is integrated, it saves a resistor divider and a decoupling capacitor. So, the replacement value of the TDA6107Q is very high.

The TDA6107Q is provided with a black current data pin. Since TDA884X is used as drive device, no adjustments are required for gain and black setting, as the TDA884X has I²C white point adjustment and black current set-up.

10. SINGLE/MULTISTANDARD VIF/SIF-PLL and FM-PLL/AM DEMODULATOR TDA9818

The TDA9818 is an IC for multistandard vision IF signal processing, sound AM and FM demodulation.

It is a gain controlled wide band VIF-amplifier (AC-coupled). It is applicable for IF frequencies of 38.9 MHz, 45.75 MHz and 58.75 MHz. True synchronous demodulation is provided with active carrier regeneration. It has a VCO frequency which can be switchable between L and L accent (alignment external) picture carrier frequency.

The TDA9818 has a SIF input for single reference QSS mode (PLL controlled). SIF AGC detector is to provide gain controlled SIF amplifier. The AM demodulator is without extra reference circuit. The supply voltage is +5VDC at pin 21.

11. COMBFILTER SAA4961

The SAA 4961 is a one-chip, PAL/NTSC combfilter IC with internal delay lines, filters, clock control, synchronisation and signal switches. The combfilter function is realised in a switched capacitor technique, so it has time discrete but amplitude continuous processing.

The Y/CVBS input is first clamped and then fed to the delay-line and combfilter section via a low pass pre-filter.

This filter can be bypassed via the external LPF-on pin. This pin is internally pulled up, to put the filter default on. The Y/CVBS input is also fed to the sync separator, where horizontal and vertical reference pulses are made.

Bypass mode can be forced via BYP (pin 3). FSC (pin 1) is the subcarrier input which is connected to the colour decoder.

Input FSCSW pin indicates if fsc or 2*fsc is used.

The Sys1,2 pins (20, 23) indicate which system standard is processed. Sys2 is internally pulled up, Sys1 is internally pulled down. Therefore when the Sys1,2 inputs are left open, automatically PAL 4.43MHz is forced.

SAA4961 output pin 15 "CVBS" can be used for parallel-synced teletext decoders, to guarantee that the teletext display always has a correct timing relation with the main picture. Comb filter is disabled by setting SAA4961 pin 3 "BYP" high.

12. POWER SUPPLY (SMPS)

The DC voltages required at various parts of the chassis are provided by an SMPS transformer controlled by the IC MC44604 which is designed for driving, controlling and protecting switching transistor of SMPS. The transformer produces 150/115V for FBT input, ±14V for audio output IC, S+5V for microcontroller, +15V for vertical output (field scan) and +33V for tuner and some other ICs and transistors.

13. MICROCONTROLLER SDA525X

The device is TV TEXT tuning and control system based on the SDA 525X TV TEXT microcontroller. It is designed for a low cost mono TV-SET with analogue picture and sound control. Nevertheless the system offers an on screen display (OSD) and IR remote control of all functions.

SDA525X has the following features:

- Display of program number, channel number, TV standard, analogue values, sleep timer, parental control, and mute is done by OSD.
- Single LED for IR active, standby and on mode indication.
- 1 Control line to select external source.
- 3 Control lines for TV standard selection.
- Frequency synthesis tuning (62.5 kHz steps)
- 192 step fine tuning
- Channels corresponding to standards B/G, OIRT, L and I (I+)
- Mono sound control by analogue voltage
- System configuration with service mode

14. SERIAL ACCESS CMOS 8K (1024*8) EEPROM ST24C08

The ST24C08 is a 8Kbit electrically erasable programmable memory (EEPROM), organised as 4 blocks of 256*8 bits.

The memory is compatible with the I²C standard, two wire serial interface which uses a bi-directional data bus and serial clock.

The memory carries a built-in 4 bit, unique device identification code (1010) corresponding to the I²C bus definition.

This is used together with 1 chip enable input (E) so that up to 2*8K devices may be attached to the I²C bus and selected individually.

15. CLASS AB STEREO HEADPHONE DRIVER TDA1308

The TDA1308 is an integrated class AB stereo headphone driver contained in a DIP8 plastic package. The device is fabricated in a 1 mm CMOS process and has been primarily developed for portable digital audio applications.

16. SAW FILTERS

Saw filter type : Model:

G1965M	: PAL-SECAM B/G MONO
G3962M	: PAL-SECAM B/G GER&NIC STEREO, PAL I' NIC STEREO, INT-1
G1984	: PAL-SECAM B/G GER&NIC STEREO INT-2
J1951M	: PAL-I MONO
J3950M	: PAL-I NIC STEREO
J1956M	: PAL-I' MONO
K2955M	: PAL-SECAM B/G-D/K MONO, PAL-SECAM B/G-D/K-I', MONO, PAL-SECAM B/G-D/K-L MONO
K2958M	: PAL-SECAM B/G-D/K (38) MONO
K2962M	: PAL-SECAM B/G-L/L' MONO
G3957M	: PAL-SECAM B/G-L/L' GER&NIC BG/L STEREO
K6256K	: PAL-SECAM B/G-D/K-I-L/L' MONO, PAL-SECAM B/G-D/K-I, L/L' GER&NIC BG/L STEREO, PAL-SECAM B/G-D/K-I-L/L' I, NICAM STEREO, PAL-SECAM B/G-D/K-I-L/L' GER&NIC I'-B/G-L, STEREO
K6259K	: PAL-SECAM B/G-D/K-I-M/N (EURO) MONO
M1963M	: PAL M/N MONO, NTSC M MONO, PAL M/N-NTSC M MONO

17. BTSC STEREO/SAP/DBX-DECODER and AUDIO PROCESSOR TDA9855

The TDA9855 is a BTSC stereo/SAP/dbx decoder and audio processor. It performs all functions to transform the composite baseband signal into the appropriate audio output signals to line out and to the loudspeaker output stages.

IC DESCRIPTIONS AND INTERNAL BLOCK DIAGRAM

- TDA8840/8842/8844
- TUNER (UV1315, UV1316, UV1336)
- TEA6415C
- TDA9830
- TDA2614/2615/2616Q
- TDA8351/8356
- TDA6107Q
- SAA4961
- MC44604
- SDA525X
- TDA9875
- TDA9818
- ST24C08
- TDA1308
- G1965M
- TDA9855

TDA8840/8842/8844:

The TDA884X is I²C-bus controlled single chip TV processor which is intended to be applied in PAL, NTSC, PAL/NTSC and multi-standard television receivers. These IC's are nearly pin compatible with the TDA837X TV processors but have a higher degree of integration because the delay line (TDA4665 function) and the SECAM decoder have been integrated. In addition to these functions some additional features have been added like "Continuous Cathode Calibration" (2-point black current loop which results in an accurate biasing of the 3 guns), adjustable luminance delay time, blue stretching and dynamic skin tone control.

Features:

- Vision IF circuit with PLL demodulator
- Alignment-free multi-standard FM sound demodulator (4.5 MHz to 6.5 MHz)
- Audio switch
- Flexible source selection with CVBS switch and Y(CVBS)/C input so that a comb filter can be applied
- Integrated chrominance trap circuit
- Integrated luminance delay line
- Asymmetrical peaking in the luminance channel with a noise coring function
- Black stretching of non-standard CVBS or luminance signals
- Integrated chroma band-pass filter with switchable center frequency
- Blue stretch circuit which offsets colours near white towards blue
- RGB control circuit with "Continuous Cathode Calibration" and white point adjustment
- Linear RGB inputs and fast blanking
- Possibility to insert a "blue black" option when no video signal is available
- Horizontal synchronisation with two control loops and alignment-free horizontal oscillator
- Vertical count-down circuit
- Vertical driver optimised for DC-coupled vertical output stages
- I²C-bus control of various functions
- Low dissipation (850 mW)

Functional Differences between the 8840/8842/8844:

IC VERSION (TDA)	8840	8842	8844
Multi-standard IF		X	X
Automatic Volume Limiting	X	X	
PAL Decoder	X	X	X
SECAM Decoder		X	X
NTSC Decoder		X	X
Dynamic Skin Control			X
Colour Matrix PAL/NTSC (Japan)		X	X
Colour Matrix NTSC Japan/USA			
YUV interface			X
Base-band delay line	X	X	X
Adjustable luminance delay time			X
Horizontal geometry			X
Horizontal and vertical zoom			X
Vertical scroll			X

PINNING

PIN VALUE

1. Sound IF input	: 1mVrms
2. External audio input	: 500mVrms
3. IF demodulator tuned circuit 1	
4. IF demodulator tuned circuit 2	
5. IF-PLL loop filter	: Min:32-Max:60 MHz
6. IF video output	: 4.7V (Negative Modulation), 2V (Positive Modulation)
7. Serial clock input	: Low level max:1.5 V, High level min 3.5V
8. Serial data input/output	: Low level max:1.5 V, High level min 3.5V
9. Bandgap decoupling	
10. Chrominance input (S-VHS)	: 1Vpp, Max:1.4Vpp
11. External CVBS/Y input	: 1Vpp, Max:1.4Vpp
12. Main supply voltage 1	: 8V, Min:7.2V, Max:8.8V
13. Internal CVBS input	: 1Vpp, Max:1.4Vpp
14. Ground 1	
15. Audio output	: 700mVrms, Min:500mVrms, Max:900mVrms
16. SECAM PLL decoupling	
17. External CVBS input	: Vpp, Max:1.4Vpp
18. Black-current input	: Amplitude of "low" reference current : 8mA Amplitude of "high" reference current : 20mA
19. Blue output	: 2Vpp
20. Green output	: 2Vpp
21. Red output	: 2Vpp
22. Beam current limiter input/V-guard input	
23. Red input for insertion	: 0.7Vpp, Max:0.8Vpp
24. Green input for insertion	: 0.7Vpp, Max:0.8Vpp
25. Blue input for insertion	: 0.7Vpp, Max:0.8Vpp
26. RGB insertion input	: Max:0.3V
27. Luminance input	: 1.4Vpp
28. Luminance output	: 1.4Vpp
29. (B-Y) signal output	: 1.05Vpp
30. (R-Y) signal output	: 1.05Vpp
31. (B-Y) signal input	: 1.05Vpp
32. (R-Y) signal input	: 1.05Vpp
33. Subcarrier reference output	: 3.58/4.43 MHz
34. 3.58 MHz crystal connection	
35. 4.43/3.58 MHz crystal connection	
36. Loop filter phase detector	
37. 2nd supply voltage 1	: 8V, Min:7.2V, Max:8.8V
38. CVBS output	: 1Vpp, Max:1.4Vpp
39. Decoupling digital supply	: 1.8V
40. Horizontal output	: Max: 0.3V
41. Flyback input/sandcastle output	: Min:100ma, Max:300mA
42. Phase-2 filter	: 150 ms/ms
43. Phase-1 filter	: ±0.9 kHz, Max: ±1.2 kHz
44. Ground 2	
45. East-west drive output	
46. Vertical drive A output	: 0.95mA
47. Vertical drive B output	: 0.95mA
48. IF input 1	
49. IF input 2	
50. EHT/overvoltage protection input	: Min:1.2V, Max : 2.8V
51. Vertical sawtooth capacitor	: 3Vpp
52. Reference current input	: 3Vpp
53. AGC decoupling capacitor	
54. Tuner AGC output	: Max:9V (Maximum tuner AGC Output voltage), 300mV (Output saturation voltage)
55. Audio deemphasis	: 500mVrms
56. Decoupling sound demodulator	

UV1315, UV1316, UV1336

General description of UV1315:

The UV1315 tuner belongs to the UV 1300 family of tuners, which are designed to meet a wide range of applications. It is a combined VHF, UHF tuner suitable for CCIR systems B/G, H, L, L', I and I'. The low IF output impedance has been designed for direct drive of a wide variety of SAW filters with sufficient suppression of triple transient.

Features of UV1315:

- Member of the UV1300 family small sized UHF/VHF tuners
- Systems CCIR: B/G, H, L, L', I and I'; OIRT: D/K
- Voltage synthesized tuning (VST)
- Off-air channels, S-cable channels and Hyperband
- Standardized mechanical dimensions and pinning
- Compact size

PINNING	PIN VALUE
1. Gain control voltage (AGC)	: 4.0V, Max:4.5V
2. Tuning voltage	
3. High band switch	: 5V, Min:4.75V, Max:5.5V
4. Mid band switch	: 5V, Min:4.75V, Max:5.5V
5. Low band switch	: 5V, Min:4.75V, Max:5.5V
6. Supply voltage	: 5V, Min:4.75V, Max:5.5V
7. Not connected	
8. Not connected	
9. Not connected	
10. Symmetrical IF output 1	
11. Symmetrical IF output 2	

Bandswitching table:

	Pin 3	Pin 4	Pin 5
Low band	0V	0V	+5V
Mid band	0V	+5V	0V
High band	+5V	0V	0V

General description of UV1316:

The UV1316 tuner belongs to the UV 1300 family of tuners, which are designed to meet a wide range of applications. It is a combined VHF, UHF tuner suitable for CCIR systems B/G, H, L, L', I and I'. The low IF output impedance has been designed for direct drive of a wide variety of SAW filters with sufficient suppression of triple transient.

Features of UV1316:

- Member of the UV1300 family small sized UHF/VHF tuners
- Systems CCIR: B/G, H, L, L', I and I'; OIRT: D/K
- Digitally controlled (PLL) tuning via I²C-bus
- Off-air channels, S-cable channels and Hyperband
- World standardized mechanical dimensions and world standard pinning
- Compact size
- Complies to "CENELEC EN55020" and "EN55013"

PINNING	PIN VALUE
1. Gain control voltage (AGC)	: 4.0V, Max:4.5V
2. Tuning voltage	
3. I ² C-bus address select	: Max:5.5V
4. I ² C-bus serial clock	: Min:-0.3V, Max:5.5V
5. I ² C-bus serial data	: Min:-0.3V, Max:5.5V
6. Not connected	
7. PLL supply voltage	: 5.0V, Min:4.75V, Max:5.5V
8. ADC input	
9. Tuner supply voltage	: 33V, Min:30V, Max:35V
10. Symmetrical IF output 1	
11. Symmetrical IF output 2	

General description of UV1336:

UV1336 series is developed for reception of channels broadcast in accordance with the M, N standard. The tuning is available through built-in digitally controlled I²C bus (PLL).

Features of UV1336:

- Global standard pinning
- Integrated Mixer-Oscillator&PLL function
- Conforms to CISPR 13, FCC and DOC (Canada) regulations
- Low power consumption
- Both Phono connector and 'F' connector are available

PINNING	PIN VALUE
1. Gain control voltage	: 4.0V, Max:4.5V
2. Tuning voltage	
3. Address select	: Max:5.5V
4. Serial clock	: Min:-0.3V, Max:5.5V
5. Serial data	: Min:-0.3V, Max:5.5V
6. Not connected	
7. Supply voltage	: 5.0V, Min:4.75V, Max:5.5V
8. ADC input (optional)	
9. Tuning supply voltage	: 33V, Min:30V, Max:35V
10. Ground	
11. IF output	

TEA6415C:

General Description:

The main function of the TEA6415C is to switch 8 video input sources on the 6 outputs.

Each output can be switched to only one of the inputs whereas but any same input may be connected to several outputs. All switching possibilities are controlled through the I²C-bus.

Features:

- 20 MHz Bandwidth
- Cascadable with another TEA6415C (Internal address can be changed by pin 7 voltage)
- 8 inputs (CVBS, RGB, Mac, CHROMA, ...)
- 6 Outputs
- Possibility of MAC or chroma signal for each input by switching-off the clamp with an external resistor bridge
- Bus controlled
- 6.5dB gain between any input and output
- -55dB crosstalk at 5MHz
- Fully ESD protected

PINNING	PIN VALUE
1. Input	: Max : 2Vpp, Input Current : 1mA, Max : 3mA
2. Data	: Low level : -0.3V Max:1.5V, High level : 3.0V Max : Vcc+0.5V
3. Input	: Max : 2Vpp, Input Current : 1mA, Max : 3mA
4. Clock	: Low level : -0.3V Max:1.5V, High level : 3.0V Max : Vcc+0.5V
5. Input	: Max : 2Vpp, Input Current : 1mA, Max : 3mA
6. Input	: Max : 2Vpp, Input Current : 1mA, Max : 3mA
7. Prog	
8. Input	: Max : 2Vpp, Input Current : 1mA, Max : 3mA
9. Vcc	: 12V
10. Input	: Max : 2Vpp, Input Current : 1mA, Max : 3mA
11. Input	: Max : 2Vpp, Input Current : 1mA, Max : 3mA
12. Ground	
13. Output	: 5.5Vpp, Min : 4.5Vpp
14. Output	: 5.5Vpp, Min : 4.5Vpp
15. Output	: 5.5Vpp, Min : 4.5Vpp
16. Output	: 5.5Vpp, Min : 4.5Vpp
17. Output	: 5.5Vpp, Min : 4.5Vpp
18. Output	: 5.5Vpp, Min : 4.5Vpp
19. Ground	
20. Input	: Max : 2Vpp, Input Current : 1mA, Max : 3mA

TDA9830:

General description:

The TDA9830, a monolithic integrated circuit, is designed for AM-sound demodulation used in L- and L'-standard. The IC provides an audio source selector and also mute switch.

Features:

- Adjustment free wideband synchronous AM demodulator
- Audio source-mute switch (low noise)
- Audio level according EN50049
- 5 to 8V power supply or 12 V alternative
- Low power consumption

PINNING	PIN VALUE
1. Sound IF differential input signal	: Minimum IF input signal (between pins 1 and 16):60mV Max:100mV Maximum IF input signal (between pins 1 and 16) :120mV Min :70mV
2. Not connected	
3. AGC capacitor	
4. REF voltage filtering capacitor	
5. Not connected	
6. AM demodulator output	: THD:0.8%, Max:2%; S/N:53dB, Min:47%; DC potential:2.15V, Min : 2.00V Max :2.30V
7. Input signal (from AM) to audio switch	: Max:1.2V
8. Output signal from audio switch	: 80dB, Min : 70dB
9. Input signal (from external) to audio switch	: Max:1.2V

- 10. Switch input select control : Audio switching voltage to activate pin7 : Min :0V, Max :0.8V
Audio switching voltage to activate pin9 : Min:1.5V, Max :Vp
- 11. Supply voltage : 12V, Min:10.8V, Max:13.2V
- 12. Mute control : For Mute-ON Min : 0V, Max : 0.8V For Mute-OFF Min : 1.5V, Max : Vp
- 13. Ground
- 14. Supply voltage : 5V, Min : 4.5V, Max : 8.8V
- 15. Not connected
- 16. Sound IF differential input signal : Look at pin 1

TDA2614/TDA2615/TDA2616Q:

General Description of TDA2614:

The TDA2614 is a power amplifier in a 9-lead single-in-line (SIL9) plastic medium power package. It has been especially designed for mains fed applications.

Features:

- Requires very few external components
- No switch-on/switch-off clicks
- Input mute during switch-on and switch-off
- Low offset voltage between output and ground
- Hi-fi in accordance with IEC 268 and DIN 45500
- Short-circuit proof and thermal protected
- Mute possibility

PINNING

PIN VALUE

- 1. Not connected
- 2. Mute input : 300mA (For mute to activate)
- 3. Ground
- 4. Not connected
- 5. Supply voltage (negative) : -12VDC
- 6. Output : 6.9Vrms
- 7. Supply voltage (positive) : +12VDC
- 8. Inverting input (Ground) : 0V
- 9. Non-inverting input : 700mVrms, Min : 500mVrms, Max : 900mVrms

General Description of TDA2615:

The TDA2615 is a dual power amplifier in a 9-lead single-in-line (SIL9). It has been especially designed for mains fed applications.

Features:

- Requires very few external components
- No switch-on/switch-off clicks
- Input mute during switch-on and switch-off
- Low offset voltage between output and ground
- Excellent gain balance of both amplifiers
- Hi-fi in accordance with IEC 268 and DIN 45500
- Short-circuit proof and thermal protected
- Mute possibility

PINNING

PIN VALUE

- 1. Non-inverting input 1 : 700mVrms, Min :500mVrms, Max : 900mVrms
- 2. Mute input : 300mA (For mute to activate)
- 3. Ground
- 4. Output 1 : 6.9Vrms
- 5. Supply voltage (negative) : -12VDC
- 6. Output 2 : 6.9Vrms
- 7. Supply voltage (positive) : +12VDC
- 8. Inverting inputs 1 and 2 (Ground) : 0V
- 9. Non-inverting input 2 : 700mVrms, Min : 500mVrms, Max : 900mVrms

General Description of TDA2616Q:

The TDA2616Q is a dual power amplifier. It is supplied in a 9-lead SIL-bent-to DIL plastic power package (SOT157). It has been especially designed for mains fed applications.

Features:

- Requires very few external components
- No switch-on/switch-off clicks
- Input mute during switch-on and switch-off
- Low offset voltage between output and ground
- Excellent gain balance of both amplifiers
- Hi-fi in accordance with IEC 268 and DIN 45500
- Short-circuit proof and thermal protected
- Mute possibility

PINNING

1. Non-inverting input 1	: 700mVrms, Min : 500mVrms, Max : 900mVrms
2. Mute input	: 300mA (For mute to activate)
3. Ground	
4. Output 1	: 9.8Vrms
5. Supply voltage (negative)	: -16VDC
6. Output 2	: 9.8Vrms
7. Supply voltage (positive)	: +16VDC
8. Inverting inputs 1 and 2 (Ground)	: 0V
9. Non-inverting input 2	: 700mVrms, Min : 500mVrms, Max : 900mVrms

PIN VALUE**TDA8351/8356:****General Description:**

The TDA8356 is a power circuit for use in 90° colour deflection system for field frequencies of 50 to 120 Hz.

The circuit operates as a highly efficient class G system.

The TDA8351 is a power circuit for use in 110° colour deflection system for field frequencies of 50 to 120 Hz.

The circuit operates as a highly efficient class G system.

Features:

- Few external components
- Highly efficient fully DC-coupled vertical output bridge circuit
- Vertical flyback switch
- Guard circuit
- Protection against:
 - short-circuit of the output pins (7 and 4)
 - short-circuit of the output pins to Vp
- Temperature (thermal) protection
- High EMC immunity because of common mode inputs
- A guard signal in zoom mode

PINNING

1. Input power-stage (positive); includes li(sb) signal bias	: 400mA, Min : 50mA, Max : 500mA
2. Input power-stage (negative); includes li(sb) signal bias	: 400mA, Min : 50mA, Max : 500mA
3. Operating supply voltage	: +15VDC
4. Output voltage B	: Max : 52V Output current : 2App (TDA8356) 3App (TDA8351)
5. Ground	
6. Input flyback supply voltage	: Min : Vp, Max : 50V
7. Output voltage A	: Max : 52V Output current : 2App (TDA8356) 3App (TDA8351)
8. Guard output voltage	: Max:5.5V (Io:100mA)
9. Input feedback voltage	: Max:52V

PIN VALUE**TDA6107Q:**

The TDA6107Q includes three video output amplifiers in a SIL 9 MP (Single In Line 9 pins Medium Power) package SOT111BE, using high-voltage DMOS technology, and is intended to drive the three cathodes of a colour picture tube.

In contrast to previous types of DMOS video amplifiers, all external resistors (Rf, Ri and Ra) are integrated, so the gain is fixed and it saves 9 resistors.

To obtain maximum performance, the amplifier should be used with black-current control and mounted on the CRT panel.

Features:

- Bandwidth: 4.0 MHz typ at 100Vpp (Measured in appli,cation set-up, with Rf=1K5 and Cl=Ctube+Cpcb=10pF)
- Slewrate: 950V/ms
- Fixed gain of 50 times
- No external components, only the well known supply decoupling
- Very simple application with a variety of colour decoders
- Black-current measurement output for automatic black current stabilization
- Only one supply voltage needed
- Internal protection against positive appearing CRT flash-over discharges
- Protection against ESD
- Internal reference voltage
- Thermal protection
- Controllable switch-off behaviour
- Very small PCB dimensions
- Very high replacement value

PINNING

1. Inverting input 1	: 2Vpp
2. Inverting input 2	: 2Vpp
3. Inverting input 3	: 2Vpp
4. Ground	
5. BSC-output	: Max:7V
6. Supply voltage	: 200VDC
7. Cathode output 3	: 20mA, 100Vpp
8. Cathode output 2	: 20mA, 100Vpp
9. Cathode output 1	: 20mA, 100Vpp

PIN VALUE

SAA4961:

The SAA4961 is an adaptive alignment-free one chip comb filter compatible with both PAL and NTSC systems and provides high performance in Y/C separation.

Features:

- One chip adaptive multi-standard comb filter
- Time discrete but continuous amplitude signal processing with analogue interfaces
- Internal delay lines, filters, clock processing and signal switches
- Alignment-free
- No hanging dots or residual cross colour on vertical transients
- Few external components

It is possible to switch the comb filter into one of the following 3 modes:

- 1. Comb mode** : In this mode, luminance and chrominance comb filter function are active.
Chrominance output pin (pin 12) outputs comb filtered chrominance signal, luminance output pin (pin 14) outputs comb filtered luminance signal and CVBS output pin (pin 15) outputs delay compensated CVBS signal.
- 2. Comboff mode** : In this mode, luminance comb filter function is turned off, but chrominance comb filter function operates.
Chrominance output pin (pin 12) outputs comb filtered chrominance signal, luminance output pin (pin 14) outputs delay compensated CVBS signal and CVBS output pin (pin 15) outputs delay compensated CVBS signal.
- 3. Bypass mode** : In this mode, no IC-function is active. Cext is bypassed to chrominance output pin (pin 12) and Yext/CVBS is bypassed to luminance output pin (pin 14) and CVBS output pin (pin 15).

PINNING

PIN VALUE

- | | |
|--|---|
| 1. Subcarrier frequency input | : 200mVpp, Min : 100mVpp, Max : 400mVpp |
| 2. Internal connected | |
| 3. Bypass mode forcing | : HIGH level input voltage Min : 2.4VDC, Max : Vcc |
| 4. Internal connected | |
| 5. Decoupling capacitor | : 1.25VDC, Min : 1.1VDC, Max : 1.4VDC |
| 6. Internal connected | |
| 7. Analogue supply voltage | : 5VDC, Min : 4.75VDC, Max : 5.5VDC |
| 8. Analogue supply voltage output buffer | : 5VDC, Min : 4.75VDC, Max : 5.5VDC |
| 9. Analogue ground | |
| 10. External chrominance input | : 0.7Vpp, Max : 1Vpp |
| 11. Analogue ground output buffer | |
| 12. Chrominance output signal | : 0mV, Min : -400mV, (DC offset voltage related to input) Max : +400mV
BYPASS-mode:Co/Cext : 0dB, Min : -1dB, Max : +1dB |
| 13. fsc reference selection | : HIGH level input voltage Min : 2V, Max : Vcc
: Low level input voltage Min : 0V, Max : 0.8V |
| 14. Luminance output signal | : 1Vpp, Min : 0.6Vpp, Max : 1.54Vpp |
| 15. CVBS and Y output signal | : 1Vpp, Min : 0.6Vpp, Max : 1.54Vpp |
| 16. Internal connected | |
| 17. CVBS and Y input signal | : 1Vpp, Min : 0.7Vpp, Max : 1.4Vpp |
| 18. Disable prefilter | : HIGH level input voltage Min : 2.0VDC, Max : Vcc
: LOW level input voltage Min : 0VDC, Max : 0.8VDC |
| 19. Storage Capacitor | : 2.5VDC, Min : 1.8VDC, Max : Vcc |
| 20. Standard select 1 | : HIGH level input voltage Min : 2.0VDC, Max : Vcc
: LOW level input voltage Min : 0VDC, Max : 0.8VDC |
| 21. Digital ground | |
| 22. Digital supply voltage | : 5VDC, Min : 4.75VDC, Max : 5.5VDC |
| 23. Standard select 2 | : HIGH level input voltage Min : 2.0VDC, Max : Vcc
: LOW level input voltage Min : 0VDC, Max : 0.8VDC |
| 24. Decoupling capacitor | : 1.25VDC, Min : 1.1VDC, Max : 1.4VDC |
| 25. Controlling I/O pin | : HIGH level input voltage Min : 2.4VDC, Max : Vcc
: LOW level input voltage Min : 0VDC, Max : 1.5VDC |
| 26. Analogue ground PLL | |
| 27. Analogue supply voltage PLL | : 5VDC, Min : 4.75VDC, Max : 5.5VDC |
| 28. Internal connected | |

MC44604:

General description:

The MC44604 is an enhanced high performance controller that is specifically designed for off-line and DC-to-DC converter applications. It offers a really safe and reliable power management thanks particularly to its protection features (foldback, overvoltage detection, soft start, accurate demagnetization detection). Its high current totem pole output is also ideally suited for driving a power MOSFET, but can also be used for driving a bipolar transistor in low power converters. In addition to these features, the MC44604 offers an efficient stand-by mode.

Features:

Current Mode Controller

- Operation up to 250 kHz Output Switching Frequency
- Inherent Feed Forward Compensation
- Latching PWM for Cycle-by-Cycle Current Limiting
- Oscillator with Precise Frequency Control

High Flexibility

- Externally Programmable Reference Current
- Secondary or Primary Sensing
- High Current Totem Pole Output
- Undervoltage Lockout with Hysteresis

Safety/Protection Features

- Overvoltage Protection Facility against Open Loop
- Protection against Short Circuit on Oscillator Pin
- Fully Programmable Foldback
- Soft-Start Feature
- Accurate max Duty Cycle Setting
- Demagnetization (Zero Current Detection) Protection
- Internally Trimmed Reference

“Green Controller”

- Low Start-Up and Operating Current
- Patented Stand-by Pulsed Mode for low stand-by losses
- Low dV/dT for Low EMI radiations

PINNING

PIN VALUE

1. Output Supply Voltage (Vcc)	: 12VDC
2. Output Supply Voltage (Vc)	: 12VDC
3. Output voltage	: LOW Level Drop Voltage 1VDC, Max : 1.2VDC (Isink=100mA) 1.4VDC, Max : 2VDC (Isink=500mA) HIGH Level Drop Voltage 1.5VDC, Max : 2VDC (Isource=200mA) 2VDC, Max : 2.7VDC (Isource=500mA)
4. Ground	
5. Foldback input	: 0.9VDC, Min:-0.3VDC, Max : Vcc+0.3VDC
6. Overvoltage protection (OVP)	: 0.78VDC, Min:-0.3VDC, Max : Vcc+0.3VDC
7. Current sense input	: Min:-0.3VDC, Max : Vcc+0.3VDC
8. Demagnetization detection input	: Idemag-ib (source):-4mA Idemag-ib (sink) : 10mA
9. Standby current set	: Ipeak-stby/Iref : 0.40 Min : 0.37 Max : 0.43
10. Oscillator voltage swing	: 2Vpp
11. Soft start/Dmax/Voltage mode	: Idischarge : 5mA, Min : 1.5mA (Vsoft start=1V)
12. Clamp E/A input	: 4.7VDC, Min : 4.5VDC Max : 4.9VDC
13. E/A output	: HIGH State: 6.5VDC, Min : 5.5VDC, Max : 7.5VDC LOW State : 1.0VDC, 1.1VDC
14. E/A input	: 2.5VDC, Min : 2.4VDC, Max : 2.6VDC
15. Stand-by management	: Stand-by On Detection current ratio : Idet/Iref : 0.38, Min : 0.34, Max : 0.42 Stand-by regulation current ratio : Ireg/Iref : 20.5, Min : 18, Max : 23
16. Rref input	: 2.5VDC, Min : 2.4VDC, Max : 2.6VDC

SDA525X:

General description:

The SDA525X is designed for a low cost mono TV-set with analogue picture and sound control. IN SDA525X the following IC' s are used and supported:

Non-volatile memory	: SDA 2526 or SDA2546
PLL	: SDA 3202-3, SDA 3302
IR transmitter	: SDA 2208-3 or SDA 2218
IR preamplifier	: SFH 506-32

Features:

General:

- Display of program number, channel number, TV standard, analogue values, sleep timer, parental control, and mute is done by OSD
- Single LED for IR active, standby and on mode indication
- Local control (8 keys)
- IR remote control
- Control of volume, contrast, brightness, and saturation by analogue voltages
- Non-volatile memory for 50 or 100 programs, optimum analogue values and system parameters
- Individual delta volume for each program
- 1 control line to select external source
- 3 control lines for TV standard selection
- Automatic muting if no carrier detected
- Automatic switch-off when carrier disappears for more than 5 minutes
- Software protection against tube flashovers with internal watchdog timer
- Sleep timer
- Parental control
- IF 38 MHz or 38.9 MHz selectable

Tuning:

- Frequency synthesis tuning (62.5 kHz steps)
- 192 step fine tuning
- Channels corresponding to standards
- 100 programs selectable by directly entering a program number or by up/down function depending on the NVM size
- Channel selection by directly entering a channel number or by up/down function
- Channel search function in two directions

Sound:

- Mono sound control by analogue voltage

Service Mode:

- System configuration with service mode

PINNING**PIN VALUE**

1. Crystal selection output 1	: LOW level : 0V HIGH level : 4.2V
2. Volume + switch input	: LOW level : 0V HIGH level : 5V
3. Volume - switch input	: LOW level : 0V HIGH level : 5V
4. Program - switch input	: LOW level : 0V HIGH level : 5V
5. Program + switch input:	: LOW level : 0V HIGH level : 5V
6. LED output	: LOW level : 0V HIGH level : 4.2VDC
7. Filter (sound standard) selection output 1	: LOW level : 0V HIGH level : 4.2V
8. Filter (sound standard) selection output 2	: LOW level : 0V HIGH level : 4.2V
9. Mod-switch selection output	: LOW level : 0V HIGH level : 4.2V
10. Ground	
11. Supply voltage	: +5V
12. 18 MHz crystal connection 1	: 2Vpp
13. 18 MHz crystal connection 2	: 2Vpp
14. L-ACC output	: LOW level : 0V HIGH level : 3.6V
15. RESET output	: LOW level : 0V HIGH level : 5V
16. Comb filter PAL/SECAM selection output	: LOW level : 0V HIGH level : 5V
17. Tuning output	: LOW level : 0V HIGH level : 3.4V
18. Audio switch transistor selection 1	: LOW level : 0V HIGH level : 5V
19. Audio switch transistor selection 2	: LOW level : 0V HIGH level : 5V
20. Audio switch transistor selection 3	: LOW level : 0V HIGH level : 5V
21. Audio switch transistor selection 4	: LOW level : 0V HIGH level : 5V
22. Comb filter standard selection 1	: LOW level : 0V HIGH level : 5V
23. Comb filter standard selection 2	: LOW level : 0V HIGH level : 5V
24. Analogue ground	
25. Filter 3	
26. Filter 2	
27. Filter 1	
28. Analogue supply voltage	: 5VDC
29. Reference current input	
30. CVBS input	: 1Vpp
31. Service output	: LOW level : 0V HIGH level : 5V
32. AV2-status input	: LOW level : 0V HIGH level : 5V
33. AV1-status input	: LOW level : 0V HIGH level : 5V
34. AFC output	: 600mVpp
35. Ground	
36. IR-input	: LOW level : 0V HIGH level : 5V
37. Supply voltage	: 5V
38. LC input	: 5Vpp
39. LC output	: 5Vpp
40. Mute output	: LOW level : 0V HIGH level : 4.2V
41. St-by output	: LOW level : 0V HIGH level : 1.4V
42. Clock signal output	
43. Data output	
44. Local connection	: LOW : 0V HIGH : 5V
45. SAND input	: 4Vpp
46. ODD/EVEN output	: 1.8V
47. OSD-red output	: LOW level : 0V HIGH level : 5V
48. OSD-green output	: LOW level : 0V HIGH level : 5V
49. OSD-blue output	: LOW level : 0V HIGH level : 5V
50. OSD-blanking output	: LOW level : 0Vh HIGH level : 5V
51. COR output	: LOW level : 0V HIGH level : 5V
52. Crystal selection output 2	: LOW level : 0V HIGH level : 4.2V

TDA9875:

General description:

The TDA9875 is a single-chip Digital TV Sound Processor (DTVSP) for analogue and digital multi-channel sound systems.

Features:

Demodulator and decoder section:

- Sound IF (SIF) input switch e.g. to select between terrestrial TV SIF and SAT SIF sources
- SIF AGC with 21dB control range
- SIF 8-bit Analogue-to-Digital Converter (ADC)
- DQPSK demodulation for different standards, simultaneously with 1-channel FM demodulation
- NICAM decoding (B/G, I and L standard)
- Two-carrier multistandard FM demodulation (B/G, D/K and M standard)
- Decoding for three analogue multi-channel systems (A2, A2+ and A2*) and satellite sound
- Optional AM demodulation for system L, simultaneously with NICAM
- Programmable identification (B/G, D/K and M standard) and different identification times

DSP section:

- Digital crossbar switch for all digital signal sources and destinations
- Control of volume, balance, contour, bass, treble, pseudo stereo, spatial, bass boost and soft-mute
- Plop-free volume control
- Automatic Volume Level (AVL) control
- Adaptive de-emphasis for satellite
- Programmable beeper
- Monitor selection for FM/AM DC values and signals, with peak detection option
- I²S-bus interface for a feature extension (e.g. Dolby surround) with matrix, level adjust and mute.

Analogue audio section:

- Analogue crossbar switch with inputs for mono and stereo, SCART 1 input/output, SCART2 input/output and line output
- User defined full-level/-3dB scaling for SCART outputs
- Output selection of mono, stereo, dual A/B, dual A or dual B
- 20 kHz bandwidth for SCART-to-SCART copies
- Standby mode with functionality for SCART copies
- Dual audio digital-to-analogue converter from DSP to analogue crossbar switch, bandwidth 15kHz
- Dual audio ADC from analogue inputs to DSP
- Two dual audio Digital-to-Analogue Converters (DACs) for loudspeakers (Main) and headphone (Auxiliary) outputs; also applicable for L, R, C and S in the Dolby Pro Logic mode with feature extension.

PINNING

	PIN VALUE
1. NICAM clock output (728kHz)	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
2. Serial NICAM DATA output (728kHz)	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
3. First I ² C-bus slave address modifier	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
4. SCL (I ² C-bus clock)	: LOW level input voltage : Max : 1.6V HIGH level input voltage : Min : 3.0V
5. SDA (I ² C-bus data)	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
6. Analogue supply ground 1	: 0V
7. Analogue supply voltage 1	: 5V, Min : 4.75V, Max : 5.5V
8. Resistor for reference current generator	: Iref : 220mA, Min : 170mA, Max : 260mA
9. First general purpose I/O pin	
10. Sound IF input 2	: Min : 21Vrms, Max : 250mVrms
11. Reference voltage for demodulator part	: Vdda1/Vssa1 : 50%, Min : 35%, Max : 65%
12. Sound IF input 1	: Min : 21Vrms, Max : 250mVrms
13. Second I ² C-bus slave address modifier	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
14. Digital supply ground 1	: 0V
15. Digital supply voltage 1	: 5V, Min : 4.75V, Max : 5.5V
16. Capacitor for power-on reset	: LOW level input voltage : Max : 1.6V HIGH level input voltage : Min : 3.0V
17. Crystal oscillator output	
18. Crystal oscillator input	
19. Tuning voltage output for crystal oscillator	
20. Second general purpose I/O pin	
21. System clock output	: LOW level input voltage : Max : 0.5V HIGH level input voltage : Min : 2.9V
22. I ² S-bus clock	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
23. I ² S-bus word select	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
24. I ² S-bus data output 2	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
25. I ² S-bus data output 1	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
26. I ² S-bus data input 2	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
27. I ² S-bus data input 1	: LOW level input voltage : Max : 0.8V HIGH level input voltage : Min : 2.0V
28. First test pin; connected to ground for normal operation	
29. Audio mono input	: 500mVrms
30. Second test pin; connected to ground for normal operation	
31. External audio input right channel	: 350mVrms

32. External audio input left channel	: 350mVrms
33. SCART 1 input right channel	: 350mVrms
34. SCART 1 input left channel	: 350mVrms
35. Ground guards	
36. SCART 2 input right channel	: 350mVrms
37. SCART 2 input left channel	: 350mVrms
38. Analogue supply voltage 2	: 5V, Min : 4.75V, Max : 5.5V
39. Positive reference voltage	
40. Reference voltage ground	: 0V
41. Filter capacitor pin 1	
42. Filter capacitor pin 2	
43. Analogue supply ground 2	: 0V
44. Filter capacitor pin 2	
45. Filter capacitor pin 1	
46. Reference voltage 2	: Vdda2/Vssa2 : 50%
47. Scart 1 output right channel	: 500mVrms
48. Scart 1 output left channel	: 500mVrms
49. Digital supply ground 2	: 0V
50. Analogue supply ground 4	: 0V
51. Scart 2 output right channel	: 500mVrms
52. Scart 2 output left channel	: 500mVrms
53. Reference voltage 3	: Vdda3/Vssa3:50%
54. Post-filter capacitor pin right channel	
55. Post-filter capacitor pin left channel	
56. Analogue supply ground 3	: 0V
57. Headphone output right channel	: Vo(clip) : Min : 1400mVrms
58. Headphone output left channel	: Vo(clip) : Min : 1400mVrms
59. Analogue supply voltage 3	: 5.0V, Min : 4.75V, Max : 5.5V
60. Loudspeaker (main) output right channel	: Vo(clip) : Min : 1400mVrms
61. Loudspeaker (main) output left channel	: Vo(clip) : Min : 1400mVrms
62. Line output left channel	: 500mVrms
63. Line output right channel	: 500mVrms
64. Digital supply voltage 2	: 5.0V, Min : 4.75V, Max : 5.5V

TDA9818:

General description:

The TDA9818 is an integrated circuit for multistandard vision IF signal processing, sound AM and FM demodulation.

Features:

- 5 V supply voltage
- Applicable for IF frequencies of 38.9 MHz, 45.75 MHz and 58.75 MHz
- Gain controlled wide band VIF-amplifier (AC-coupled)
- True synchronous demodulation with active carrier regeneration (very linear demodulation, good intermodulation figures, reduced harmonics, excellent pulse response)
- Robustness for overmodulation better than 105% due to gated phase detector at L/L accent standard and PLL-bandwidth control at negative modulated standards
- VCO frequency switchable between L and L accent (alignment external) picture carrier frequency
- VIF AGC detector for gain control, operating as peak sync detector for B/G, peak white detector for L; signal controlled reaction time for L
- Tuner AGC with adjustable takeover point (TOP)
- AFC detector without extra reference circuit
- AC-coupled limiter amplifier for sound intercarrier signal
- Alignment-free FM-PLL demodulator with high linearity
- SIF input for single reference QSS mode (PLL controlled); SIF AGC detector for gain controlled SIF amplifier; single reference QSS mixer able to operate in high performance single reference QSS mode and in intercarrier mode
- AM demodulator without extra reference circuit
- Stabilizer circuit for ripple rejection and to achieve constant output signals
- ESD protection for all pins

PINNING

PIN VALUE

1. VIF differential input signal voltage 1	: Input signal voltage sensitivity 60mVrms, Max:100mVrms
2. VIF differential input signal voltage 2	: Input signal voltage sensitivity 60mVrms, Max:100mVrms
3. Standard switch	: Min : 2.8V, Max : Vp
4. VIF AGC capacitor	: Charging current : 1mA, Min : 0.75mA, Max : 1.25mA Discharging current : B/G standard : 20mA, Min : 15mA, Max:25mA Normal mode L : 300nA, Min : 225nA, Max : 375nA Fast mode L : 40mA, Min : 30mA, Max : 50mA
5. SIF AGC capacitor	: Charging current : FM mode : 12mA, Min : 8mA, Max : 16mA AM mode : 1.2mA, Min : 0.8mA, Max : 1.6mA Discharging current : FM mode : 12mA, Min : 8mA, Max : 16mA Normal mode AM : 1.4mA, Min : 1mA, Max : 1.8mA Fast mode AM : 85mA, Min : 60mA, Max : 110mA
6. PLL loop filter	: Min : 0V, Max : Vp
7. L/L accent switch and adjust	: Min : 0V, Max : Vp
8. Audio output	: Rx : 470ohm : 250mVrms, Min : 200mVrms, Max : 300mVrms Rx : 0ohm : 500mVrms, Min : 400mVrms, Max : 600mVrms
9. De-emphasis input	: Min : 0V, Max : Vp
10. De-emphasis output	: Min : 0V, Max : Vp
11. Decoupling capacitor	: Min : 0V, Max : Vp
12. Single reference QSS/intercarrier output voltage	: 140mVrms, Min : 100mVrms Max : 180mVrms

13. Sound intercarrier input voltage	: Input signal voltage for lock-in: Max : 100mVrms Input signal voltage : 250mVrms
14. Tuner AGC output	: IF input signal voltage for minimum starting point of tuner takeover 2mV, Max : 5mV IF input signal voltage for maximum starting point of tuner takeover 100mV, Min : 50mV
15. Black level detector	: Min : 0V, Max : Vp
16. Composite video output voltage	: 1.1Vpp, Min : 0.97Vpp, Max : 1.23Vpp
17. AFC output	: Upper limit : Vp-0.3V, Min : Vp-0.6V, Lower limit : 0.3V, Max : 0.6V
18. VCO1 resonance circuit	
19. VCO2 resonance circuit	
20. Ground	: 0V
21. Supply voltage	: 5V, Min : 4.5V, Max : 5.5V
22. Tuner AGC takeover adjust (TOP)	
23. SIF differential input signal voltage 1	: Input signal voltage sensitivity 50mVrms, Max : 100mVrms
24. SIF differential input signal voltage 2	: Input signal voltage sensitivity 50mVrms, Max : 100mVrms

ST24C08:

General description:

The ST24C08 is a 8Kbit electrically erasable programmable memory (EEPROM), organized as 4 blocks of 256 * 8 bits. The memory operates with a power supply value as low as 2.5V. Both Plastic Dual-in-Line and Plastic Small Outline packages are available.

Features:

- Minimum 1 million ERASE/WRITE cycles with over 10 years data retention
- Single supply voltage: 4.5 to 5.5V
- Two wire serial interface, fully IIC-bus compatible
- Byte and Multibyte write (up to 8 bytes)
- Page write (up to 16 bytes)
- Byte, random and sequential read modes
- Self timed programming cycle

PINNING

	PIN VALUE
1. Write protect enable (Ground)	: 0V
2. Not connected (Ground)	: 0V
3. Chip enable input (Ground)	: 0V
4. Ground	: 0V
5. Serial data address input/output	: Input LOW voltage : Min : -0.3V, Max : 0.3*Vcc Input HIGH voltage: Min : 0.7*Vcc, Max : Vcc+1
6. Serial clock	: Input LOW voltage : Min : -0.3V, Max : 0.3*Vcc Input HIGH voltage: Min : 0.7*Vcc, Max : Vcc+1
7. Multibyte/Page write mode	: Input LOW voltage : Min : -0.3V, Max : 0.5V Input HIGH voltage: Min : Vcc-0.5, Max : Vcc+1
8. Supply voltage	: Min : 2.5V, Max : 5.5V

TDA1308:

Features:

- Wide temperature range
- No switch ON/OFF clicks
- Excellent power supply ripple rejection
- Low power consumption
- Short-circuit resistant
- High performance
 - high signal-to-noise ratio
 - high slew rate
 - low distortion
- Large output voltage swing

PINNING

	PIN VALUE
1. Output A (Voltage swing)	: Min : 0.75V, Max : 4.25V
2. Inverting input A	: Vo(clip) : Min : 1400mVrms
3. Non-inverting input A	: 2.5V
4. Ground	: 0V
5. Non-inverting input B	: 2.5V
6. Inverting input B	: Vo(clip) : Min : 1400mVrms
7. Output B (Voltage swing)	: Min : 0.75V, Max : 4.25V
8. Positive supply	: 5V, Min : 3.0V, Max : 7.0V

G1965M:

Features:

- TV IF filter with Nyquist slope and sound shelf at typ. 20.4dB
- High colour carrier level at typ. 1.0dB
- Constant group delay
- Insertion attenuation typ. 15.0dB

PINNING

1. Input
2. Input-ground
3. Chip carrier-ground

TDA9855

General description:

The TDA9855 is a bipolar-integrated BTSC stereo/SAP decoder with hi-fi audio processor (IIC-bus controlled) for application in TV sets.

Features:

- Quasi alignment-free BTSC stereo decoder due to auto adjustment of channel separation via IIC-bus
- High integration level with automatically tuned integrated filters
- Input level adjustment IIC-bus controlled
- Alignment-free Sap processing
- dbx noise reduction circuit
- Audio processor
 - Selector for internal and external signals (line in)
 - Automatic volume level control
 - Subwoofer or surround output with separate volume control
 - Volume control
 - Special loudness characteristic automatically controlled in combination with volume setting
 - Bass and treble control
 - Audio signal zero crossing detection between any volume step switching
 - Mute control at audio signal zero crossing
 - IIC-bus transceiver.

PINNING

PIN VALUE

- | | |
|---|--|
| 1. Treble control capacitor, left channel | |
| 2. Bass control capacitor, left channel | |
| 3. Bass control capacitor, left channel | |
| 4. Not connected | |
| 5. Programmable address bit (module address) | |
| 6. Output, left channel | : 500mVrms, Min : 480mVrms,
Max : 520mVrms |
| 7. Input loudness, left channel | |
| 8. Input volume control, left channel | : 2.15Vrms, Min : 2Vrms |
| 9. Output effects, left channel | |
| 10. Automatic volume control capacitor | |
| 11. Reference voltage 0.5Vcc | : 4VDC |
| 12. Line input, left channel | : 2.3Vrms, Min : 2Vrms |
| 13. Input automatic volume control, left channel | : Min : 2Vrms |
| 14. Output selector, left channel | |
| 15. Line output, left channel | : 500mVrms |
| 16. Capacitor timing wideband for dbx | |
| 17. Capacitor timing spectral for dbx | |
| 18. Capacitor wideband for dbx | |
| 19. Capacitor spectral for dbx | |
| 20. Variable emphasis out for dbx | |
| 21. Variable emphasis in for dbx | |
| 22. Capacitor noise reduction for dbx | |
| 23. Capacitor mute for SAP | |
| 24. Capacitor DC decoupling for SAP | |
| 25. Common ground | : 0V |
| 26. Serial data input/output | : High level input voltage:
Min : 3VDC, Max : Vcc Low level input voltage:
Min : -0.3VDC, Max : 1.5VDC
Low level output voltage : Max : 0.4VDC |
| 27. Serial clock input | : High level input voltage:
Min : 3VDC, Max : Vcc
Low level input voltage : Min : -0.3VDC, Max : 1.5VDC
Low level output voltage : Max : 0.4VDC |
| 28. Supply voltage | : 8VDC |
| 29. Input composite signal | : 250mVrms |
| 30. Capacitor for electronic filtering of supply | |
| 31. Capacitor for pilot detector | |
| 32. Capacitor for pilot detector | |
| 33. Capacitor for phase detector | |
| 34. Capacitor for filter adjust | |
| 35. Ceramic resonator | |
| 36. Capacitor DC decoupling mono | |
| 37. Capacitor DC decoupling stereo/SAP | |
| 38. Line output, right channel | : 500mVrms |
| 39. Output selector, right channel | |
| 40. Input automatic volume control, right channel | : Min:2Vrms |
| 41. Line input, right channel | : 2.3Vrms, Min : 2Vrms |
| 42. Capacitor 2 pseudo function | |
| 43. Capacitor 1 pseudo function | |
| 44. Output effects, right channel | |
| 45. Input volume control, right channel | : Min : 2Vrms |
| 46. Input loudness, right channel | |
| 47. Output, right channel | : 500mVrms, Min : 480mVrms,
Max : 520mVrms |
| 48. Not connected | |
| 49. Filter capacitor for subwoofer | |
| 50. Bass control capacitor, right channel | |
| 51. Bass control capacitor, right channel | |
| 52. Treble control capacitor | |

AK19 CHASSIS MANUAL ADJUSTMENTS PROCEDURE

In order to enter the service mode, first enter the installation menu (or press blue button on the remote control handset) and then press the digits 4, 7, 2 and 5 respectively.

For ADJUST settings:

Select **Adjust** using ∇ or \triangle button and press \triangleright or \triangleleft button to enter it. To select different adjust parameters, use ∇ or \triangle button. To change the selected parameter, use \triangleright or \triangleleft button.

WHITE BALANCE ADJUSTMENT:

The following three parameters are used to make white balance adjustment. To do this, use a Colour Analyser. Using white point RED, white point GREEN and white point BLUE parameters, insert the + sign in the square which is in the middle of the screen.

ADJUST 00 = White Point RED

ADJUST 01 = White Point GREEN

ADJUST 02 = White Point BLUE

AGC ADJUSTMENT:

In order to do AGC adjustment, enter a 60dBmV RF signal level from channel C-12.

Connect a digital voltmeter to pin 1 of the tuner. Change the AGC parameter until you see 3.70VDC on voltmeter display. Check that picture is normal at 90dBmV signal level.

IF-PLL NEGATIVE ADJUSTMENT (Only with PLL tuner):

Connect 38.9 MHz test pattern for PAL B/G, PAL-SECAM B/G, 39.5 MHz test pattern for PAL I or 45.75 MHz test pattern for PAL M/N, NTSC M model to Z401 SAW filter input terminals. Change the IF-PLL Negative parameter until you see IN, DOWN below. If you cannot catch IN, DOWN position this way, using a screwdriver rotate the VIF-COIL LT401 left or right until you see IN, DOWN.

IF-PLL POSITIVE ADJUSTMENT (Only with PLL tuner):

Connect 33.9 MHz test pattern for SECAM L' model to Z401 SAW filter input terminals. Change the IF-PLL Positive parameter until you see IN, DOWN below. If you cannot catch IN, DOWN position this way, using a screwdriver rotate the VIF-COIL LT401 left or right until you see IN, DOWN.

LUMINANCE DELAY ADJUSTMENT (with only TDA 8844 video processor):

Y-Delay PAL

Enter a PAL B/G colour and black-white bar test pattern via RF. Adjust Y-Delay PAL till the colour transients on the colour bar of the pattern become as sharper and colours between transients do not mix with each other as possible.

Note: If the SAW filter is one of the G1965M, J1951M, J3950M, K2958M, K2962M, G3957M, K6256K, K6259K or M1963M, there is constant group delay distortion, so for an equal delay of the luminance and chrominance signal the delay must be set at a value of 160nS. This means the adjustment must be set to the maximum value.

Y-Delay SECAM

Enter a SECAM B/G colour and black-white bar test pattern via RF. Adjust Y-Delay SECAM till the colour transients on the colour bar of the pattern become as sharper and colours between transients do not mix with each other as possible.

Note: If the SAW filter is one of the G1965M, K2958M, K2962M, G3957M, K6256K or K6259K, there is constant group delay distortion, so for an equal delay of the luminance and chrominance signal the delay must be set at a value of 160nS.

This means the adjustment must be set to the maximum value.

Y-Delay NTSC

Enter an NTSC colour and black-white bar test pattern via RF. Adjust Y-Delay NTSC till the colour transients on the colour bar of the pattern become as sharper and colours between transients do not mix with each other as possible.

Note: If the SAW filter is M1963M, there is constant group delay distortion, so for an equal delay of the luminance and chrominance signal the delay must be set at a value of 160nS. This means the adjustment must be set to the maximum value.

Y-Delay Other

In case of other colour systems, enter this system with colour and black-white bar test pattern via RF. Adjust Y-Delay Other till the colour transients on the colour bar of the pattern become as sharper and colours between transients do not mix with each other as possible. Normally for an equal delay of the luminance and chrominance signal the delay must be set at a value of 160nS.

This means the adjustment must be set to the maximum value.

VERTICAL ZOOM ADJUSTMENT (only for 110ø picture tubes):

Enter a PAL B/G circle test pattern via RF. Change vertical zoom till you see the upper and lower limit of the circle as close to the upper and lower limit of the picture tube as possible.

VERTICAL SCROLL ADJUSTMENT (only for 110ø picture tubes):

Enter a PAL B/G circle test pattern via RF. Change vertical scroll till you see the circle exactly in the middle of the screen.

4:3 HORIZONTAL SHIFT ADJUSTMENT:

Enter a RED PURITY test pattern via RF. Change horizontal shift till the picture is horizontally centred. Check whether this adjustment is correct after completing Service Mode Adjustment.

4:3 VERTICAL SLOPE ADJUSTMENT:

Enter a CROSS-HATCH B/G test pattern via RF. Change vertical slope till the size of squares on both the upper and lower part of test pattern become equal to the squares laying on the vertical centre of the test pattern. Check and readjust VERTICAL SLOPE item if the adjustment becomes improper after some other geometric adjustments are done.

4:3 VERTICAL AMPLITUDE ADJUSTMENT:

Enter a PAL B/G test pattern via RF. Change vertical slope till horizontal black lines on both the upper and lower part of the test pattern become very close to the upper and lower horizontal sides of picture tube and nearly about to disappear. Check and readjust VERTICAL AMPLITUDE item if the adjustment becomes improper after some other geometric adjustments are done.

4:3 S-CORRECTION ADJUSTMENT:

Enter a PAL B/G circle test pattern via RF. Change S-correction till the middle part of the circle is as round as possible.

4:3 VERTICAL SHIFT ADJUSTMENT:

Enter a PAL B/G test pattern via RF. Change Vertical Shift till the test pattern is vertically centred, i.e. horizontal line at the centre pattern is in equal distance both to upper and lower side of the picture tube. Check and readjust Vertical Shift item if the adjustment becomes improper after some other geometric adjustments are done.

4:3 EW WIDTH ADJUSTMENT (only for 110ø picture tubes):

Enter a PAL B/G test pattern via RF. Change EW Width till the vertical black and white bars on both left and right side of the pattern exactly disappear.

4:3 EW PARABOLA WIDTH ADJUSTMENT (only for 110ø picture tubes):

Enter a PAL B/G test pattern via RF. Change EW Parabola Width till vertical lines close to the both sides of the picture frame become parallel to vertical sides of picture tube. Check and readjust EW Parabola Width item if the adjustment becomes improper after some other geometric adjustments are done.

4:3 EW CORNER PARABOLA ADJUSTMENT (only for 110ø picture tubes):

Enter a PAL B/G test pattern via RF. Change EW Corner Parabola till vertical lines at the corners of both sides of picture frame become vertical and parallel to vertical corner sides of picture tube. Check and readjust EW Corner Parabola item if the adjustment becomes improper after some other geometric adjustments are done.

4:3 EW TRAPEZIUM ADJUSTMENT (only for 110ø picture tubes):

Enter a PAL B/G test pattern via RF. Change EW Trapezium till vertical lines, especially lines at the sides of the picture frame became parallel to the both sides of picture tube as close as possible. Check and readjust EW Trapezium item if the adjustment becomes improper after some other geometric adjustments are done.

16:9 HORIZONTAL SHIFT ADJUSTMENT:

Enter a RED PURITY test pattern via RF. Change horizontal shift till the picture is horizontally centred. Check whether this adjustment is correct after completing Service Mode Adjustment.

16:9 VERTICAL SLOPE ADJUSTMENT:

Enter a CROSS-HATCH B/G test pattern via RF. Change vertical slope till the size of squares on both the upper and lower part of test pattern become equal to the squares laying on the vertical centre of the test pattern. Check and readjust VERTICAL SLOPE item if the adjustment becomes improper after some other geometric adjustments are done.

16:9 VERTICAL AMPLITUDE ADJUSTMENT:

Enter a PAL B/G test pattern via RF. Change vertical slope till horizontal black lines on both the upper and lower part of the test pattern become very close to the upper and lower horizontal sides of picture tube and nearly about to disappear. Check and readjust VERTICAL AMPLITUDE item if the adjustment becomes improper after some other geometric adjustments are done.

16:9 S-CORRECTION ADJUSTMENT:

Enter a PAL B/G circle test pattern via RF. Change S-correction till the middle part of the circle is as round as possible.

16:9 VERTICAL SHIFT ADJUSTMENT:

Enter a PAL B/G test pattern via RF. Change Vertical Shift till the test pattern is vertically centred, i.e. horizontal line at the centre pattern is in equal distance both to upper and lower side of the picture tube. Check and readjust Vertical Shift item if the adjustment becomes improper after some other geometric adjustments are done.

16:9 EW WIDTH ADJUSTMENT (only for 110ø picture tubes):

Enter a PAL B/G test pattern via RF. Change EW Width till the vertical black and white bars on both left and right side of the pattern exactly disappear.

16:9 EW PARABOLA WIDTH ADJUSTMENT (only for 110ø picture tubes):

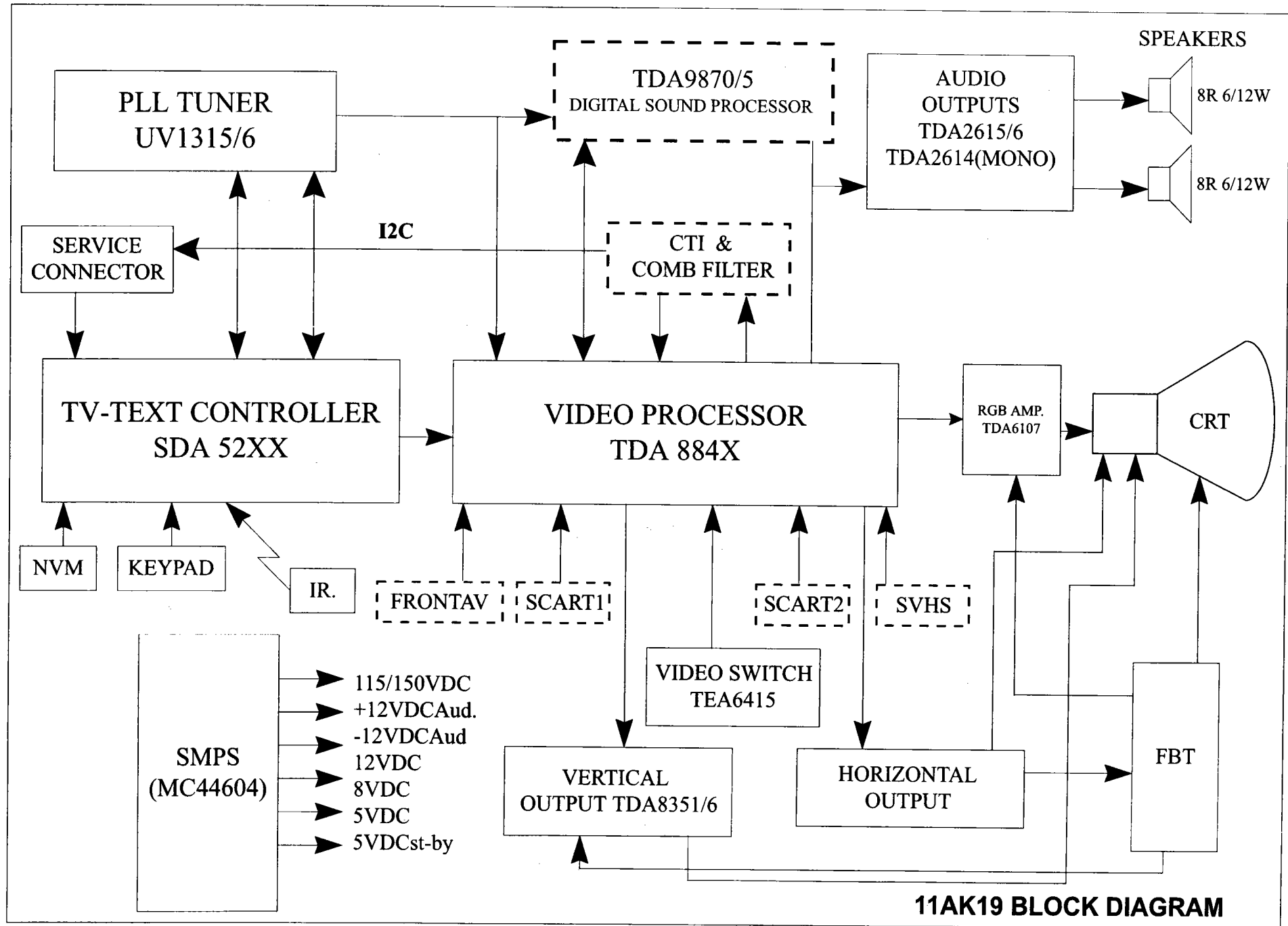
Enter a PAL B/G test pattern via RF. Change EW Parabola Width till vertical lines close to the both sides of the picture frame become parallel to vertical sides of picture tube. Check and readjust EW Parabola Width item if the adjustment becomes improper after some other geometric adjustments are done.

16:9 EW CORNER PARABOLA ADJUSTMENT (only for 110ø picture tubes):

Enter a PAL B/G test pattern via RF. Change EW Corner Parabola till vertical lines at the corners of both sides of picture frame become vertical and parallel to vertical corner sides of picture tube. Check and readjust EW Corner Parabola item if the adjustment becomes improper after some other geometric adjustments are done.

16:9 EW TRAPEZIUM ADJUSTMENT (only for 110ø picture tubes):

Enter a PAL B/G test pattern via RF. Change EW Trapezium till vertical lines, especially lines at the sides of the picture frame became parallel to the both sides of picture tube as close as possible. Check and readjust EW Trapezium item if the adjustment becomes improper after some other geometric adjustments are done.



11AK19 BLOCK DIAGRAM

GENERAL BLOCK DIAGRAM OF CHASSIS AK19

SPARE PARTS LIST									
10002697		7216 TEAC AUSTR TEAC EU-66ST(METAL.FUME)							
BOM Date : 06/03/2000									
COMPONENT CODE	MATERIAL	UNIT	QTY	POSITION NUMBER					
20000849	FUSE ASSY.TK79-A (3.15A)	PC	1,000	F801	.	.	.	.	.
20001627	MD.ASY.TK40-7216 5SW 19	PC	1,000	.	.	.	.	.	.
20001959	MD.ASY.ST19A -BG/DK GS H FAV+1SC 7APCB	PC	1,000	.	.	.	.	.	.
20002004	MD.ASY.LD18-LED BOARD 7216	PC	1,000	.	.	.	.	.	.
20003606	BRACKET HEATSINK (AUDIO- HOR)	PC	1,000	.	.	.	.	.	.
20003607	BRACKET HEATSINK BACK AV AK19	PC	1,000	.	.	.	.	.	.
20003839	BUTTON ON/OFF 7216 (I) (WO/TS)	PC	1,000	.	.	.	.	.	.
20003842	BUTTON FUNCTION 7216 5T (I)	PC	1,000	.	.	.	.	.	.
20004005	CHASSIS FRAME AK19 (110°)	PC	1,000	.	.	.	.	.	.
20004429	LENS LED 8410/7216 (I)	PC	1,000	.	.	.	.	.	.
20004519	CABLE HOLDER CRT (I)	PC	1,000	.	.	.	.	.	.
20014023	MD.ASY.SB19B-1 HEADPHODE&SVHS AK19	PC	1,000	.	.	.	.	.	.
20014738	MD.ASY.19-T KARTI (02)	PC	1,000	.	.	.	.	.	.
20015308	CHS.ASSY.19-1WGN2222133XK2	PC	1,000	.	.	.	.	.	.
20015509	BACK CVR.7210/1/2/5/6 (UL) GRAY (I)AK19	PC	1,000	.	.	.	.	.	.
20015510	FRONT 7216 W/H&J-SVHS UL(GRAY)(I)	PC	1,000	.	.	.	.	.	.
20015708	FRONT 7216 W/H&J-SVHS UL(TEAC MET.FU)(P)	PC	1,000	.	.	.	.	.	.
20015709	BACK CVR.7210/1/2/5/6(UL)TEAC MET.FU (P)	PC	1,000	.	.	.	.	.	.
20015710	LENS 7216M-AV(-V+P+)TEAC ME.FU(PN429C/S	PC	1,000	.	.	.	.	.	.
20016405	ON/OFF AS.110°(28- 29°)(2.2/AU)(W/MAKARON	PC	1,000	.	.	.	.	.	.
20017969	STANDBY ASSY.AK19	PC	1,000	.	.	.	.	.	.
20018351	BASE 721X/20/7411/12 (UL)(I)W/CHA.F.AK19	PC	1,000	.	.	.	.	.	.
20018608	CABLE ASSY.STANDBY (13cm)	PC	1,000	.	.	.	.	.	.
30000457	RES SMD 1/10W 10R J 0805	PC	1,000	R104	.	.	.	.	.
.	.	PC	1,000	R105	.	.	.	.	.
30000459	RES CF 1/4W 100R J	PC	1,000	R044	.	.	.	.	.

.	.	PC	3,000	R907	R908	R909	.	.
.	.	PC	2,000	R208	R209	.	.	.
.	.	PC	8,000	R202	R407	R431	R432	R602
.	.	.	.	R621	R714	R715	.	.
.	.	PC	2,000	R303	R304	.	.	.
.	.	PC	2,000	J163	J164	.	.	.
30000464	RES SMD 1/10W 100R J	PC	1,000	R100	.	.	.	.
.	.	PC	2,000	R050	R051	.	.	.
.	.	PC	4,000	R305	R306	R325	R326	.
30000466	RES CF 1/4W 1K J	PC	1,000	R508	.	.	.	.
.	.	PC	7,000	R605	R626	R716	R807	R809
.	.	.	.	R818	R829	.	.	.
.	.	PC	1,000	J400	.	.	.	.
.	.	PC	1,000	R448	.	.	.	.
30000469	RES SMD 1/10W 1K J 0805	PC	7,000	R102	R105	R106	R107	R110
.	.	.	.	R111	R112	.	.	.
.	.	PC	1,000	R082	.	.	.	.
.	.	PC	14,000	R405	R437	R438	R439	R440
.	.	.	.	R441	R500	R502	R503	R507
.	.	.	.	R543	R554	R571	R708	.
.	.	PC	4,000	R067	R069	R079	R081	.
.	.	PC	2,000	R321	R351	.	.	.
30000471	RES CF 1/4W 10K J	PC	5,000	R203	R488	R601	R831	R844
.	.	PC	2,000	R101	R102	.	.	.
.	.	PC	2,000	R002	R001	.	.	.
30000475	RES SMD 1/10W 10K J 0805	PC	1,000	R546	.	.	.	.
.	.	PC	1,000	R323	.	.	.	.
.	.	PC	12,000	R433	R524	R534	R552	R564
.	.	.	.	R572	R578	R581	R594	R595
.	.	.	.	R596	R709	.	.	.
.	.	PC	1,000	R361	.	.	.	.
.	.	PC	3,000	R336	R337	R360	.	.
.	.	PC	6,000	R094	R095	R096	R097	R098
.	.	.	.	R099	.	.	.	.
.	.	PC	2,000	R475	R487	.	.	.
30000480	RES SMD 1/10W 100K J (0805)	PC	2,000	R446	R586	.	.	.
.	.	PC	2,000	R479	R494	.	.	.
.	.	PC	2,000	R107	R109	.	.	.
30000484	RES SMD 1/10W 1M J (0805)	PC	1,000	R584	.	.	.	.
30000489	RES SMD 1/10W 1R J (0805)	PC	1,000	R449	.	.	.	.

30000494	RES SMD 1/10W 120R J (0805)	PC	1,000	R332	.	.	.	.
30000495	RES CF 1/4W 1.2K J	PC	1,000	R587	.	.	.	.
30000499	RES SMD 1/10W 1.2K J (0805)	PC	1,000	R421	.	.	.	.
30000500	RES CF 1/4W 12K J	PC	1,000	R711	.	.	.	.
30000503	RES SMD 1/10W 12K J (0805)	PC	2,000	R561	R574	.	.	.
.	.	PC	1,000	R200	.	.	.	.
30000513	RES CF 1/4W 130K J	PC	1,000	R823	.	.	.	.
30000519	RES CF 1/4W 150R J	PC	1,000	R812	.	.	.	.
30000524	RES SMD 1/10W 150R J (0805)	PC	1,000	R316	.	.	.	.
.	.	PC	1,000	R045	.	.	.	.
.	.	PC	1,000	R429	.	.	.	.
30000525	RES CF 1/2W 1.5K J	PC	5,000	R901	R902	R903	R905	R906
30000531	RES CF 1/4W 15K J	PC	1,000	R849	.	.	.	.
.	.	PC	2,000	R549	R570	.	.	.
30000534	RES SMD 1/10W 15K J (0805)	PC	1,000	R454	.	.	.	.
.	.	PC	4,000	R310	R311	R312	R313	.
30000540	RES CF 1/2W 1.5M J (400V)	PC	1,000	R816	.	.	.	.
30000542	RES SMD 1/10W 1.5M J	PC	1,000	R639	.	.	.	.
30000546	RES SMD 1/10W 1.5R J (0805)	PC	2,000	R301	R320	.	.	.
30000548	RES CF 1/4W 1.6K J	PC	1,000	RX61	.	.	.	.
30000550	RES SMD 1/10W 160K J	PC	1,000	R456	.	.	.	.
30000554	RES CF 1/4W 180R J	PC	1,000	R569	.	.	.	.
30000558	RES SMD 1/10W 180R J	PC	1,000	R422	.	.	.	.
.	.	PC	1,000	R465	.	.	.	.
.	.	PC	1,000	R346	.	.	.	.
30000563	RES SMD 1/10W 1.8KJ (0805)	PC	2,000	R498	R566	.	.	.
30000569	RES CF 1/4W 180K J	PC	1,000	R850	.	.	.	.
30000572	RES CF 1/4W 2K J	PC	1,000	R824	.	.	.	.
30000580	RES CF 1/4W 22R J	PC	2,000	R705	R835	.	.	.
30000583	RES CF 1/4W 220R J	PC	1,000	J167	.	.	.	.
.	.	PC	1,000	R559	.	.	.	.
30000588	RES SMD 1/10W 220R J 0805	PC	1,000	R618	.	.	.	.
.	.	PC	2,000	R492	R493	.	.	.
30000593	RES SMD 1/10W 2.2K J (0805)	PC	2,000	R314	R315	.	.	.
.	.	PC	1,000	R335	.	.	.	.
.	.	PC	1,000	R509	.	.	.	.
.	.	PC	1,000	R420	.	.	.	.
.	.	PC	3,000	R537	R538	R539	.	.
30000594	RES CF 1/4W 22K J	PC	2,000	R810	R811	.	.	.
30000597	RES SMD 1/10W 22K J	PC	1,000	R213	.	.	.	.

.	.	PC	2,000	R350	R352	.	.	.	.
.	.	PC	1,000	R101	.	.	.	.	.
.	.	PC	1,000	R474	.	.	.	.	.
30000599	RES CF 1/4W 220K J	PC	1,000	R821	.	.	.	.	.
30000603	RES CF 1/2W 2.2M J (400V)	PC	1,000	R860	.	.	.	.	.
30000606	RES SMD 1/10W 2.2M J	PC	1,000	R453	.	.	.	.	.
.	.	PC	1,000	R457	.	.	.	.	.
30000609	RES SMD 1/10W 2.2R J	PC	1,000	R302	.	.	.	.	.
30000626	RES SMD 1/10W 270R J	PC	1,000	R447	.	.	.	.	.
.	.	PC	1,000	R308	.	.	.	.	.
30000628	RES CF 1/4W 2.7K J	PC	2,000	RX010	RX011	.	.	.	.
30000631	RES SMD 1/10W 2.7K J 0805	PC	1,000	R450	.	.	.	.	.
.	.	PC	1,000	R540	.	.	.	.	.
30000633	RES CF 1/4W 27K J	PC	2,000	R451	R805	.	.	.	.
.	.	PC	1,000	R547	.	.	.	.	.
30000636	RES SMD 1/10W 27K J 0805	PC	1,000	R362	.	.	.	.	.
30000650	RES CF 1/4W 33R J	PC	2,000	R428	R455	.	.	.	.
.	.	PC	2,000	R111	R112	.	.	.	.
30000653	RES SMD 1/10W 33R J	PC	1,000	R083	.	.	.	.	.
.	.	PC	1,000	R101	.	.	.	.	.
.	.	PC	1,000	R075	.	.	.	.	.
30000655	RES CF 1/4W 330R J	PC	1,000	R707	.	.	.	.	.
30000659	RES SMD 1/10W 330R J (0805)	PC	2,000	R403	R426	.	.	.	.
30000660	RES CF 1/4W 3.3K J	PC	1,000	R871	.	.	.	.	.
30000664	RES SMD 1/10W 3.3K J (0805)	PC	1,000	R331	.	.	.	.	.
30000665	RES CF 1/4W 33K J	PC	1,000	CX9	.	.	.	.	.
30000668	RES SMD 1/10W 33K J 0805	PC	1,000	R511	.	.	.	.	.
30000675	RES SMD 1/10W 3.3M J	PC	1,000	R510	.	.	.	.	.
30000688	RES SMD 1/10W 390R J (0805)	PC	1,000	R404	.	.	.	.	.
30000696	RES SMD 1/10W 39K J (0805)	PC	1,000	R548	.	.	.	.	.
30000697	RES SMD 1/10W 39K G	PC	1,000	R459	.	.	.	.	.
30000704	RES CF 1/4W 43K J	PC	1,000	R606	.	.	.	.	.
30000706	RES CF 1/4W 47R J	PC	5,000	R103	R402	R814	R833	R836	.
30000710	RES SMD 1/10W 47R J (0805)	PC	1,000	R419	.	.	.	.	.
.	.	PC	1,000	R322	.	.	.	.	.
.	.	PC	1,000	R084	.	.	.	.	.
30000712	RES CF 1/4W 470R J	PC	1,000	R717	.	.	.	.	.
.	.	PC	2,000	J126	J127	.	.	.	.
30000717	RES SMD 1/10W 470R J (0805)	PC	1,000	R049	.	.	.	.	.
.	.	PC	1,000	R400	.	.	.	.	.

30000718	RES CF 1/4W 4.7K J	PC	2,000	R832	R879	.	.	.
.	.	PC	1,000	R710	.	.	.	.
30000721	RES SMD 1/10W 4.7K J	PC	2,000	R333	R345	.	.	.
.	.	PC	2,000	R486	R542	.	.	.
30000723	RES CF 1/4W 47K J	PC	1,000	R201	.	.	.	.
30000727	RES SMD 1/10W 47K J (0805)	PC	2,000	R339	R347	.	.	.
.	.	PC	1,000	R100	.	.	.	.
30000732	RES SMD 1/10W 470K J	PC	1,000	R458	.	.	.	.
.	.	PC	2,000	R103	R108	.	.	.
30000735	RES SMD 1/10W 4.7R J (0805)	PC	1,000	R418	.	.	.	.
30000747	RES SMD 1/10W 560R J (0805)	PC	1,000	R102	.	.	.	.
.	.	PC	1,000	R334	.	.	.	.
30000751	RES SMD 1/10W 5.6K J 0805	PC	2,000	R358	R359	.	.	.
.	.	PC	3,000	R528	R529	R530	.	.
30000755	RES SMD 1/10W 56K J	PC	1,000	R338	.	.	.	.
30000770	RES CF 1/4W 680R J	PC	1,000	R003	.	.	.	.
.	.	PC	1,000	R460	.	.	.	.
30000774	RES SMD 1/10W 680R J (0805)	PC	4,000	R066	R068	R078	R080	.
30000775	RES CF 1/4W 6.8K J	PC	2,000	R614	R617	.	.	.
30000778	RES SMD 1/10W 6.8K J 0805	PC	2,000	R341	R363	.	.	.
30000782	RES SMD 1/10W 68K J	PC	1,000	R342	.	.	.	.
30000797	RES SMD 1/10W 75R J (0805)	PC	7,000	R065	R070	R071	R072	R073
.	.	.	.	R077	R417	.	.	.
30000801	RES CF 1/4W 7.5K J	PC	1,000	R808	.	.	.	.
30000805	RES CF 1/4W 75K J	PC	1,000	R108	.	.	.	.
30000807	RES SMD 1/10W 75K J	PC	1,000	R106	.	.	.	.
.	.	PC	1,000	R113	.	.	.	.
30000808	RES CF 1/4W 82R J	PC	2,000	R103	R105	.	.	.
30000810	RES CF 1/4W 820R J	PC	2,000	R868	R869	.	.	.
30000814	RES SMD 1/10W 820R J	PC	1,000	R330	.	.	.	.
30000815	RES CF 1/4W 8.2K J	PC	2,000	R619	R834	.	.	.
.	.	PC	2,000	R613	R615	.	.	.
30000818	RES SMD 1/10W 8.2K J (0805)	PC	2,000	R343	R344	.	.	.
30000837	RES CF 1/4W 9.1K J	PC	1,000	R813	.	.	.	.
30000860	RES MF 1/4W 1R F	PC	1,000	R703	.	.	.	.
30000949	RES MF 1/4W 3K G	PC	1,000	R706	.	.	.	.
30001064	RES ADJ 470R 0.1W VER (MAN)	PC	1,000	VR801	.	.	.	.
30001082	RES MO 1/2W 1K J	PC	2,000	R620	R630	.	.	.
30001129	RES MO 22K 3W J	PC	1,000	R822	.	.	.	.
30001159	RES MO 1W 0.33R J	PC	2,000	R819	R870	.	.	.

30001171	RES MO 2W 4.7K J	PC	2,000	R610	R631	.	.	.
30001178	RES MO 5W 5K1 J	PC	2,000	R806-	R806-	.	.	.
30001210	RES FUSE 1/4W 100R J	PC	1,000	R704	.	.	.	.
30001215	RES FUSE 1W 1R J	PC	1,000	R611	.	.	.	.
30001228	RES FUSE 1/2W 2.2R J	PC	1,000	R628	.	.	.	.
30001232	RES FUSE 1/4W 2.7R J	PC	1,000	R629	.	.	.	.
30001235	RES FUSE 1/2W 0.33R J	PC	1,000	R608	.	.	.	.
30001242	RES FUSE 1/4W 47R J	PC	1,000	J902	.	.	.	.
30001257	RES MG 1/2W 4.7M J	PC	1,000	R845	.	.	.	.
30001260	RES WW 5W 2.2R J RAD.	PC	1,000	R817	.	.	.	.
30001270	PTC 9 OHM	PC	1,000	TH801	.	.	.	.
30007759	RES CF 1W 47K J	PC	1,000	R828	.	.	.	.
40000020	TR HOLDER TR-06A	PC	2,000	.	.	.	.	.
40000098	CABLE HOLDER 2.5*4P	PC	2,000	.	.	.	.	.
40000099	CABLE HOLDER 2.5*5P	PC	2,000	.	.	.	.	.
40000101	SPACER SUPPORT AK19 STR®	PC	1,000	KART	.	.	.	.
40000108	ADJUSTABLE BOSS 63-72/XX	PC	4,000	.	.	.	.	.
40000127	SWITCH INSULATION DOOR LK101	PC	1,000	.	.	.	.	.
40000145	INSULATOR SILICON PAD(20*30MM)	PC	1,000	.	.	.	.	.
40001898	MACARON (12cm.Isý ile daralan)	PC	1,000	.	.	.	.	.
40004691	LENS 7216 M-AV (I)	PC	1,000	.	.	.	.	.
50005978	CARTON BOX TEAC EU-66ST	PC	1,000	.	.	.	.	.
50006058	CAR.BOX 72-10/1/2/5/6/20/70/71 CR&TV.EMP	PC	1,000	.	.	.	.	.

BILL OF MATERIAL LIST

10002697

7216 TEAC AUSTR TEAC EU-66ST(METAL.FUME)

BOM Date : 06/03/2000

NO	LEVEL	COMPONENT CODE	MATERIAL	UNIT	QTY	POSITION NUMBER				
1	1	20000542	SPK.A.721X/20/70-1/82X/28(19)ST/MN WO/HP	PC	1,000	.	.	.	.	.
2	2	20000546	SPK.ASSY.8R 15W 721X/20(19)(R)	PC	1,000	.	.	.	.	.
3	3	30001946	SPEAKER 8R 15W 57*160	PC	1,000	.	.	.	.	.
4	3	30007498	CONN.ASSY.2/76 R2.6 W/BL CONN.	PC	1,000	.	.	.	.	.
5	2	20000547	SPK.ASSY.8R 15W 721X/20(19)(L)	PC	1,000	.	.	.	.	.
6	3	30001946	SPEAKER 8R 15W 57*160	PC	1,000	.	.	.	.	.
7	3	30007497	CONN.ASSY.2/69 R2.6 W/GRAY CONN.	PC	1,000	.	.	.	.	.
8	1	20000594	CRT KIT (28) AK19 WO/UL	PC	1,000	.	.	.	.	.
9	2	30002136	28 DEG COIL&EARTH CB. WO/UL	PC	1,000	.	.	.	.	.
10	2	30007298	CONN.ASSY.4/45 R26 (HRZ&VER) IMPROVED	PC	1,000	.	.	.	.	.
11	2	35000010	EARTH SPRING (4CM)	PC	1,000	.	.	.	.	.
12	1	20001627	MD.ASY.TK40-7216 5SW 19	PC	1,000	.	.	.	.	.
13	2	30001284	DIODE 1N4148	PC	2,000	D500	D501	.	.	.
14	2	30001670	PREAMPLIFIER TFMS5360	PC	1,000	.	.	.	.	.
15	2	30002181	SWITCH TACT	PC	5,000	SW501	SW502	SW503	SW504	SW505
16	2	30002300	CONN.ASSY 5/45 FC	PC	1,000	.	.	.	.	.
17	2	30002335	CON.ASSY.3/60 FC (PRE-AMP)	PC	1,000	.	.	.	.	.
18	2	30002459	PCB TK40-1	PC	1,000	.	.	.	.	.
19	1	20002004	MD.ASY.LD18-LED BOARD 7216	PC	1,000	.	.	.	.	.
20	2	20003839	BUTTON ON/OFF 7216 (I) (WO/TS)	PC	1,000	.	.	.	.	.
21	3	60000003	ABS BLACK	KG	0,005	.	.	.	.	.
22	2	20004429	LENS LED 8410/7216 (I)	PC	1,000	.	.	.	.	.
23	3	60000013	ACRYLIC MILKY	G	0,600	.	.	.	.	.
24	2	20027453	MD.ASY.LD18-LD18	PC	1,000	.	.	.	.	.
25	3	30001279	LED RED/GREEN LTL293SJ	PC	1,000	.	.	.	.	.
26	3	30002325	CONN.ASSY 2/60 FC (LED)	PC	1,000	.	.	.	.	.

27	3	30009097	PCB 11LD18-1	PC	1,000	.	.	.	.	.
28	1	20002380	MD.ASY.FAV-19 STR	PC	1,000	.	.	.	.	.
29	2	30001833	CONN MALE 2P SIDE BLUE	PC	1,000	PL1201	.	.	.	.
30	2	30001844	CONN MALE 3P SIDE GREEN	PC	1,000	PL1202	.	.	.	.
31	2	30001882	RCA JACK 1P WHITE	PC	1,000	PL1204	.	.	.	.
32	2	30001883	RCA JACK 1P RED	PC	1,000	PL1205	.	.	.	.
33	2	30001884	RCA JACK 1P YELLOW	PC	1,000	PL1203	.	.	.	.
34	2	30002315	CONN ASSY 2/55 SHL.D.C. BLU	PC	1,000	.	.	.	.	.
35	2	30002321	CONN ASSY 3/55 SHL.D.C. GRN	PC	1,000	.	.	.	.	.
36	2	30007744	PCB 11FAV19A-2	PC	1,000	.	.	.	.	.
37	3	60000047	CCL 1220*1020*1.6 FR2 V0 351	M2	0,002	.	.	.	.	.
38	1	20002565	EXP.KIT 12/18/19 FNL W/SPRING	PC	1,000	.	.	.	.	.
39	2	20004519	CABLE HOLDER CRT (I)	PC	1,000	.	.	.	.	.
40	3	60000018	COPOLYMER POLYPROPYLENE	KG	0,002	.	.	.	.	.
41	2	35000013	SPRING ON/OFF SWITCH	PC	1,000	.	.	.	.	.
42	2	35000512	NUT C ZN M4	PC	1,000	.	.	.	.	.
43	1	20003842	BUTTON FUNCTION 7216 5T (I)	PC	1,000	.	.	.	.	.
44	2	60000003	ABS BLACK	KG	0,005	.	.	.	.	.
45	1	20006058	SCR.AS.7216HP/FAV/BAV (19)	PC	1,000	.	.	.	.	.
46	2	35000162	WASHER C ZN DZ 4.4*12*1	PC	1,000	.	.	.	.	.
47	2	35000199	SCREW S C ZN YSMB 3.9*25	PC	1,000	.	.	.	.	.
48	2	35000215	SCREW S C ZNSY YSMB 3.9*13	PC	1,000	.	.	.	.	.
49	2	35000216	SCREW S C ZNSY YSMB 3.9*19	PC	9,000	.	.	.	.	.
50	2	35000224	SCREW C SK ZN YFMB 2.9*9.5	PC	11,000	.	.	.	.	.
51	2	35000231	SCREW SK C NI YFMB 2.9*6.5	PC	2,000	.	.	.	.	.
52	2	35000232	SCREW SK C NI YFMB 2.9*9.5	PC	4,000	.	.	.	.	.
53	2	35000235	SCREW P C ZN AKBR 7*32	PC	4,000	.	.	.	.	.
54	2	40000108	ADJUSTABLE BOSS 63- 72/XX	PC	4,000	.	.	.	.	.

55	1	20013330	SNOW BOX ASSY.7210/11/12/15/16	PC	1,000	.	.	.	.	.
56	2	20004303	SNOW BOX BOTTOM- 7210/11/12	PC	1,000	.	.	.	.	.
57	3	60000011	EPS	KG	0,411	.	.	.	.	.
58	2	20004304	SNOW BOX TOP- 7210/11/12	PC	1,000	.	.	.	.	.
59	3	60000011	EPS	KG	0,411	.	.	.	.	.
60	1	20014023	MD.ASY.SB19B-1 HEADPHODE&SVHS AK19	PC	1,000	.	.	.	.	.
61	2	20014709	MD.OTO.SB19B-1 HEADPHONE&SVHS AK19	PC	1,000	.	.	.	.	.
62	3	20014014	MD.SMD.SB19B-1 HEADPHONE&SVHS AK19	PC	1,000	.	.	.	.	.
63	4	20014015	MD.RAD.SB19B-1 HEADPHONE&SVHS AK19	PC	1,000	.	.	.	.	.
64	5	20014016	MD.AXI.SB19B-1 HEADPHONE&SVHS AK19	PC	1,000	.	.	.	.	.
65	6	20014017	MD.SEQ.SB19B-1 HEADPHONE&SVHS AK19	PC	1,000	.	.	.	.	.
66	7	20014019	MD.JUM.SB19B-1 HEADPHODE&SVHS AK19	PC	1,000	.	.	.	.	.
67	8	30002583	JUMPER WIRE 0.6MM	G	0,250	S103	S104	.	.	.
68	7	30000471	RES CF 1/4W 10K J	PC	2,000	R101	R102	.	.	.
69	7	30000650	RES CF 1/4W 33R J	PC	2,000	R111	R112	.	.	.
70	7	30000808	RES CF 1/4W 82R J	PC	2,000	R103	R105	.	.	.
71	7	30001979	FIXED COIL 1UH Q45 M-A	PC	1,000	L102	.	.	.	.
72	6	30007180	PCB 11SB19B-3	PC	1,000	.	.	.	.	.
73	7	60000047	CCL 1220*1020*1.6 FR2 V0 351	M2	0,006	.	.	.	.	.
74	5	30000191	CAP CER 100PF 50V J SL	PC	1,000	C107	.	.	.	.
75	2	30001838	CONN MALE 3P TOP YELLOW	PC	1,000	PL105	.	.	.	.
76	2	30001895	JACK 4P DIN TYPE FOR SVHS	PC	1,000	CON101	.	.	.	.
77	2	30001902	JACK HEADPHONE STEREO WO/SW	PC	1,000	CON105	.	.	.	.
78	2	30002317	CONN.3/55 W/RED (HEADPHONE)	PC	1,000	PL102	.	.	.	.

79	2	30002322	CONN ASSY 3/55 SHL.D.C. YLW	PC	1,000	PL105	.	.	.	.
80	1	20015308	CHS.ASSY.19- 1WGN2222133XK2	PC	1,000	.	.	.	.	.
81	2	20009333	CRT DIFF.KIT AK19- 28/VCL(GY)	PC	1,000	.	.	.	.	.
82	3	20014738	MD.ASY.19-T KARTI (02)	PC	1,000	.	.	.	.	.
83	4	20003510	CABLE ASSY.19-5/45 FC RGB	PC	1,000	.	.	.	.	.
84	5	30002301	CABLE 5/45FC (RGB AK19) WO/SOC	PC	1,000	.	.	.	.	.
85	5	40000099	CABLE HOLDER 2.5*5P	PC	2,000	.	.	.	.	.
86	4	20014739	MD.RAD.19-T KARTI (02- 03-04)	PC	1,000	.	.	.	.	.
87	5	20014740	MD.AXI.19-T KARTI (02- 03-04)	PC	1,000	.	.	.	.	.
88	6	20014741	MD.SEQ.19-T KARTI (02- 03-04)	PC	1,000	.	.	.	.	.
89	7	30000471	RES CF 1/4W 10K J	PC	2,000	R002	R001	.	.	.
90	7	30000770	RES CF 1/4W 680R J	PC	1,000	R003	.	.	.	.
91	7	30001284	DIODE 1N4148	PC	4,000	D001	D002	D003	D004	.
92	6	30007006	PCB T-1	PC	1,000	.	.	.	.	.
93	7	60000047	CCL 1220*1020*1.6 FR2 V0 351	M2	0,002	.	.	.	.	.
94	5	30000375	CAP EL 220UF 16V M	PC	1,000	C001	.	.	.	.
95	5	30001455	TR BC558B	PC	1,000	Q001	.	.	.	.
96	4	30001912	PIN F 5P/2.5MM (11.5MM)	PC	1,000	PL002	.	.	.	.
97	4	30009828	CABLE 1P R2.6 (25CM)	PC	1,000	CAB+8V	.	.	.	.
98	3	30000117	CAP MKT 8.2NF 100V J	PC	1,000	C707	.	.	.	.
99	3	30000123	CAP PP 33NF 630V K	PC	1,000	C610	.	.	.	.
100	3	30000143	CAP MKP 2.2NF 2KV %3.5	PC	1,000	C611	.	.	.	.
101	3	30000172	CAP MKP 680NF 250V J (P15)	PC	1,000	C617	.	.	.	.
102	3	30000180	CAP MKP 9.1NF 2000V %3.5	PC	1,000	C626	.	.	.	.
103	3	30000655	RES CF 1/4W 330R J	PC	1,000	R707	.	.	.	.
104	3	30000712	RES CF 1/4W 470R J	PC	1,000	R717	.	.	.	.
105	3	30000815	RES CF 1/4W 8.2K J	PC	2,000	R613	R615	.	.	.
106	3	30000860	RES MF 1/4W 1R F	PC	1,000	R703	.	.	.	.
107	3	30001215	RES FUSE 1W 1R J	PC	1,000	R611	.	.	.	.
108	3	30001855	SOCKET CRT NARROWNECK W/GND	PC	1,000	PL900	.	.	.	.
109	3	30002026	FIXED COIL 1MH AK19	PC	1,000	L602	.	.	.	.

			25/28							
110	2	20015309	CHS.WO/CRT.19-1WGN2222133XX2	PC	1,000	.	.	.	.	.
111	3	20001959	MD.ASY.ST19A-BG/DK GS H FAV+1SC 7APCB	PC	1,000	.	.	.	.	.
112	4	20001953	MD.OTO.ST19A -BGDK/I G/N HP(7APCB)	PC	1,000	.	.	.	.	.
113	5	20001779	MD.SMD.ST19-COMMON	PC	1,000	.	.	.	.	.
114	6	20001780	MD.RAD.ST19-COMMON	PC	1,000	.	.	.	.	.
115	7	20001781	MD.AXI.ST19-COMMON	PC	1,000	.	.	.	.	.
116	8	20001782	MD.SEQ.ST19-COMMON	PC	1,000	.	.	.	.	.
117	9	30000459	RES CF 1/4W 100R J	PC	2,000	R303	R304	.	.	.
118	9	30001987	FIXED COIL 4.7UH Q70 K-A	PC	4,000	L302	L303	L304	L305	.
119	9	30002583	JUMPER WIRE 0.6MM	G	1,755	J300	J305	J307	J308	J309
.	.	.	.	.	.	J311	J313	J314	J315	J319
.	.	.	.	.	.	J320	J321	J323	.	.
120	7	30000100	CAP MKT 330NF 63V J	PC	8,000	C304	C316	C318	C319	C322
.	.	.	.	.	.	C323	C327	C328	.	.
121	7	30000362	CAP EL 1UF 50V M	PC	1,000	C335	.	.	.	.
122	7	30000384	CAP EL 2.2UF 50V M	PC	4,000	C308	C309	C310	C311	.
123	7	30000387	CAP EL 33UF 50V M	PC	1,000	C330	.	.	.	.
124	7	30000400	CAP EL 47UF 50V M	PC	4,000	C301	C307	C312	C315	.
125	7	30000413	CAP EL 4.7UF 50V M	PC	1,000	C340	.	.	.	.
126	6	30000189	CAP SMD 100PF 50V J (0805)	PC	2,000	C337	C339	.	.	.
127	6	30000224	CAP SMD 220PF 50V J (08*05)	PC	4,000	C317	C320	C321	C324	.
128	6	30000256	CAP SMD 470PF 50V J (0805)	PC	2,000	C325	C326	.	.	.
129	6	30000284	CAP SMD 1NF 50V K R (0805)	PC	2,000	C341	C344	.	.	.
130	6	30000289	CAP SMD 10NF 50V K R (0805)	PC	2,000	C305	C306	.	.	.
131	6	30000294	CAP SMD 100NF 50V K (0805)	PC	3,000	C338	C378	C379	.	.
132	6	30000332	CAP SMD 4.7NF 50V K (0805)	PC	2,000	C342	C343	.	.	.
133	6	30000336	CAP SMD 5.6NF 50V K (0805)	PC	1,000	C329	.	.	.	.
134	6	30000464	RES SMD 1/10W 100R J	PC	4,000	R305	R306	R325	R326	.
135	6	30000469	RES SMD 1/10W 1K J 0805	PC	2,000	R321	R351	.	.	.
136	6	30000475	RES SMD 1/10W 10K J 0805	PC	1,000	R323	.	.	.	.

137	6	30000524	RES SMD 1/10W 150R J (0805)	PC	1,000	R316	.	.	.	.
138	6	30000534	RES SMD 1/10W 15K J (0805)	PC	4,000	R310	R311	R312	R313	.
139	6	30000546	RES SMD 1/10W 1.5R J (0805)	PC	2,000	R301	R320	.	.	.
140	6	30000593	RES SMD 1/10W 2.2K J (0805)	PC	2,000	R314	R315	.	.	.
141	6	30000626	RES SMD 1/10W 270R J	PC	1,000	R308	.	.	.	.
142	6	30000710	RES SMD 1/10W 47R J (0805)	PC	1,000	R322	.	.	.	.
143	6	30001734	JUMPER SMD (0805)	PC	2,000	J317	J322	.	.	.
144	6	30001968	FERRITE BEAD (0805) BLM21B201S	PC	2,000	L309	L310	.	.	.
145	6	30001971	FERRITE BEAT (805) BLM21A601S	PC	2,000	L306	L307	.	.	.
146	5	20001784	MD.SMD.ST19-BG/DK GER.STR.	PC	1,000	.	.	.	.	.
147	6	20001785	MD.RAD.ST19-BG/DK GER.STR.	PC	1,000	.	.	.	.	.
148	7	20001786	MD.AXI.ST19-BG/DK GER.STR.	PC	1,000	.	.	.	.	.
149	8	20001787	MD.SEQ.ST19-BG/DK GER.STR.	PC	1,000	.	.	.	.	.
150	9	30001284	DIODE 1N4148	PC	2,000	D302	D303	.	.	.
151	9	30001979	FIXED COIL 1UH Q45 M-A	PC	1,000	L312	.	.	.	.
152	7	30000384	CAP EL 2.2UF 50V M	PC	2,000	C364	C365	.	.	.
153	7	30001423	TR BF240	PC	1,000	Q303	.	.	.	.
154	7	30001454	TR BC548B	PC	3,000	Q301	Q302	Q304	.	.
155	6	30000289	CAP SMD 10NF 50V K R (0805)	PC	3,000	C355	C359	C361	.	.
156	6	30000294	CAP SMD 100NF 50V K (0805)	PC	3,000	C356	C360	C362	.	.
157	6	30000312	CAP SMD 22NF 50V K (0805)	PC	1,000	C363	.	.	.	.
158	6	30000315	CAP SMD 220NF 25V Z (0805)	PC	1,000	C366	.	.	.	.
159	6	30000475	RES SMD 1/10W 10K J 0805	PC	1,000	R361	.	.	.	.
160	6	30000494	RES SMD 1/10W 120R J (0805)	PC	1,000	R332	.	.	.	.
161	6	30000558	RES SMD 1/10W 180R J	PC	1,000	R346	.	.	.	.
162	6	30000593	RES SMD 1/10W 2.2K J (0805)	PC	1,000	R335	.	.	.	.
163	6	30000597	RES SMD 1/10W 22K J	PC	2,000	R350	R352	.	.	.
164	6	30000664	RES SMD 1/10W 3.3K J	PC	1,000	R331	.	.	.	.

			(0805)							
165	6	30000721	RES SMD 1/10W 4.7K J	PC	2,000	R333	R345	.	.	.
166	6	30000727	RES SMD 1/10W 47K J (0805)	PC	2,000	R339	R347	.	.	.
167	6	30000747	RES SMD 1/10W 560R J (0805)	PC	1,000	R334	.	.	.	.
168	6	30000755	RES SMD 1/10W 56K J	PC	1,000	R338	.	.	.	.
169	6	30000782	RES SMD 1/10W 68K J	PC	1,000	R342	.	.	.	.
170	6	30000818	RES SMD 1/10W 8.2K J (0805)	PC	2,000	R343	R344	.	.	.
171	6	30001734	JUMPER SMD (0805)	PC	4,000	C370	S301	S302	S305	.
172	5	20001799	MD.SMD.ST19- HEADPHONE	PC	1,000	.	.	.	.	.
173	6	20001800	MD.RAD.ST19- HEADPHONE	PC	1,000	.	.	.	.	.
174	7	30000352	CAP EL 100UF 16V M	PC	3,000	C336	C373	C374	.	.
175	7	30000362	CAP EL 1UF 50V M	PC	1,000	C375	.	.	.	.
176	7	30000384	CAP EL 2.2UF 50V M	PC	2,000	C347	C348	.	.	.
177	6	30000242	CAP SMD 330PF 50V J	PC	2,000	C352	C354	.	.	.
178	6	30000294	CAP SMD 100NF 50V K (0805)	PC	1,000	C369	.	.	.	.
179	6	30000309	CAP SMD 2.2NF 50V K R	PC	2,000	C357	C358	.	.	.
180	6	30000332	CAP SMD 4.7NF 50V K (0805)	PC	2,000	C349	C350	.	.	.
181	6	30000475	RES SMD 1/10W 10K J 0805	PC	3,000	R336	R337	R360	.	.
182	6	30000636	RES SMD 1/10W 27K J 0805	PC	1,000	R362	.	.	.	.
183	6	30000751	RES SMD 1/10W 5.6K J 0805	PC	2,000	R358	R359	.	.	.
184	6	30000778	RES SMD 1/10W 6.8K J 0805	PC	2,000	R341	R363	.	.	.
185	5	20001810	MD.SMD.ST19- WO/WYCOM	PC	1,000	.	.	.	.	.
186	6	30000220	CAP SMD 22PF 50V J (08*05)	PC	1,000	C345	.	.	.	.
187	6	30000289	CAP SMD 10NF 50V K R (0805)	PC	1,000	C377	.	.	.	.
188	6	30000814	RES SMD 1/10W 820R J	PC	1,000	R330	.	.	.	.
189	5	20001835	MD.SMD.ST19-7A PCB GRB	PC	1,000	.	.	.	.	.
190	6	20001836	MD.RAD.ST19-7A PCB GRB	PC	1,000	.	.	.	.	.
191	7	20001837	MD.AXI.ST19-7A PCB GRB	PC	1,000	.	.	.	.	.
192	8	30008720	PCB 11ST19-7B	PC	1,000	.	.	.	.	.
193	7	30000226	CAP CER 2.2PF 50V C CH	PC	1,000	C399	.	.	.	.

194	7	3000295	CAP CER 100NF 50V Z F	PC	1,000	C380	.	.	.	.
195	5	20001949	MD.SMD.ST19-7A/987XA GRUBU	PC	1,000	.	.	.	.	.
196	6	30000609	RES SMD 1/10W 2.2R J	PC	1,000	R302	.	.	.	.
197	6	30001734	JUMPER SMD (0805)	PC	7,000	C313	C314	C334	R307	R318
.	.	.	.	.	.	S310	S311	.	.	.
198	4	20003168	MD.MAN.ST19-COMMON	PC	1,000	.	.	.	.	.
199	5	30001741	XTAL 24.576MHZ	PC	1,000	X301	.	.	.	.
200	5	30001809	CONN.FEMALE 12P MOLEX	PC	1,000	PL301	.	.	.	.
201	5	30001811	CONN.FEMALE 14P MOLEX	PC	1,000	PL302	.	.	.	.
202	5	30002583	JUMPER WIRE 0.6MM	G	0,125	JX01	.	.	.	.
203	5	30009846	CABLE 0.6MM BLUE (4CM)	PC	1,000	CAB151	.	.	.	.
204	4	20003170	MD.MAN.ST19- HEADPHONE	PC	1,000	.	.	.	.	.
205	5	30001518	IC TDA1308	PC	1,000	IC305	.	.	.	.
206	5	30001776	CONN.MALE 3P(2703) RED	PC	1,000	PL303	.	.	.	.
207	4	20003174	MD.MAN.ST19-FRONT AV+1SC	PC	1,000	.	.	.	.	.
208	5	30001844	CONN MALE 3P SIDE GREEN	PC	1,000	PL304	.	.	.	.
209	4	20003192	MD.MAN.ST19-BG/DK GER.STR.	PC	1,000	.	.	.	.	.
210	5	30001589	IC TDA9817	PC	1,000	IC302	.	.	.	.
211	5	30001597	IC TDA 9875A	PC	1,000	.	.	.	.	.
212	5	30001692	FILTER SAW OFWK3953M	PC	1,000	Z300	.	.	.	.
213	5	30001706	FILTER SAW OFWK9453	PC	1,000	Z301	.	.	.	.
214	5	30002041	ADJ COIL 251NH Q50	PC	1,000	LT301	.	.	.	.
215	3	20002122	MD.ASY.BAV19E- BAV/OUT	PC	1,000	.	.	.	.	.
216	4	20002123	MD.OTO.BAV19E- BAV/OUT	PC	1,000	.	.	.	.	.
217	5	20002099	MD.SMD.BAV19E- BAV/OUT	PC	1,000	.	.	.	.	.
218	6	20002100	MD.RAD.BAV19E- BAV/OUT	PC	1,000	.	.	.	.	.
219	7	20002101	MD.AXI.BAV19E- BAV/OUT	PC	1,000	.	.	.	.	.
220	8	30009556	PCB 11BAV19E-2	PC	1,000	.	.	.	.	.
221	7	30000109	CAP MKT 470NF 63V J	PC	3,000	C103	C104	C113	.	.
222	7	30000352	CAP EL 100UF 16V M	PC	1,000	C100	.	.	.	.

223	7	3000387	CAP EL 33UF 50V M	PC	2,000	C101	C102	.	.	.
224	7	30001454	TR BC548B	PC	3,000	Q100	Q101	Q102	.	.
225	6	30000464	RES SMD 1/10W 100R J	PC	1,000	R100	.	.	.	.
226	6	30000469	RES SMD 1/10W 1K J 0805	PC	7,000	R102	R105	R106	R107	R110
.	.	.	.	.	.	R111	R112	.	.	.
227	6	30000653	RES SMD 1/10W 33R J	PC	1,000	R101	.	.	.	.
228	6	30000732	RES SMD 1/10W 470K J	PC	2,000	R103	R108	.	.	.
229	6	30000807	RES SMD 1/10W 75K J	PC	1,000	R113	.	.	.	.
230	4	20003214	MD.MAN.BAV19E-BAV OUT	PC	1,000	.	.	.	.	.
231	5	30001840	CONN MALE 3P SIDE WHITE	PC	1,000	PL101	.	.	.	.
232	5	30001842	CONN MALE 3P SIDE BLUE	PC	1,000	PL100	.	.	.	.
233	5	30001880	JACK RCA 3P (BACK AV) 180°	PC	1,000	PL113	.	.	.	.
234	5	30002250	CONN ASSY 3/28 SHL.D.C. BLU	PC	1,000	.	.	.	.	.
235	5	30002251	CONN ASSY 3/28 SHL.D.C. WHT	PC	1,000	.	.	.	.	.
236	3	20015310	M.ASSY.19-MAN 15GN22221X3XX2	PC	1,000	.	.	.	.	.
237	4	20002455	MB.MAN.19-COMMON	PC	1,000	.	.	.	.	.
238	5	20000952	HE.ASY.16/19-REG(2)	PC	1,000	IC804	.	.	.	.
239	6	30001622	IC 7805 (1A)	PC	1,000	.	.	.	.	.
240	6	35000105	HEATSINK 16/19- REGULATOR(2)	PC	1,000	.	.	.	.	.
241	6	35000158	NUT C ZN BOTTOM M3	PC	1,000	.	.	.	.	.
242	6	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)	PC	1,000	.	.	.	.	.
243	6	35000181	SCREW C ZN YSMB M3*8	PC	1,000	.	.	.	.	.
244	5	20003606	BRACKET HEATSINK (AUDIO-HOR)	PC	1,000	.	.	.	.	.
245	6	60000003	ABS BLACK	KG	0,006	.	.	.	.	.
246	5	30000075	CAP MKT 100NF 250V K (DC)	PC	1,000	C605	.	.	.	.
247	5	30000356	CAP EL 100UF 63V M	PC	2,000	C612	C702	.	.	.
248	5	30000359	CAP EL 1000UF 16V M	PC	3,000	C817	C820	C828	.	.
249	5	30000360	CAP EL 1000UF 25V M	PC	1,000	C632	.	.	.	.
250	5	30000402	CAP EL 47UF 100V M	PC	1,000	C704	.	.	.	.
251	5	30000410	CAP EL 470UF 50V M	PC	1,000	C115	.	.	.	.
252	5	30000411	CAP EL 4700UF 16V M	PC	1,000	C813	.	.	.	.
253	5	30000665	RES CF 1/4W 33K J	PC	1,000	CX9	.	.	.	.

254	5	30001307	DIODE BYW95A	PC	2,000	D814	D815	.	.	.
255	5	30001384	TR MCR22-6	PC	1,000	Q810	.	.	.	.
256	5	30001499	IC MC44604P	PC	1,000	IC802	.	.	.	.
257	5	30001762	CONN.MALE 2P (2052) GRAY	PC	1,000	PL100	.	.	.	.
258	5	30001783	CONN.MALE 5P (2005)	PC	1,000	PL050	.	.	.	.
259	5	30001792	CONN.MALE 2P MOLEX	PC	1,000	PL801	.	.	.	.
260	5	30001795	CONN.MALE 3P (DEG)	PC	1,000	PL802	.	.	.	.
261	5	30001827	HRZ VRT CONN.(4P)	PC	1,000	PL601	.	.	.	.
262	5	30002011	COIL CHOKE 150UH 0.82A RAD	PC	1,000	L803	.	.	.	.
263	5	30002090	LINE DRIVER NEW TYPE	PC	1,000	TR601	.	.	.	.
264	5	30002388	CABLE 0.6MM BLUE	CM	26,000	???	CAB031	.	.	.
265	5	30007069	IC TCDT1102G	PC	1,000	IC801	.	.	.	.
266	5	30007759	RES CF 1W 47K J	PC	1,000	R828	.	.	.	.
267	5	30008845	CABLE ASSY 1/25 AK19 GND	PC	1,000	.	.	.	.	.
268	4	20003252	MB.MAN.19-2SC STR FAV+SVHS	PC	1,000	.	.	.	.	.
269	5	30000410	CAP EL 470UF 50V M	PC	1,000	C114	.	.	.	.
270	5	30000548	RES CF 1/4W 1.6K J	PC	1,000	RX61	.	.	.	.
271	5	30001619	IC TEA6415C	PC	1,000	IC050	.	.	.	.
272	5	30001764	CONN.MALE (2052) BLACK	PC	1,000	PL101	.	.	.	.
273	5	30001830	CONN MALE 2P TOP BLUE	PC	1,000	PL056	.	.	.	.
274	5	30001838	CONN MALE 3P TOP YELLOW	PC	1,000	PL051	.	.	.	.
275	5	30001865	SOCKET SCART (R)	PC	2,000	SC050	SC051	.	.	.
276	4	20003300	MB.MAN.19-PLL NORMAL	PC	1,000	.	.	.	.	.
277	5	30009637	TUNER WSP (PLL) 38.9 MK2 - BATCH	PC	1,000	TU201	.	.	.	.
278	4	20003307	MB.MAN.19-SMPS WO/POWER FACTOR	PC	1,000	.	.	.	.	.
279	5	30000161	CAP MKP 47NF 630V J	PC	1,000	C811	.	.	.	.
280	5	30001129	RES MO 22K 3W J	PC	1,000	R822	.	.	.	.
281	4	20003312	MB.MAN.19-FTZ WO/YERLI	PC	1,000	.	.	.	.	.
282	5	35000058	SHIELD AK19 SIDE	PC	1,000	.	.	.	.	.
283	5	35000059	SHIELD AK19 (TOP)	PC	1,000	.	.	.	.	.
284	5	35000061	SHIELD AK19 (BOTTOM W/PVC)	PC	1,000	.	.	.	.	.
285	4	20003326	MR MAN 19-RAV OUT	PC	1,000	.	.	.	.	.

			WO/BTSC							
286	5	30000190	CAP CER 100PF 50V J CH	PC	1,000	.	.	.	.	.
287	5	30001835	CONN MALE 3P TOP WHITE	PC	1,000	PL058	.	.	.	.
288	5	30001837	CONN MALE 3P TOP BLUE	PC	1,000	PL059	.	.	.	.
289	5	35000194	SCREW S C ZN YSMB 2.9*9.5	PC	2,000	.	.	.	.	.
290	4	20003327	MB.MAN.19-PSBG GS+NI 110°	PC	1,000	.	.	.	.	.
291	5	30000092	CAP MKT 220NF 63V J	PC	1,000	C415	.	.	.	.
292	5	30001579	IC TDA8844/N2	PC	1,000	IC401	.	.	.	.
293	5	30001693	FILTER SAW G3962	PC	1,000	Z401	.	.	.	.
294	5	30001748	XTAL 4.433619 MHZ	PC	1,000	X401	.	.	.	.
295	5	30001808	CONN.MALE 12P MOLEX	PC	1,000	PL403	.	.	.	.
296	5	30001810	CONN.MALE 14P MOLEX	PC	1,000	PL404	.	.	.	.
297	4	20003342	MB.MAN.19-SMPS 90-270V 110°	PC	1,000	.	.	.	.	.
298	5	20000965	HE.ASY.19-SMPS 110° 90-270V	PC	1,000	.	.	.	.	.
299	6	30001388	TR MTW8N60E	PC	1,000	Q802	.	.	.	.
300	6	35000015	SPRING TR.HOLDER (BIG)	PC	1,000	.	.	.	.	.
301	6	35000117	HEATSINK 19-PRIMER 110°	PC	1,000	.	.	.	.	.
302	6	40000145	INSULATOR SILICON PAD(20*30MM)	PC	1,000	.	.	.	.	.
303	5	30001159	RES MO 1W 0.33R J	PC	2,000	R819	R870	.	.	.
304	5	30002081	TRF SMPS AK19 110° (90-270V)	PC	1,000	TR802	.	.	.	.
305	5	30002104	LINE FILTER 2X22MH (AK16)	PC	1,000	TR801	.	.	.	.
306	4	20003353	MB.MAN.19-25/28" SIZE NORMAL	PC	1,000	.	.	.	.	.
307	5	20000954	HE.ASY.19-CRT BOARD	PC	1,000	.	.	.	.	.
308	6	30008721	IC TDA6108	PC	1,000	IC901	.	.	.	.
309	6	35000114	HEATSINK 19-CRT BOARD	PC	1,000	.	.	.	.	.
310	6	35000158	NUT C ZN BOTTOM M3	PC	1,000	.	.	.	.	.
311	6	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)	PC	1,000	.	.	.	.	.
312	6	35000189	SCREW C NI YSMB M3*6	PC	1,000	.	.	.	.	.
313	5	20000963	HE.ASY.19-E/W 110°	PC	1,000	.	.	.	.	.
314	6	30001429	TR BUK444-200A	PC	1,000	Q603	.	.	.	.

315	6	35000115	HEATSINK 19-E/W	PC	1,000	.	.	.	.	.
316	6	35000158	NUT C ZN BOTTOM M3	PC	1,000	.	.	.	.	.
317	6	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)	PC	1,000	.	.	.	.	.
318	6	35000190	SCREW C NI YSMB M3*10	PC	1,000	.	.	.	.	.
319	5	20003506	CABLE ASSY.19-4/45 FC (FLAMAN)	PC	1,000	.	.	.	.	.
320	6	30002295	CABLE 4/45 FC (FLAMAN) WO/SOC	PC	1,000	.	.	.	.	.
321	6	40000098	CABLE HOLDER 2.5*4P	PC	2,000	.	.	.	.	.
322	5	30000075	CAP MKT 100NF 250V K (DC)	PC	1,000	C901	.	.	.	.
323	5	30000076	CAP MKT 100NF 275V M AC	PC	2,000	C801	C802	.	.	.
324	5	30000121	CAP KP 27NF 630V J	PC	1,000	C613	.	.	.	.
325	5	30000141	CAP MPP 0.22NF 630V K	PC	1,000	C833	.	.	.	.
326	5	30000156	CAP MKP 430NF 250V J	PC	1,000	C630	.	.	.	.
327	5	30000350	CAP EL 10UF 250V M	PC	1,000	C902	.	.	.	.
328	5	30000406	CAP EL 47UF 250V M (HR)	PC	2,000	C606	C829	.	.	.
329	5	30000440	CAP CER 2.2NF 4KV M	PC	1,000	C860	.	.	.	.
330	5	30001064	RES ADJ 470R 0.1W VER (MAN)	PC	1,000	VR801	.	.	.	.
331	5	30001171	RES MO 2W 4.7K J	PC	2,000	R610	R631	.	.	.
332	5	30001270	PTC 9 OHM	PC	1,000	TH801	.	.	.	.
333	5	30001301	DIODE BYM26D	PC	1,000	D816	.	.	.	.
334	5	30001320	DIODE GUC BY228	PC	1,000	D612	.	.	.	.
335	5	30001323	DIODE BY299	PC	1,000	D611	.	.	.	.
336	5	30002031	FIXED COIL INJECTION 15MH	PC	1,000	L604	.	.	.	.
337	5	30002064	TRF FBT AK19 110°	PC	1,000	TR602	.	.	.	.
338	5	30002156	LIN.COIL 30UH 110' (AK19)	PC	1,000	L603	.	.	.	.
339	5	30002170	COIL FTZ/RAD	PC	1,000	PL904	.	.	.	.
340	5	30007069	IC TCDT1102G	PC	1,000	IC801	.	.	.	.
341	5	35000135	TEST PIN 1.1MM	PC	1,000	PL903	.	.	.	.
342	4	20003357	MB.MAN.19-CABINET 110° W/TUNER	PC	1,000	.	.	.	.	.
343	5	30001762	CONN.MALE 2P (2052) GRAY	PC	1,000	LD501	.	.	.	.
344	5	30001770	CONN.MALE 3P (2003) GRAY	PC	1,000	PL502	.	.	.	.
345	5	30001783	CONN.MALE 5P (2005)	PC	1,000	PL501	.	.	.	.
346	4	20003368	MB.MAN.19-W/SECAM	PC	1,000	.	.	.	.	.

347	5	30001745	XTAL 3.579545	PC	1,000	X404	.	.	.	.
348	4	20003378	MB.MAN.19-STR WO/DOLBY	PC	1,000	.	.	.	.	.
349	5	20000956	HE.ASY.19-REG&STR WO/DL	PC	1,000	.	.	.	.	.
350	6	30001500	IC LM7808	PC	1,000	IC805	.	.	.	.
351	6	30001525	IC TDA2615	PC	1,000	IC100	.	.	.	.
352	6	30001622	IC 7805 (1A)	PC	1,000	IC807	.	.	.	.
353	6	35000158	NUT C ZN BOTTOM M3	PC	3,000	.	.	.	.	.
354	6	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)	PC	3,000	.	.	.	.	.
355	6	35000181	SCREW C ZN YSMB M3*8	PC	1,000	.	.	.	.	.
356	6	35000183	SCREW C ZN YSMB M3*12	PC	2,000	.	.	.	.	.
357	6	35001647	HEATSINK REG.&AUDIO (AK19,SATELLITE TV)	PC	1,000	.	.	.	.	.
358	6	40000020	TR HOLDER TR-06A	PC	2,000	.	.	.	.	.
359	6	40000146	INSULATOR SILICON PAD (15*20)	PC	2,000	.	.	.	.	.
360	6	50001759	LABEL 19-REG STEREO	PC	1,000	.	.	.	.	.
361	5	30000383	CAP EL 2200UF 25V M	PC	2,000	C823	C826	.	.	.
362	5	40000101	SPACER SUPPORT AK19 STR®	PC	1,000	KART TUTUCU	.	.	.	.
363	4	20008751	HE.ASY.19-HOR&VER BAV/EXT.110°	PC	1,000	.	.	.	.	.
364	5	20003607	BRACKET HEATSINK BACK AV AK19	PC	1,000	.	.	.	.	.
365	6	60000003	ABS BLACK	KG	0,001	.	.	.	.	.
366	5	30001441	TR BU2508AF	PC	1,000	Q605	.	.	.	.
367	5	30002736	IC TDA 8351/N6	PC	1,000	IC701	.	.	.	.
368	5	35000015	SPRING TR.HOLDER (BIG)	PC	1,000	.	.	.	.	.
369	5	35000119	HEATSINK 19-HOR&VER BACKAV	PC	1,000	.	.	.	.	.
370	5	35000158	NUT C ZN BOTTOM M3	PC	1,000	.	.	.	.	.
371	5	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)	PC	1,000	.	.	.	.	.
372	5	35000183	SCREW C ZN YSMB M3*12	PC	1,000	.	.	.	.	.
373	5	50001756	LABEL 19-HOR&VER 110ø	PC	1,000	.	.	.	.	.
374	4	20014866	MB.MAN.19-8P/TXT 545X TEAC	PC	1,000	.	.	.	.	.
375	5	20017158	PR.IC.19-545X TEAC	PC	1,000	.	.	.	.	.
376	6	30001862	SOCKET IC 52P (SHRINK)	PC	1,000	IC501(S)	.	.	.	.

377	6	30006718	IC SDA545X OTP	PC	1,000	IC501	.	.	.	.
378	5	30006662	XTAL 6MHZ	PC	1,000	X501	.	.	.	.
379	4	20017174	MB.MAN.19-WO/AK19B NORMAL	PC	1,000	.	.	.	.	.
380	5	20017969	STANDBY ASSY.AK19	PC	1,000	.	.	.	.	.
381	6	20018608	CABLE ASSY.STANDBY (13cm)	PC	1,000	.	.	.	.	.
382	7	30009832	CABLE 0.6MM BLUE (13CM)	PC	1,000	CAB210	.	.	.	.
383	6	30000628	RES CF 1/4W 2.7K J	PC	2,000	RX010	RX011	.	.	.
384	5	30000295	CAP CER 100NF 50V Z F	PC	1,000	CX041	.	.	.	.
385	5	30000712	RES CF 1/4W 470R J	PC	2,000	J126	J127	.	.	.
386	5	30001986	FIXED COIL 3.3UH Q65 K	PC	1,000	L402	.	.	.	.
387	5	30001992	FIXED COIL 10UH Q65 K- A	PC	2,000	L405	L406	.	.	.
388	5	30002215	CABLE 1P R2.6	M	0,460	B-B	.	.	.	.
389	4	20022295	MB.MAN.19-SMPS 90-270V 110° SDA 545X	PC	1,000	.	.	.	.	.
390	5	20000849	FUSE ASSY.TK79-A (3.15A)	PC	1,000	F801	.	.	.	.
391	6	30001732	FUSE 3.15A 250V 5*20	PC	1,000	.	.	.	.	.
392	6	35000138	FUSE HOLDER TK79A (BLACK)	PC	1,000	F801	.	.	.	.
393	5	30000422	CAP EL 330UF 400V M	PC	1,000	C804	.	.	.	.
394	5	30001178	RES MO 5W 5K1 J	PC	2,000	R806-1	R806-2	.	.	.
395	5	30001260	RES WW 5W 2.2R J RAD.	PC	1,000	R817	.	.	.	.
396	5	30001305	DIODE BYM56E	PC	4,000	D801	D802	D803	D804	.
397	3	20015311	M.ASSY.19-OTO 15GN22XX1X3XX2	PC	1,000	.	.	.	.	.
398	4	20001255	MB.SMD.19-COMMON	PC	1,000	.	.	.	.	.
399	5	20001256	MB.RAD.19-COMMON	PC	1,000	.	.	.	.	.
400	6	20001257	MB.AXI.19-COMMON	PC	1,000	.	.	.	.	.
401	7	20001258	MB.SEQ.19-COMMON	PC	1,000	.	.	.	.	.
402	8	20008760	MB.JUM.19-COMMON	PC	1,000	.	.	.	.	.
403	9	20008761	MB.PER.19-COMMON	PC	1,000	.	.	.	.	.
404	9	30002583	JUMPER WIRE 0.6MM	G	19,250	J096	J098	J100	J101	J102
.	.	.	.	.	.	J103	J107	J108	J109	J110
.	.	.	.	.	.	R802	J112	J115	J117	J118
.	.	.	.	.	.	J120	J122	J124	J125	J130
.	.	.	.	.	.	J132	J133	J136	J138	J139
.	.	.	.	.	.	J143	J145	J146	J147	J148
.	.	.	.	.	.	J149	J150	J151	J153	J155

.	.	.	.	.	.	J157	J158	J159	J160	J161
.	.	.	.	.	.	J169	J170	J175	J177	J178
.	.	.	.	.	.	J179	J180	J182	J183	J184
.	.	.	.	.	.	J186	J189	J190	J191	J192
.	.	.	.	.	.	J193	J194	J196	J197	J198
.	.	.	.	.	.	J199	J201	J202	J203	J204
.	.	.	.	.	.	J205	J206	J207	J208	J209
.	.	.	.	.	.	J210	J211	J212	J214	J215
.	.	.	.	.	.	J216	J218	J220	J221	J223
.	.	.	.	.	.	J225	J226	J227	J230	J237
.	.	.	.	.	.	J238	J239	J240	J241	J242
.	.	.	.	.	.	J245	J246	J247	J248	J249
.	.	.	.	.	.	J250	J251	J252	J253	J255
.	.	.	.	.	.	J256	J257	J260	J261	J262
.	.	.	.	.	.	J266	J267	J270	J272	J273
.	.	.	.	.	.	J274	J278	J282	J288	J290
.	.	.	.	.	.	J291	J292	J293	J294	J295
.	.	.	.	.	.	J296	J299	J451	J498	J499
.	.	.	.	.	.	J570	J611	J612	J613	J614
.	.	.	.	.	.	J615	J616	J619	J648	J651
.	.	.	.	.	.	J801	J802	J803	J804	J808
.	.	.	.	.	.	J810	J850	R616	R825	R827
.	.	.	.	.	.	S112	S113	S114	S511	S602
.	.	.	.	.	.	S107	R803	J805	J264	.
405	8	30000459	RES CF 1/4W 100R J	PC	8,000	R202	R407	R431	R432	R602
.	.	.	.	.	.	R621	R714	R715	.	.
406	8	30000466	RES CF 1/4W 1K J	PC	7,000	R605	R626	R716	R807	R809
.	.	.	.	.	.	R818	R829	.	.	.
407	8	30000471	RES CF 1/4W 10K J	PC	5,000	R203	R488	R601	R831	R844
408	8	30000495	RES CF 1/4W 1.2K J	PC	1,000	R587	.	.	.	.
409	8	30000519	RES CF 1/4W 150R J	PC	1,000	R812	.	.	.	.
410	8	30000531	RES CF 1/4W 15K J	PC	1,000	R849	.	.	.	.
411	8	30000554	RES CF 1/4W 180R J	PC	1,000	R569	.	.	.	.
412	8	30000569	RES CF 1/4W 180K J	PC	1,000	R850	.	.	.	.
413	8	30000580	RES CF 1/4W 22R J	PC	2,000	R705	R835	.	.	.
414	8	30000583	RES CF 1/4W 220R J	PC	1,000	R559	.	.	.	.
415	8	30000594	RES CF 1/4W 22K J	PC	2,000	R810	R811	.	.	.
416	8	30000599	RES CF 1/4W 220K J	PC	1,000	R821	.	.	.	.
417	8	30000603	RES CF 1/2W 2.2MJ (400V)	PC	1,000	R860	.	.	.	.
418	8	30000633	RES CF 1/4W 27K J	PC	2,000	R451	R805	.	.	.

419	8	3000650	RES CF 1/4W 33R J	PC	2,000	R428	R455	.	.	.
420	8	3000706	RES CF 1/4W 47R J	PC	5,000	R103	R402	R814	R833	R836
421	8	3000723	RES CF 1/4W 47K J	PC	1,000	R201	.	.	.	.
422	8	3000770	RES CF 1/4W 680R J	PC	1,000	R460	.	.	.	.
423	8	3000810	RES CF 1/4W 820R J	PC	2,000	R868	R869	.	.	.
424	8	3000815	RES CF 1/4W 8.2K J	PC	2,000	R619	R834	.	.	.
425	8	3000837	RES CF 1/4W 9.1K J	PC	1,000	R813	.	.	.	.
426	8	3000949	RES MF 1/4W 3K G	PC	1,000	R706	.	.	.	.
427	8	30001082	RES MO 1/2W 1K J	PC	2,000	R620	R630	.	.	.
428	8	30001284	DIODE 1N4148	PC	11,000	D201	D420	D509	D524	D525
.	.	.	.	.	.	D602	D603	D607	D608	D701
.	.	.	.	.	.	D823	.	.	.	.
429	8	30001315	DIODE BYD33D	PC	3,000	D811	D812	D813	.	.
430	8	30001317	DIODE BA157	PC	3,000	D605	D606	D609	.	.
431	8	30001318	DIODE BA159	PC	5,000	D805	D818	D826	D827	D807
432	8	30001349	DIODE ZENER 11V	PC	1,000	D819	.	.	.	.
433	8	30001369	DIODE ZENER 3.6V ZPD	PC	1,000	D505	.	.	.	.
434	8	30001377	DIODE ZENER 33V UZT 33B	PC	1,000	D604	.	.	.	.
435	8	30001979	FIXED COIL 1UH Q45 M-A	PC	1,000	L201	.	.	.	.
436	8	30001984	FIXED COIL 2.2UH Q55 M-AX	PC	1,000	L801	.	.	.	.
437	8	30001992	FIXED COIL 10UH Q65 K-A	PC	2,000	L502	L503	.	.	.
438	8	30001997	FIXED COIL 33UH Q60 J	PC	1,000	J129	.	.	.	.
439	8	30002016	FIXED COIL 150UH Q60 K	PC	1,000	J649	.	.	.	.
440	6	30000071	CAP MKT 10NF 63V J	PC	1,000	C705	.	.	.	.
441	6	30000074	CAP MKT 100NF 63V J	PC	5,000	C403	C436	C483	C709	C807
442	6	30000092	CAP MKT 220NF 63V J	PC	1,000	C706	.	.	.	.
443	6	30000106	CAP MKT 47NF 100V J	PC	1,000	C604	.	.	.	.
444	6	30000109	CAP MKT 470NF 63V J	PC	1,000	C112	.	.	.	.
445	6	30000191	CAP CER 100PF 50V J SL	PC	1,000	C803	.	.	.	.
446	6	30000198	CAP CER 120PF 500V J SL	PC	1,000	C831	.	.	.	.
447	6	30000283	CAP CER 1NF 50V K B	PC	2,000	C808	C855	.	.	.
448	6	30000290	CAP CER 10NF 50V Z F	PC	1,000	C853	.	.	.	.
449	6	30000295	CAP CER 100NF 50V Z F	PC	6,000	C816	C819	C822	C825	C830
.	.	.	.	.	.	C832	.	.	.	.
450	6	30000313	CAP CER 22NF 50V Z F	PC	1,000	C406	.	.	.	.
451	6	30000342	CAP CER 820PF 50V K B	PC	1,000	C806	.	.	.	.
452	6	30000345	CAP EL 10UF 50V M	PC	9,000	C102	C203	C402	C405	C410
.	.	.	.	.	.	C440	C517	C580	C570	.

453	6	30000353	CAP EL 100UF 25V M	PC	2,000	C426	C848	.	.	.
454	6	30000362	CAP EL 1UF 50V M	PC	1,000	C431	.	.	.	.
455	6	30000371	CAP EL 22UF 50V M	PC	1,000	C516	.	.	.	.
456	6	30000375	CAP EL 220UF 16V M	PC	4,000	C413	C814	C845	C847	.
457	6	30000384	CAP EL 2.2UF 50V M	PC	2,000	C407	C437	.	.	.
458	6	30000387	CAP EL 33UF 50V M	PC	1,000	C601	.	.	.	.
459	6	30000393	CAP EL 3.3UF 50V M	PC	1,000	C500	.	.	.	.
460	6	30000400	CAP EL 47UF 50V M	PC	1,000	C201	.	.	.	.
461	6	30000407	CAP EL 470UF 16V M	PC	1,000	C607	.	.	.	.
462	6	30000433	CAP CER 1NF 1KV M B	PC	4,000	C821	C824	C850	C851	.
463	6	30001435	TR BC639	PC	1,000	Q604	.	.	.	.
464	6	30001454	TR BC548B	PC	9,000	Q100	Q402	Q406	Q407	Q420
.	.	.	.	.	.	Q514	Q805	Q806	Q807	.
465	6	30001455	TR BC558B	PC	4,000	Q503	Q512	Q601	Q701	.
466	6	30001506	IC TL431	PC	1,000	Q809	.	.	.	.
467	6	30007708	CAP CER 1NF 1KV K (PULSE)	PC	1,000	C827	.	.	.	.
468	6	30008805	CAP MKT 39NF 63V J	PC	1,000	C854	.	.	.	.
469	5	30000189	CAP SMD 100PF 50V J (0805)	PC	2,000	C448	C498	.	.	.
470	5	30000220	CAP SMD 22PF 50V J (08*05)	PC	1,000	C422	.	.	.	.
471	5	30000252	CAP SMD 47PF 50V J (08*05)	PC	2,000	C446	C447	.	.	.
472	5	30000284	CAP SMD 1NF 50V K R (0805)	PC	2,000	C433	C434	.	.	.
473	5	30000294	CAP SMD 100NF 50V K (0805)	PC	13,000	C211	C424	C427	C510	C513
.	.	.	.	.	.	C537	C538	C539	C540	C029
.	.	.	.	.	.	C030	C031	C032	.	.
474	5	30000300	CAP SMD 1.5NF 50V K	PC	3,000	C495	C497	C499	.	.
475	5	30000309	CAP SMD 2.2NF 50V K R	PC	1,000	C603	.	.	.	.
476	5	30000312	CAP SMD 22NF 50V K (0805)	PC	7,000	C108	C412	C416	C417	C418
.	.	.	.	.	.	C425	C438	.	.	.
477	5	30000315	CAP SMD 220NF 25V Z (0805)	PC	1,000	C419	.	.	.	.
478	5	30000322	CAP SMD 3.3NF 50V K (0805)	PC	1,000	C423	.	.	.	.
479	5	30000332	CAP SMD 4.7NF 50V K (0805)	PC	1,000	C459	.	.	.	.
480	5	30000334	CAP SMD 47NF 50V K (0805)	PC	2,000	C411	C450	.	.	.

481	5	30000457	RES SMD 1/10W 10R J 0805	PC	1,000	R104	.	.	.	.
482	5	30000469	RES SMD 1/10W 1K J 0805	PC	14,000	R405	R437	R438	R439	R440
.	.	.	.	.	.	R441	R500	R502	R503	R507
.	.	.	.	.	.	R543	R554	R571	R708	.
483	5	30000475	RES SMD 1/10W 10K J 0805	PC	12,000	R433	R524	R534	R552	R564
.	.	.	.	.	.	R572	R578	R581	R594	R595
.	.	.	.	.	.	R596	R709	.	.	.
484	5	30000480	RES SMD 1/10W 100K J (0805)	PC	2,000	R446	R586	.	.	.
485	5	30000489	RES SMD 1/10W 1R J (0805)	PC	1,000	R449	.	.	.	.
486	5	30000503	RES SMD 1/10W 12K J (0805)	PC	1,000	R200	.	.	.	.
487	5	30000524	RES SMD 1/10W 150R J (0805)	PC	1,000	R429	.	.	.	.
488	5	30000534	RES SMD 1/10W 15K J (0805)	PC	1,000	R454	.	.	.	.
489	5	30000563	RES SMD 1/10W 1.8K J (0805)	PC	2,000	R498	R566	.	.	.
490	5	30000588	RES SMD 1/10W 220R J 0805	PC	1,000	R618	.	.	.	.
491	5	30000593	RES SMD 1/10W 2.2K J (0805)	PC	3,000	R537	R538	R539	.	.
492	5	30000606	RES SMD 1/10W 2.2M J	PC	1,000	R457	.	.	.	.
493	5	30000631	RES SMD 1/10W 2.7K J 0805	PC	1,000	R450	.	.	.	.
494	5	30000653	RES SMD 1/10W 33R J	PC	1,000	R075	.	.	.	.
495	5	30000659	RES SMD 1/10W 330R J (0805)	PC	2,000	R403	R426	.	.	.
496	5	30000688	RES SMD 1/10W 390R J (0805)	PC	1,000	R404	.	.	.	.
497	5	30000697	RES SMD 1/10W 39K G	PC	1,000	R459	.	.	.	.
498	5	30000710	RES SMD 1/10W 47R J (0805)	PC	1,000	R419	.	.	.	.
499	5	30000717	RES SMD 1/10W 470R J (0805)	PC	1,000	R400	.	.	.	.
500	5	30000721	RES SMD 1/10W 4.7K J	PC	2,000	R486	R542	.	.	.
501	5	30000727	RES SMD 1/10W 47K J (0805)	PC	1,000	R100	.	.	.	.
502	5	30000732	RES SMD 1/10W 470K J	PC	1,000	R458	.	.	.	.
503	5	30000735	RES SMD 1/10W 4.7R J (0805)	PC	1,000	R418	.	.	.	.
504	5	30000747	RES SMD 1/10W 560R J (0805)	PC	1,000	R102	.	.	.	.

505	5	30000751	RES SMD 1/10W 5.6K J 0805	PC	3,000	R528	R529	R530	.	.
506	5	30001734	JUMPER SMD (0805)	PC	18,000	J097	J195	J224	J231	J233
.	.	.	.	.	.	J236	J258	J268	J279	J283
.	.	.	.	.	.	J289	J401	J405	J406	J610
.	.	.	.	.	.	J617	S415	S070	.	.
507	4	20001263	MB.SMD.19-PBG/PSBG GS&NI	PC	1,000	.	.	.	.	.
508	5	20001264	MB.RAD.19-PBG/PSBG GS&NI	PC	1,000	.	.	.	.	.
509	6	20001265	MB.AXI.19-PBG/PSBG GS&NI	PC	1,000	.	.	.	.	.
510	7	20001266	MB.SEQ.19-PBG/PSBG GS&NI	PC	1,000	.	.	.	.	.
511	8	20008763	MB.JUM.19-PBG/PSBG GS&NI	PC	1,000	.	.	.	.	.
512	9	30002583	JUMPER WIRE 0.6MM	G	1,000	C451	C452	L403	S503	S504
.	.	.	.	.	.	S505	S510	J200	.	.
513	8	30001257	RES MG 1/2W 4.7M J	PC	1,000	R845	.	.	.	.
514	8	30001284	DIODE 1N4148	PC	2,000	D503	D504	.	.	.
515	6	30000109	CAP MKT 470NF 63V J	PC	1,000	C113	.	.	.	.
516	5	30000220	CAP SMD 22PF 50V J (08*05)	PC	1,000	C421	.	.	.	.
517	5	30000284	CAP SMD 1NF 50V K R (0805)	PC	2,000	C490	C439	.	.	.
518	5	30000499	RES SMD 1/10W 1.2K J (0805)	PC	1,000	R421	.	.	.	.
519	5	30000503	RES SMD 1/10W 12K J (0805)	PC	2,000	R561	R574	.	.	.
520	5	30000558	RES SMD 1/10W 180R J	PC	1,000	R422	.	.	.	.
521	5	30000593	RES SMD 1/10W 2.2K J (0805)	PC	1,000	R420	.	.	.	.
522	5	30001734	JUMPER SMD (0805)	PC	1,000	S065	.	.	.	.
523	4	20001275	MB.SMD.19-PLL NORMAL-PIP-AMERIKA	PC	1,000	.	.	.	.	.
524	5	20001276	MB.RAD.19-PLL NORMAL-PIP-AMERIKA	PC	1,000	.	.	.	.	.
525	6	20001277	MB.AXI.19-PLL NORMAL- PIP-AMERIKA	PC	1,000	.	.	.	.	.
526	7	20001278	MB.SEQ.19-PLL NORMAL- PIP-AMERIKA	PC	1,000	.	.	.	.	.
527	8	20013528	MB.JUM.19-PLL NORMAL- PIP-AMERIKA	PC	1,000	.	.	.	.	.
528	8	30000459	RES CF 1/4W 100R J	PC	2,000	R208	R209	.	.	.

529	6	30000345	CAP EL 10UF 50V M	PC	1,000	C204	.	.	.	.
530	5	30000597	RES SMD 1/10W 22K J	PC	1,000	R213	.	.	.	.
531	5	30001734	JUMPER SMD (0805)	PC	2,000	S201	S203	.	.	.
532	4	20001340	MB.SMD.19-WO/CF-CTI	PC	1,000	.	.	.	.	.
533	5	20001341	MB.RAD.19-WO/CF-CTI	PC	1,000	.	.	.	.	.
534	6	20001342	MB.AXI.19-WO/CF-CTI	PC	1,000	.	.	.	.	.
535	7	20001343	MB.SEQ.19-WO/CF-CTI	PC	1,000	.	.	.	.	.
536	8	20008774	MB.JUM.19-WO/CF-CTI	PC	1,000	.	.	.	.	.
537	9	30002583	JUMPER WIRE 0.6MM	G	0,125	S062	.	.	.	.
538	4	20001358	MB.SMD.19-2SC STR FAV+SVHS	PC	1,000	.	.	.	.	.
539	5	20001359	MB.RAD.19-2SC STR FAV+SVHS	PC	1,000	.	.	.	.	.
540	6	20010942	MB.AXI.19-2SC STR FAV+SVHS	PC	1,000	.	.	.	.	.
541	7	20001360	MB.SEQ.19-2SC STR FAV+SVHS	PC	1,000	.	.	.	.	.
542	8	20018710	MB.JUM.19-2SC STR FAV+SVHS	PC	1,000	.	.	.	.	.
543	9	30002583	JUMPER WIRE 0.6MM	G	0,250	S066	J140	.	.	.
544	8	30000459	RES CF 1/4W 100R J	PC	1,000	R044	.	.	.	.
545	8	30000466	RES CF 1/4W 1K J	PC	1,000	R508	.	.	.	.
546	8	30000531	RES CF 1/4W 15K J	PC	2,000	R549	R570	.	.	.
547	8	30001992	FIXED COIL 10UH Q65 K- A	PC	1,000	L407	.	.	.	.
548	8	30002015	FIXED COIL 150UH Q50 K (RAD)	PC	2,000	L050	L051	.	.	.
549	6	30000092	CAP MKT 220NF 63V J	PC	4,000	C051	C053	C054	C071	.
550	6	30000283	CAP CER 1NF 50V K B	PC	1,000	C408	.	.	.	.
551	6	30000345	CAP EL 10UF 50V M	PC	1,000	C068	.	.	.	.
552	6	30000352	CAP EL 100UF 16V M	PC	1,000	C028	.	.	.	.
553	6	30001454	TR BC548B	PC	2,000	Q055	Q500	.	.	.
554	6	30001455	TR BC558B	PC	1,000	Q504	.	.	.	.
555	5	30000189	CAP SMD 100PF 50V J (0805)	PC	2,000	C099	C097	.	.	.
556	5	30000224	CAP SMD 220PF 50V J (08*05)	PC	1,000	C098	.	.	.	.
557	5	30000294	CAP SMD 100NF 50V K (0805)	PC	4,000	C052	C072	C073	C075	.
558	5	30000300	CAP SMD 1.5NF 50V K	PC	4,000	C059	C060	C064	C065	.
559	5	30000312	CAP SMD 22NF 50V K (0805)	PC	1,000	C110	.	.	.	.
560	5	30000334	CAP SMD 47NF 50V K	PC	1,000	C409	.	.	.	.

			(0805)							
561	5	30000457	RES SMD 1/10W 10R J 0805	PC	1,000	R105	.	.	.	.
562	5	30000464	RES SMD 1/10W 100R J	PC	2,000	R050	R051	.	.	.
563	5	30000469	RES SMD 1/10W 1K J 0805	PC	1,000	R082	.	.	.	.
564	5	30000475	RES SMD 1/10W 10K J 0805	PC	6,000	R094	R095	R096	R097	R098
.	.	.	.	.	.	R099	.	.	.	.
565	5	30000524	RES SMD 1/10W 150R J (0805)	PC	1,000	R045	.	.	.	.
566	5	30000588	RES SMD 1/10W 220R J 0805	PC	2,000	R492	R493	.	.	.
567	5	30000593	RES SMD 1/10W 2.2K J (0805)	PC	1,000	R509	.	.	.	.
568	5	30000653	RES SMD 1/10W 33R J	PC	1,000	R083	.	.	.	.
569	5	30000668	RES SMD 1/10W 33K J 0805	PC	1,000	R511	.	.	.	.
570	5	30000675	RES SMD 1/10W 3.3M J	PC	1,000	R510	.	.	.	.
571	5	30000710	RES SMD 1/10W 47R J (0805)	PC	1,000	R084	.	.	.	.
572	5	30000717	RES SMD 1/10W 470R J (0805)	PC	1,000	R049	.	.	.	.
573	5	30000774	RES SMD 1/10W 680R J (0805)	PC	4,000	R066	R068	R078	R080	.
574	5	30000797	RES SMD 1/10W 75R J (0805)	PC	7,000	R065	R070	R071	R072	R073
.	.	.	.	.	.	R077	R417	.	.	.
575	4	20001387	MB.SMD.19-25/28" SIZE NORMAL/UL	PC	1,000	.	.	.	.	.
576	5	20001388	MB.RAD.19-25/28" SIZE NORMAL/UL	PC	1,000	.	.	.	.	.
577	6	20001389	MB.AXL.19-25/28" SIZE NORMAL/UL	PC	1,000	.	.	.	.	.
578	7	20001390	MB.SEQ.19-25/28" SIZE NORMAL/UL	PC	1,000	.	.	.	.	.
579	8	20008790	MB.JUM.19-25/28" SIZE NORMAL/UL	PC	1,000	.	.	.	.	.
580	9	20008791	MB.PER.19-25/28" SIZE NORMAL/UL	PC	1,000	.	.	.	.	.
581	9	30002583	JUMPER WIRE 0.6MM	G	0,375	S604	J901	J903	.	.
582	8	30000459	RES CF 1/4W 100R J	PC	3,000	R907	R908	R909	.	.
583	8	30000513	RES CF 1/4W 130K J	PC	1,000	R823	.	.	.	.
584	8	30000525	RES CF 1/2W 1.5K J	PC	5,000	R901	R902	R903	R905	R906
585	8	30000572	RES CF 1/4W 2K J	PC	1,000	R824	.	.	.	.
586	8	30000704	RES CF 1/4W 43K J	PC	1,000	R606	.	.	.	.
587	8	30000775	RES CF 1/4W 6.8K J	PC	2,000	R614	R617	.	.	.

588	8	30001210	RES FUSE 1/4W 100R J	PC	1,000	R704	.	.	.	.
589	8	30001228	RES FUSE 1/2W 2.2R J	PC	1,000	R628	.	.	.	.
590	8	30001232	RES FUSE 1/4W 2.7R J	PC	1,000	R629	.	.	.	.
591	8	30001235	RES FUSE 1/2W 0.33R J	PC	1,000	R608	.	.	.	.
592	8	30001318	DIODE BA159	PC	1,000	D601	.	.	.	.
593	8	30001329	DIODE 1N4007	PC	3,000	D901	D902	D903	.	.
594	6	30000074	CAP MKT 100NF 63V J	PC	1,000	C435	.	.	.	.
595	6	30000078	CAP MKT 1UF 100V M	PC	2,000	C621	C618	.	.	.
596	6	30000082	CAP MKT 15NF 63V J	PC	1,000	C608	.	.	.	.
597	6	30000319	CAP CER 2.7NF 500V K B	PC	1,000	C904	.	.	.	.
598	6	30000433	CAP CER 1NF 1KV M B	PC	1,000	C620	.	.	.	.
599	6	30000434	CAP CER 1NF 2KV K B	PC	1,000	C903	.	.	.	.
600	6	30001454	TR BC548B	PC	1,000	Q426	.	.	.	.
601	6	30001455	TR BC558B	PC	1,000	Q425	.	.	.	.
602	5	30000284	CAP SMD 1NF 50V K R (0805)	PC	2,000	C708	C715	.	.	.
603	5	30000289	CAP SMD 10NF 50V K R (0805)	PC	2,000	C430	C600	.	.	.
604	5	30000309	CAP SMD 2.2NF 50V K R	PC	1,000	R452	.	.	.	.
605	5	30000340	CAP SMD 6.8NF 50V K (0805)	PC	1,000	C627	.	.	.	.
606	5	30000475	RES SMD 1/10W 10K J 0805	PC	2,000	R475	R487	.	.	.
607	5	30000480	RES SMD 1/10W 100K J (0805)	PC	2,000	R479	R494	.	.	.
608	5	30000542	RES SMD 1/10W 1.5M J	PC	1,000	R639	.	.	.	.
609	5	30000550	RES SMD 1/10W 160K J	PC	1,000	R456	.	.	.	.
610	5	30000597	RES SMD 1/10W 22K J	PC	1,000	R474	.	.	.	.
611	5	30000606	RES SMD 1/10W 2.2M J	PC	1,000	R453	.	.	.	.
612	5	30001734	JUMPER SMD (0805)	PC	1,000	S425	.	.	.	.
613	4	20001392	MB.AXI.19-CABINET 110° veya TACK SW	PC	1,000	.	.	.	.	.
614	5	20001393	MB.SEQ.19-CABINET 110° veya K.AMERIKA	PC	1,000	.	.	.	.	.
615	6	20008792	MB.JUM.19-CABINET 110° veya K.AMERIKA	PC	1,000	.	.	.	.	.
616	7	30002583	JUMPER WIRE 0.6MM	G	0,250	S812	S813	.	.	.
617	4	20001395	MB.SMD.19-W/CF110°- WO/CTI+CF veyá WO/PIP	PC	1,000	.	.	.	.	.
618	5	30001734	JUMPER SMD (0805)	PC	3,000	S409	S410	S411	.	.
619	4	20001419	MB.SMD.19-(PAL W/NTSC) OR W/SECAM	PC	1,000	.	.	.	.	.
620	5	30001734	JUMPER SMD (0805)	PC	1,000	R478	.	.	.	.

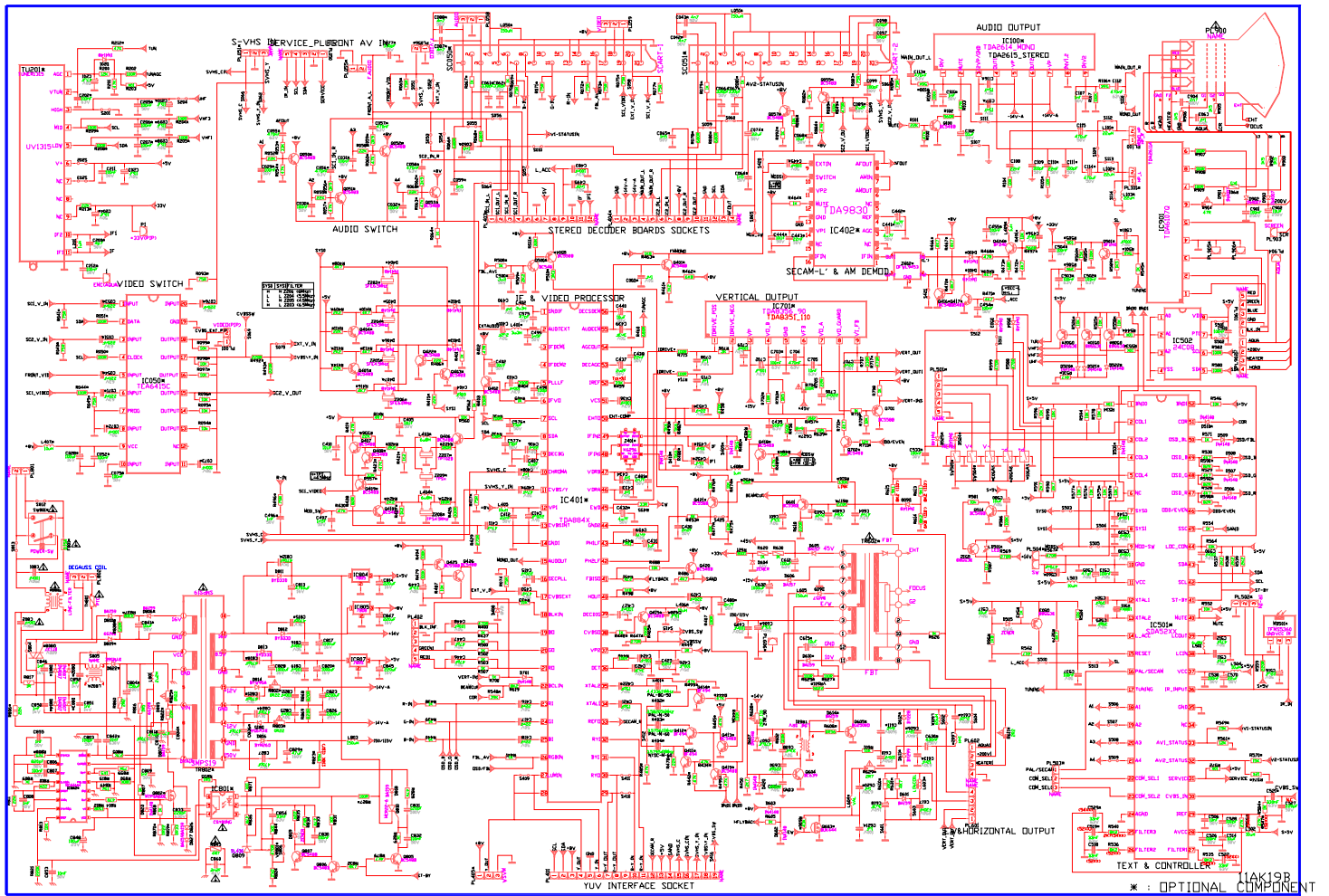
621	4	20001433	MB.SMD.19-W/8R 15W SPK.20/21/25/28"GS/NI	PC	1,000	.	.	.	.	.
622	5	20001434	MB.RAD.19-W/8R 15W SPK.20/21/25/28"GS/NI	PC	1,000	.	.	.	.	.
623	6	20001435	MB.AXI.19-W/8R 15W SPK.20/21/25/28"GS/NI	PC	1,000	.	.	.	.	.
624	7	20001436	MB.SEQ.19-W/8R 15W SPK.20/21/25/28"GS/NI	PC	1,000	.	.	.	.	.
625	8	20015467	MB.JUM.19-W/8R 15W SPK.20/21/25/28"GS/NI	PC	1,000	.	.	.	.	.
626	9	30002583	JUMPER WIRE 0.6MM	G	0,125	J297	.	.	.	.
627	8	30000805	RES CF 1/4W 75K J	PC	1,000	R108	.	.	.	.
628	5	30000284	CAP SMD 1NF 50V K R (0805)	PC	2,000	C107	C101	.	.	.
629	5	30000480	RES SMD 1/10W 100K J (0805)	PC	2,000	R107	R109	.	.	.
630	5	30000807	RES SMD 1/10W 75K J	PC	1,000	R106	.	.	.	.
631	4	20001461	MB.SMD.19-2SC STR WO/DOLBY	PC	1,000	.	.	.	.	.
632	5	30000242	CAP SMD 330PF 50V J	PC	4,000	C061	C062	C066	C067	.
633	5	30000469	RES SMD 1/10W 1K J 0805	PC	4,000	R067	R069	R079	R081	.
634	4	20001471	MB.AXI.19-PCB AK198A	PC	1,000	.	.	.	.	.
635	5	30002409	PCB AK19-8A	PC	1,000	.	.	.	.	.
636	4	20001507	MB.SMD.19-WO/AK19B NORMAL/TUNERSIZ TV	PC	1,000	.	.	.	.	.
637	5	20001508	MB.RAD.19-WO/AK19B NORMAL/TUNERSIZ TV	PC	1,000	.	.	.	.	.
638	6	20001509	MB.AXI.19-WO/AK19B NORMAL/TUNERSIZ TV	PC	1,000	.	.	.	.	.
639	7	20001510	MB.SEQ.19-WO/AK19B NORMAL/TUNERSIZ TV	PC	1,000	.	.	.	.	.
640	8	20008845	MB.JUM.19-WO/AK19B NORMAL/TUNERSIZ TV	PC	1,000	.	.	.	.	.
641	9	30002583	JUMPER WIRE 0.6MM	G	2,625	J114	J116	J131	J156	J165
.	.	.	.	.	.	J166	J171	J243	J254	J800
.	.	.	.	.	.	S506	S507	S508	S509	S804
.	.	.	.	.	.	J111	J187	J188	D822	S805
.	.	.	.	.	.	J128	.	.	.	.
642	8	30000459	RES CF 1/4W 100R J	PC	2,000	J163	J164	.	.	.
643	8	30000466	RES CF 1/4W 1K J	PC	1,000	J400	.	.	.	.
644	8	30000583	RES CF 1/4W 220R J	PC	1,000	J167	.	.	.	.
645	8	30000718	RES CF 1/4W 4.7K J	PC	2,000	R832	R879	.	.	.
646	8	30001242	RES FUSE 1/4W 47R J	PC	1,000	J902	.	.	.	.

647	8	30001347	DIODE ZENER 8.2V	PC	1,000	D408	.	.	.	.
648	6	30000345	CAP EL 10UF 50V M	PC	1,000	C514	.	.	.	.
649	6	30000387	CAP EL 33UF 50V M	PC	1,000	C449	.	.	.	.
650	6	30000400	CAP EL 47UF 50V M	PC	1,000	C505	.	.	.	.
651	6	30000433	CAP CER 1NF 1KV M B	PC	2,000	C846	C852	.	.	.
652	5	30000289	CAP SMD 10NF 50V K R (0805)	PC	1,000	C526	.	.	.	.
653	5	30000475	RES SMD 1/10W 10K J 0805	PC	1,000	R546	.	.	.	.
654	5	30000597	RES SMD 1/10W 22K J	PC	1,000	R101	.	.	.	.
655	5	30001734	JUMPER SMD (0805)	PC	1,000	S502	.	.	.	.
656	4	20014994	MB.SMD.19-WO/TXT- 8P/TXT 545X TEAC	PC	1,000	.	.	.	.	.
657	5	20014995	MB.RAD.19-WO/TXT- 8P/TXT 545X TEAC	PC	1,000	.	.	.	.	.
658	6	20014996	MB.AXI.19-WO/TXT- 8P/TXT 545X TEAC	PC	1,000	.	.	.	.	.
659	7	20014997	MB.SEQ.19-WO/TXT- 8P/TXT 545X TEAC	PC	1,000	.	.	.	.	.
660	8	20017493	MB.JUM.19-WO/TXT- 8P/TXT 545X TEAC	PC	1,000	.	.	.	.	.
661	9	30002583	JUMPER WIRE 0.6MM	G	0,125	J141	.	.	.	.
662	8	30000466	RES CF 1/4W 1K J	PC	1,000	R448	.	.	.	.
663	8	30000500	RES CF 1/4W 12K J	PC	1,000	R711	.	.	.	.
664	8	30000633	RES CF 1/4W 27K J	PC	1,000	R547	.	.	.	.
665	8	30000718	RES CF 1/4W 4.7K J	PC	1,000	R710	.	.	.	.
666	8	30001284	DIODE 1N4148	PC	4,000	D510	D506	D507	D508	.
667	6	30000099	CAP MKT 33NF 63V J	PC	1,000	C519	.	.	.	.
668	6	30000100	CAP MKT 330NF 63V J	PC	1,000	C521	.	.	.	.
669	6	30000345	CAP EL 10UF 50V M	PC	1,000	C428	.	.	.	.
670	6	30001454	TR BC548B	PC	2,000	Q415	Q702	.	.	.
671	5	30000237	CAP SMD 33PF 50V J (08*05)	PC	2,000	C524	C525	.	.	.
672	5	30000289	CAP SMD 10NF 50V K R (0805)	PC	1,000	C506	.	.	.	.
673	5	30000484	RES SMD 1/10W 1M J (0805)	PC	1,000	R584	.	.	.	.
674	5	30000558	RES SMD 1/10W 180R J	PC	1,000	R465	.	.	.	.
675	5	30000626	RES SMD 1/10W 270R J	PC	1,000	R447	.	.	.	.
676	5	30000631	RES SMD 1/10W 2.7K J 0805	PC	1,000	R540	.	.	.	.
677	5	30000696	RES SMD 1/10W 39K J (0805)	PC	1,000	R548	.	.	.	.
678	4	20015459	MR.SMD.19-SMPS 90-270V	PC	1,000	.	.	.	.	.

			110° 54XX							
679	5	20015460	MB.RAD.19-SMPS 90-270V 110° 54XX	PC	1,000	.	.	.	.	.
680	6	20015461	MB.AXI.19-SMPS 90-270V 110° 54XX	PC	1,000	.	.	.	.	.
681	7	20015462	MB.SEQ.19-SMPS 90-270V 110° 54XX	PC	1,000	.	.	.	.	.
682	8	30000540	RES CF 1/2W 1.5M J (400V)	PC	1,000	R816	.	.	.	.
683	8	30000660	RES CF 1/4W 3.3K J	PC	1,000	R871	.	.	.	.
684	8	30000801	RES CF 1/4W 7.5K J	PC	1,000	R808	.	.	.	.
685	6	30000283	CAP CER 1NF 50V K B	PC	1,000	C809	.	.	.	.
686	4	20015752	MB.SMD.19-C111-C109 GRUBU (100 PF)	PC	1,000	.	.	.	.	.
687	5	30000189	CAP SMD 100PF 50V J (0805)	PC	2,000	C111	C109	.	.	.
688	3	20026726	IC 24C16 773J6E2100100010	PC	1,000	.	.	.	.	.
689	4	30009005	IC 24C16	PC	1,000	.	.	.	.	.
690	1	20015474	LBL.BCK.CVR.TEAC EU- 66ST	PC	1,000	.	.	.	.	.
691	2	20013018	LBL.BCK.CVR.ASSY (TV) (WO/UL)	PC	1,000	.	.	.	.	.
692	3	50004065	LABEL LOT W/BARCODE (3)	PC	1,000	.	.	.	.	.
693	3	70000004	RIBBON T13506 ZA 110MM*300MT	PC	0,001	.	.	.	.	.
694	1	20015708	FRONT 7216 W/H&J-SVHS UL(TEAC MET.FU)(P)	PC	1,000	.	.	.	.	.
695	2	20015510	FRONT 7216 W/H&J-SVHS UL(GRAY)(I)	PC	1,000	.	.	.	.	.
696	3	60000009	FR-HIPS NATR.V-0 6335	KG	1,501	.	.	.	.	.
697	3	60000138	MASTERBATCH (GRAY) % 1	G	15,000	.	.	.	.	.
698	2	60000148	PAINT TEAC METALIK FUME	KG	0,030	.	.	.	.	.
699	1	20015709	BACK CVR.7210/1/2/5/6(UL)TEAC MET.FU (P)	PC	1,000	.	.	.	.	.
700	2	20015509	BACK CVR.7210/1/2/5/6 (UL) GRAY (I)AK19	PC	1,000	.	.	.	.	.
701	3	60000009	FR-HIPS NATR.V-0 6335	KG	2,562	.	.	.	.	.
702	3	60000138	MASTERBATCH (GRAY) % 1	G	26,000	.	.	.	.	.
703	2	60000148	PAINT TEAC METALIK FUME	KG	0,030	.	.	.	.	.

704	1	20015710	LENS 7216M-AV(-V+ P+)TEAC ME.FU(PN429C/S	PC	1,000	.	.	.	.	.
705	2	40004691	LENS 7216 M-AV (I)	PC	1,000	.	.	.	.	.
706	2	60000148	PAINT TEAC METALIK FUME	KG	0,001	.	.	.	.	.
707	1	20015837	F CARTON BOX TEAC EU- 66ST	PC	1,000	.	.	.	.	.
708	2	50005978	CARTON BOX TEAC EU- 66ST	PC	1,000	.	.	.	.	.
709	2	50006058	CAR.BOX 72- 10/1/2/5/6/20/70/71 CR&TV.EMP	PC	1,000	.	.	.	.	.
710	1	20016405	ON/OFF AS.110°(28- 29")(2.2/AU)(W/MAKARON	PC	1,000	.	.	.	.	.
711	2	30002174	SWITCH ON/OFF 4A/64A	PC	1,000	.	.	.	.	.
712	2	30002368	CABLE AC 2P 65CM W/MLX CONN.	PC	1,000	.	.	.	.	.
713	2	30002386	POWER CORD 2.2MT AUST.TYPE	PC	1,000	.	.	.	.	.
714	2	40000127	SWITCH INSULATION DOOR LK101	PC	1,000	.	.	.	.	.
715	2	40001898	MACARON (12cm.Isý ile daralan)	PC	1,000	.	.	.	.	.
716	1	20018351	BASE 721X/20/7411/12 (UL)(I)W/CHA.F.AK19	PC	1,000	.	.	.	.	.
717	2	20004005	CHASSIS FRAME AK19 (110°)	PC	1,000	.	.	.	.	.
718	3	60000003	ABS BLACK	KG	0,050	.	.	.	.	.
719	2	60000009	FR-HIPS NATR.V-0 6335	KG	0,826	.	.	.	.	.
720	2	60000022	MASTERBATCH (BLACK)	KG	0,008	.	.	.	.	.
721	1	20033668	ARTWORK TEAC AUSTR TEAC EU-66ST	PC	1,000	.	.	.	.	.
722	2	20026652	R/C 2042 TEAC RC- 735(ME.DBL4146/P)(ÖZ/S)	PC	1,000	.	.	.	.	.
723	3	30009321	R/C 2042 NOBRAND (427C/S)(ME.DBL4146/P)	PC	1,000	.	.	.	.	.
724	2	30002391	BATTERY AAA UM4 1.5V GREEN	PC	2,000	.	.	.	.	.
725	2	50005951	WARRANTY CARD TEAC (ENG)	PC	1,000	.	.	.	.	.
726	2	50005977	I/B TEAC EU-66ST FST/2040/ENG/545X-OTP	PC	1,000	.	.	.	.	.
727	1	30002864	28" CPT TUBE 50 HZ FLAT IRON - SOUTH	PC	1,000	.	.	.	.	.
728	1	40001918	LOGO TEAC (W/P-GRAY)	PC	1,000	.	.	.	.	.

729	1	50000007	PLASTIZOTE (1400*1000)	PC	2,000	.	.	.	.	.
730	1	50005979	LBL.SCREEN TEAC EU - 66ST	PC	1,000	.	.	.	.	.
731	1	50006126	LBL.SERVICE TEAC	PC	1,000	.	.	.	.	.



11AK19B COMPONENT
* : OPTIONAL

