

SATELLITE PROCESSORS Individual modules make it easy to customize

Technical Description

The S780 satellite processor converts an individual satellite channel using state of the art phase lock loop oscillators controlled by a microprocessor . To improve the threshold performance of the front end there is a tracking frequency agile bandpass filter in the first stage of each converter.

The individual channel, after amplification, is converted to an intermediate frequency ,passed through a SAW filter giving excellent selectivity,before being converted to the output frequency . Each channel has 25dB of AGC, essential to compensate for levels varying due to rain attenuation .The output level of each channel can be adjusted over a range of 10 dB , this will maximize the performance of the head end amplifier as tilt can easily be applied and minor frequency response errors in the head end configuration can be corrected . In addition ,the whole system performance is improved if all the channels distributed are processed, as the distribution amplifiers are not having to cope with the full bandwidth of the noise power from the LNB and unwanted channels.

Sky digital channels,can only be distributed **if the channel frequency is not changed due to the digibox software** ,so if a single wire system is used for sky there would be some limitations on what can be distributed.

The processors are particularly useful on five wire switch systems distributing sky , it gives level control on each digital carrier,and also enables other satellite carriers to be fitted into frequencies not being used by sky or into frequencies occupied by sky programmes that are not required by the customer.

Unless a processor is used,it is difficult to construct large distribution systems at IF frequencies because of the practical difficulty of installing multiple trunk and distribution cables and the changing signal levels of all the carriers . Unless there is AGC and level control on each and every carrier provided by processing a system has to be designed to accommodate the weakest and strongest transmission in addition to signal level variation through changing weather or broadcasters adjusting power levels.

Therefore if a processor is not used the variables would add up to a large contingency being required in the system design .

Specification S780

Minimum Input Level	48dBuV
Maximum Input level	83dBuV
Output Level	73dBuV
AGC	25dB
Adjustable Attenuation	10dB
Bandwidth each channel	27-36MHz
Input frequency range	920MHz-2150MHz
Output frequency range	920MHz-2150MHz
Power Requirements	5V DC 330mA 30VDC 3mA

Specification TIS 808

Input frequency range	5-860Mhz	920MHz-2150MHz
Gain	2dB 5-860Mhz+44dB	920MHz-2150MHz
Max output		125dBuV(57dbmV)
Power requirement		15VDC 190mA
Gain and Tilt controls		

S780 Converter module



Adding channels from other satellites .
Piece of Cake



TPF 22 link



TPM 29 link

Illustrated are terrestrial channel amplifiers detailed elsewhere in the catalogue. These can be used in conjunction with the sat processors

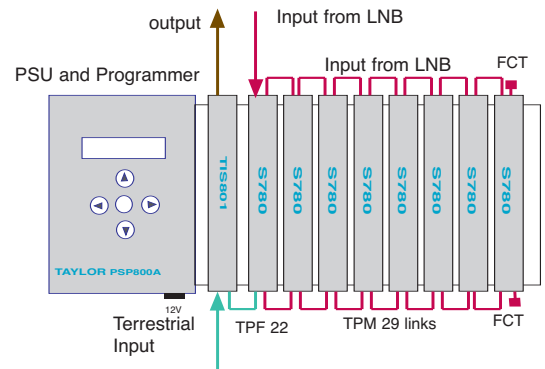


Other Analogue or digital
Astra 28.2 Sky Digital



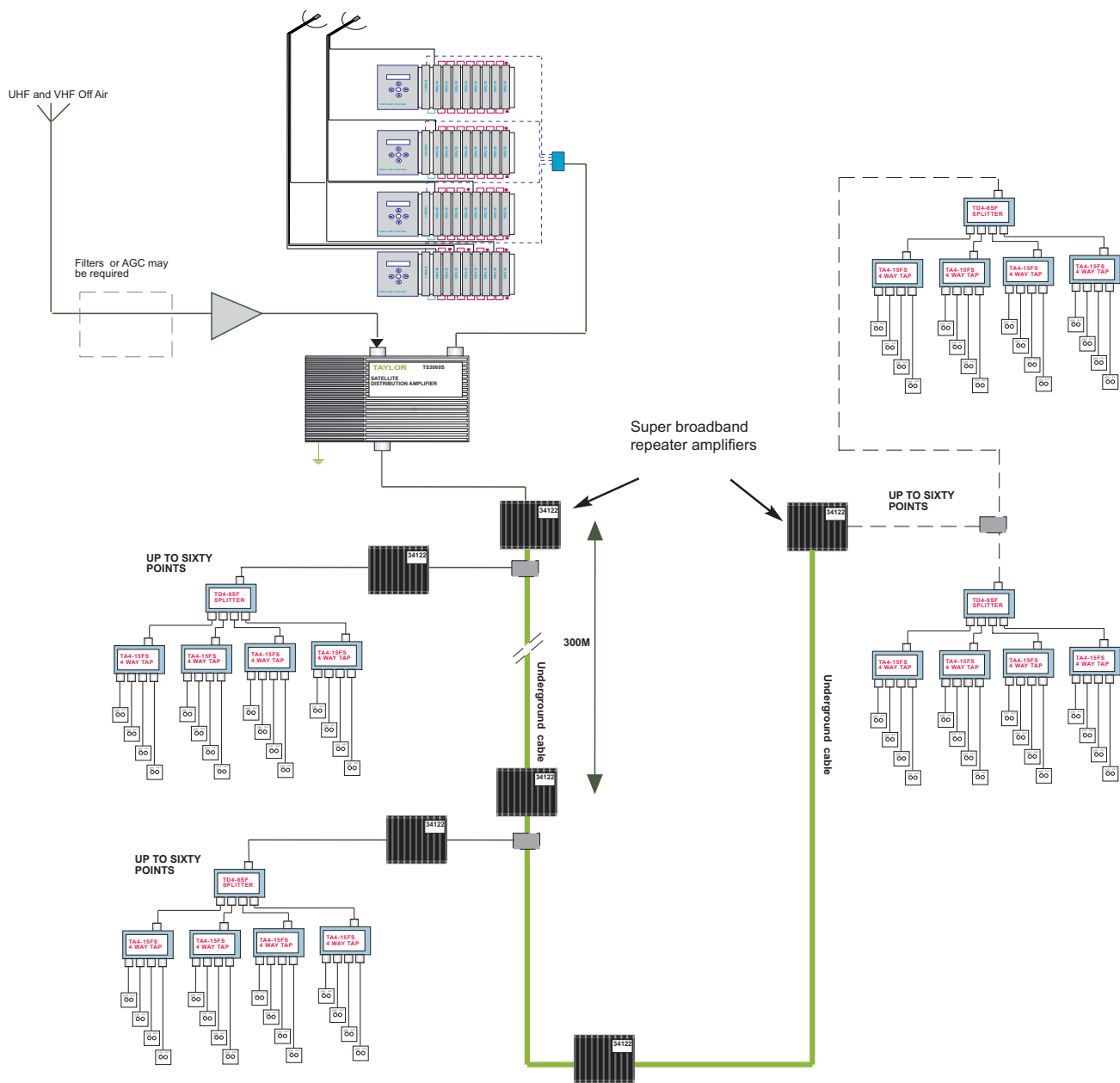
System showing selected Sky digital channels combined with another satellite, using unused or unwanted Sky frequencies.

Some Sky channels must be included due to data essential for the digibox



		Price
S780	Sat IF Converter	£67.33
TIS 808	920-2150MHz amp and combiner for 5-860Mhz	£40.41
BP10	Backplate for mounting PSP800 psu and ten modules	£7.89
BP6	Backplate for mounting PSP800 psu and six modules	£7.40
PSP 800A	PSU and pogrammer for eight modules	£116.25
PSP 800B	PSU and pogrammer for sixteen modules	£130.79
TCLP1500-15	1500mA 15VDC Switch mode psu	£38.73
TPM 29	Rigid IEC to F Coax Link	£1.58
TPF22	Rigid IEC Coax Link	£1.58
FCT	75Ω Load F connector	£0.09
FJ-CP	Coax IEC to F adaptor	£0.17

Typical large sat system using a single coax



Above is a typical system distributing analogue or digital satellite channels plus terrestrial VHF and UHF.

For large systems this is the only optional way of distributing satellite if the running multiple underground trunk cables is prohibitive.

Systems of over a thousand points can be constructed using coax or tens of thousands of points using a hybrid fibre/coax system. The limitations to the size of system are the same as existing cable networks except greater care has to be taken in calculating frequency response errors at higher frequencies.

The limitations of using a single cable for distribution of satellite is bandwidth, and the software in sky digiboxes being unable to locate transponders, that have been relocated in the IF spectrum. There are various partial solutions to this software problem, see our website, but at the moment no complete solution unless Sky update the receiver software in the future.

As more channels are allocated various options can be used to optimize the available bandwidth.

For example, using satellite demodulators and remodulating, programmes that are broadcast clear in the UHF or VHF band, makes more capacity available in the one to two GHz spectrum for subscription programmes.

Digital broadcast make more efficient use of bandwidth and as broadcasters move over to digital more channels can be distributed in the available bandwidth. If the most efficient current technology is used a single coax system can carry fourteen hundred and seventy channels.