CVR800 Standards Converter

3Gb/s, HD & SD SDI and Composite Standards Converter with Synchronizer, Up, Down and Cross Conversion

Operator's Manual

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Explanation of Safety Symbols

GB

This symbol refers the user to important information contained in the accompanying literature. Refer to manual.

This symbol indicates that hazardous voltages are present inside.
No user serviceable parts inside.
This unit should only be serviced by trained personnel.

Safety Warnings

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVERS
NO USER SERVICEABLE PARTS
REFER SERVICING TO QUALIFIED PERSONNEL ONLY

Servicing instructions where given, are for use by qualified service personnel only.
To reduce risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.
Refer all servicing to qualified personnel.

- **To reduce the risk of electric shock, do not expose this appliance to rain or moisture.**
- **Always ensure that the unit is properly earthed and power connections correctly made.**
- **This equipment must be supplied from a power system providing a PROTECTIVE EARTH ⏚ connection and having a neutral connection which can be reliably identified.**
- **The power outlet supplying power to the unit should be close to the unit and easily accessible**

Power connection in countries other than the USA

The equipment is normally shipped with a power cable with a standard IEC moulded free socket on one end and a standard IEC moulded plug on the other. If you are required to remove the moulded mains supply plug, dispose of the plug immediately in a safe manner.

The colour code for the lead is as follows:

GREEN/YELLOW lead connected to E (Protective Earth Conductor)
BLUE lead connected to N (Neutral Conductor)
BROWN lead connected to L (Live Conductor)

Caution If the unit has two mains supply inputs ensure that both power cords are plugged into mains outlets operating from the same phase.

Légende :

F

Ce symbole indique qu'il faut prêter attention et se référer au manuel.

Ce symbole indique qu'il peut y avoir des tensions électriques à l'intérieur de l'appareil. Ne pas intervenir sans l'agrément du service qualifié.

Précaution d'emploi :

ATTENTION
RISQUE DE CHOC ELECTRIQUE
NE PAS RETIRER LE COUVERCLE
NE PAS INTERVENIR SANS L'AGREMENT DU SERVICE QUALIFIE

Les procédures de maintenance ne concernent que le service agréé. Afin de réduire le risque de choc électrique, il est recommandé de se limiter aux procédures d'utilisation, à moins d'en être qualifié. Pour toute maintenance, contacter le service compétent.

- **Pour réduire le risque de choc électrique, ne pas exposer l'appareil dans un milieu humide.**
- **Toujours s'assurer que l'unité est correctement alimentée, en particuliers à la liaison à la terre.**
- **La source électrique de cet équipement doit posséder une connexion à la terre ⏚, ainsi qu'une liaison « neutre » identifiable.**
- **La prise électrique qui alimente l'appareil doit être proche de celle-ci et accessible.**

Câble secteur de pays autres que les Etats-Unis

L'équipement est livré avec un câble secteur au standard IEC, moulé mâle/femelle.
Si vous souhaitez changr la prise mâle de votre cordon, voici les codes couleurs des fils :

Le fil VERT/JAUNE est connecté à T (Terre)
Le fil BLEU est connecté à N (Neutre)
Le fil MARRON est connecté à P (Phase)

Attention si l'appareil a 2 alimentations, s'assurer que les cordons soient branchés sur la même phase.

Erklärung der Sicherheitssymbole

D

Dieses Symbol weist den Benutzer auf wichtige Informationen hin, die in der begleitenden Dokumentation enthalten sind.

Dieses Symbol zeigt an, dass gefährliche Spannung vorhanden ist.
Es befinden sich keine vom Benutzer zu wartenden Teile im Geräteinneren.
Dieses Gerät sollte nur von geschultem Personal gewartet werden

Sicherheits-Warnhinweise

ACHTUNG
Gefahr von Elektroschocks.
Abdeckungen nicht entfernen
Keine vom Benutzer zu wartende Teile
Wenden Sie sich ausschließlich an qualifiziertes Personal

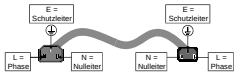
Die angeführten Service-/Reparatur-Anweisungen sind ausschließlich von qualifiziertem Service-Personal auszuführen. Um das Risiko eines lektroschocks zu reduzieren, führen Sie ausschließlich die im Benutzerhandbuch eschriebenen Anweisungen aus, es sei denn, Sie haben die entsprechende Qualifikation.
Wenden Sie sich in allen Service-Fragen an qualifiziertes Personal.

- **Um das Risiko eines Elektroschocks zu reduzieren, setzen Sie das Gerät weder Regen noch Feuchtigkeit aus.**
- **Stellen Sie immer sicher, dass das Gerät ordnungsgemäß geerdet und verkabelt ist.**
- **Dieses Equipment muss an eine Netzsteckdose mit ⏚ Schutzleiter angeschlossen werden und einen zuverlässig identifizierbaren Nullleiter haben.**
- **Die Netzsteckdose sollte nahe beim Gerät und einfach zugänglich sein.**

Netzanschluss in anderen Ländern als der USA

Das Equipment wird im Normalfall mit einem Netzkabel mit Standard IEC Anschlussbuchse und einem Standard IEC Anschlussstecker geliefert.
Sollten Sie den angeschweißten Stecker auswechseln müssen, entsorgen Sie diesen bitte umgehend. Die farbliche Belegung des Netzkabels ist wie folgt:

GRÜN GELB E = Schutzleiter ⏚
BLAU N = Nulleiter
BRAUN L = P = Phase



Achtung: Wenn das Gerät zwei Anschlussbuchsen hat, stellen Sie bitte sicher, dass beide Netzkabel mit der selben Phase in die Netzsteckdose gesteckt werden.

Explicación de los Símbolos de Seguridad

ESP

Éste símbolo refiere al usuario información importante contenida en la literatura incluida. Referirse al manual.

Éste símbolo indica que voltajes peligrosos están presentes en el interior.
No hay elementos accesibles al usuario dentro.
Esta unidad sólo debería ser tratada por personal cualificado.

Advertencias de Seguridad

ADVERTENCIA
RIESGO DE CHOQUE ELECTRICO
NO QUITAR LAS PROTECCIONNES
ELEMENTOS NO ACCESIBLES AL USUARIO
SERVICIO SOLAMENTE A PERSONAL CUALIFICADO

Las instrucciones de servicio cuando sean dadas, son sólo para uso de personal cualificado. Para reducir el riesgo de choque eléctrico no llevar a cabo ninguna operación de servicio aparte de las contenidas en las instrucciones de operación, a menos que se esté cualificado para realizarlas.
Referir todo el trabajo de servicio a personal cualificado.

- **Para reducir el riesgo de choque eléctrico, no exponer este equipo a la lluvia o humedad.**
- **Siempre asegurarse de que la unidad está propiamente conectada a tierra y que las conexiones de alimentación están hechas correctamente.**
- **Este equipo debe ser alimentado desde un sistema de alimentación con conexión a TIERRA ⏚ y teniendo una conexión neutra fácilmente identificable.**
- **La toma de alimentación para la unidad debe ser cercana y fácilmente accesible.**

Conexión de alimentación en otros países que no sean USA

El equipo es normalmente entregado con un cable de alimentación con un enchufe hembra estándar IEC en un extremo y con una clavija estándar IEC en el otro. Si se requiere eliminar la clavija para sustituirla por otra, disponer dicha clavija de una forma segura.
El código de color a emplear es como sigue:

VERDE/ AMARILLO conectado a E (Conductor de protección a Tierra -Earth en el original-)
AZUL conectado a N (Conductor Neutro -Neutral en el original-)
MARRÓN conectado a L (Conductor Fase -Live en el original-)

Advertencia Si la unidad tuviera dos tomas de alimentación, asegurarse de que ambos cables de alimentación están conectados a la misma fase.

Simboli di sicurezza: (I)

Questo simbolo indica l'informazione importante contenuta nei manuali appartenenti all'apparecchiatura. Consultare il manuale.

Questo simbolo indica che all'interno dell'apparato sono presenti tensioni pericolose. Non cercare di smontare l'unità.
Per qualsiasi tipo di intervento rivolgersi al personale qualificato.

Attenzione:

ATTENZIONE
RISCHIO DI SHOCK ELETTRICO NON CERCARE DI SMONTARE L'UNITA PER QUALSIASI TIPO DI INTERVENTO RIVOLGERSI AL PERSONALE QUALIFICATO

Le istruzioni relative alla manutenzione sono ad uso esclusivo del personale qualificato. E' proibito all'utente eseguire qualsiasi operazione non esplicitamente consentita nelle istruzioni. Per qualsiasi informazione rivolgersi al personale qualificato.

- **Per prevenire il pericolo di scosse elettriche è necessario non esporre mai l'apparecchiatura alla pioggia o a qualsiasi tipo di umidità.**
- **Assicurarsi sempre, che l'unità sia propriamente messa a terra e che le connessioni elettriche siano eseguite correttamente.**
- **Questo dispositivo deve essere collegato ad un impianto elettrico dotato di un sistema di messa a terra efficace.**
- **La presa di corrente deve essere vicina all'apparecchio e facilmente accessibile.**

Connessione elettrica nei paesi diversi dagli Stati Uniti

L'apparecchiatura normalmente è spedita con cavo pressofuso con la presa e spina standard IEC. Nel caso della rimozione della spina elettrica, gettarla via immediatamente osservando tutte le precauzioni del caso.
La leggenda dei cavi è la seguente:

VERDE/GIALLO cavo connesso ad "E" (terra)
BLU cavo connesso ad "N" (neutro)
MARRONE cavo connesso ad "L" (fase)

Attenzione! Nel caso in cui l'apparecchio abbia due prese di corrente, assicurarsi che i cavi non siano collegati a fasi diverse della rete elettrica.

Förklaring av Säkerhetssymboler (S)

Denna symbol hänvisar användaren till viktig information som återfinns i litteraturen som medföljer. Se manualen.

Denna symbol indikerar att livsfarlig spänning finns på insidan.
Det finns inga servicevänliga delar inne i apparaten.
Denna apparat få endast repareras av utbildad personal.

Säkerhetsvarningar

CAUTION
RISK OF ELECTRIC SHOCK DO NOT REMOVE COVERS NO USER SERVICEABLE PARTS REFER SERVICING TO QUALIFIED PERSONNEL ONLY

Serviceinstruktioner som anges avser endast kvalificerad och utbildad servicepersonal. För att minska risken för elektrisk stöt, utför ingen annan service än den som återfinns i medföljande driftinstruktionerna, om du ej är behörig. Överlåt all service till kvalificerad personal.

- **För att reducera risken för elektrisk stöt, utsätt inte apparaten för regn eller fukt.**
- **Se alltid till att apparaten är ordentligt jordad samt att strömtillförseln är korrekt utförd.**
- **Denna apparat måste bli försörjd från ett strömsystem som är försedd med jordadanslutning ⏚ samt ha en neutral anslutning som lätt identifierbar.**
- **Vägguttaget som strömförsörjer apparaten bör finnas i närheten samt vara lätttillgänglig.**

Strömkontakter i länder utanför USA

Apparaten utrustas normalt med en strömkabel med standard IEC gjuten honkontakt på ena änden samt en standard IEC gjuten hankontakt på den andra änden. Om man måste avlägsna den gjutna hankontakten, avyttra denna kontakt omedelbart på ett säkert sätt. Färgkoden för ledningen är följande:

GRÖN/GUL ledning ansluten till E (Skyddsjordad ledare)
BLÅ ledning ansluten till N (Neutral ledare)
BRUN ledning ansluten till L (Fas ledare)

Varning! Om enheten har två huvudsakliga elförsörjningar, säkerställ att båda strömkablarna som är inkopplade i enheten arbetar från samma fas.

Forklaring på sikkerhedssymboler (DK)

Dette symbol gør brugeren opmærksom på vigtig information i den medfølgende manual.

Dette symbol indikerer farlig spænding inden i apparatet. Ingen bruger servicerbare dele i apparatet på brugerniveau.
Dette apparat må kun serviceres af faglærte personer..

Sikkerhedsadvarsler

FORSIGTIG
RISIKO FOR ELEKTRISK STØD DÆKPLADER MÅ IKKE FJERNES INGEN BRUGER SERVICERBARE DELE SERVICE MÅ KUN UDFØRES AF FAGLÆRTE PERSONER

Serviceinstruktioner er kun til brug for faglærte servicefolk. For at reducere risikoen for elektrisk stød må bruger kun udføre anvisninger i betjeningsmanualen.
Al service skal udføres af faglærte personer.

- **For at reducere risikoen for elektrisk stød må apparatet ikke udsættes for regn eller fugt.**
- **Sørg altid for at apparatet er korrekt tilsluttet og jordet.**
- **Dette apparat skal forbindes til en nettilslutning, der yder BESKYTTENDE JORD ⏚ og 0 forbindelse skal være tydeligt markeret.**
- **Stikkontakten, som forsyner apparatet, skal være tæt på apparatet og let tilgængelig**.

Nettilslutning i andre lande end USA

Udstyret leveres normalt med et strømkabel med et standard IEC støbt løst hunstik i den ene ende og et standard IEC støbt hanstik i den anden ende. Hvis et af de støbte stik på strømkablet er defekt, skal det straks kasseres på forsvarlig vis. Farvekoden for lederen er som følger:

GRØN/GUL leder forbundet til J (Jord)
BLÅ leder forbundet til 0
BRUN leder forbundet til F(Fase)

Forsigtig Hvis enheden har to lysnetindgange, skal der sørges for at begge ledninger tilsluttes lystnetudgange fra den samme fase.

Turvamerkkien selitys (FI)

Tämä merkki tarkoittaa, että laitteen mukana toimitettu kirjallinen materiaali sisältää tärkeitä tietoja. Lue käyttöohje.

Tämä merkki ilmoittaa, että laitteen sisällä on vaarallisen voimakas jännite. Sisäpuolella ei ole mitään osia, joita käyttäjä voisi itse huoltaa. Huollon saa suorittaa vain alan ammattilainen.

Turvaohjeita

VAROITUS
SÄHKÖISKUN VAARA ÄLÄ AVAA LAITTEEN KANSIA EI SISÄLLÄ KÄYTTÄJÄLLE HUOLLETTAVIA OSIA HUOLTO AINOASTAAN AMMATTILAISEN SUORITTAMANA

Huolto-ohjeet on tarkoitettu ainoastaan alan ammattilaisille. Älä suorita laitteelle muita toimenpiteitä, kuin mitä käyttöohjeissa on neuvottu, ellet ole asiantuntija. Voit saada sähköiskun. Jätä kaikki huoltotoimet ammattilaiselle.

- **Sähköiskujen välttämiseksi suojaa laite sateelta ja kosteudelta.**
- **Varmistu, että laite on asianmukaisesti maadoitettu ja että sähkökytkennät on tehty oikein.**
- **Laitteelle tehoa syöttävässä järjestelmässä tulee olla SUOJAMAALIITÄNTÄ ⏚ ja nollaliitännän on oltava luotettavasti tunnistettavissa.**
- **Sähköpistorasian tulee olla laitteen lähellä ja helposti tavoitettavissa.**

Sähkökytkentä

Laitteen vakiovarusteena on sähköjohto, jonka toisessa päässä on muottiin valettu, IEC-standardin mukainen liitäntärasia ja toisessa päässä muottiin valettu, IEC-standardin mukainen pistoliitin. Jos pistoliitin tarvitsee poistaa, se tulee hävittää heti turvallisella tavalla. Johtimet kytketään seuraavasti:

KELTA-VIHREÄ suojamaajohdin E-napaan
SININEN nollajohdin N-napaan
RUSKEA vaihejohdin L-napaan

Huom! Jos laitteessa on kaksi verkkojännitteen tuloliitäntää, niiden johdot on liitettävä verkkopistorasioihin, joissa on sama vaiheistus.

Símbolos de Segurança

P

O símbolo triangular adverte para a necessidade de consultar o manual antes de utilizar o equipamento ou efectuar qualquer ajuste.

Este símbolo indica a presença de voltagens perigosas no interior do equipamento. As peças ou partes existentes no interior do equipamento não necessitam de intervenção, manutenção ou manuseamento por parte do utilizador. Reparações ou outras intervenções devem ser efectuadas apenas por técnicos devidamente habilitados.

Avisos de Segurança

As instruções de manutenção fornecidas são para utilização de técnicos qualificados. Para reduzir o risco de choque eléctrico, não devem ser realizadas intervenções no equipamento não especificadas no manual de instalações a menos que seja efectuadas por técnicos habilitados.

- **Para reduzir o risco de choque eléctrico, não expor este equipamento à chuva ou humidade.**
- **Assegurar que a unidade está sempre devidamente ligada à terra e que as ligações à alimentação estão correctas.**
- **O sistema de alimentação do equipamento deve, por razões de segurança, possuir ligação a terra de protecção (⏚) e ligação ao NEUTRO devidamente identificada.**
- **A tomada de energia à qual a unidade está ligada deve situar-se na sua proximidade e facilmente acessível.**

Ligação da alimentação noutros países que não os EUA

O equipamento é, normalmente, enviado com cabo de alimentação com ficha IEC fêmea standard num extremo e uma ficha IEC macho standard no extremo oposto. Se for necessário substituir ou alterar alguma destas fichas, deverá remove-la e elimina-la imediatamente de maneira segura.
O código de cor para os condutores é o seguinte:

Condutor VERDE/AMARELO ligado a E (Terra)
Condutor AZUL ligado a N (Neutro)
Condutor CASTANHO ligado a L (Vivo).

Atenção: Se a unidade tem duas fontes de alimentação assegurar que os dois cabos de alimentação estão ligados a tomadas pertencentes à mesma fase.

Επεξήγηση των Συμβόλων Ασφαλείας

G

Αυτό το σύμβολο παραπέμπει το χρήστη σε σημαντικές πληροφορίες που συμπεριλαμβάνονται στο συνοδευτικό εγχειρίδιο.

Αυτό το σύμβολο υποδεικνύει ότι στο εσωτερικό υφίστανται επικίνδυνες ηλεκτρικές τάσεις. Στο εσωτερικό δεν υπάρχουν επισκευάσιμα μέρη. Αυτή η μονάδα πρέπει να επισκευάζεται μόνο από ειδικά εκπαιδευμένο προσωπικό.

Προειδοποίηση Ασφαλείας

Οδηγίες επισκευής, όπου παρέχονται, αναφέρονται αποκλειστικά και μόνο σε εξειδικευμένο προσωπικό. Για να μειωθεί ο κίνδυνος ηλεκτροπληξίας, μην εκτελείτε επισκευές παρά μόνο τις συμπεριλαμβανόμενες στο εγχειρίδιο των οδηγιών, εκτός και αν έχετε τα απαραίτητα προσόντα για να το κάνετε. Όλες οι επισκευές να εκτελούνται από ειδικά εκπαιδευμένο προσωπικό.

- **Για να μειώσετε τον κίνδυνο ηλεκτροπληξίας μην εκθέτετε τη συσκευή σε βροχή ή υγρασία.**
- **Πάντα να εξασφαλίζετε τη σωστή γείωση της συσκευής και τη σωστή σύνδεση των συνδέσμων τροφοδοσίας.**
- **Ο εξοπλισμός πρέπει να τροφοδοτείται από ένα σύστημα τροφοδοσίας που να εξασφαλίζει ΠΡΟΣΤΑΤΕΥΤΙΚΗ ΓΕΙΩΣΗ (⏚) και να έχει καθορισμένες θέσεις ουδέτερου και φάσης.**
- **Ο εξοπλισμός που τροφοδοτεί τη συσκευή θα πρέπει να βρίσκεται κοντά στη συσκευή και να είναι εύκολα προσβάσιμος.**

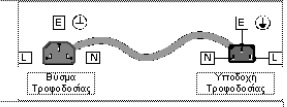
Σύνδεση τροφοδοσίας σε χώρες εκτός των ΗΠΑ

Ο εξοπλισμός συνοδεύεται συνήθως από ένα καλώδιο τροφοδοσίας με ένα σταθερό βύσμα τροφοδοσίας ρεύματος τύπου πυραμίδας στη μια άκρη του και μια σταθερή υποδοχή τροφοδοσίας ρεύματος τύπου πυραμίδας στην άλλη άκρη του. Εάν χρειαστεί να αφαιρέσετε το σταθερό βύσμα τροφοδοσίας μην το επαναχρησιμοποιείτε, θεωρείται άχρηστο. Ο χρωματικός οδηγός για το καλώδιο τροφοδοσίας είναι ο παρακάτω:

ΠΡΑΣΙΝΟ/ΚΙΤΡΙΝΟ καλώδιο συνδέεται στο E (Προστατευτικός Αγωγός Γείωσης)

ΜΠΛΕ καλώδιο συνδέεται στο N (Ουδέτερο Αγωγό)

ΚΑΦΕ καλώδιο συνδέεται στο L (Αγωγό Φάσης)



ΠΡΟΣΟΧΗ! Αν η μονάδα έχει δύο τροφοδοτικά βεβαιωθείτε ότι και τα δύο καλώδια τροφοδοσίας είναι συνδεδεμένα σε εξόδους τροφοδοσίας που βρίσκονται στην ίδια φάση.

Power cable supplied for the USA

The equipment is shipped with a power cord with a standard IEC molded free socket on one end and a standard 3-pin plug on the other. If you are required to remove the molded mains supply plug, dispose of the plug immediately in a safe manner. The color code for the cord is as follows:

GREEN lead connected to E (Protective Earth Conductor)

BLACK lead connected to L (Live Conductor)

WHITE lead connected to N (Neutral Conductor)

Note that for equipment that is not fitted with a mains power switch, to comply with EN60950 Clauses 1.7.2 and 2.6.9, the power outlet supplying power to the unit should be close to the unit and easily accessible.

Safety Standard

The CVR800 conforms to the following standards:

BS EN60950:2000 *Specification for safety of information technology equipment, including electrical business equipment.*

UL 1419. *Professional video equipment File No. E193966*

The CVR800 conforms to the following standard:

BS EN60950:2001 Specification for safety of information technology equipment, including electrical business equipment.

EMC Standards

These units conform to the following standards:

BS EN 55103-1 : 1997
Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 1. Emission

BS EN 55103-2 : 1997
Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2. Immunity

Federal Communications Commission Rules Part 15, Class A :1998

EMC Environment

The product(s) described in this manual conform to the EMC requirements for, and are intended for use in,

The controlled EMC environment (for example purpose-built broadcasting or recording studios), and the rural outdoor environment (far away from railways, transmitters, overhead power lines, etc.) E4

EMC Performance of Cables and Connectors

Snell products are designed to meet or exceed the requirements of the appropriate European EMC standards. In order to achieve this performance in real installations it is essential to use cables and connectors with good EMC characteristics.

All signal connections (including remote control connections) shall be made with screened cables terminated in connectors having a metal shell. The cable screen shall have a large-area contact with the metal shell.

COAXIAL CABLES
Coaxial cables connections (particularly serial digital video connections) shall be made with high-quality double-screened coaxial cables such as Belden 1694 or BBC type PSF1/2M.

D-TYPE CONNECTORS
D-type connectors shall have metal shells making good RF contact with the cable screen. Connectors having "dimples" which improve the contact between the plug and socket shells, are recommended.

About this Manual

This manual covers the installation and operation of the CVR800 Standards Converter.

Packing List

In addition to the unit ordered please check the contents include an operators manual, rubber feet and power cable. Report any shortages or damage immediately.

The unit is supplied in a dedicated packing carton provided by the manufacturer and should not be accepted if delivered in inferior or unauthorized materials. Carefully unpack the carton and check for any shipping damage or shortages. Please retain the box and original packing materials in case the unit needs to be returned.

Any shortages or damage should be reported to the supplier immediately.

Enclosures:

- Product CD
- CVR800
- Power Cable

Software Version Amendments

Notes about Versions Fitted..... V3.04

Manufacturers Notice

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Description

The CVR800 is a 3Gb/s HD & SD standards and format converter with synchronization capability. It provides multi-rate 3Gb/s/HD/SD inputs and outputs, and is capable of providing upconversion, downconversion, and crossconversion both within and between frame rates courtesy of its linear motion adaptive standards conversion feature.

The CVR800 is AFD ready, enabling integration of SMPTE 2016 (AFD) into your workflow.

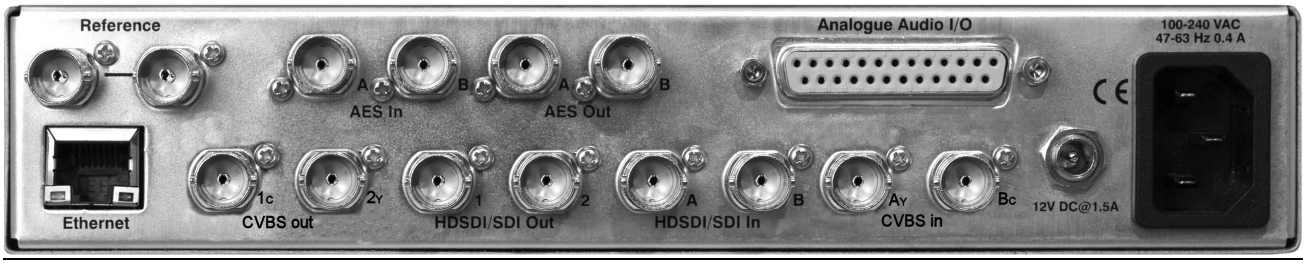
In addition, the product handles embedded, AES (balanced or unbalanced) and analog audio, with a range of additional features such as Aspect Ratio Conversion (ARC) and color space conversion.

The CVR800 has a DC input for redundant PSU capability and is provided in a compact half rack width housing with remote control via an Ethernet connection.

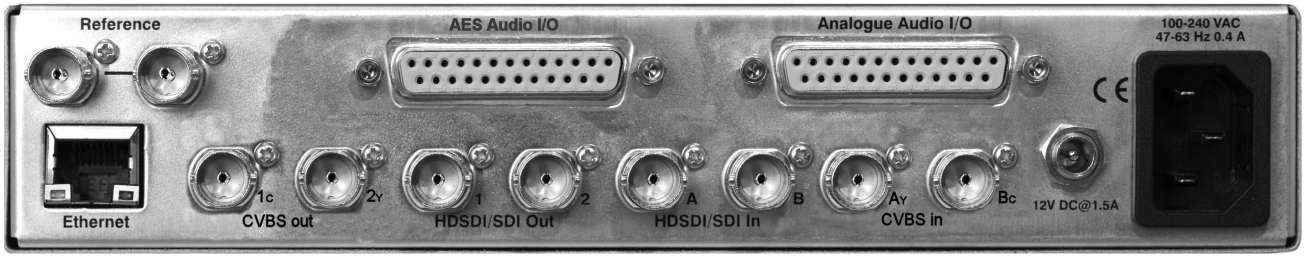
Front panel view

Rear panel views

HD CVR800UD Unbalanced AES & Analog Audio



HD CVR800BD Balanced AES & Analog Audio



Order Codes

- CVR800UD – 5068015
- CVR800BD – 5068025
- Rack mount kit to mount one or two units in a 19” rack (optional) – INSY-MNT-KIT
- Redundant PSU (External PSU, provides redundant PSU Operation) – INSY-PSU-EXT

Technical Profile

Product Features

Format and frame rate conversions

		Output							
		525 59.94i	**625 50i**	**720 50P**	**720 59.94P**	**1080 50i**	**1080 50P**	**1080 59.94i**	**1080 59.94P**
Input	**525 59.94i**	√	√	√	√	√	√	√	√
	625 50i	√	√	√	√	√	√	√	√
	720 50P	√	√	√	√	√	√	√	√
	720 59.94P	√	√	√	√	√	√	√	√
	1080 50i	√	√	√	√	√	√	√	√
	1080 50P	√	√	√	√	√	√	√	√
	1080 59.94i	√	√	√	√	√	√	√	√
	1080 59.94P	√	√	√	√	√	√	√	√

Synchronization	HD to HD (720P/1080i) or SD to SD (525i/625). HD/SD bi or tri sync reference. Will also synchronize SD/HD output when up/down converting. Cross-locking allowed: The output will lock to any input or reference of the same frequency. Ensures minimum latency and no frame drops or repeats when up/down converting.
Frame rate conversion	Multi-point vertical/temporal aperture
Control	Via resident Web page or active front panel
Remote control	Ethernet: Enhanced TSL UMD (V4.0) protocol in direct UDP encapsulation. Multicast supported.
HANC data	Audio data (2 groups) processed. Other HANC data is blanked.
VANC data	Pass if the input standard is the same as the output standard (e.g. 1080 50i to 1080 50i). Blanked in all up, down and cross conversion modes.
Processed audio	De-embed any channel (up to 2 groups). For SDI audio must be synchronous 48kHz. Embed to any two groups Processed audio may be from external audio inputs or de-embedder and is simultaneously available on the external audio outputs and as the embedder source PCM audio has full sub-frame router, with pair gain control PCM and non-PCM Processed audio is matched to video delay Non-PCM audio must be 48KHz synchronous to genlock source Simple pair routing of Non-PCM audio, gain control disabled 16, 20 & 24 bit non-PCM audio from the de-embedder or AES input is detected automatically. When detected and selected by the router, the non-PCM data and its associated validity bit and channel status metadata is passed unprocessed through the router and audio delay.
Signaling	Decode incoming L23, Video Index and SMPTE 2016-1 (AFD) Real time clean conversion dependant on decoded signaling (if same frequency) Encode L23, Video Index and SMPTE 2016-1 (AFD) and insert on output
Analog video input	CVBS, YC, 3D adaptive comb filter. Good tolerance to poor inputs. Standards PAL, NTSC, NTSC-J, PAL-M, PAL-N, N4.4, SECAM 12 bit ADCs. Control of Comb, Pedestal, ACC, CTI and Noise reduction

Analog video output	CVBS, YC. Standards PAL, NTSC, NTSC-J, PAL-M, PAL-N. 12 bit DACs
Closed caption	Passes captions between CEA608 (SD) and the 608 compatibility space in CEA708 (HD), dropping and repeating null packets. HD to HD passes full CEA708 packet with simple synchronisation.

External Interface Specification

Video input	2 x 75 Ohm SD/HD/3Gb/s serial digital with embedded audio.
Video output	2 x 75 Ohm SD/HD/3Gb/s serial digital with embedded audio.
Reference	Analog Bi/Tri sync in any operating video standard Loop-through. Impedance >20k
Digital video standards	3Gb/s HD-SDI SMPTE425 level A, dual-link level B 1.5 Gbit/s HD-SDI SMPTE292M/SMPTE299M 270M Mbit/s HD-SDI SMPTE259M
Input cable length	> 120m of Beldon 1694A @ 1.5Gbits/s > 350m of Beldon 1694A @ 270Mbits/s
Output jitter	HD timing jitter < 1UI HD alignment jitter < 0.2UI SD timing and alignment jitter < 0.2UI
Input/output return loss	< -15dB @ 1.5GHz < -10dB @ 3GHz
CVBS input	Differential phase < 0.8 deg. Differential gain < 0.8% Non-linearity < 1% SNR (unweighted): better than -61dB
CVBS output	Differential phase < 0.4 deg. Differential gain < 0.4% Non-linearity < 0.5% SNR (unweighted): better than -62dB
Remote control	10/100BaseT Ethernet
Indicators	Standby
Power Supply	100 – 240 VAC, 47 - 63Hz 0.4A. 3 pin IEC power socket. 12VDC @ 1.5A via 2.1mm ring lock jack (or second AC input on 1RU)

Audio Options

2 x AES Output	Unbalanced BNC 1Vpk-pk and/or Balanced (25 Way D) 3Vpk-pk 48KHz PCM or non PCM audio
2 x AES Input	Unbalanced BNC and/or Balanced (25Way D) 32-96KHz PCM audio 48kHz non PCM (valid only if synchronous to video output lock source)
AES output jitter	< 0.04UI
2 x Stereo Analog Audio Out	24 bit; THD , -91dB and +24dBu, flatness 20Hz – 20KHz ±0.05dB wrt 1KHz

2 x Stereo Analog Audio In	24 bit; < -87 dB at -1dBFS

Control Features

Input select	SDI A, B; CVBS A, B; YC
Manual image size	Zoom ±20%
Conversion scaling	Fit to height, 14:9, fit to width
SD input format	Normal, anamorphic 16:9, letterbox 16:9
SD output format	Normal, anamorphic 16:9
Pattern	Off, black, ramp, color bars
Conversion	Linear, motion adaptive
Conversion processing	Still process: Detects still images and applies an aperture with full (progressive) vertical frequency response. Enhanced still: Adds field motion detection to still process. Prevents artifacts on moving repetitive patterns.
Black level	± 100mV in 0.8mV steps
Contrast	± 6dB in 0.2dB steps
Color saturation	± 6dB in 0.2dB steps
Gamma	Luminance only (black stretch). Range 0.4 to 1.7
Freeze	Frame (synchronize mode) or field freeze (convert mode)
Safe area markers	Off, 16:9, 4:3. Rectangular white marker box with color suppress. Vertical extent always 93% (16:9) or 70% (4:3)
Processed audio source	For each processed channel: Analogue A; Analogue B; AES A, AES B, De-embed pair 1 to 8; Tone; Silence Pair or channel routing options for PCM audio Pair routing of Non-PCM audio
Audio gain	For each processed pair ±18dB in 0.1dB steps (PCM audio only).
Embed group	Processed pairs A & B: 1, 2, 3, 4, Off (priority selection) Processed pairs C & D: 1, 2, 3, 4, Off
AES output source 1 & 2	Processed pairs A & B (fixed – no control)
DAC output source 1 & 2	Processed pairs A & B (fixed – no control)
Analog audio input level	+12 to +24dBu in 0.5 dBu steps
Analog audio output level	+12 to +24dBu in 0.5 dBu steps
Tone	Frequency: 100Hz to 10kHz in 100Hz steps
User memories	Up to 16 configurations can be saved, cleared and recalled.

Genlock	Reference lock; Input lock; free run. Genlock phase adjustment +0.5F in output pixel steps. (Control allows range to cover worst-case standards). Only available when reference locked to a source of the same frame rate of the output video. This control is disabled when input locked and a fixed, minimum delay is set. Enabling genlock will lock the output video clock to the genlock source (reference or input) regardless of video standard. If the genlock source and video output are the same frame rate (50 or 59.94Hz) genlock will lock the output to the vertical phase of the source, giving consistent and repeatable processing delay. When attempting to pass non-PCM audio it is essential that genlock is enabled. If using an external reference this must be clock-locked to the input video. Non-PCM audio will always be corrupt if the Genlock is set to free-run. Although the unit will input lock to CVBS/YC or YCbCr, it is recommended that in this case the CVBS or Y source is looped through the reference input / output to the CVBS / Y input, and that reference lock is selected.
Sync mode	Disables ARC feature when input and output formats are the same. This gives the lowest latency.
Signaling reader	The unit can be configured to automatically control the conversion depending on the read value of the incoming L23, VI, or SMPTE2016-1 (AFD) active format descriptors. When no valid signaling is recognized, the user can select whether to hold the current conversion or default to the current manual conversion setup. These conversions, assuming the input and output are of the same frequency, will be clean. Additional controls are provided to allow configuration of the format and standard of each of the signaling types: L23 - Standard ETSI/AFD - Line 10-23 VI - Standard SMPTE/AFD HD inputs only support SMPTE2016-1 (AFD), L23 is valid only on 625 inputs and VI on all SD inputs.
Output signaling	Individual control for each of L23, VI and SMPTE2016-1 (AFD) to be inserted on the output, to allow Automatic generation, deletion, passing or always forcing to a user configured value. There are also a number of controls to allow configuration of the format and standard of the output signaling: L23 - Standard ETSI/AFD - Line 10 – 23 - pass/setting of non Aspect ratio bits VI - standard SMPTE/AFD - pass/delete non AFD data SMPTE 2016 is valid on all output standards, VI is valid on SD outputs and L23 is valid only on 625 outputs.
DHCP	Enables/disables DHCP address discovery.
IP Address	Manual setting of static IP address for non-DHCP networks (Default IP address 192.168.0.100), net mask, default gateway.
Advanced Horizontal Enhancement	Enable/Disable Frequency band selection (Low, Med, High) 4 preset enhancement levels (Low, Med, High, Super) Custom H Gain and H Noise rejection levels.
Advanced Vertical Enhancement	Enable/Disable Frequency band selection (Low, Med, High) 5 preset enhancement levels (Soft, Normal, Sharp 1, Sharp 2, Sharp 3)
Horizontal Aperture	5 preset H detail levels (Soft 2, Soft 1, Normal, Sharp 1, Sharp 2) 5 preset H sharpness levels (Low 2, Low 1, Normal, High 1, High 2)
Closed Caption (59.94Hz only)	CEA608 NTSC Enable CEA708 Output line number (1080i/P & 720P); enable

Processing

Scaling/De-interlacing	Motion adaptive linear vertical-temporal filter. Horizontal scaling employs a linear filter.
Color matrix	Automatic correction with HD/SD conversions
Data width	>= 10 bit YCbCr throughout
Audio	ADC/DAC conversion is 24 bit Digital audio is 24 bit throughout Delay smoothly tracks video delay Minimum audio delay < 3ms
Legalizer	On/Off The legalizer ensures that the output video is kept within the RGB gamut limit.

General

Dimensions	1/2RU H44 x W220 x D255
Weight	Approx. 1.6kg

Throughput delays

Frame rate conversion	Delay ~= 58ms (motion adaptive or linear)
Same frame rate 'Sync' mode (interlaced formats)	0.4ms < Delay < 2 fields + 0.4ms
Same frame rate 'Sync' mode (720P)	0.4ms < Delay < 1 field + 0.4ms
Same frame rate 'ARC' mode (interlaced format in **and** out)	4 fields + 1ms < Delay < 6 fields + 1ms
Same frame rate 'ARC' mode (720P in **or** out)	4 fields + 1ms < Delay < 5 fields + 1ms
	where field = 16.7 or 20ms

Notes

WhenCVR800 is performing a standards conversion, irrespective of reference mode, the delay is always approximately 58ms

In Sync mode, the CVR800 is acting as a synchronizer only (the input and output have the same format and frame rate), and it is assumed that the user is synchronizing the output to a chosen reference. Depending on the reference, the delay will vary between 0.4 ms (minimum) and 2 fields plus 0.4 ms (maximum).

For ARC mode, there must be at minimum 4 fields of delay as the CVR800 must load at least 3 fields of data to be able to do the aspect ratio conversion with 'still mode' processing. In input-locked mode, the ARC delay could be just 4 fields. However, if the user is synchronizing the output to a chosen reference, as in Sync mode above, depending on the reference, and up to an additional 2 fields + 1ms (maximum) delay may be incurred. Therefore the total delay in ARC mode will vary between 4 fields (minimum) and 6 fields + 1ms (maximum).

Installation

Power Connections

The CVR800 unit has an IEC320 mains power connector suitable for a standard IEC type power. A cable fitted with fused type plug should be used and a fuse rated at 3A installed.

The CVR800 also has a DC input for redundant PSU capability. It is recommended that a UL approved 12V DC 1.5A supply via a 2.1mm ring lock jack is used for this purpose. The centre pin must only be connected to +12V and the outer casing to 0V.

Supply Voltage

The power supply is auto switching for input voltages in the ranges of 100 V to 240 V nominal.

No voltage adjustment procedure is required.

CAUTION: THIS UNIT MUST NOT BE OPERATED WITHOUT AN EARTH CONNECTION.

Power On/Off Switch

There is no power On/Off switch. The switch on the front panel is a standby switch.

Power ON will be indicated by the illumination of the front panel display. Standby mode is indicated by a red LED on the front panel.

Note that for equipment that is not fitted with a mains power switch, to comply with EN60950 Clauses 1.7.2 and 2.6.9, the power outlet supplying power to the unit should be close to the unit and easily accessible.

Input Connections

HDSDI/SDI In

There are two SDI inputs to the unit via BNC connectors.

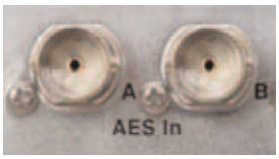
Reference

Where suitable signals are connected to this input, the video output of the unit will be synchronized to the reference signal source when the genlock function is selected. If no signal is present, the unit will automatically revert to internal free-running operation.

BNC loop-through connectors are provided and the signal may black burst or Trisync video at standard level.

Audio AES In (Unbalanced Option)

There are two AES Audio inputs to the unit via BNC connectors.



Audio AES In (Balanced Option)

AES audio input is via the 25 way D-Type connector.

Analogue Audio

Analogue audio input is via the 25 way D-Type connector.

CVBS/YC

These BNC connectors enable either:

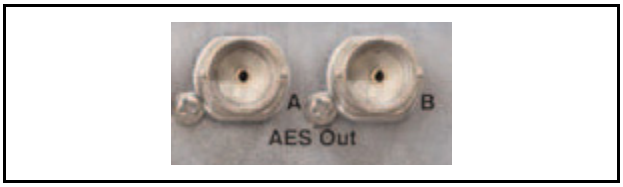
- 2 CVBS inputs
  (CVBS A, CVBS B)
- 1 YC input

Output Connections

HDSDI/SDI Out
There are two SDI outputs from the unit via BNC connectors.

Audio AES Out (Unbalanced Option)
There are two AES Audio outputs from the unit via BNC connectors.

AES Out A outputs the audio selected for processed pair A, and AES Out B outputs the audio selected for processed pair B.



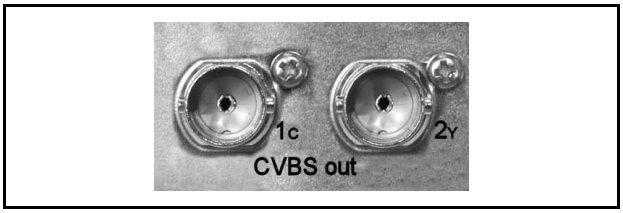
Audio AES Out (Balanced Option)
There are two AES Audio outputs from the unit via the 25 way D-Type connector.

AES Out A outputs the audio selected for processed pair A, and AES Out B outputs the audio selected for processed pair B.

Analogue Audio
Analogue audio Output is via the 25 way D-Type connector.

There are two stereo analog outputs available from this connector, containing the audio selectee for processed pair A and processed pair B respectively.

CVBS/YC Out
These BNC connectors allow either 2 CVBS outputs (CVBS 1, CVBS 2) or 1 YC output to be made.



Control Connections

Ethernet
Connection to a Web browser can be made via the 10/100 BaseT Ethernet connection.

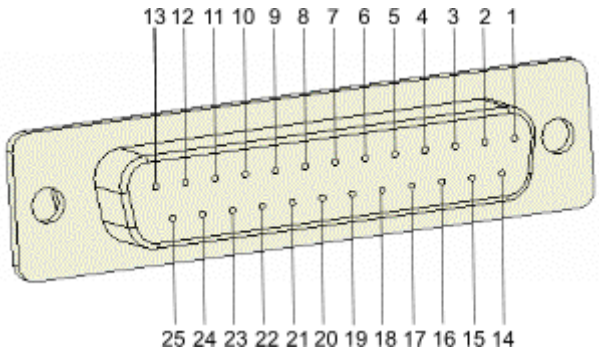
Analog Input/Output Pin Connections

25 D-Sub Pin Description (Analog Input/Output)		
Pin	Name	Signal
1	Chassis	Ground
14	GND1	Analog Out Pair 2 right ‘G’
2	1+	Analog Out Pair 2 right ‘+’
15	1-	Analog Out Pair 2 right ‘-‘
3	2+	Analog Out Pair 2 left ‘+’
16	2 -	Analog Out Pair 2 left ‘-‘
4	GND2	Analog Out Pair 2 left ‘G’
17	GND3	Analog Out Pair 1 right ‘G’
5	3+	Analog Out Pair 1 right ‘+’
18	3-	Analog Out Pair 1 right ‘-‘
6	4+	Analog Out Pair 1 left ‘+’
19	4-	Analog Out Pair 1 left ‘-‘
7	GND4	Analog Out Pair 1 left ‘G’
20	GND5	Analog In Pair 2 right ‘G’
8	5+	Analog In Pair 2 right ‘+’
21	5-	Analog In Pair 2 right ‘-‘
9	6+	Analog In Pair 2 left ‘+’
22	6-	Analog In Pair 2 left ‘-‘
10	GND6	Analog In Pair 2 left ‘G’
23	GND7	Analog In Pair 1 right ‘G’
11	7+	Analog In Pair 1 right ‘+’
24	7-	Analog In Pair 1 right ‘-‘
12	8+	Analog In Pair 1 left ‘+’
25	8-	Analog In Pair 1 left ‘-‘
13	GND8	Analog In Pair 1 left ‘G’

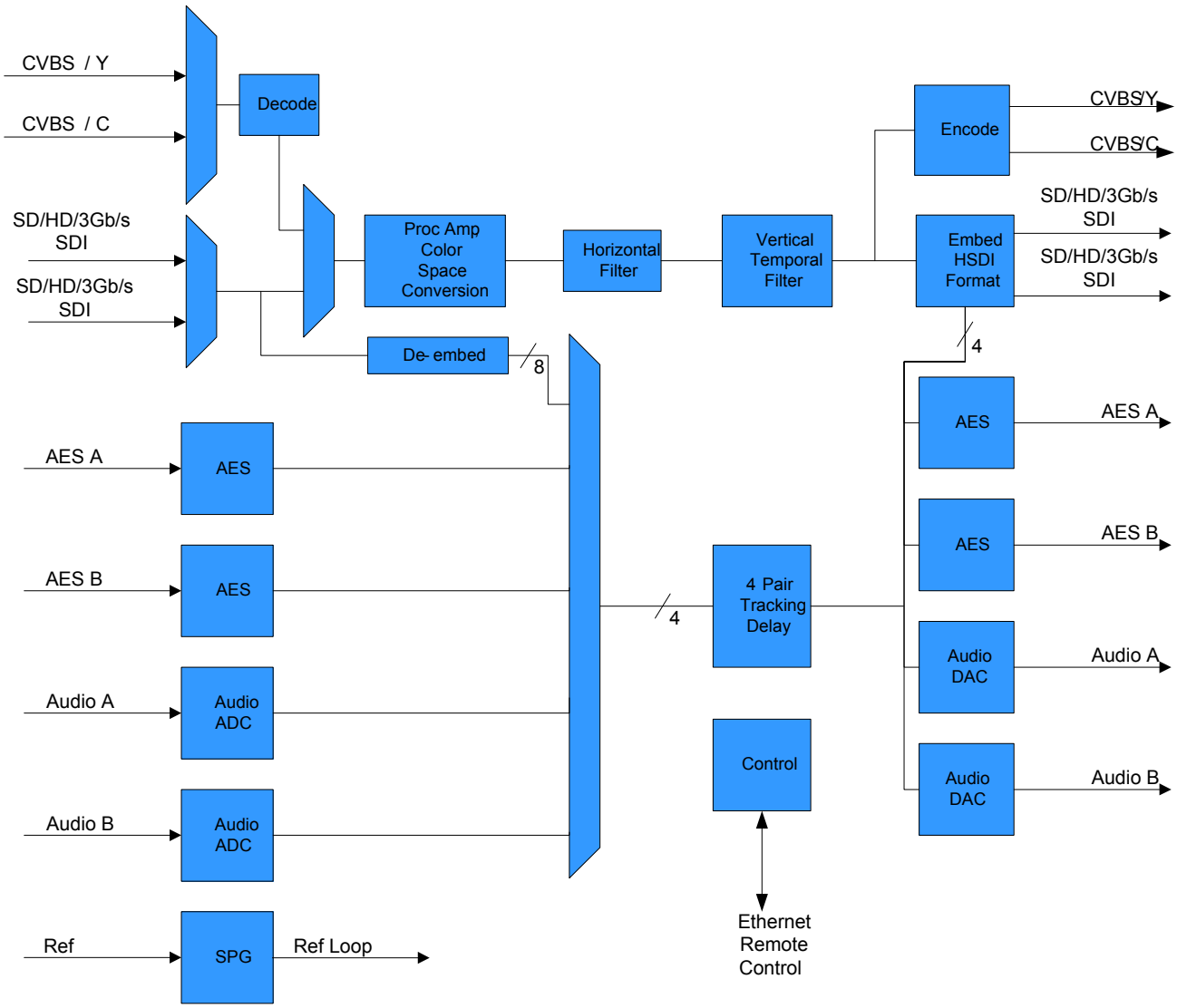
AES Input/Output Pin Connections

25 D-Sub Pin Description (AES Input/Output)		
Pin	Name	Signal
1	Chassis	
14	GND1	
2	1+	
15	1-	
3	2+	
16	2 -	
4	GND2	
17	GND3	AES Out Pair 2 ‘G’
5	3+	AES Out Pair 2 ‘+’
18	3-	AES Out Pair 2 ‘-‘
6	4+	AES Out Pair 1 ‘+’
19	4-	AES Out Pair 1 ‘-‘
7	GND4	AES Out Pair 1 ‘G’
20	GND5	
8	5+	
21	5-	
9	6+	
22	6_	
10	GND6	
23	GND7	AES In Pair 2 ‘G’
11	7+	AES In Pair 2 ‘+’
24	7-	AES In Pair 2 ‘-‘
12	8+	AES In Pair 1 ‘+’
25	8-	AES In Pair 1 ‘-‘
13	GND8	AES In Pair 1 ‘G’

D-Type Connector (On Unit)



Block Diagram

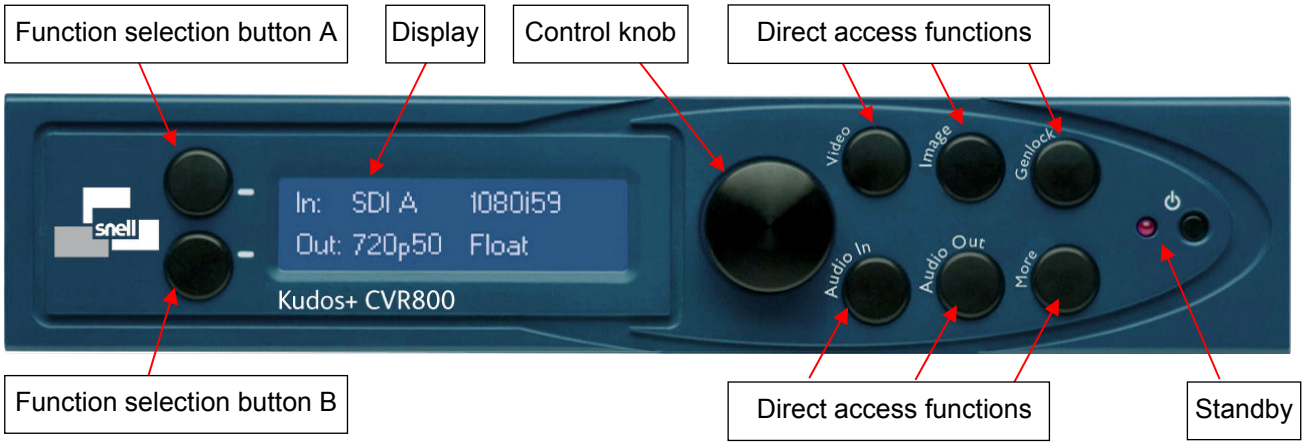


Operation via the Front Panel

The layout of the active front panel is shown below. Applying power activates the unit; if it was powered down in standby mode, switch on using the standby button. Direct access functions are available via six buttons. The action of the control knob and function selection buttons are indicated by the display and vary depending upon the mode selected.

Note that certain settings and functions cannot be adjusted by means of the front panel, and can only be adjusted by means of the Web interface. These are:

- Net Mask
- Default IP Add
- Default Gateway



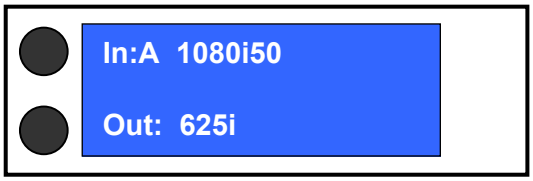
Item	Description
Standby	When the unit is switched off the LED is illuminated. When the unit is switched on the display and controls are active and the LED is extinguished.
Display	Provides status and control information
Control knob	Rotate to scroll through functions
Function selection button A	This button has two functions 1. This button toggles between the default screen (showing the status of the input, output and genlock) and the Input selection screen. 2. When the word 'Back' is shown on the display adjacent to this button, pressing it returns to the previous menu.
Function selection button B	The button has three functions 1. This selects the Output selection screen. 2. When the word 'Select' is shown on the display adjacent to this button, pressing it selects the desired user selection 3. When the word 'Preset' is shown on the display adjacent to this button, pressing it presets the chosen control.
Direct access functions	These buttons provide access to the unit's Video, Image, Genlock, Audio In and Audio Out menus, as well as to the More menu, which provides access to additional setup functions.

Selected items - indication

Selected items are highlighted with a – sign at the beginning and end of the name.

Default display

The product defaults to show the state of the input and output.



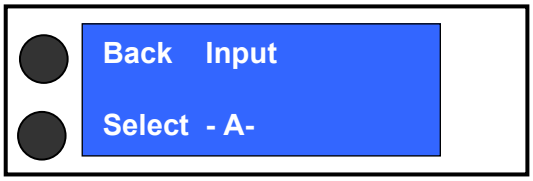
Upper Soft Button

This will allow the input signal type to be selected.

Input Options

- A / B
- CVBS A / CVBS B
- YC

The selected input is indicated by dashes (-) at either end of the name.



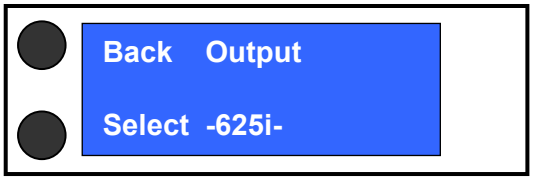
Rotate the knob to show alternate input and then press Select.

Input standard is automatically detected.

Note that for this and most other menus:
To return to the default menu press ***Back*** *or wait for the time out.*

Lower Soft Button

This will allow the format of the output signal to be selected.



Output Options

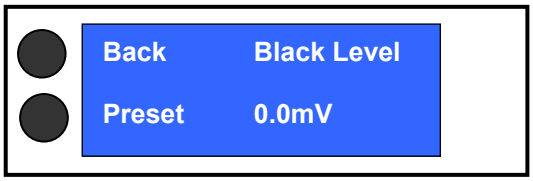
625i, 525i, 720P 50, 720P 59.94, 1080i 50, 1080i 59.94, 1080P 50 A, 1080P 59.94 A, 1080P 50 B, 1080P 59.94 B

Video

Video Controls

Black Level
Rotate the knob to adjust the Black Level by ±100mV in 0.8mV steps.

Preset will return the Black Level to 0mV.

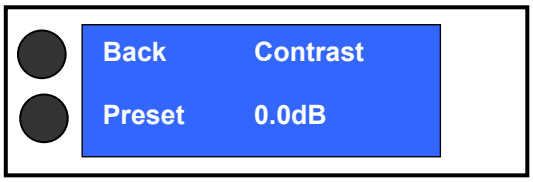


Y Gama
Rotate the knob to select the Y gamma curve between 0.4 and 1.7 in 0.1 steps

Preset will return the Y Gama 0.

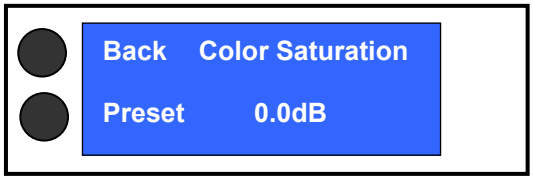
Contrast
Rotate the knob to adjust the Luma Gain by ±6dB in 0.2dB steps.

Preset will return the Luma Gain to 0dB.



Color Saturation
Rotate the knob to adjust the Chroma Gain by ±6dB in 0.2dB steps.

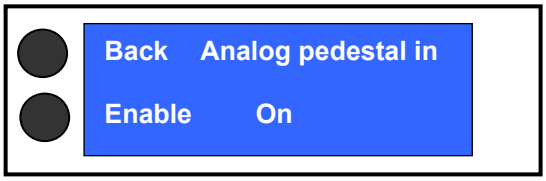
Preset will return the Chroma Gain to 0dB.



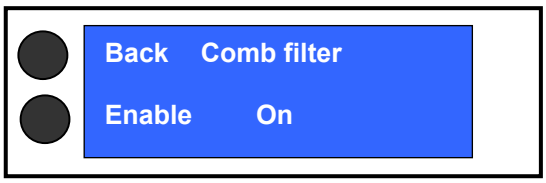
NTSC Hue
Rotate the knob to adjust the NTSC Hue from 180° to -180° in 1deg steps.

The preset value is 0°.

Analog pedestal in
Enabling this option allows the composite source (NTSC only) to be treated as if a pedestal is present.



Comb filter
The comb filter employs a 5-line adaptive 2D comb filter that separates chrominance and luminance when decoding a composite video signal. It adapts to the video standard and signal quality automatically. This control improves the decoder performance and should only be switched off if the operator needs to see the source through only a low pass filter.



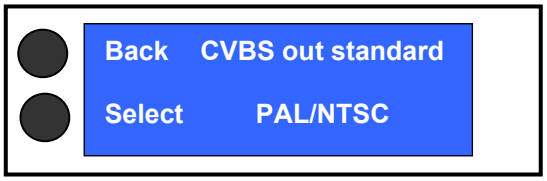
Analog ACC
The automatic color gain control (ACC) function examines the input burst amplitude and adjusts chrominance gain to compensate for chroma level attenuation. Check this control when chroma levels are low compared to luminance. This may occur when using YC installations or composite from RF links.

Analog CTI
The chroma transient improvement (CTI) control examines the input video data. It detects transitions of chroma and enhances chroma edges in order to artificially restore lost color bandwidth. Use this function when the input video has chroma bandwidth limitations.

Analog NR
The noise reduction is based on the assumption that high frequency signals with low amplitude are probably noise and their removal improves picture quality. Improvements can be seen on most material so this function is on by default.

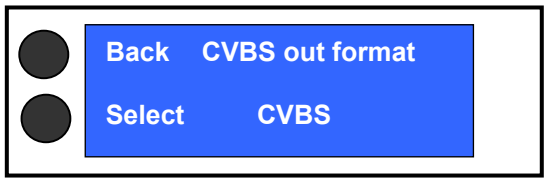
CVBS out standard
Use the radio buttons to specify the CVBS output standard. The options are:

- PAL/NTSC
- PALN/PALM
- PAL/NTSC-J



CVBS out format
Use the radio buttons to specify the CVBS output format:

- CVBS
- YC

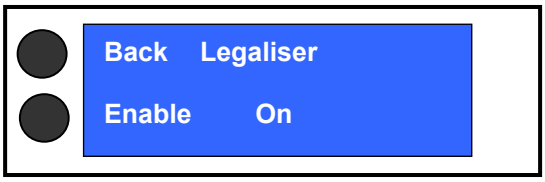


Note that when the output is not selected to be an SD standard, the CVBS or YC output will not be valid.

Legalizer
The Legalizer ensures that output video is kept within the RGB gamut limit.
When the Legalizer control is enabled (**On**):

1. Source video is matrixed from YPbPr to RGB.
2. Any RGB video transitions below black are clipped to black.
3. Black-clipped RGB is matrixed back to YPbPr.
4. Any RGB transitions above peak white are measured relative to peak white to create a scaling factor.
5. The YPbPr video (from stage 3) is multiplied by the scaling factor.

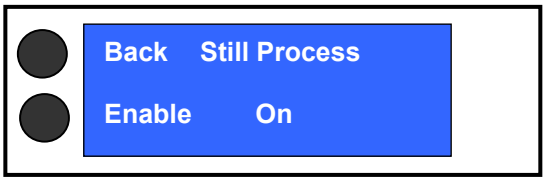
This process ensures minimal disturbance to the perceived black level of the pre-corrected video while maintaining approximately the correct hue in parts of the image above peak white.



Image

Image Controls

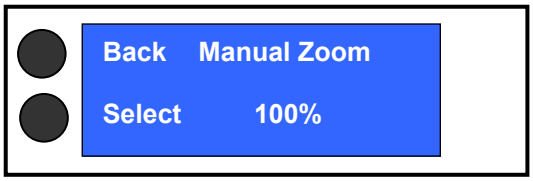
Still Process
When enabled **(On)**, the CVR800 uses powerful motion detection techniques to extract the maximum resolution from interlaced sources whilst format or standards converting. The benefits of this processing can be seen most dramatically on static logos and computer generated overlays.



Enhanced Still
When used in concert with the Still Process option, Enhanced Still adds field motion detection to still processing, which prevents artifacts on moving repetitive patterns.

Auto Zoom
Enables (**On**) or disables (**Off**) the auto zoom function.

Manual Zoom
Rotate the knob to adjust the zoom from 120% to 80%.

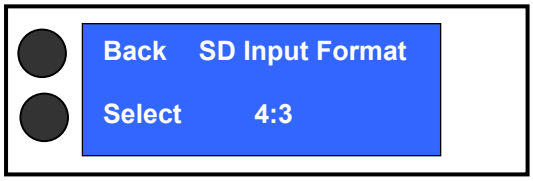


Convert Scaling
Rotate the knob to select conversion scaling method. The available options are:

- Fit to Height
- 14:9
- Fit to Width

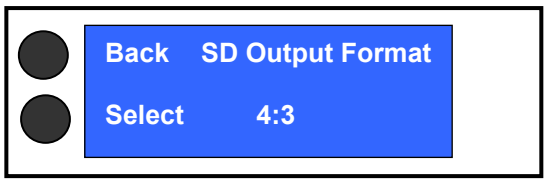
SD Input Format
Rotate the knob to select the SD input format. The available options are:

- Normal 4:3
- 16:9 LB
- 16:9 An

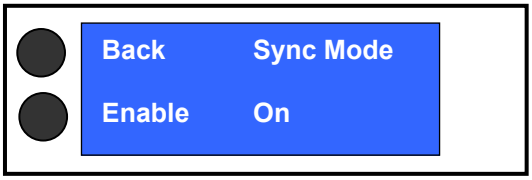


SD Output Format
Rotate the knob to select the SD output format. The available options are:

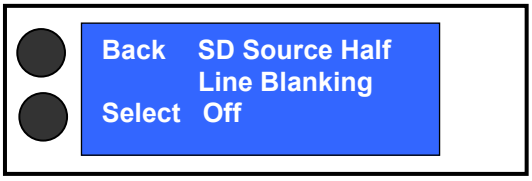
- Normal 4:3
- 16:9 An



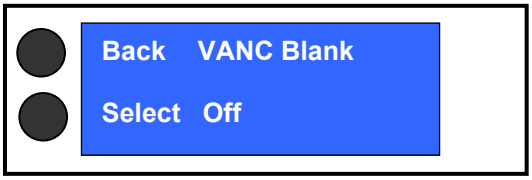
Sync Mode
When Sync Mode is On, the scaling filters are disabled, giving transparent operation while using the unit as a synchronizer. This control is only effective if the input and output formats are identical.



SD Source Half Line Blanking
Allows the source half lines to be blanked. This can be useful for certain ARC settings; for example, SD16:9AN to SD4:3 Fit to Width.



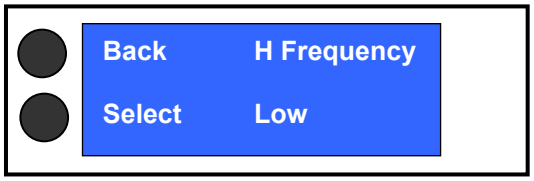
VANC Blank
Selecting this option blanks all vertical ancillary data.



Advanced Horizontal Enhancer

The Advanced Horizontal Enhancer options allow enhancement to be selectively applied to the low frequency band, medium frequency band, or high frequency band. Four presets are available as well as custom gain and noise rejection.

H Enhance
When this is enabled (ON) the Enhancer options are available.



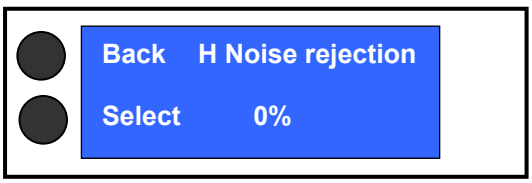
H Frequency
Rotate the control knob to select the frequency band to which the enhancement will be applied:

- Low
- Med
- High

H Presets
Rotate the control knob to select an enhancer preset or allow custom enhancement levels to be specified.

- Low: sets H Gain to 2 and H Noise rejection to 15% for the selected frequency band.
- Medium: sets H Gain to 4 and H Noise rejection to 15% for the selected frequency band.
- High: sets H Gain to 6 and H Noise rejection to 15% for the selected frequency band.
- Super: sets H Gain to 8 and H Noise rejection to 15% for the selected frequency band.
- Custom: Allows H Gain and H Noise rejection to be manually adjusted.

H Gain
If the Custom preset is selected, this allows the gain to be adjusted on the selected frequency band. This control does not have any effect if the **Custom** preset is not selected.

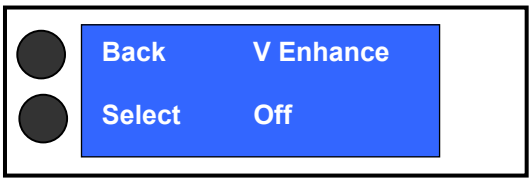


H Noise rejection
If the custom preset is selected, this allows the noise rejection to be adjusted on the selected frequency band. This control does not have any effect if the **Custom** preset is not selected.

Advanced Vertical Enhancer

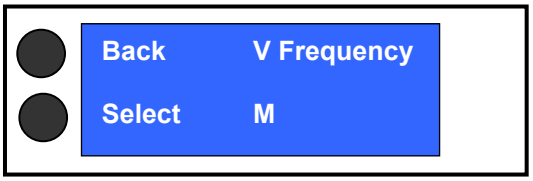
The Advanced Vertical Enhancer options allow enhancement to be selectively applied to the low frequency band, medium frequency band, or high frequency band. Five strengths are available per band.

Select the check box to enable the advanced horizontal options.



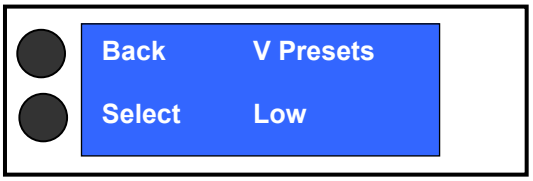
V Frequency
Rotate the control knob to select the frequency band to which the enhancement will be applied:

- Low
- Med
- High



V Presets
Rotate the control knob to select the enhancer strength.

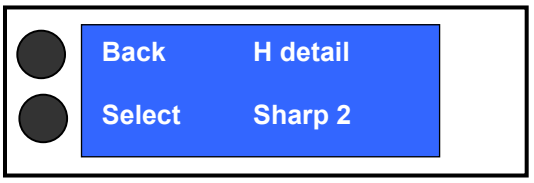
- Soft: provides attenuation in the band specified
- Normal: nominally flat frequency response
- Sharp1, Sharp2, Sharp3: progressively more boost in the frequency band of interest.



H Aperture

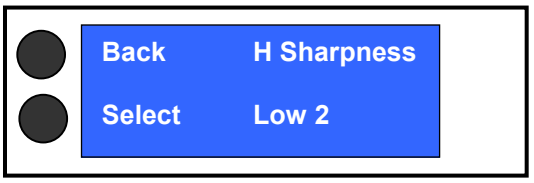
The H Aperture control allows for linear control of the Horizontal conversion process - especially useful when down converting.

H detail
Rotate the control knob to adjust the amount of detail that is allowed through to the output - effectively moving the stop band of the anti-alias filter.



- Soft2: recommended for severely over enhanced source material
- Soft1: recommended for overly enhanced source material.
- Normal: optimum setting to balance detail and alias
- Sharp1: recommended for slightly soft source material
- Sharp2: recommended for extremely soft source material

H sharpness
Rotate the control knob to adjust the sharpness of the output - effectively changing the rate of cutoff of the anti-alias filter



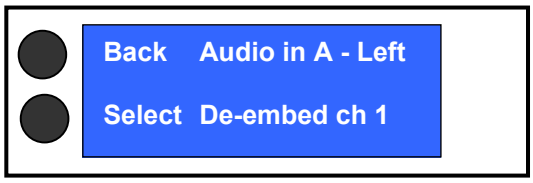
- Low2: recommended for severely over enhanced source material
- Low1: recommended for overly enhanced source material.
- Normal: optimum setting to balance detail and alias
- High1: recommended for slightly soft source material
- High2: recommended for extremely soft source material

Audio In

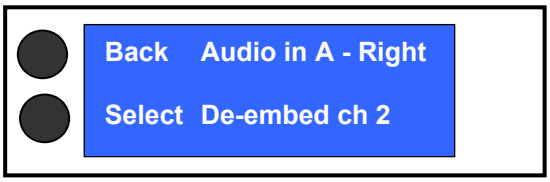
Audio Input Controls

Audio in A - Left
This specifies the Left audio A input source. Rotate the knob to select from the following options:

- De-embed ch 1 to De-embed ch 16
- Analog A – Left
- Analog A – Right
- Analog B – Left
- Analog B – Right
- AES A – Left
- AES A – Right
- AES B – Left
- AES B – Right
- Tone
- Silence

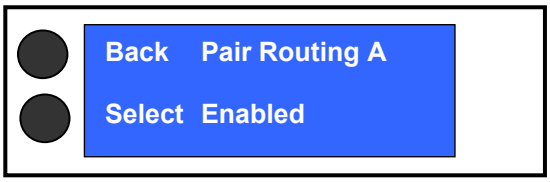


Audio in A – Right
This specifies the Right audio A input source. Selections are the same as Audio in A – Left.

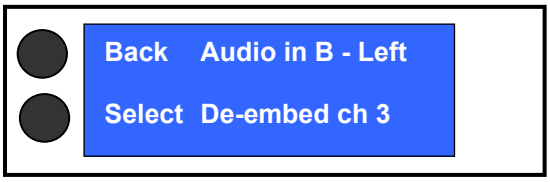


Pair Routing A
This control Enables or Disables pair routing for audio input pair A.

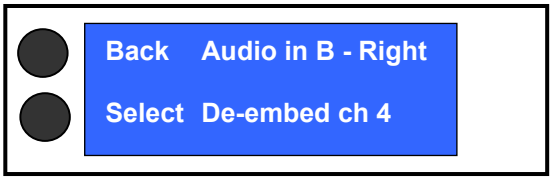
Select Pair Routing, for example, for stereo audio inputs. With Pair Routing enabled and after selecting a source for Audio in A – Left, the unit will automatically route the corresponding channel to Audio in A – Right. E.g. If De-embed ch 8 is selected for Audio in A – Left the unit will automatically route ch 9 to Audio in A – Right.



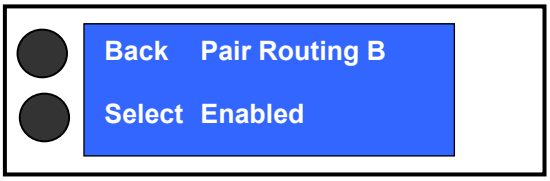
Audio in B – Left
This specifies the Left audio B input source. Selections are the same as Audio in A – Left.



Audio in B – Right
This specifies the Right audio B input source. Selections are the same as Audio in A – Left.

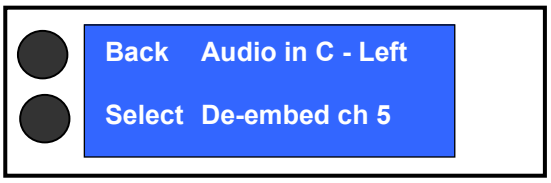


Pair Routing B
This control Enables or Disables pair routing for audio input pair B.

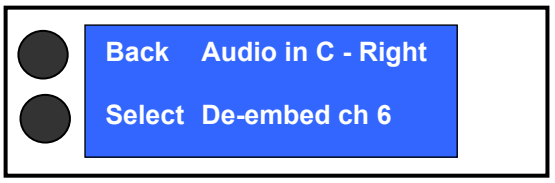


Audio in C – Left
This specifies the Left audio C input source.

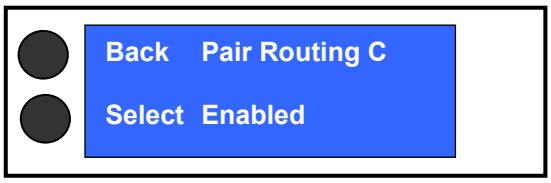
Selections are the same as Audio in A – Left.



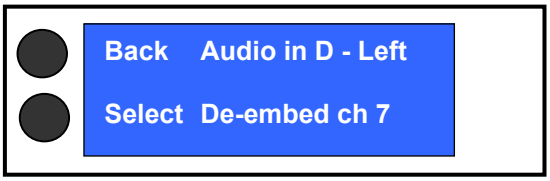
Audio in C – Right
This specifies the Right audio C input source.
Selections are the same as Audio in A – Left.



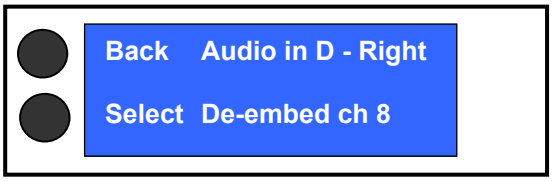
Pair Routing C
This control Enables or Disables pair routing for audio input pair C.



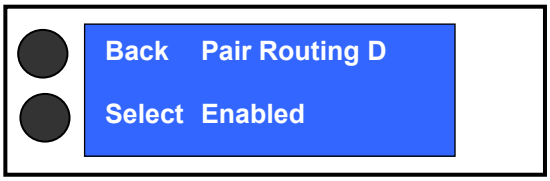
Audio in D – Left
This specifies the Left audio D input source.
Selections are the same as Audio in A – Left.



Audio in D – Right
This specifies the Right audio D input source.
Selections are the same as Audio in A – Left.



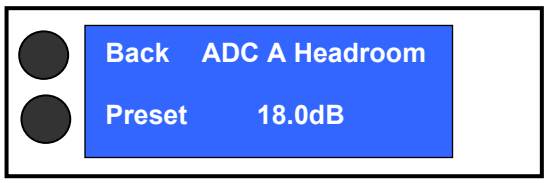
Pair Routing D
This control Enables or Disables pair routing for audio input pair D.



ADC A Headroom
Rotate the knob to adjust the ADC A headroom between +12 dBu and +24dBu in 0.5dB steps

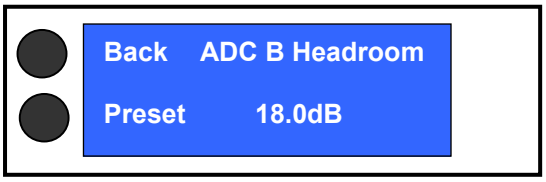
The preset value is 18dBu.

Note that if the applied audio level exceeds the value set for the Headroom the processed audio will be clipped.



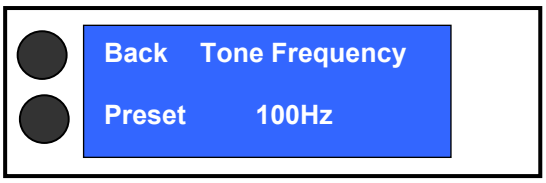
ADC B Headroom
Rotate the knob to adjust the ADC B headroom between +12 dBu and +24dBu in 0.5dB steps

The preset value is 18dBu.

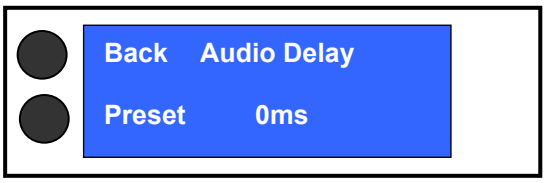


Tone Frequency
Rotate the knob to adjust the tone frequency between 100Hz and 10kHz in 100Hz steps.

The preset value is 1000Hz.



Audio Delay
Rotate the knob to adjust the audio delay -40ms to +80ms relative to the video delay.



Audio Out

Audio Output Controls

Gain Pair A
This control adjusts the gain on audio pair A (L & R).

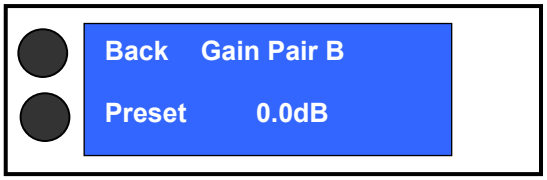
Rotate the knob to adjust the pair gain ±18dB in 0.1dB steps.

The preset value is 0dB.

Gain Pair B
This control adjusts the gain on audio pair B (L & R).

Rotate the knob to adjust the pair gain ±18dB in 0.1dB steps.

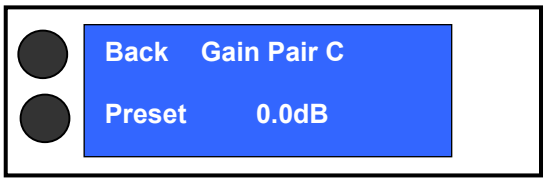
The preset value is 0dB.



Gain Pair C
This control adjusts the gain on audio pair C (L & R).

Rotate the knob to adjust the pair gain ±18dB in 0.1dB steps.

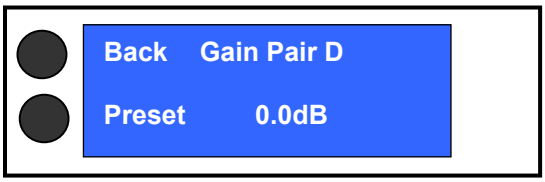
The preset value is 0dB.



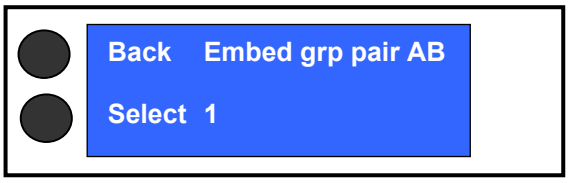
Gain Pair D
This control adjusts the gain on audio pair D (L & R).

Rotate the knob to adjust the pair gain ±18dB in 0.1dB steps.

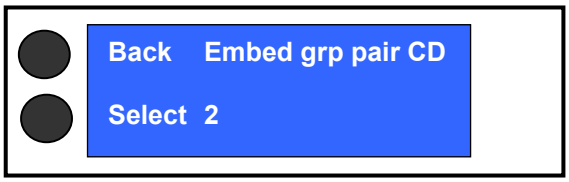
The preset value is 0dB.



Embed grp pair AB
Select the embed group for audio selected under the Audio A and Audio B tabs. Audio A will be embedded into pair 1 of the selected group and Audio B will be embedded to pair 2.



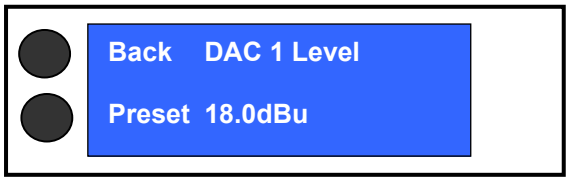
Embed grp pair CD
Select the embed group for audio selected under the Audio A and Audio B tabs. Audio A will be embedded into pair 1 of the selected group and Audio B will be embedded to pair 2. Note that if the same group is selected for AB and CD only audio AB will be embedded.



DAC 1 Level
Use the rotary control to adjust the DAC 1 audio output level for 0dBFS between +12 dBu and +24dBu in 0.5dB steps

DAC 1 outputs audio selected under the Audio A tab.

The preset value is 18.0 dBu.



DAC 2 Level
Use the rotary control to adjust the DAC 2 audio output level for 0dBFS between +12 dBu and +24dBu in 0.5dB steps

DAC 2 outputs audio selected under the Audio B tab.

The preset value is 18.0 dBu.

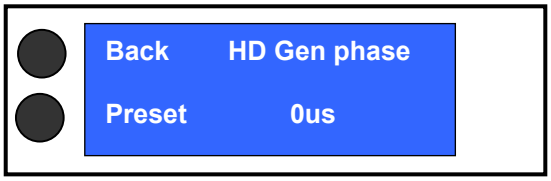
Genlock

Genlock

The selected genlock mode is indicated by – signs at either end of the name.

Rotate the knob to show the alternative Genlock modes (Ref Lock, Input Lock, Follow input, Freerun) and then press Select.

Repeated presses of the Genlock button will move through the following menus.

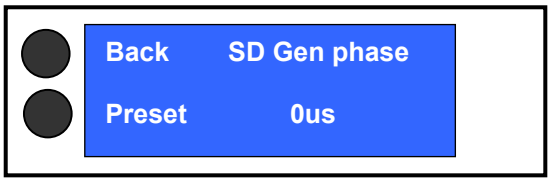


HD Gen phase

HD Gen phase is used to specify the phase offset between the reference and the HDSDI output when outputting HD in Reference Lock mode with an appropriate HD reference applied.

Rotate the knob to select the genlock offset between +32us and -32us in 13.5ns steps

Preset is 0us.

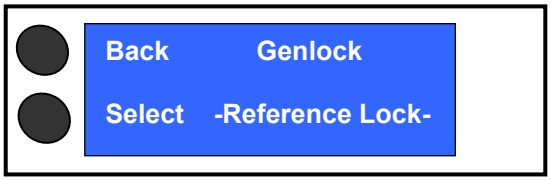


SD Gen phase

SD Gen phase is used to specify the phase offset between the reference and the SDSDI output when outputting SD in Reference Lock mode with an appropriate SD reference applied.

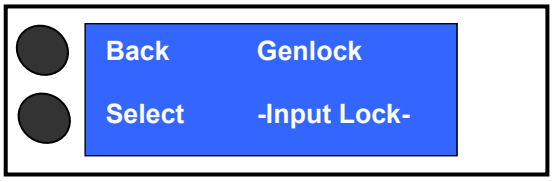
Rotate the knob to select the genlock offset between +32us and -32us in 37ns steps
Preset is 0us.

Genlock



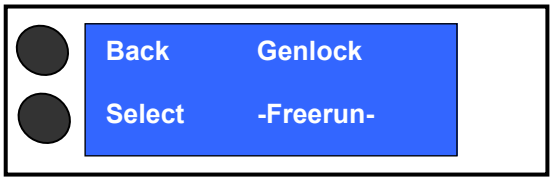
Reference Lock

Output video is locked to an external reference. The offset between the external reference and the output can be adjusted over a range of approximately +/- 32us using the Genlock phase controls.



Input Lock

Output video is locked to the selected source. The offset between input source and the output is fixed, frame aligned.



Free run

Output video is locked to an internal reference clock.

More

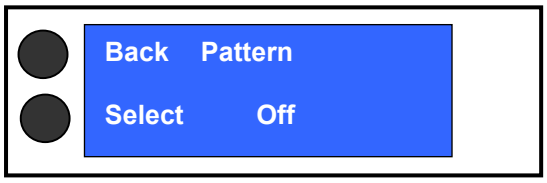
More: Additional menu items

The More menu enables further menus to be accessed. Rotate the knob to the desired function then press select.

Note that the text in the upper right hand area of the display shows the previous function and the text in the lower right hand area shows the next function.

More / Image

Pattern
This control enables and disables the pattern output, and specifies the type of pattern output if enabled.



Rotate the control knob to select one of the following options:

- Off
- Ramp
- Bars
- Black

Freeze
This control freezes the output when enabled.

Safe Area Marks
Markers may be inserted appropriate to the output aspect ratio to indicate the nominal safe area. The safe area is 93% of the effective picture height and width.

More / Memory

The memory function allows you to store up to 16 unit configurations (User Memory 1 to User Memory 16).

User Mem Recall

Use this control to select a saved user memory. Rotate the knob to select the user configuration memory and then press the **Select** button.

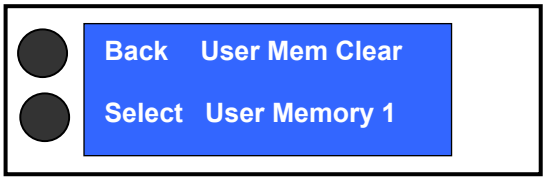
User Mem Save

Use this control to save the current configuration to memory (User Memory 1 to User Memory 16). Rotate the knob to select the memory (1 to 16) to which the configuration will be saved and then press the **Select** button.

When controlling the unit by means of the front panel, you cannot rename memories. However, memories can be renamed when using the Web interface.

User Mem Clear

Use this control to clear a selected user memory. Rotate the knob to select the memory you want to clear and then press the **Select** button.



More / Signalling

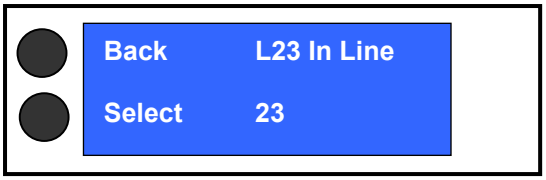
In Signaling (SD)
Rotate the control knob to select which input signaling type should be enabled for an SD source, and if applicable, how it should be interpreted.

See “Operation via the Web interface” for more details.

- SMPTE2016
- VI SMPTE
- VI AFD
- L23 AFD
- L23 ETSI

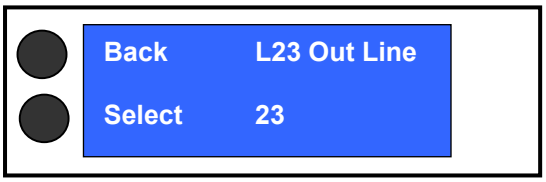
L23 In Line
Rotate the control knob to select which source line will be used for L23 signaling extraction.

See “Operation via the Web interface” for more details.



L23 Out Line
Rotate the control knob to select which line to embed L23 signaling on at the output.

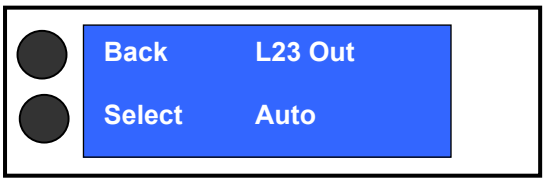
See “Operation via the Web interface” for more details.



L23 Out
Rotate the control knob to select how L23 signaling is generated at the output.

See “Operation via the Web interface” for more details.

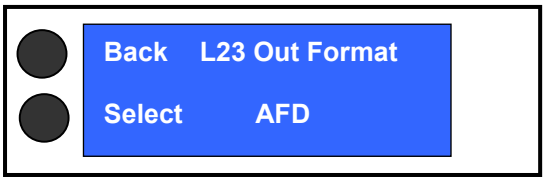
- Auto
- Pass
- Force
- Delete



L23 Out Format
Rotate the control knob to select which L23 signaling standard should be used

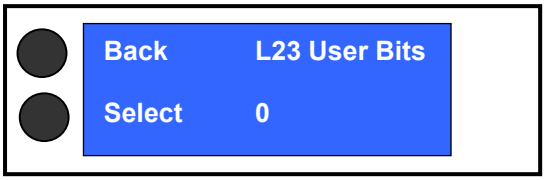
See “Operation via the Web interface” for more details.

- AFD
- ETSI
- Force
- Delete



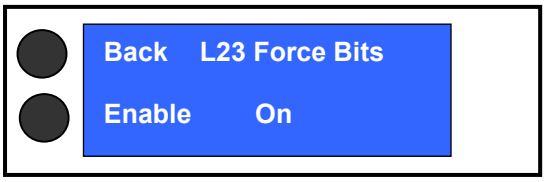
L23 user bits
Rotate the control knob to select the user set enhanced L23 bits. (Enabled by L23 force bits)

See “Operation via the Web interface” for more details.



L23 force bits
Rotate the control knob to determine whether the L23 user bits control should be actioned

See “Operation via the Web interface” for more details.



VI Out
Rotate the control knob to select how the VI signaling is generated at the output.

See “Operation via the Web interface” for more details.

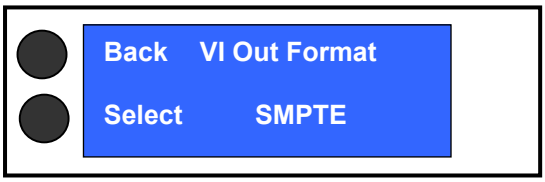
- Auto
- Pass
- Force
- Delete

VI Out Format

Rotate the control knob to select which VI signaling standard should be used

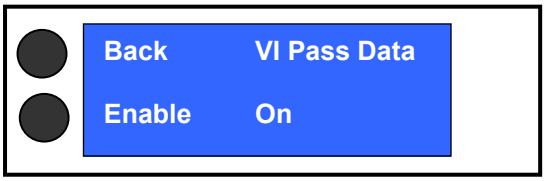
See “Operation via the Web interface” for more details.

- SMPTE
- AFD



VI Pass Data

Rotate the control knob to select whether the VI data other than coded frame and AFD are blanked, or passed from the input if selected.

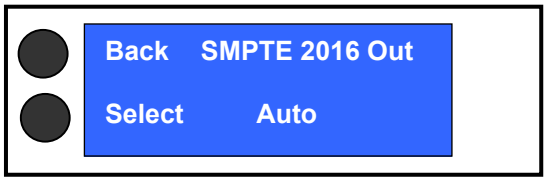


SMPTE 2016 Out

Rotate the control knob to select how the SMPTE 2016 signaling is generated at the output.

See “Operation via the Web interface” for more details.

- Auto
- Pass
- Force
- Delete



Force RP186

Rotate the control knob to select the coded frame to be sent when VI Out is set to “Force”

See “Operation via the Web interface” for more details.

- 4/3
- 16/9

Force AFD

Rotate the control knob to select the AFD to be sent when VI or L23 signaling has been forced, and the Out mode is set to AFD.

See “Operation via the Web interface” for more details.

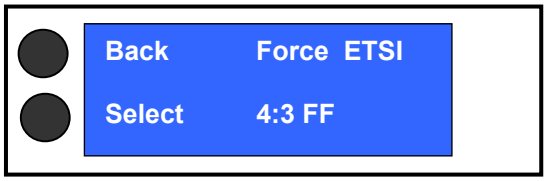
- 4/3 AFD 0 to 7
- 16:9 AFD 0 to 7

Force ETSI

Rotate the control knob to select the ETSI code to be sent when L23 signaling has been forced, and the Out mode is set to ETSI.

See “Operation via the Web interface” for more details.

- 4/3 FF
- 14/9 centre
- 14/9 top
- 16/9 centre
- 16/9 top
- >16/9 centre
- 4:3 SP 14/9
- 16/9 FF



Force 2016
Rotate the control knob to select the AFD to be sent when SMPTE 2016 signaling has been forced.

See “Operation via the Web interface” for more details.

- 4/3 AFD 0 to 7
- 16:9 AFD 0 to 7

More / Timecode

These controls enable you to specify the unit's timecode options.

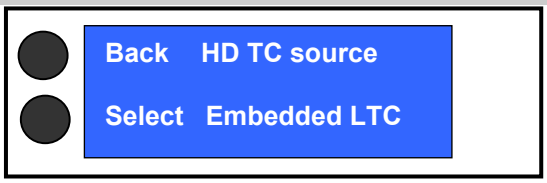
HD TC source

HD timecode can either be embedded as:

Embedded LTC: The HD input video timecode is read from the embedded VITC signals (SMPTE RP188)

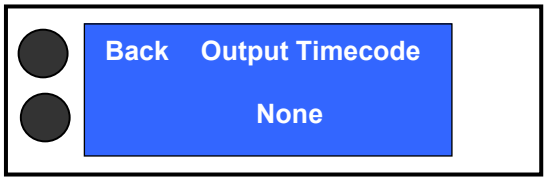
Embedded VITC: The HD input video timecode is read from the embedded LTC signals (SMPTE RP188)

Rotate the knob to choose the timecode source and then press the **Select** button.



Output Timecode

This displays the current value of the generated output timecode.



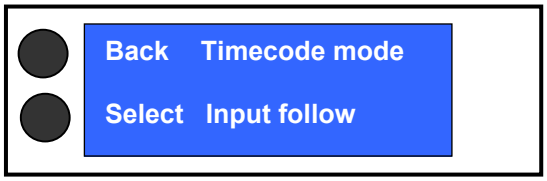
Timecode mode

The unit's timecode functions can operate in one of two modes:

Input follow: The output timecode will follow the input timecode.

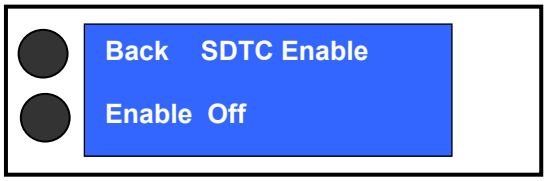
Generate: unit will generate its own timecode signal.

Rotate the knob to choose the mode and then press the **Select** button.



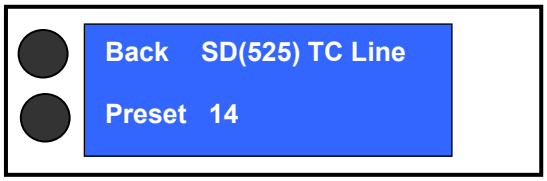
SDTC Enable

Use this option to enable SD timecode insertion. The timecode will be inserted on the line that is specified by the SD(525) TC Line or SD(625) TC Line control.



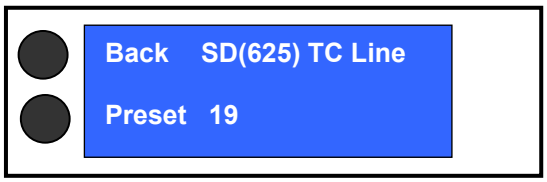
SD(525) TC Line

Rotate the knob specify the line on which SD (525) timecode information will be inserted. Press **Preset** to return the insertion line to its default value of 14.



SD(625) TC Line

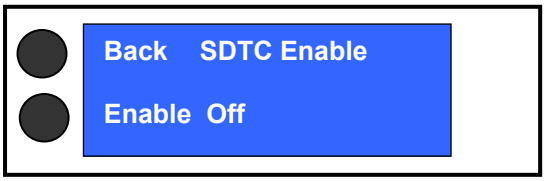
Rotate the knob specify the line on which SD (625) timecode information will be inserted. Press **Preset** to return the insertion line to its default value of 19.



More / SNMP

SNMP Enable

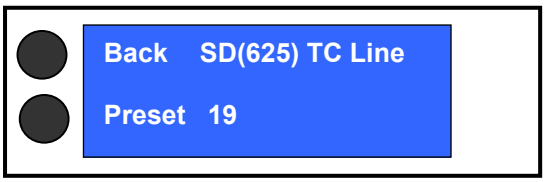
Use this option to activate the unit's SNMP functions.



SNMP port

Use the slider bar to specify the port on which the unit listens for messages from the SNMP manager. The SNMP default port is 161 but other ports may be used.

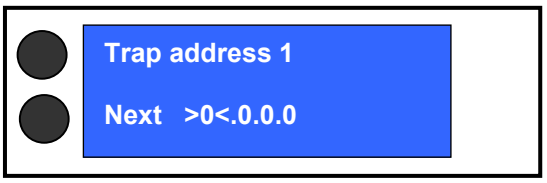
Press the **Preset** button to return the value to the default port (161).



Trap address 1 - 4

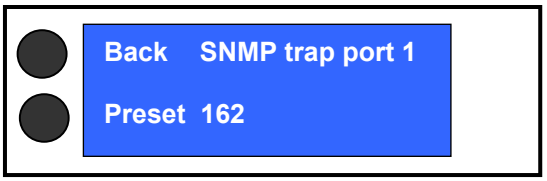
Configures the IP address to which traps (notifications) are sent. This address should correspond to the IP address of the SNMP Manager.

Values in the address are adjusted one at a time. Rotate the knob to adjust the value enclosed by the **> <** symbols. Press **Next** to move on to the next value and continue until the address has been entered.



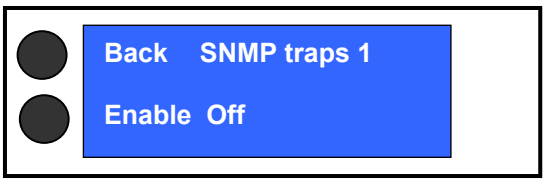
SNMP trap port 1 – 4

Configures the destination UDP port for traps. The manager should be configured to listen for traps on this port. The SNMP default is 162 but other port numbers may be used.



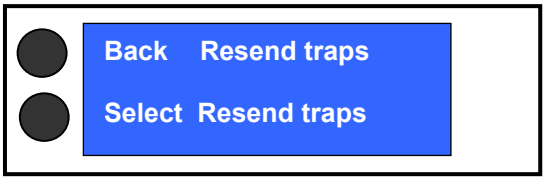
SNMP traps 1 – 4

Select this option to enable the corresponding trap destination.



Resend Traps

Select this option to resent all SNMP traps / notifications.



MIB Files

MIB files are stored locally on the unit and can be obtained by means of the Web Interface. See *Obtaining MIB files* on page 64 for more information.

More / Output – Closed Caption

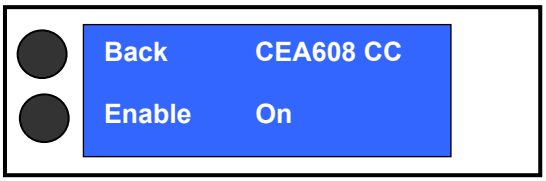
The unit is capable of passing CEA608 and CEA708 closed caption information.

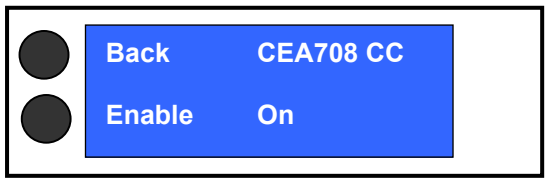
CEA608
Rotate the control knob to enable or disable CEA608 closed captions.

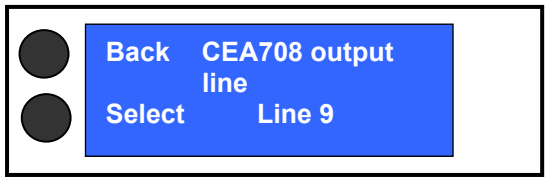
CEA708 Closed Caption
Rotate the control knob to enable or disable CEA708 closed captions

The line on which CEA708 information is carried can be specified by means of the CEA708 output line control.

CEA708 output line
Rotate the control knob to specify the CEA708 output line. The output line can be set from line 8 to line 20 (in steps of 1 line). The preset value is line 9.







The unit can pass WST (SD) and RDD08 (HD) teletext. These options enable you to specify the lines that are used and to enable or disable teletext output.

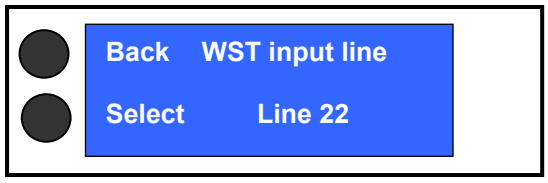
WST input line
Rotate the control knob to specify the input line on which WST input is present. The range of adjustment is from lines 7 to 22 and the preset value is line 22.

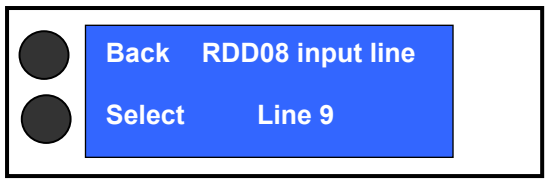
WST output enable
Rotate the control knob to enable or disable WST output. WST output will be passed on the same line as the WST input.

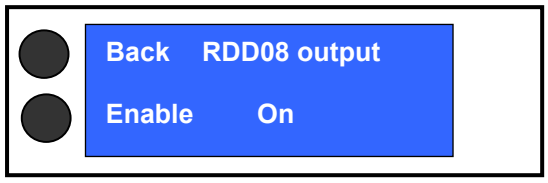
RDD08 input line
Rotate the control knob to specify the input line on which RDD08 input is present. The range of adjustment is from lines 8 to 20 and the preset value is line 9.

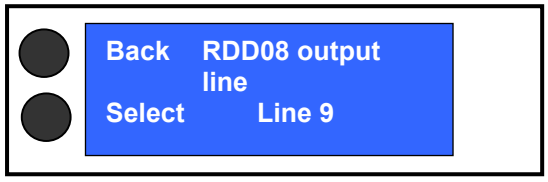
RDD08 output enable
Rotate the control knob to enable RDD08 output on the line specified by the RDD08 output line control.

RDD08 output line
Rotate the control knob to specify the RDD08 output line. The range of adjustment is from lines 8 to 20 and the preset value is line 9.

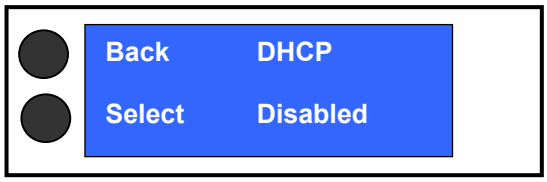








More / Initial Set-Up



The CVR800 can be controlled by means of a Web interface via an Ethernet connection. These settings allow the connection details of the unit, such as its IP address to be specified.

DHCP
To use a dynamically assigned IP address, for a DHCP server, enable the DHCP option.

If a DHCP server is not available, the unit details must be configured as described below.

Net Mask, Default IP Add, Default Gateway
These parameters can be adjusted on the Initial Setup tab of the Web interface. Currently, there is no means of setting these parameters from the front panel.

IP Multicast
This sets the IP multicast group to which the unit may be assigned for simultaneous control of multiple units.

ID Multicast
Sets the individual unit identity within the multicast group.

More / About

Version
This displays the software version number of the unit.

IP
This displays the unit's current IP address.

In DHCP mode, it will display 0.0.0.0 when disconnected from the network.

MAC Address
This displays the unit's MAC address.

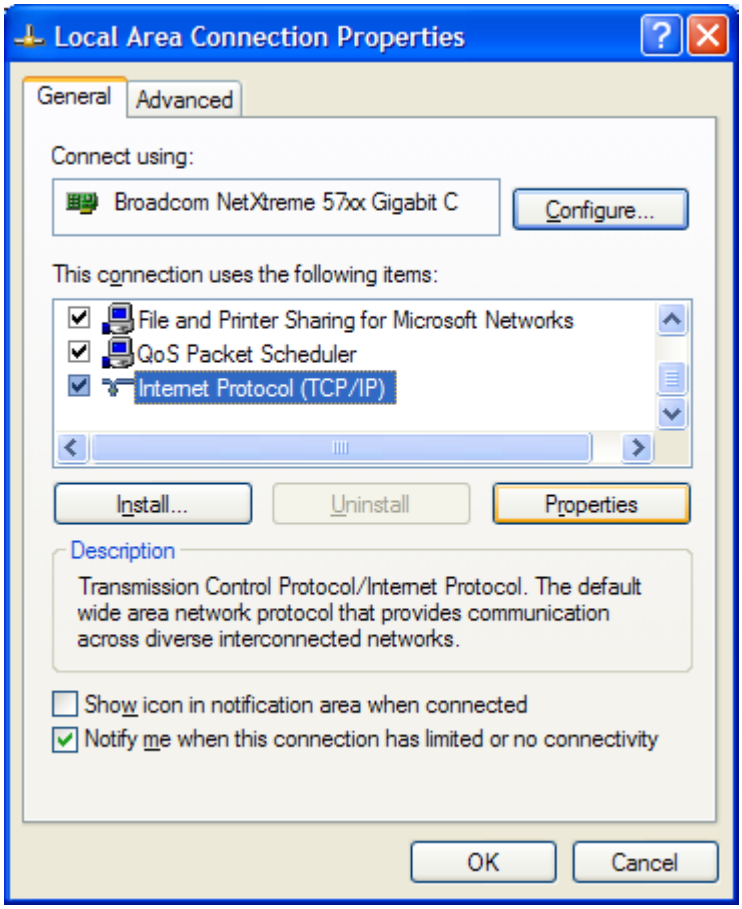
Operation via the Web Interface

In addition to the unit front controls, the CVR800 can also be controlled by means of a Web interface accessed via the 10/100 BaseT Ethernet connection.

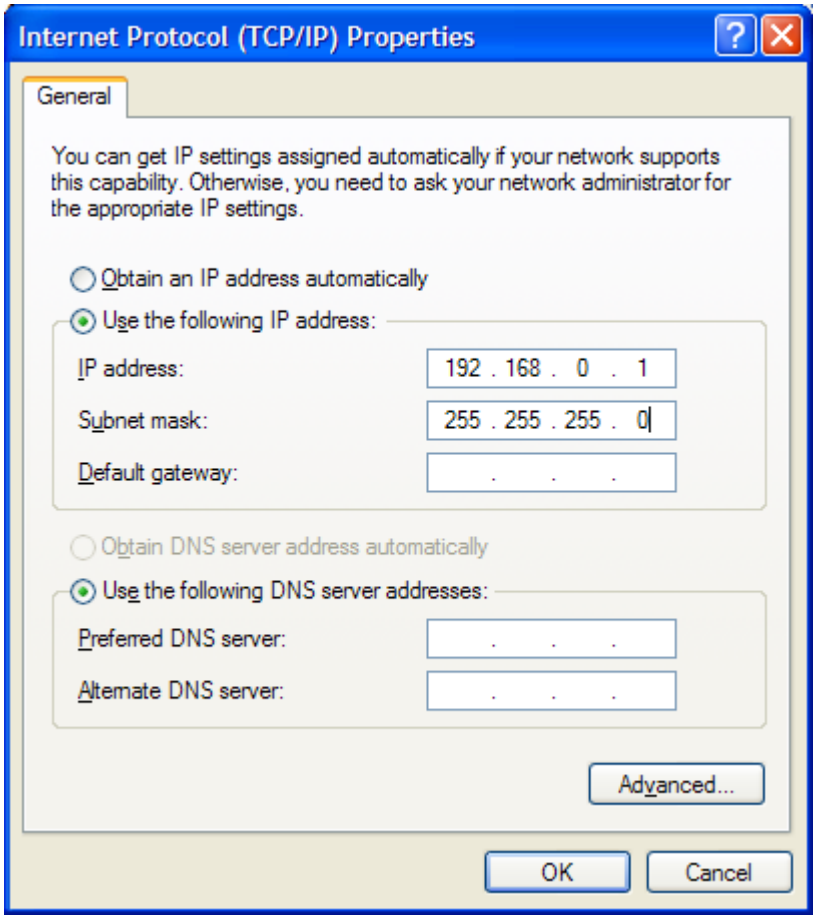
Connection to the Web interface can either be made directly or via a DHCP network.

To connect directly to a PC or laptop:

1. Connect the unit to the network port of the PC using a 'cross-wired' Ethernet cable (RJ45).
2. Click the Windows **Start** button and select **Control Panel** > **Network Connections** then select the network **Local Area Connection**. If several local connections are shown, ensure that the one corresponding to the port to which the unit is connected is selected.
3. Open the Properties window for the Local Area Connection and on the **General** tab select **Internet Protocol (TCP/IP)** and click the **Properties** button.



4. In the Internet Protocol (TCP/IP) Properties window, select **Use the following IP address** and enter an **IP address** of 192.168.0.1 and a **Subnet mask** of 255.255.255.0 then click **OK**.



5. Connect to the unit by entering the address 192.168.0.100 (or enter http://192.168.0.100) into your web browser.

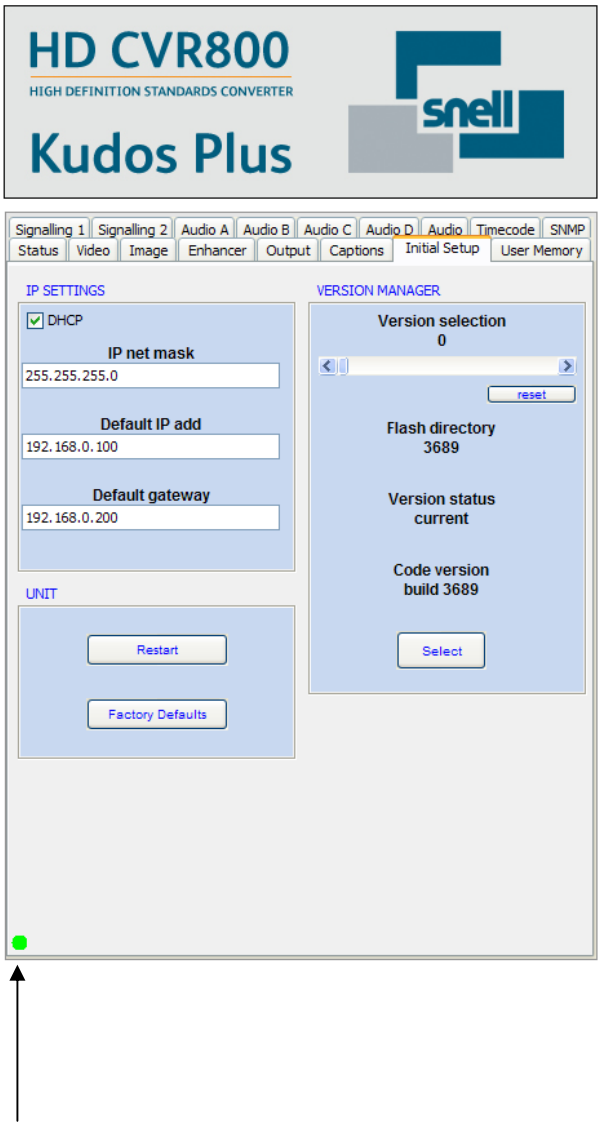
To connect through a DHCP network:

1. Ascertain from the Network Administrator the allocated IP address that corresponds to the unit's MAC address (as written on the unit itself).

2. Connect the unit to a network hub or switch using a standard (i.e. not 'cross-wired') Ethernet (RJ45) cable.

3. Connect to the unit by entering the given address into your web browser, preceded by “http://” if necessary.

Initial Setup



DHCP
To use a dynamically assigned IP address, for a DHCP server, enable the DHCP option.

If a DHCP server is not available, the unit details must be configured as described below.

IP Net Mask, Default IP Add, Default Gateway
Enter manual network set-up parameters here

Restart
Click Restart to shut the unit down and then automatically start it again.

Version Manager
The Version selection control allows the software version of the CVR800 to be specified.

Connection Status
The dot visible in the bottom Left-hand corner indicates the connection status. Red indicates that the browser is not currently controlling the unit, while green indicates the connection is functioning normally.

Status

The Status tab displays information about the current operational state of the unit.

Input standard
This displays the current input standard. If no input is detected, it displays **none**.

Output standard
This displays the currently selected output standard.

Reference
This displays the current reference standard. If no reference is detected, it displays **none**. If the current reference standard cannot be used with the selected lock mode, it displays **Error**.

Input source
This displays the currently selected input source.

SDI Audio present
This displays the presence of SDI audio, and the channels on which the audio is present.

Note that this information is only available on the Web Interface; it is not shown on the unit display.

AES Audio present
This displays the presence of AES audio, and the channels on which the audio is present.

Note that this information is only available on the Web Interface; it is not shown on the unit display.

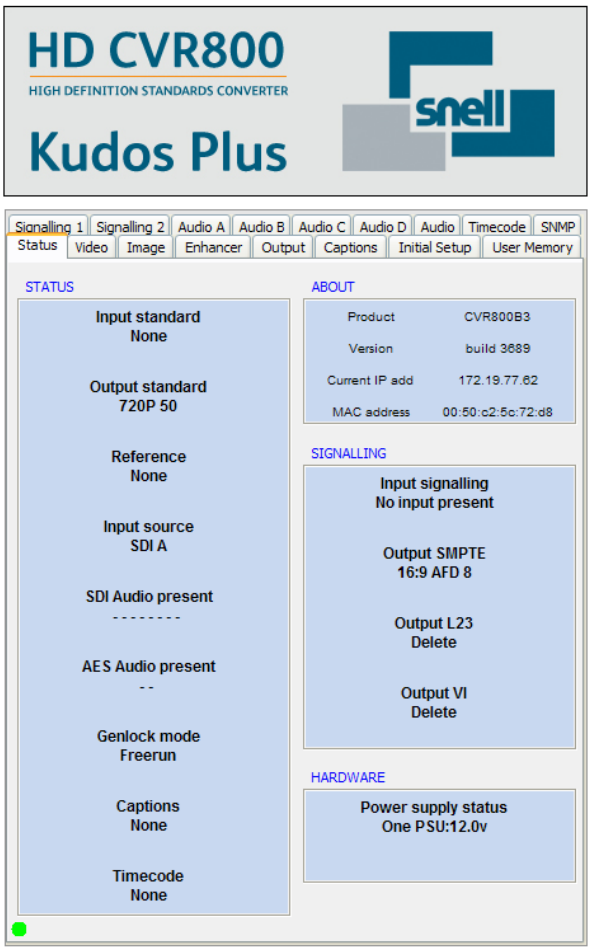
Genlock mode
This displays the current genlock status:

- Reference lock
- Input lock
- Freerun

Note that this information is only available on the Web Interface; it is not shown on the unit display.

Captions
This indicates the presence of closed captions.

Power Supply Status
This indicates whether the unit is operating with a single power supply or a dual power supply.



Version
This displays the software version number of the unit.

IP
This displays the unit's current IP address.

In DHCP mode, it will display 0.0.0.0 when disconnected from the network.

MAC Address
This displays the unit's MAC address.

Input signaling
This displays the current input signaling type.

Output SMPTE
This displays the current SMPTE output signaling type,

Output L23
This displays the current L23 output signaling type.

Output VI
This displays the current Video Index output signaling type.

Video

The controls on the Video tab enable the unit's video input source to be selected and the proc amp controls adjusted.

Black level
Use the slider bar to adjust the black level over a range of ±100mV.

Click reset to return the control to its preset value of 0mV.

Contrast
Use the slider bar to adjust the contrast over a range of ±6bB in 0.2dB steps.

Click reset to return the control to its preset value of 0dB.

Colour saturation
Use the slider bar to adjust the colour saturation over a range of ±6bB in 0.2dB steps.

Click reset to return the control to its preset value of 0dB.

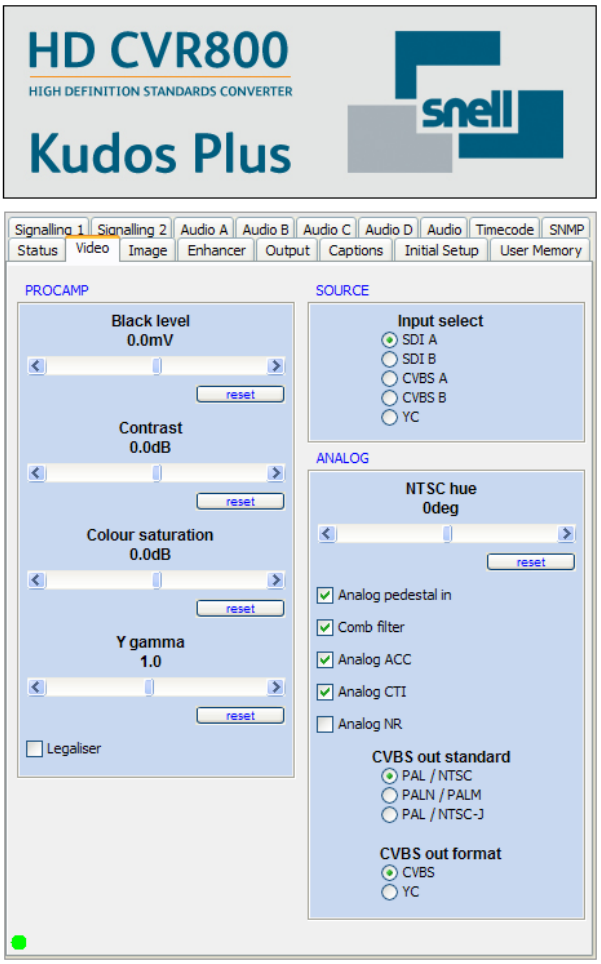
Y gamma
Use the slider bar to adjust the Y gamma curve over a range of 0.4 to 1.7 in steps of 0.1.

Click reset to return the control to its preset value of 1.

Legalizer
The Legalizer ensures that output video is kept within the RGB gamut limit.
When the Legalizer control is selected:

1. Source video is matrixed from YPbPr to RGB.
2. Any RGB video transitions below black are clipped to black.
3. Black-clipped RGB is matrixed back to YPbPr.
4. Any RGB transitions above peak white are measured relative to peak white to create a scaling factor.
5. The YPbPr video (from stage 3) is multiplied by the scaling factor.

This process ensures minimal disturbance to the perceived black level of the pre-corrected video while maintaining approximately the correct hue in parts of the image above peak white.



Input select
This allows the video input source to be selected. Click the corresponding radio button to select:

- SDI A
- SDI B
- CVBS A
- CVBS B
- YC

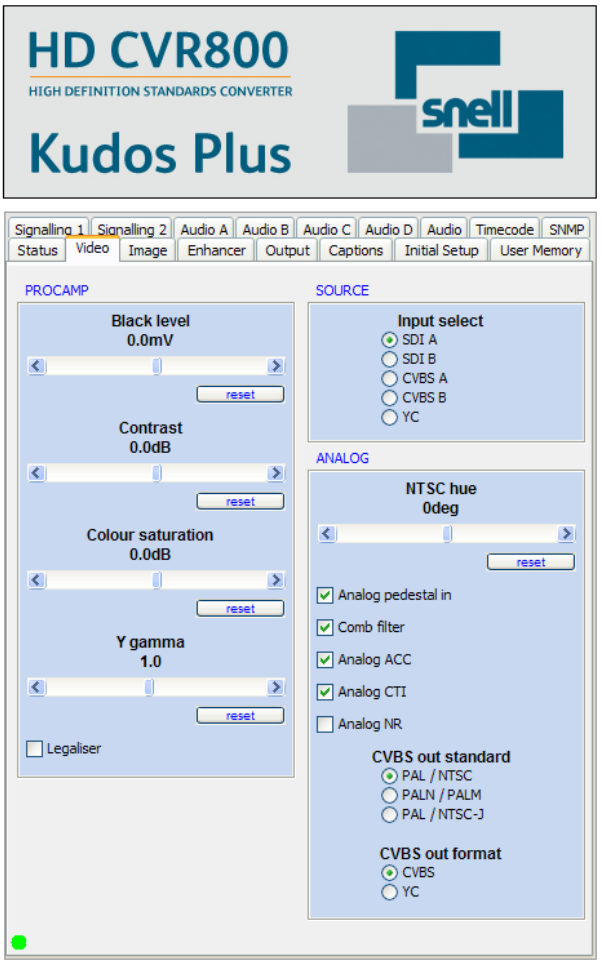
Input standard is automatically detected.

NTSC Hue
Use the slider bar to adjust the NTSC hue over a range of -180° to +180°, in increments of 1°.

Click reset to return the control to its preset value of 0°.

Analog pedestal in
Selecting this option allows the composite source (NTSC only) to be treated as if a pedestal is present.

Video (Cont.)



Comb filter

The comb filter employs a 5-line adaptive 2Dcomb filter that separates chrominance and luminance when decoding a composite video signal. It adapts to the video standard and signal quality automatically. This control improves the decoder performance and should only be switched off if the operator needs to see the source through only a low pass filter.

Analog ACC

The automatic color gain control (ACC) function examines the input burst amplitude and adjusts chrominance gain to compensate for chroma level attenuation. Check this control when chroma levels are low compared to luminance. This may occur when using YC installations or composite from RF links.

Analog CTI

The chroma transient improvement (CTI) control examines the input video data. It detects transitions of chroma and enhances chroma edges in order to artificially restore lost color bandwidth. Use this function when the input video has chroma bandwidth limitations.

Analog NR

The noise reduction is based on the assumption that high frequency signals with low amplitude are probably noise and their removal improves picture quality. Improvements can be seen on most material so this function is on by default.

CVBS out standard

Use the radio buttons to specify the CVBS output standard. The options are:

- PAL/NTSC
- PALN/PALM
- PAL/NTSC-J

CVBS out format

Use the radio buttons to specify the CVBS output format:

- CVBS
- YC

Note that when the output is not selected to be an SD standard, the CVBS or YC output will not be valid.

Image

The controls on the Image tab enable the size, control, and scaling options to be adjusted.

Still Process
When enabled (On), the CVR800 uses powerful motion detection techniques to extract the maximum resolution from interlaced sources whilst format or standards converting. The benefits of this processing can be seen most dramatically on static logos and computer generated overlays.

Enhanced Still
When used in concert with the Still Process option, Enhanced Still adds field motion detection to still processing, which prevents artifacts on moving repetitive patterns.

Auto zoom
Select the check box to enable auto zoom. Clear the check box to disable auto zoom.

By default, auto zoom is enabled.

Manual zoom
Clear the Auto zoom check box and use the slider bar to manually adjust the zoom over a range of 120% to 80% in 1% steps.

Click reset to return the control to its default value of 100%.

Pattern
This control enables and disables the pattern output, and specifies the type of pattern output if enabled. The options are:

- Off
- Ramp
- Bars
- Black

Freeze
This control freezes the output when enabled

SD Source Half Line Blanking
Allows the source half lines to be blanked. This can be useful for certain ARC settings; for example, SD16:9AN to SD4:3 Fit to Width.

VANC Blank
Selecting this option blanks all vertical ancillary data.

Convert Scaling
Use this option to select conversion scaling method. The available options are:

- Fit to Height
- 14:9
- Fit to Width

SD Input Format
Use this option to select the SD input format. The available options are:

- Normal 4:3
- 16:9 LB
- 16:9 An

SD Output Format
Use this option to select the SD output format. The available options are:

- Normal 4:3
- 16:9 An

Safe area marks
Markers may be inserted appropriate to the output aspect ratio to indicate the nominal safe area. The safe area is 93% of the effective picture height and width. The available options are:

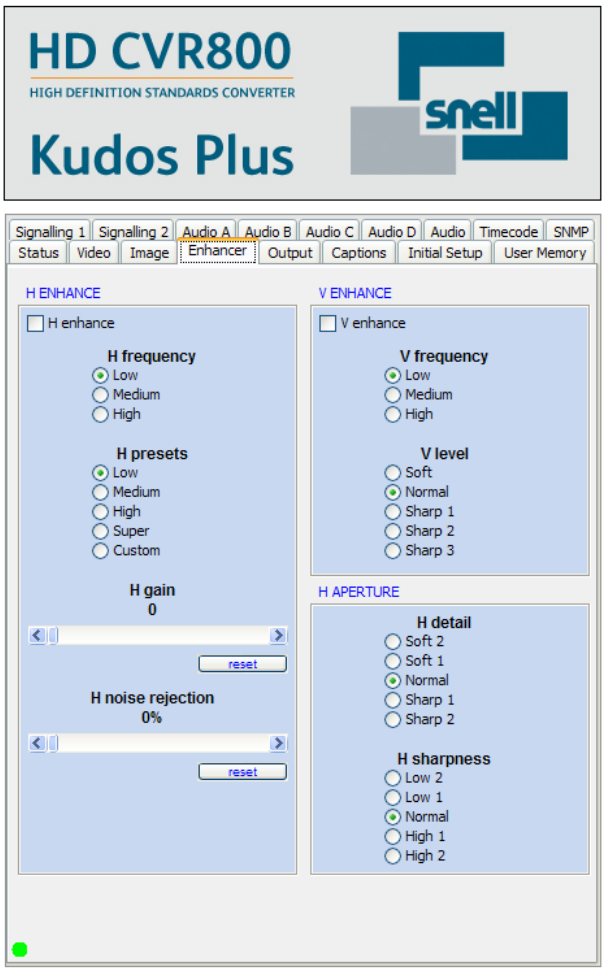
- Off
- 16:9
- 4:3

Sync Mode
When Sync Mode is On, the scaling filters are disabled giving transparent operation while using the unit as a synchronizer. This control is only effective if the input and output formats are identical

Signalling

- Use signaling: When this option is selected, the unit will use the signaling options as specified on the Signalling 1 and Signalling 2 tabs.
- Unknown is manual: When option is selected the unit will use manual aspect conversions if the input signal type is not recognized.

Enhancer



The Advanced Horizontal Enhancer allows enhancement to be selectively applied to the low frequency band, medium frequency band, or high frequency band. Four presets are available as well as custom gain and noise rejection.

H Enhance
Select this check box to enable advanced horizontal enhancement.

H Frequency
Use the radio buttons to specify the frequency band to which enhancement will be applied.

H Presets

- Low: sets H Gain to 2 and H Noise rejection to 15% for the selected frequency band.
- Medium: sets H Gain to 4 and H Noise rejection to 15% for the selected frequency band.
- High: sets H Gain to 6 and H Noise rejection to 15% for the selected frequency band.
- Super: sets H Gain to 8 and H Noise rejection to 15% for the selected frequency band.
- Custom: Allows H Gain and H Noise rejection to be manually adjusted.

H Gain
If the Custom preset is selected, this allows the gain to be adjusted on the selected frequency band. This control does not have any effect if the **Custom** preset is not selected.

H Noise rejection
If the custom preset is selected, this allows the noise rejection to be adjusted on the selected frequency band. This control does not have any effect if the **Custom** preset is not selected.

Enhancer (Cont.)

V enhance
The Advanced Vertical Enhancer options allow enhancement to be selectively applied to the low frequency band, medium frequency band, or high frequency band. Five strengths are available per band.

Select the check box to enable the advanced horizontal options.

V frequency
Rotate the control knob to select the frequency band to which the enhancement will be applied:

- Low
- Med
- High

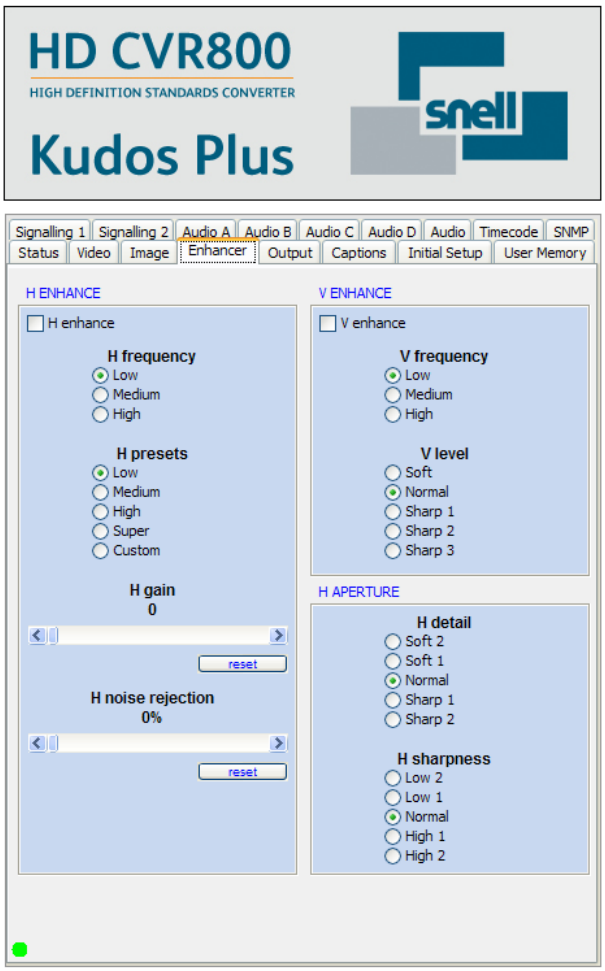
V level
Rotate the control knob to select the enhancer strength.

- Soft: provides attenuation in the band specified
- Normal: nominally flat frequency response
- Sharp1, Sharp2, Sharp3: progressively more boost in the frequency band of interest.

H Aperture
The H Aperture control allows for linear control of the Horizontal conversion process - especially useful when down converting.

H detail
Rotate the control knob to adjust the amount of detail that is allowed through to the output - effectively moving the stop band of the anti-alias filter.

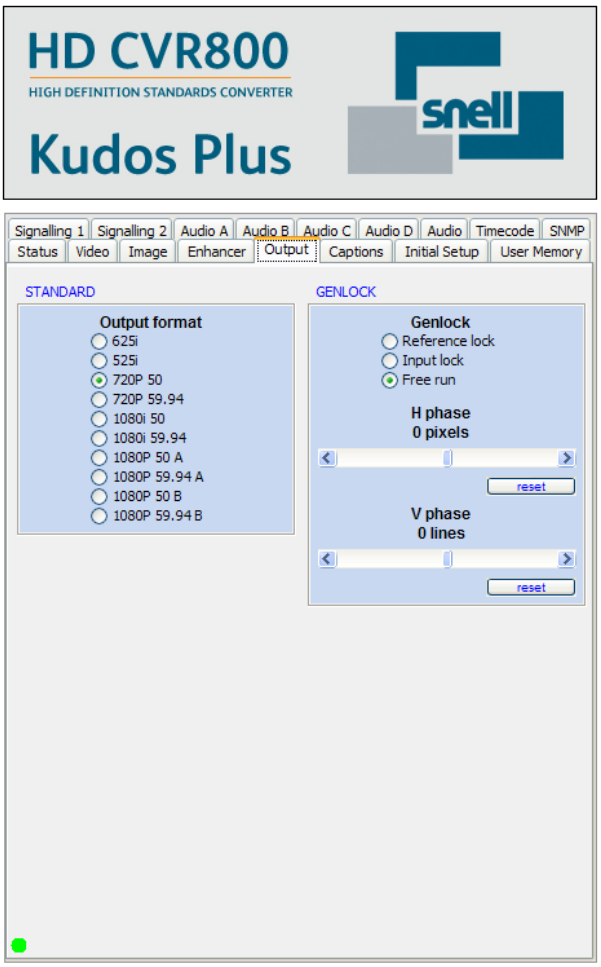
- Soft2: recommended for severely over enhanced source material
- Soft1: recommended for overly enhanced source material.
- Normal: optimum setting to balance detail and alias
- Sharp1: recommended for slightly soft source material
- Sharp2: recommended for extremely soft source material



H sharpness
Rotate the control knob to adjust the sharpness of the output - effectively changing the rate of cutoff of the anti-alias filter

- Low2: recommended for severely over enhanced source material
- Low1: recommended for overly enhanced source material.
- Normal: optimum setting to balance detail and alias
- High1: recommended for slightly soft source material
- High2: recommended for extremely soft source material

Output



The options on the Output tab allow the output format and genlock settings to be specified.

Output format
Use this control to select the output format from the supported standards:

Genlock
Enabling Genlock (either Reference Lock or Input Lock) will lock the output video clock to the genlock source (input or reference) regardless of the video standard. If the genlock source and the video output are of the same frame rate (i.e. 50 Hz or 59.95Hz) genlock will lock the output to the vertical phase of the source, giving consistent and repeatable delay.

When attempting to pass non-PCM audio it is essential that genlock is enabled. If using an external reference, it must be clock-locked to the input video.

- Reference lock: Output video is locked to an external reference. The offset between the external reference and the output can be adjusted over a range of approximately +/- 32us using the Genlock phase controls
- Input lock: Output video, if the same line and frame standard, is locked to the selected input video source. When converting between line or frame standards this mode is not available.
- Free run: Output video is locked to an internal reference clock.

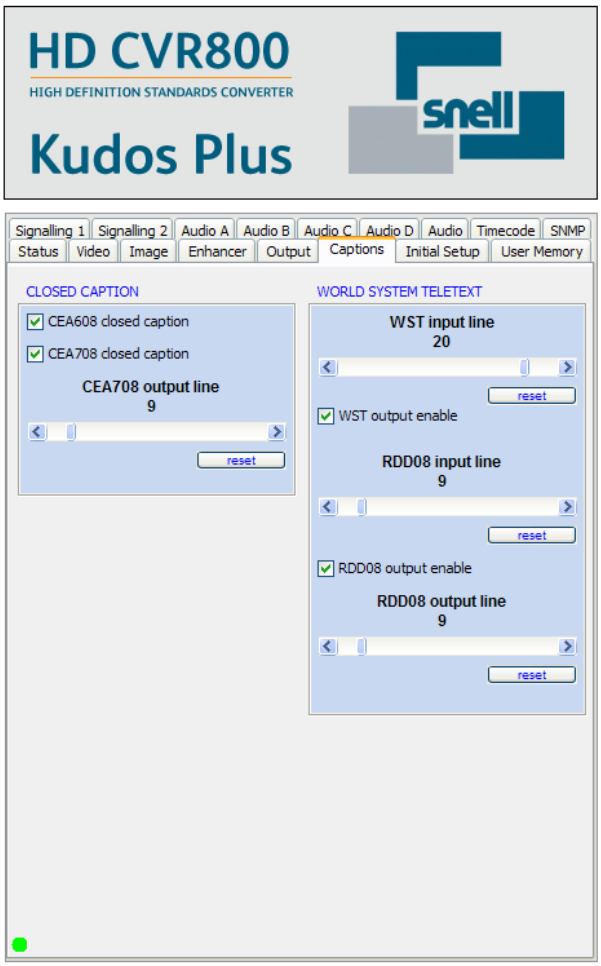
  Note: Non-PCM audio will always be corrupt if Genlock is set to free run.

H Phase
The H Phase control allows the horizontal genlock phase to be adjusted from +1320 to -1319 pixels in one pixel increments. The H Phase preset value is 0.

V Phase
The V Phase control allows the vertical genlock phase to be adjusted from +562 to – 563 in 1 line increments. The V Phase preset value is 0.

Note: *These controls are only available when the CVR800 is reference locked to a source of the same frame rate as the input video. The control is disabled when the unit is input locked and a fixed minimum delay is set.*

Captions



Closed Caption

Selecting the CEA608 closed caption option enables CEA608 in SD (NTSC).

Selecting the CEA708 closed caption option enables CEA708 in HD (59.94).

Use the slider bar to specify the CEA708 output line. The output line can be set from line 8 to line 20 (in steps of 1 line). The preset value is line 9.

Note: *Insertion is only possible if CC data is present on the input.*

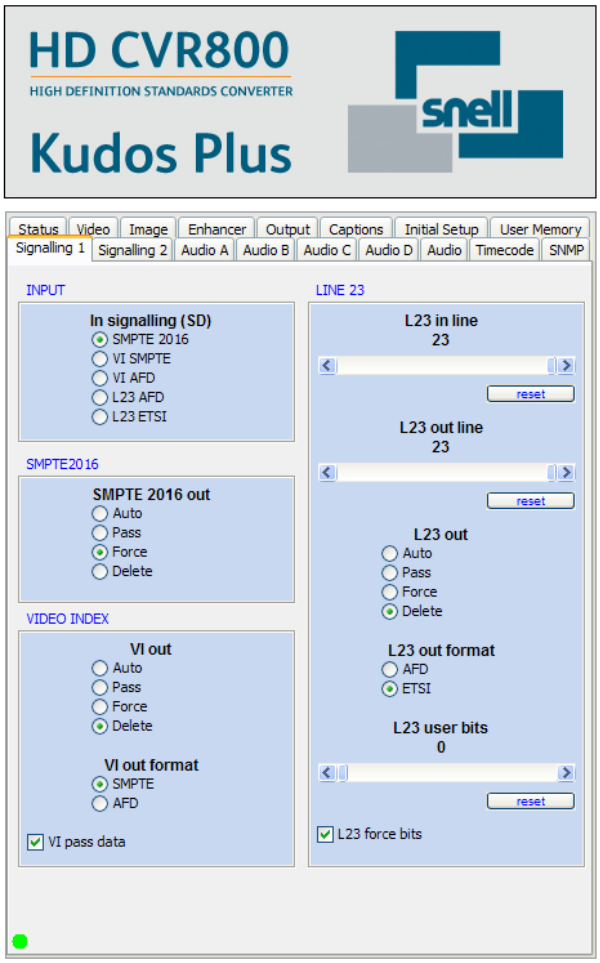
World System Teletext

The unit can pass WST (SD) and RDD08 (HD) teletext. These options enable you to specify the lines that are used and to enable or disable teletext output.

- WST input line: Use the slider bar to specify the input line on which WST input is present. The range of adjustment is from lines 7 to 22 and the preset value is line 22.
- WST output enable: Select the checkbox to enable WST output. WST output will be passed on the same line as the WST input.
- RDD08 input line: Use the slider bar to specify the input line on which RDD08 input is present. The range of adjustment is from lines 8 to 20 and the preset value is line 9.
- RDD08 output enable: Select the checkbox to enable RDD08 output on the line specified by the RDD08 output line control.
- RDD08 output line: Use the slider bar to specify the RDD08 output line. The range of adjustment is from lines 8 to 20 and the preset value is line 9.

Signalling 1

The options on the Signalling 1 tab allow the parameters that control automatic Aspect Ratio Conversion to be specified.



In signaling (SD)

This option specifies the type of input signaling the unit will respond to.

- SMPTE 2016: Embedded VANC packet according to SMPTE 2016 standard. This format is for Active Format Description only, and is supported in both SD and HD
- VI SMPTE: Video Index according to SMPTE RP186, supported in SD only, line 11/324 (625), 14/277 (525).
- VI AFD: Video Index, plus a 3 bit AFD according to ARDSPEC1, supported in SD only.
- L23 AFD: Video Index, transported using Line 23 (WSS) signaling.
- L23 ETSI: Line 23 (WSS) signaling according to ETSI EN 300 294 (2003) Group 1, supported in SD only.

SMPTE2016:

These options specify the SMPTE 2016 output actions.

SMPTE 2016 out:

- Auto: This option automatically sets the conversion based on a combination of the input output standards.
- Pass: If this option is selected, SMPTE 2016 information will be passed through the unit unchanged.
- Force: If this option is selected, the unit will force the conversion specified on the Signalling 2 tab.
- Delete: If the option is selected, SMPTE 2016 information will be deleted from the output signal.

Video Index

These options specify the VI output actions

VI Pass Data:

These options specify whether any user data from the source VI is used at the output. If pass data is not enabled, the VI data other than coded frame and AFD are blanked, otherwise, they are passed from the input if appropriate.

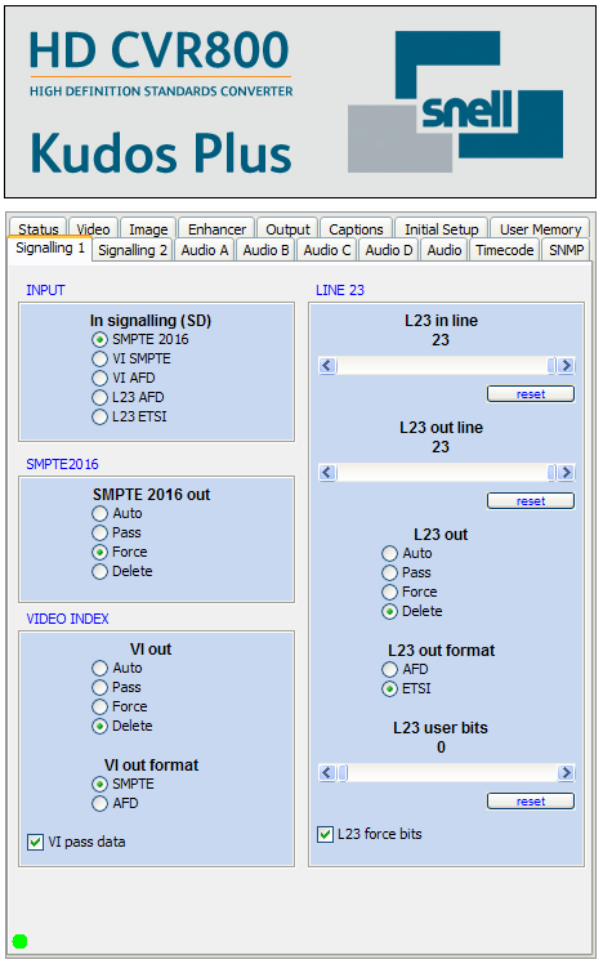
VI out:

- Auto: This option automatically sets the conversion based on a combination of the input output standards.
- Pass: If this option is selected, VI information will be passed through the unit unchanged.
- Force: If this option is selected, the unit will force the conversion specified on the Signalling 2 tab.
- Delete: If the option is selected, VI information will be deleted from the output signal.

VI out format:

- SMPTE: Select this option to output Video Index information according to SMPTE RP186.
- AFD: Select this option to output Video Index information according to ARDSPEC1.

Signalling 1 (Continued)



Line 23
These options specify the Line 23 (WSS) input and output parameters.

L23 in line:

- By default, L23 information is carried on line 23. However, if the information occurs on a different line, use the slider to specify the line on which it is carried in the input. The range of adjustment is from line 10 to line 23.

L23 out line:

- By default, L23 information is carried on line 23. However, if the information is required on a different line, use the slider to specify the line on which it is carried in the output. The range of adjustment is from line 10 to line 23.

L23 out:

- Auto: This option automatically sets the conversion based on a combination of the input output standards.
- Pass: If this option is selected, L23 information will be passed through the unit unchanged.
- Force: If this option is selected, the unit will force the conversion specified on the Signalling 2 tab.
- Delete: If the option is selected, L23 information will be deleted from the output signal.

L23 out format:

- Select AFD to insert L23 information in AFD format.
- Select ETSI to insert L23 information in ETSI format.

L23 user bits:

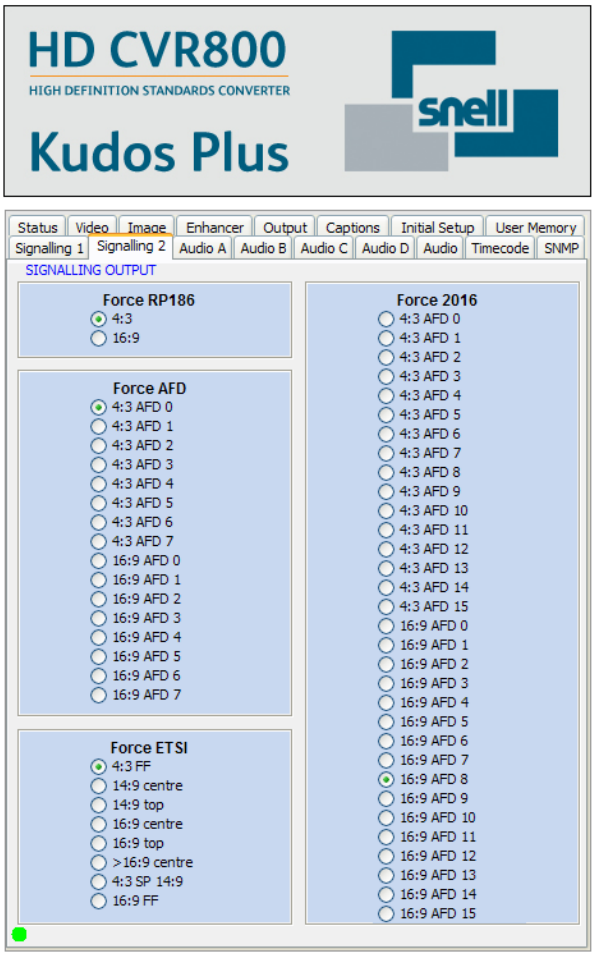
- Set enhanced L23 bits. Use the slider control to select between 15 preset bit combinations.

L23 force bits:

- Determines whether the L23 user bits set above are forced into the L23 output.

Signalling 2

The options on the Signalling 2 tab specify the output that will be forced if the corresponding Force option is selected on the Signalling 1 tab.



Audio A, Audio B, Audio C, and Audio D

The settings on these four tabs enable the audio input sources to be specified for the Left and Right channels. Since each tab differs only in the audio pair that is controlled, it is described only once.

Audio in A/B/C/D Left
These specify the Left audio input source.

- De-embed ch 1
  -to-
  De-embed ch 16
- Analog A – Left
- Analog A – Right
- Analog B – Left
- Analog B – Right
- AES A – Left
- AES A – Right
- AES B – Left
- AES B – Right
- Tone
- Silence

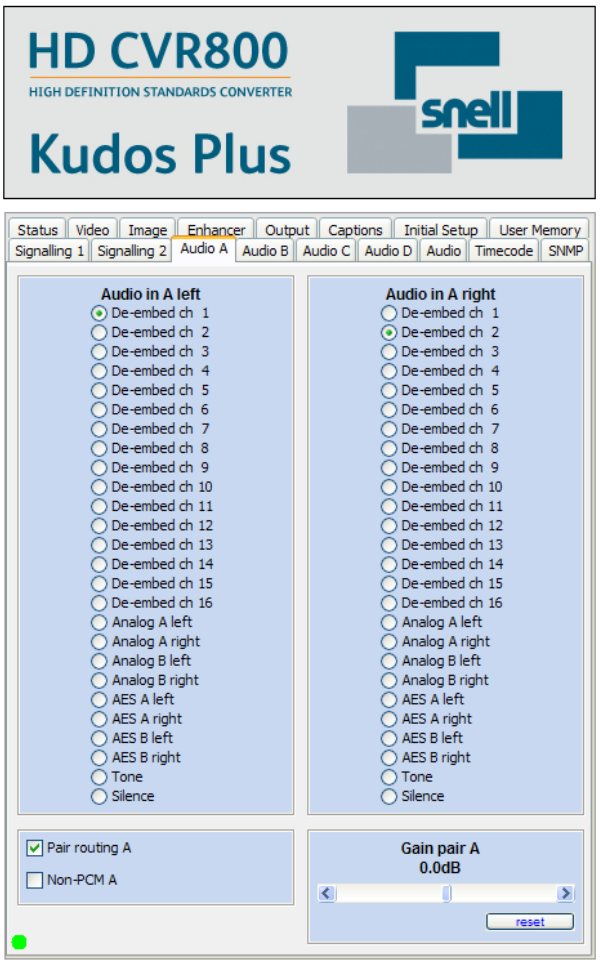
Audio in A/B/C/D Right
These specify the Right audio input source. The options are the same as the Left input source.

Preset Values
The audio input channels have the following default values:

- Audio in A Left: De-embed ch 1
- Audio in A Right: De-embed ch 2
- Audio in B Left: De-embed ch 3
- Audio in B Right: De-embed ch 4
- Audio in C Left: De-embed ch 5
- Audio in C Right: De-embed ch 6
- Audio in D Left: De-embed ch 7
- Audio in D Right: De-embed ch 8

Pair Routing A/B/C/D
Select this option to configure the Left and Right as a pair.

With Pair Routing enabled and after selecting a source for Audio in A – Left, the unit will automatically route the corresponding stereo channel to Audio in A – Right. E.g. If De-embed ch 8 is selected for Audio in A – Left the unit will automatically route ch 9 to Audio in A – Right.



Pair A/B/C/D non PCM
Selecting this option allows the unit to pass, unchanged, non-PCM data on a left/right channel pair. *Note Genlock settings on page 55.*

Gain pair A/B/C/D
Use the slider to apply a gain to the audio pair of ±18dB in 0.1dB steps.

Click reset to return the control to its preset value of 0dB.

Audio

ADC A Headroom
Use the slider bar to adjust the ADC A headroom between +12 dBu and +24dBu in 0.5dB steps

Click reset to return the control to its default value of 18dBu.

Note that if the applied audio level exceeds the value set for the Headroom the processed audio will be clipped.

ADC B Headroom
Use the slider bar to adjust the ADC B headroom between +12 dBu and +24dBu in 0.5dB steps

Click reset to return the control to its default value of 18dBu.

DAC 1 level
Use the slider bar to adjust the DAC 1 audio output level for 0dBFS between +12 dBu and +24dBu in 0.5dB steps

DAC 1 outputs audio selected under the Audio A tab..

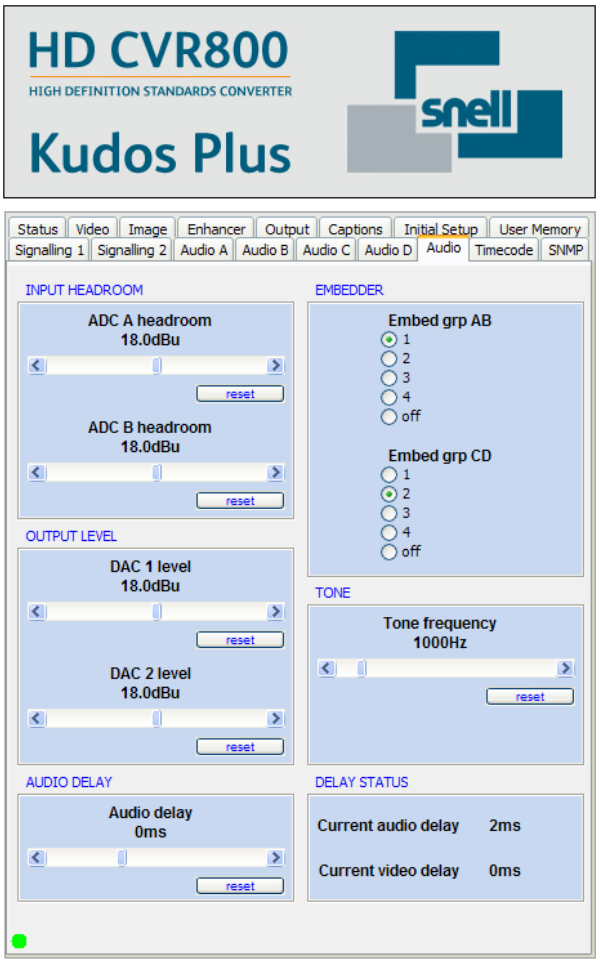
DAC 2 level
Use the slider bar to adjust the DAC 2 audio output level for 0dBFS between +12 dBu and +24dBu in 0.5dB steps

DAC 2 outputs audio selected under the Audio B tab..

Embed grp AB
Select the embed group for audio selected under the Audio A and Audio B tabs. Audio A will be embedded into pair 1 of the selected group and Audio B will be embedded to pair 2.

Embed grp CD
Select the embed group for audio selected under the Audio A and Audio B tabs. Audio A will be embedded into pair 1 of the selected group and Audio B will be embedded to pair 2. Note that if the same group is selected for AB and CD only audio AB will be embedded.

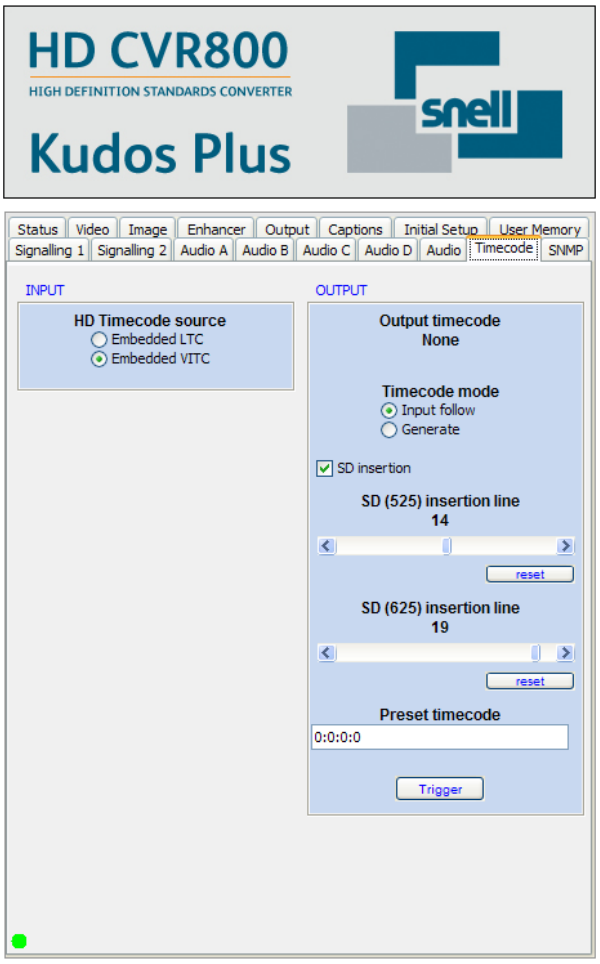
Tone Frequency
Use the slider to adjust the tone frequency between 100Hz and 10kHz in 100Hz steps.



Audio Delay
Use this control to adjust the audio delay -40ms to +80ms relative to the video delay.

Delay Status
Displays Current Audio Delay and Current Video Delay.

Timecode



The settings on the Timecode tab specify the unit's timecode options.

HD Timecode source
HD timecode can either be embedded as:

Embedded LTC: The HD input video timecode is read from the embedded VITC signals (SMPTE RP188)

Embedded VITC: The HD input video timecode is read from the embedded LTC signals (SMPTE RP188)

Output timecode
This displays the current value of the generated output timecode.

Timecode mode
The unit timecode functions can operate in one of two modes:

Input follow: The output timecode will follow the input timecode.

Generate: Unit will generate its own timecode signal.

SD insertion
Select this option to enable SD timecode insertion. The timecode will be inserted on the line that is specified below.

SD (525) insertion line
Use the slider bar to specify the line on which SD (525) timecode information will be inserted. Click **Reset** to return the insertion line to its default value of 14.

SD (625) insertion line
Use the slider bar to specify the line on which SD (625) timecode information will be inserted. Click **Reset** to return the insertion line to its default value of 19.

Preset timecode
In this field you can specify the value at which the timecode starts.

Trigger
Click **Trigger** to trigger a timecode event.

SNMP

SNMP is an acronym for Simple Network Management Protocol. It is a protocol within the TCP/IP suite and because of the popularity of TCP/IP, SNMP has become the de facto standard for managing data networks.

SNMP is a simple request / response protocol that communicates information values between two types of software entities:

SNMP Managers (also called SNMP Applications or NMS – Network Management Systems)

SNMP Agents (also called Elements, Devices or Units)

The information available from an SNMP agent is defined by sets of files called Management Information Base or MIB.

SNMP enable
Select the SNMP enable check box to activate the unit's SNMP functions.

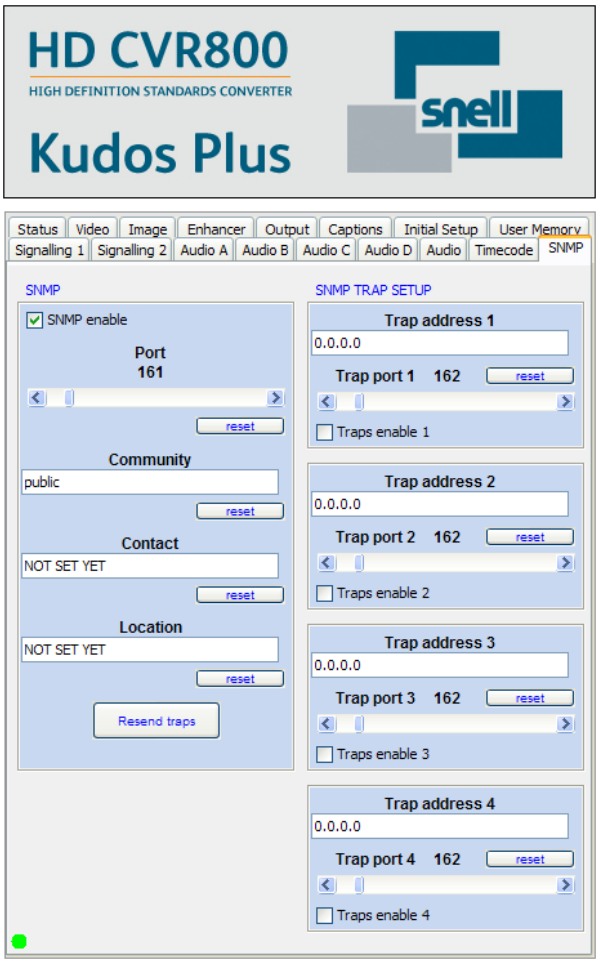
Port
Use the slider bar to specify the port on which the unit listens for messages from the SNMP manager. The SNMP default port is 161 but other ports may be used.

Community
This allows you to set the SNMP community to public or private, the default is public.

Contact
Enter the contact email of the SNMP agent.

Location
This specifies the physical location of the unit.

Resend Traps
When clicked the unit resends all current SNMP traps / notifications.



SNMP Trap Setup
SNMP traps 1 to 4 are configured in this section. The controls are the same for each.

Trap address 1 - 4
Configures the IP address to which traps (notifications) are sent. This address should correspond to the IP address of the SNMP Manager.

Trap port 1 – 4
Configures the destination UDP port for traps. The manager should be configured to listen for traps on this port. The SNMP default is 162 but other port numbers may be used.

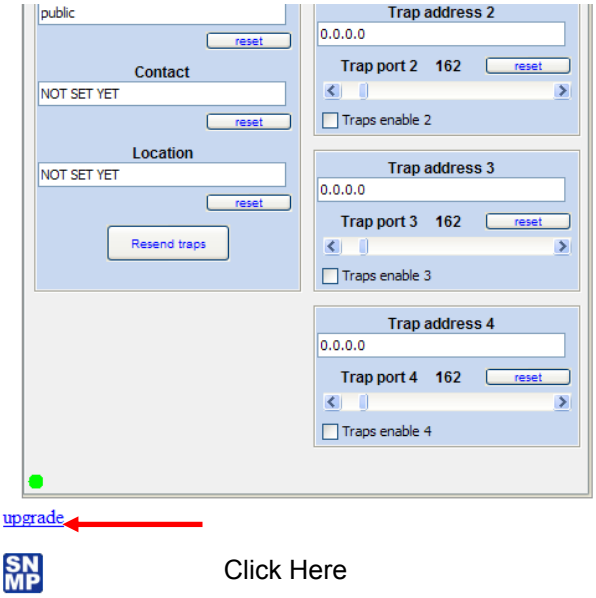
Trap enable 1 – 4
Select the check box to enable the corresponding trap destination.

Obtaining MIB files
MIB files are stored locally on the unit.

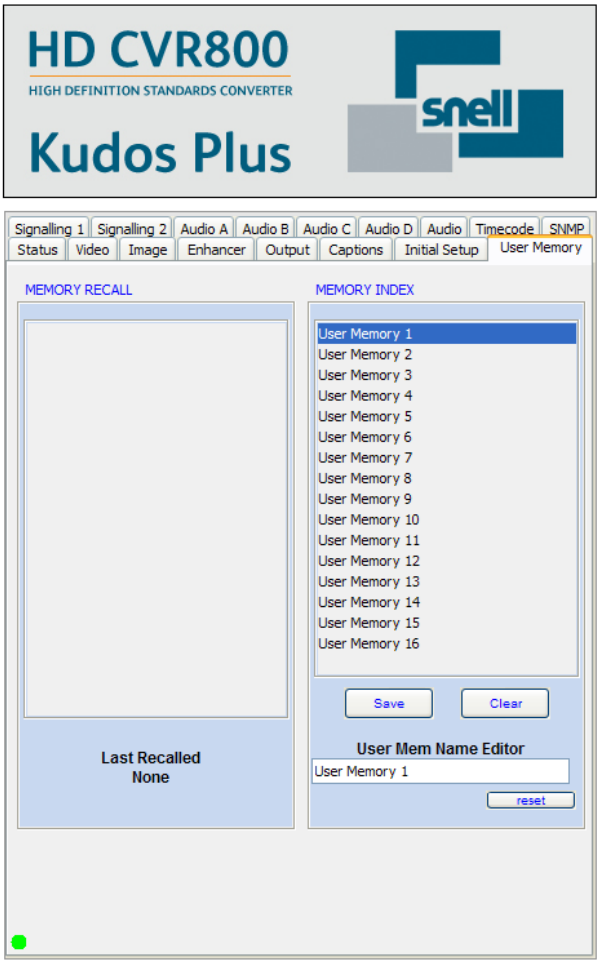
To obtain the MIB files;:

- Click the SNMP logo in the lower-left corner of the browser window. The windows file dialog appears.
- Save the files locally for use with your SNMP application.

Note: *Included with the MIB files is a CSV file that details the available SNMP functions.*



User Memory



User Memory allows you to store and recall up to 16 unit configurations (A to P).
*Note that the **User Memory** functions are only available from the Web Interface and cannot be accessed from the unit's front panel.*

To save a configuration to the user memory, click the **Save** button that corresponds to the memory location (A to P) that you want to use. After you have done this, the memory will be indicated in the **User Memory Present** list.

To clear a configuration from the user memory, click the **Clear** button that corresponds to the memory. After you have done this, the memory will be removed from the **User Memory Present** list.

To recall a configuration, select the radio button that corresponds to it. Note that the memory must have been previously stored and be in the **User Memory Present** list for this to have any effect.

Appendix A: (Automated Aspect Ratio Control)

Recognized Input Signalling

The CVR800 can be configured to respond automatically to a variety of Aspect Ratio signalling standards, controlling both the ARC conversion that is performed, and the new signalling that can be inserted at the unit's video outputs.

The table below shows how the three signalling content types are interpreted, depending on whether the signalling was received from an SD or HD source.

SMPTE 2016 can be extracted from both SD and HD sources
AFD can be extracted from SD Video Index, or 625i with L23
ETSI is only extractable from 625i with L23

Table 1

Detected Signalling				Interpretation	
SMPTE 2016	**AFD**	**ETSI**		**SD Input**	**HD Input**
4/3 AFD 8 Coded Frame 4/3 AFD 9 Coded Frame	4/3 AFD 0 Coded Frame	4/3 FF		Normal 4/3	*Normal 16/9*
4/3 AFD 8 Coded Frame 4/3 AFD 9 Coded Frame	4/3 AFD 1 – 4/3	4/3 FF		Normal 4/3	*Normal 16/9*
4/3 AFD 10 16/9LB	4/3 AFD 2 – 16/9	16/9 Center		16/9 LB	*Normal 16/9*
4/3 AFD 11 14/9 LB	4/3 AFD 3 – 14/9	14/9 Center		Normal 4/3	*Normal 16/9*
4/3 AFD 4 > 16/9 LB	4/3 AFD 4 4/3	>16/9 Center		16/9 LB	*Normal 16/9*
4/3 AFD 13 4/3 Alt 14/9	4/3 AFD 5 – 4/3 SP 14/9	SP 14/9		Normal 4/3	*Normal 16/9*
4/3 AFD 14 16/9LB Alt 14/9	*4/3 AFD 6 – 16/9 SP 14/9*			*16/9LB*	*Normal 16/9*
4/3 AFD 15 16/9LB Alt 4/3	4/3 AFD4/3 7 – 16/9 SP 4/3			16/9LB	*Normal 16/9*
16/9 AFD 2 Coded Frame 16/9 AFD 10 16/9 16/9 AFD 8 Coded Frame	16/9 AFD 0 - Coded Frame	16/9FF		16/9 Anamorphic	Normal 16/9
16/9 AFD 9 4/3PB	1 16/9 AFD 1 - 4/3			16/9 Anamorphic	Normal 16/9
16/9 AFD 2 Coded Frame 16/9 AFD 10 16/9 16/9 AFD 8 Coded Frame	16/9 AFD 2 – 16/9	16/9FF		16/9 Anamorphic	Normal 16/9
16/9 AFD 3 14/9PB 16/9 AFD 11 14/9PB	16/9 AFD 3 - 14/9			16/9 Anamorphic	Normal 16/9
16/9 AFD 4 >16/9LB	16/9 AFD 4 – AFD 4			16/9 Anamorphic	Normal 16/9
16/9 AFD 13 4/3PB Alt 14/9	16/9 AFD 5 - 4/3 SP 14/9			16/9 Anamorphic	Normal 16/9
16/9 AFD 14 16/9 Alt 14/9	16/9 AFD 6 – 16/9 SP 14/9			16/9 Anamorphic	Normal 16/9
16/9 AFD 15 16/9 Alt 4/3	16/9 AFD 7 – 16/9 SP 4/3			16/9 Anamorphic	Normal 16/9
4/3 AFD 3 14/9LB Top		14/9 Top		Normal 4/3	*Normal 16/9*
4/3 AFD 2 16/9LB Top		16/9 Top		Normal 4/3	*Normal 16/9*
4/3 AFD 0 Undefined				*Normal 4/3*	*Normal 16/9*
4/3 AFD 1 Reserved				*Normal 4/3*	*Normal 16/9*
4/3 AFD 5 Reserved				*Normal 4/3*	*Normal 16/9*
4/3 AFD 6 Reserved				*Normal 4/3*	*Normal 16/9*
4/3 AFD 7 Reserved				*Normal 4/3*	*Normal 16/9*
4/3 AFD 12 Reserved				*Normal 4/3*	*Normal 16/9*

16/9 AFD 0 Undefined				*16/9 Anamorphic*	*Normal 16/9*
16/9 AFD 1 Reserved				*16/9 Anamorphic*	*Normal 16/9*
16/9 AFD 5 Reserved				*16/9 Anamorphic*	*Normal 16/9*
16/9 AFD 6 Reserved				*16/9 Anamorphic*	*Normal 16/9*
16/9 AFD 7 Reserved				*16/9 Anamorphic*	*Normal 16/9*
16/9 AFD 12 Reserved				*16/9 Anamorphic*	*Normal 16/9*

Applied Signalling

The “Interpretation type”, from table 1, for example “Normal 4/3” is used in the table 2, along with the conversion settings, to identify what conversion will be performed (the “Output” column), and its associated signalling.

Table 2

Conversion					**Signalling Out**		
Conver-sion type	**Input**	**Convert Scaling**	**SD Out Format**	**Output**	**SMPTE 2016**	**AFD**	**ETSI**
HD -> HD	HD Normal 16/9	X	X	HD Normal 16/9	16/9 AFD 8 Coded Frame		
SD -> HD	SD Normal 4/3	Fit to width	X	HD Normal 16/9	16/9 AFD 8 Coded Frame		
	SD Normal 4/3	14/9	X	HD Normal 16/9	16/9 AFD 11 14/9PB		
	SD Normal 4/3	Fit to height	X	HD Normal 16/9	16/9 AFD 9 4/3PB		
	SD 16/9 LB	X	X	HD Normal 16/9	16/9 AFD 8 Coded Frame		
	SD 16/9 Anamorphic	X	X	HD Normal 16/9	16/9 AFD 8 Coded Frame		
HD -> SD	HD Normal 16/9	Fit to width	Normal 4/3	SD Normal 4/3	4/3 AFD 10 16/9LB	4/3 AFD 2 -16/9	16/9 Centre
	HD Normal 16/9	14/9	Normal 4/3	SD Normal 4/3	4/3 AFD 11 14/9LB	4/3 AFD 3 -14/9	14/9 Centre
	HD Normal 16/9	Fit to height	Normal 4/3	SD Normal 4/3	4/3 AFD 8 Coded Frame	4/3 AFD 0-Coded Frame	4/3 FF
	HD Normal 16/9	X	16/9 Anamorphic	SD 16/9 Anamorphic	16/9 AFD 8 Coded Frame	16/9 AFD 0-Coded Frame	16/9FF
SD -> SD	SD Normal 4/3	X	Normal 4/3	SD Normal 4/3	4/3 AFD 8 Coded Frame	4/3 AFD 0-Coded Frame	4/3 FF
	SD 16/9 LB	Fit to width	Normal 4/3	SD 16/9 LB	4/3 AFD 10 16/9LB	4/3 AFD 2 – 16/9	16/9 Centre
	SD 16/9 LB	14/9	Normal 4/3	SD 14/9 LB	4/3 AFD 11 14/9LB	4/3 AFD 3 -14/9	14/9 Centre
	SD 16/9 LB	Fit to height	Normal 4/3	SD Normal 4/3	4/3 AFD 8 Coded Frame	4/3 AFD 0-Coded Frame	4/3 FF
	SD 16/9 Anamorphic	Fit to width	Normal 4/3	SD 16/9 LB	4/3 AFD 10 16/9LB	4/3 AFD 2 – 16/9	16/9 Centre
	SD 16/9 Anamorphic	14/9	Normal 4/3	SD 14/9 LB	4/3 AFD 11 14/9LB	4/3 AFD 3 – 14/9	14/9 Centre
	SD 16/9 Anamorphic	Fit to height	Normal 4/3	SD Normal 4/3	4/3 AFD 8 Coded Frame	4/3 AFD 0-Coded Frame	4/3 FF
	SD Normal 4/3	Fit to width	16/9 Anamorphic	SD 16/9 Anamorphic	16/9 AFD 8 Coded Frame	16/9 AFD 0-Coded Frame	16/9FF
	SD Normal 4/3	14/9	16/9 Anamorphic	SD 16/9 Anamorphic	16/9 AFD 11 14/9PB	16/9 AFD 3 – 14/9	*16/9FF*
	SD Normal 4/3	Fit to height	16/9 Anamorphic	SD 16/9 Anamorphic	16/9 AFD 9 4/3PB	16/9 AFD 1 – 4/3	*16/9FF*
	SD 16/9 LB	X	16/9 Anamorphic	SD 16/9 Anamorphic	16/9 AFD 8 Coded Frame	16/9 AFD 0-Coded Frame	16/9FF
	SD 16/9 Anamorphic	X	16/9 Anamorphic	SD 16/9 Anamorphic	16/9 AFD 8 Coded Frame	16/9 AFD 0-Coded Frame	16/9FF

Appendix B: Changing the Default IP Address

This section describes how to change the default IP address on a:

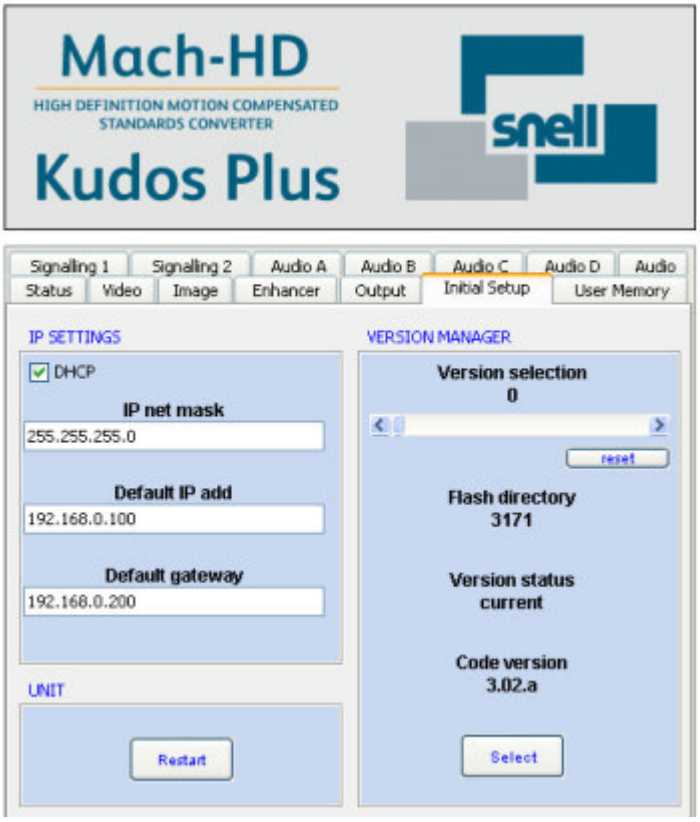
- Mach-HD
- CVR700
- CVR800
- TBS700
- CVR800

Note that in this section, all images depict a Mach-HD unit; however, this procedure is the same for all of the unit types listed above.

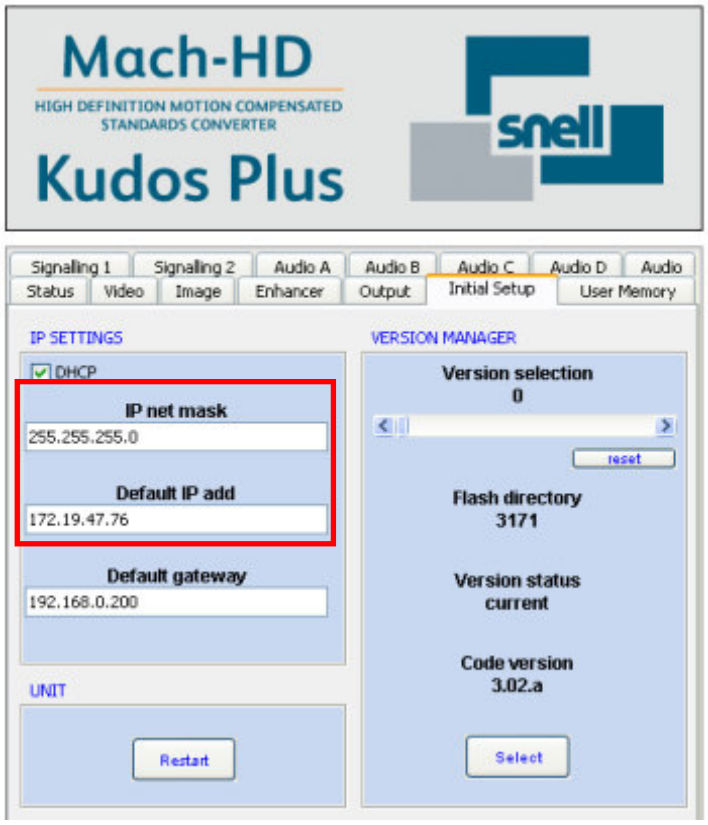
The default address cannot be changed by means of the front panel. It can only be changed from the Web Control Applet. The first part of the procedure is to upload the Applet to the controlling PC. For information regarding Applet control see Operation via the Web Interface on page 45.

To change the default IP Address

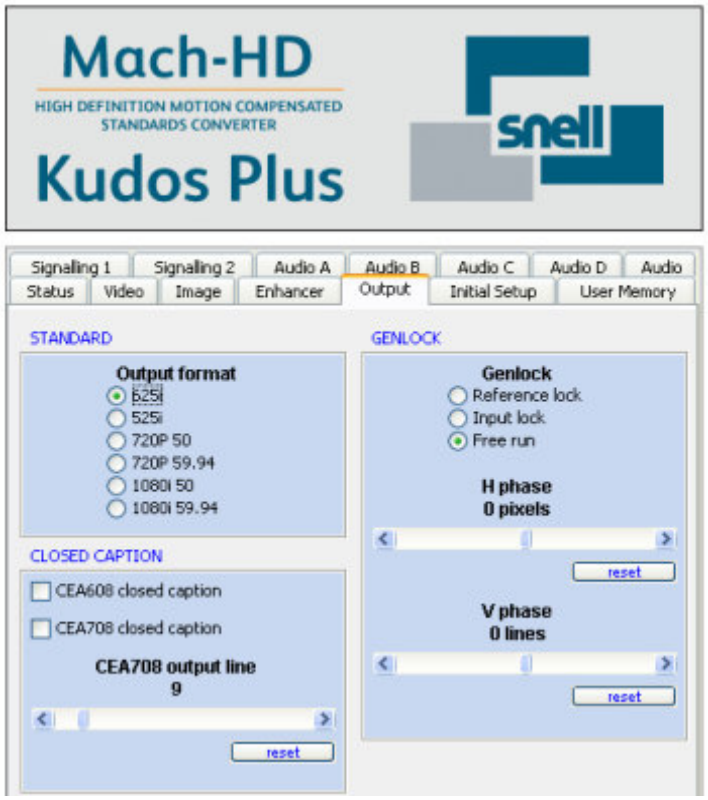
1. Open the **Initial Setup** tab.



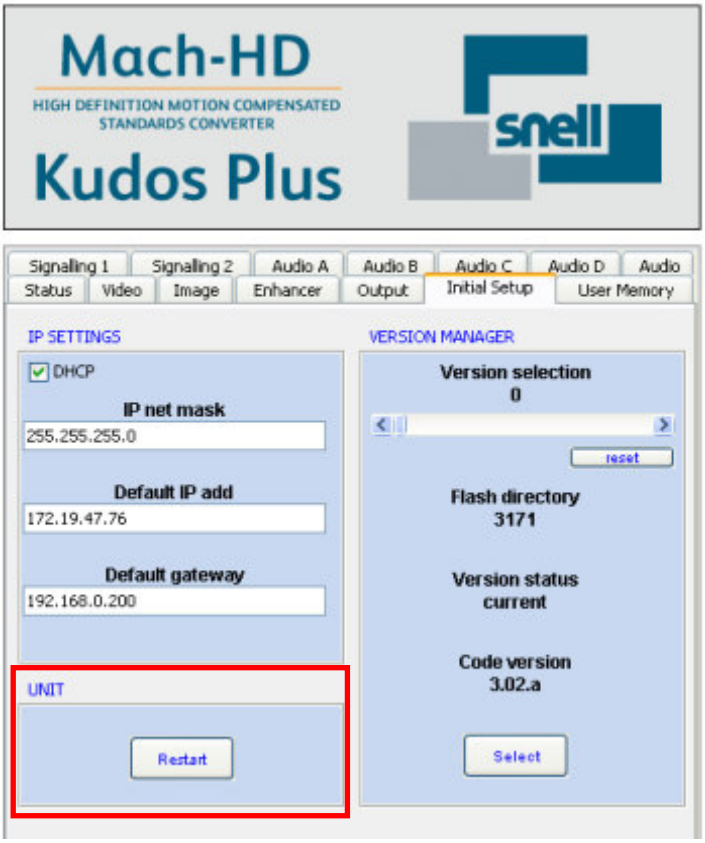
2. Type the desired Default IP Address into the box titled Default IP add (and if necessary a new IP net mask).



3. Click on any other tab in the Control Applet. In this example the **Output** tab has been selected.



4. Return to the **Initial Setup** tab, wait 30 seconds, then click **Restart**.



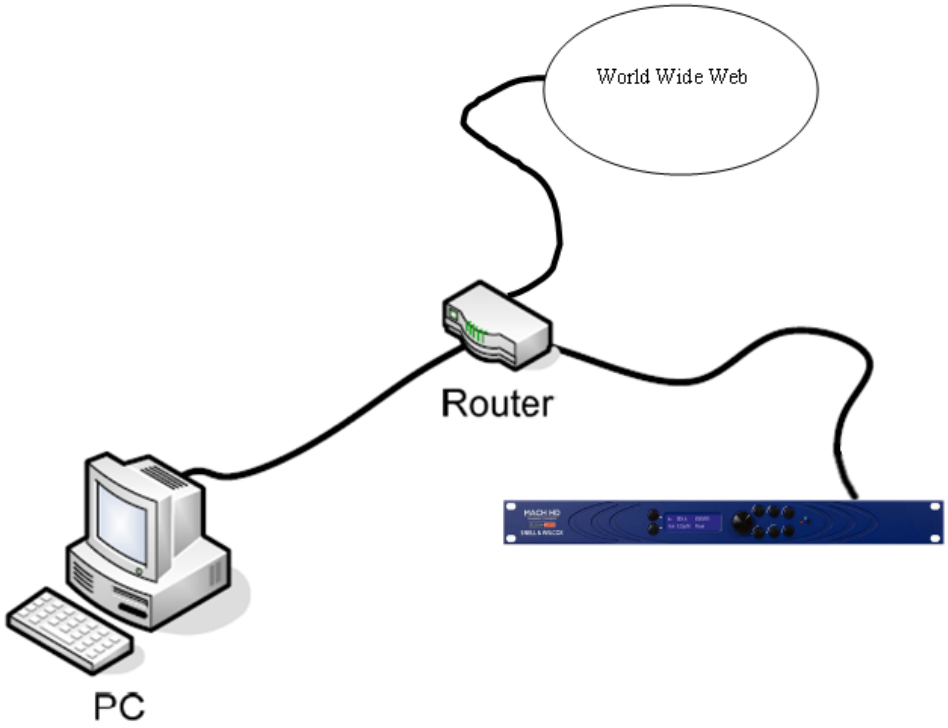
The unit will restart. Once restarted, load up the Applet again and confirm that the desired Default Gateway has been set.

Appendix C: Upgrade procedure

This appendix describes how to upgrade Mach HD, CVR and TBS units via an IP connection.

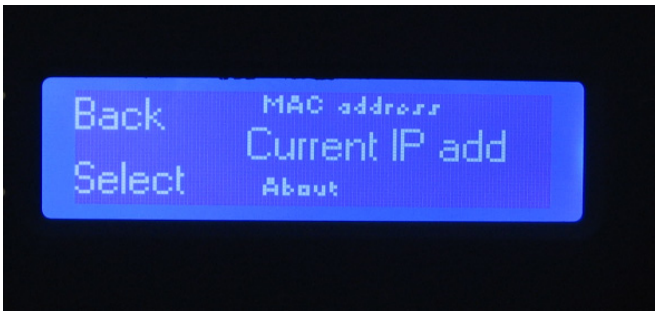
Screen shots used to illustrate the upgrade procedure in the appendix refer to Mach HD. If you are upgrading CVR800 or TBS800 please note that the software references will be to CVR800 or TBS800 respectively.

This diagram illustrates the basic connection process:



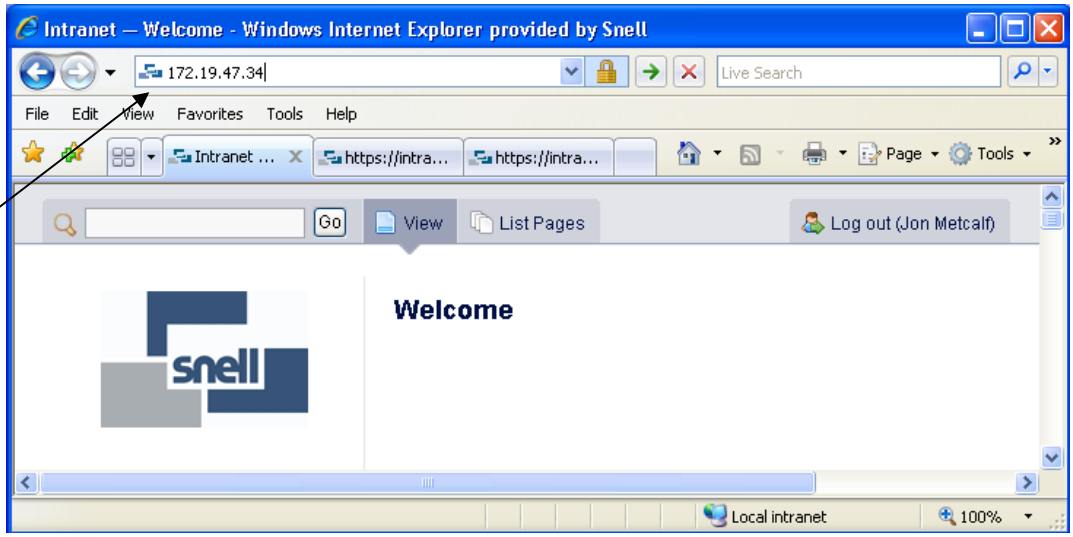
To perform an upgrade of any of the listed units, perform the following procedure.

1. Confirm the IP Address of the unit being upgraded. To do this, first press the 'More' button on the Front Panel. Now scroll down the menu to 'Current IP add'



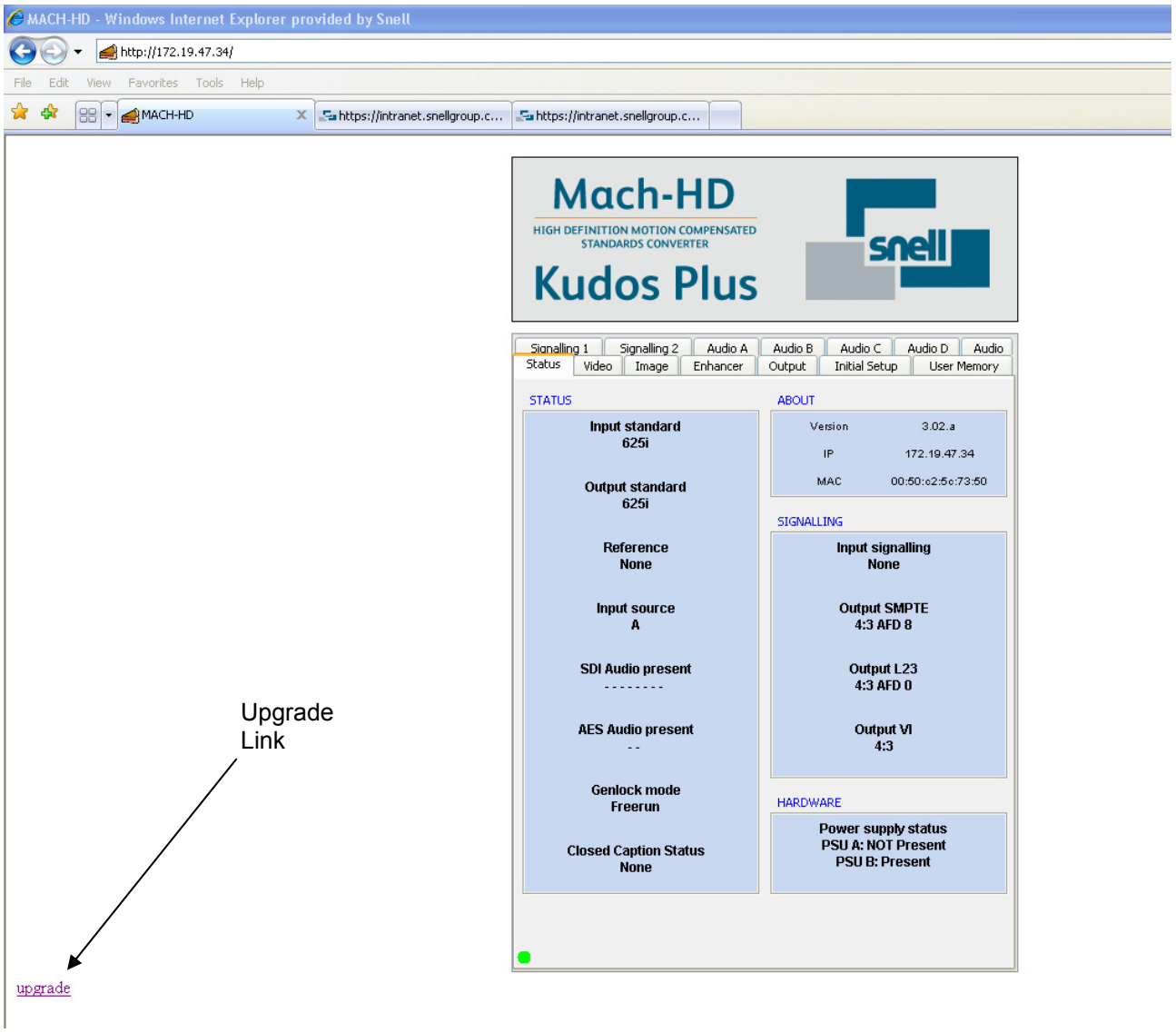
Press 'Select' and note the IP Address:

2. On the PC, open a web-browser. In the address bar, enter the IP address of the unit to be upgraded:



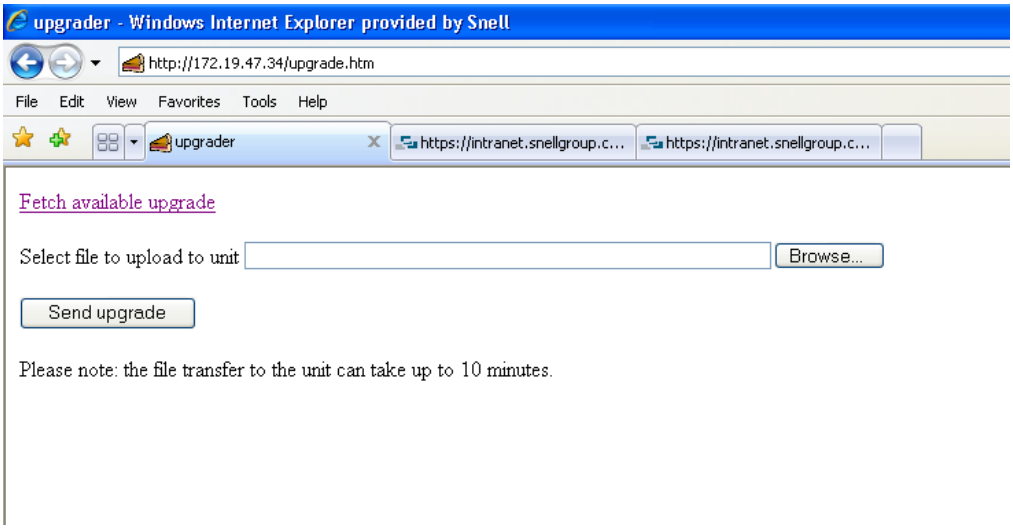
Enter IP Address of the Kudos+ product

3. Hit return and confirm that the web-browser indicates that it is connecting to the unit. The unit's Applet should upload to the PC. Note on the lower left of the Browser, there is a link titled 'Upgrade'. Click this link.



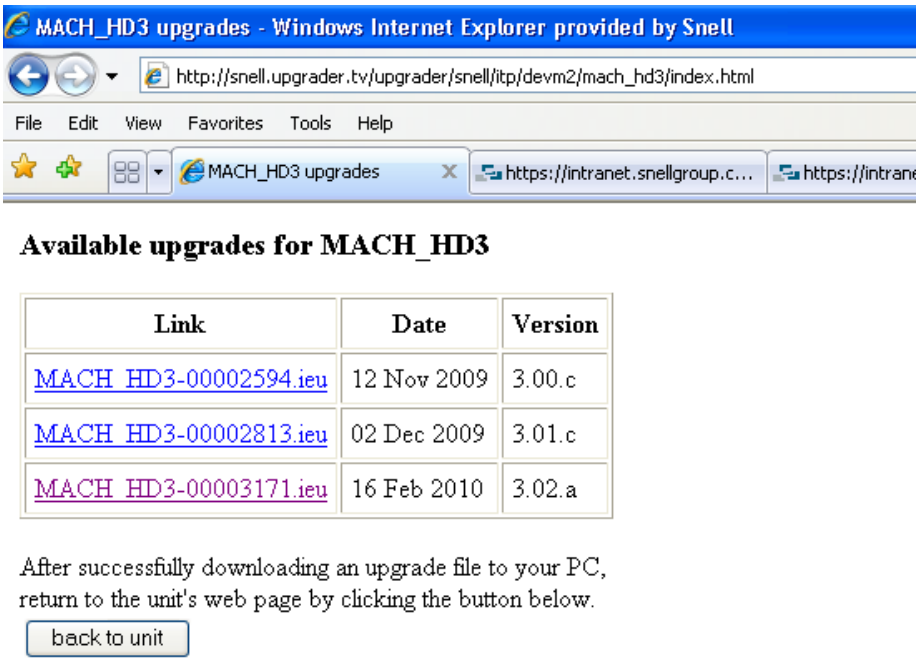
Upgrade Link

4. You should now see the follow page displayed:



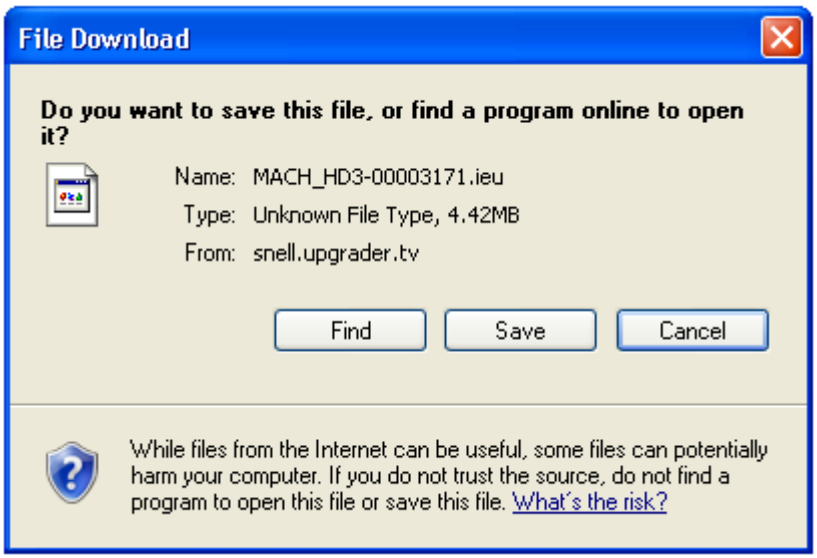
Now click on the 'Fetch available upgrade' link.

5. You should now see the following page:

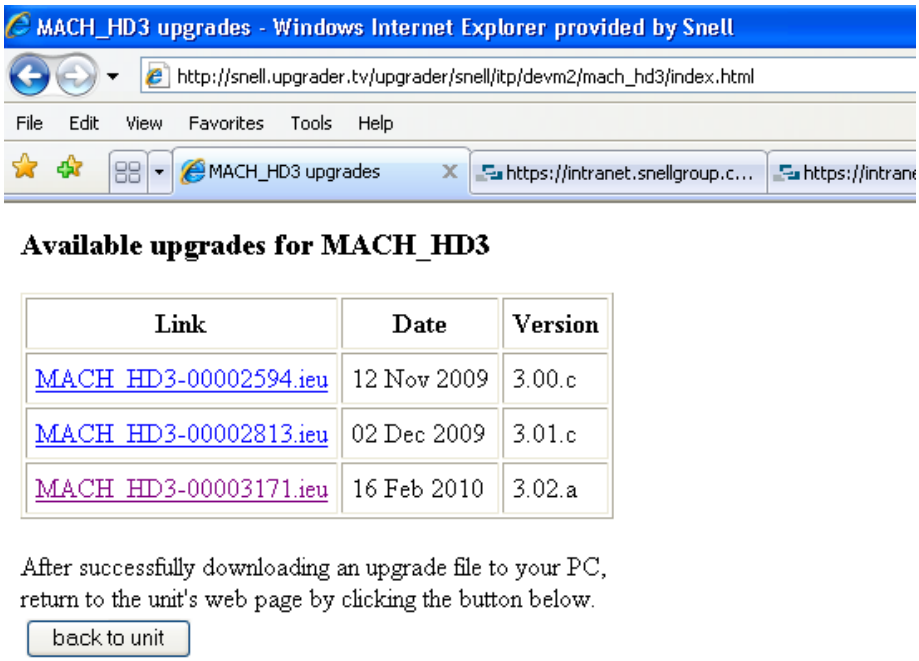


You will now be offered all the suitable versions of code, for the particular Kudos Plus product being upgraded. In this example a MachHD is being upgraded. Normal practice would be to upgrade the latest version, which in this case is V3.02a. Click on the required 'Link'.

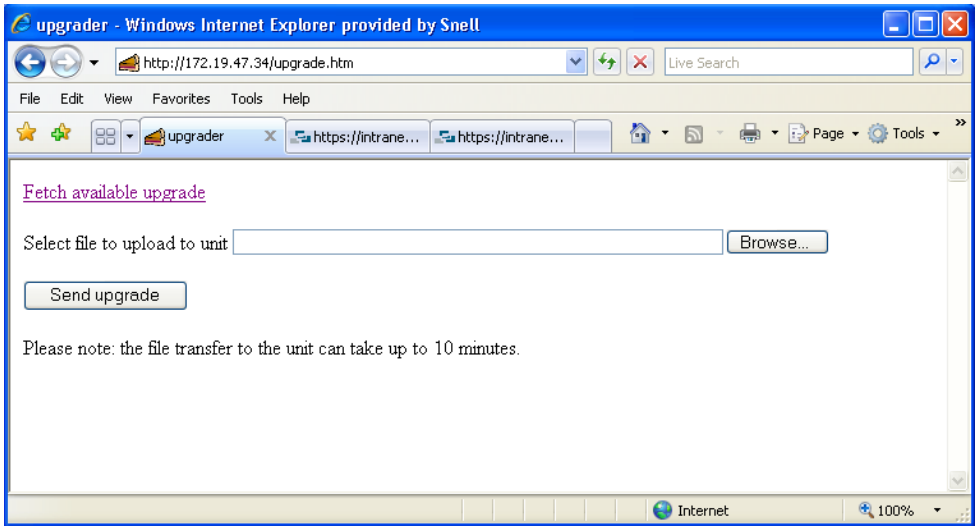
6. You will now be given the option to save this file. Save it in a suitable folder on your local drive:



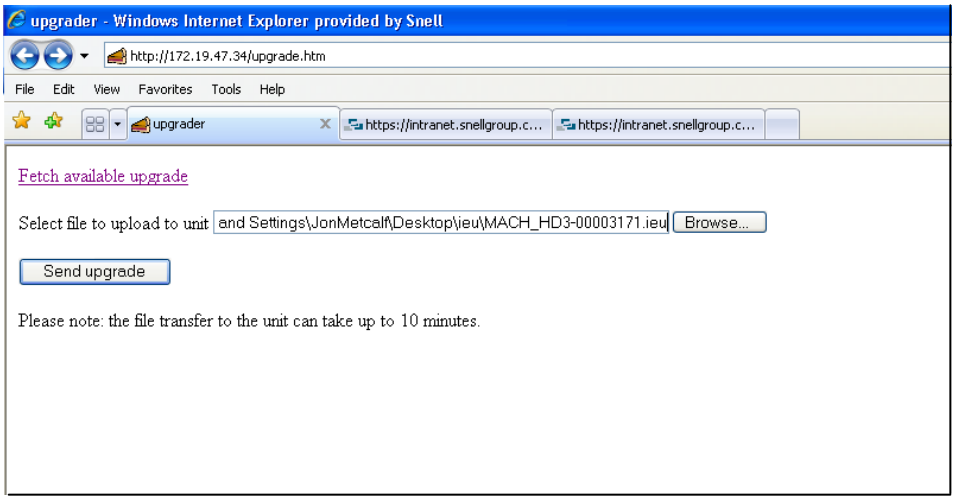
7. Now click on the 'back to unit' link:



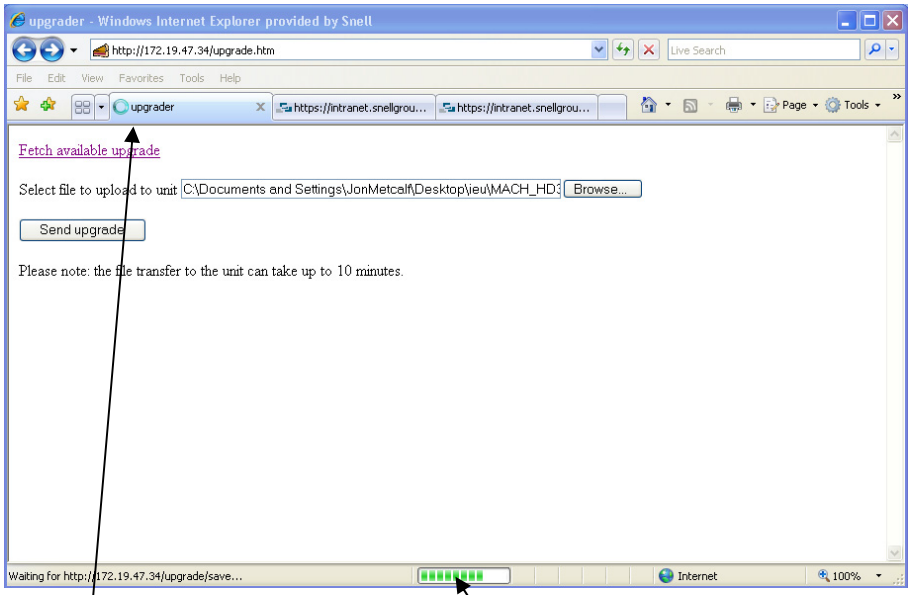
8. You will now see the following page displayed:



9. Now browse to the file you just downloaded and then hit the ‘Send upgrade’ link



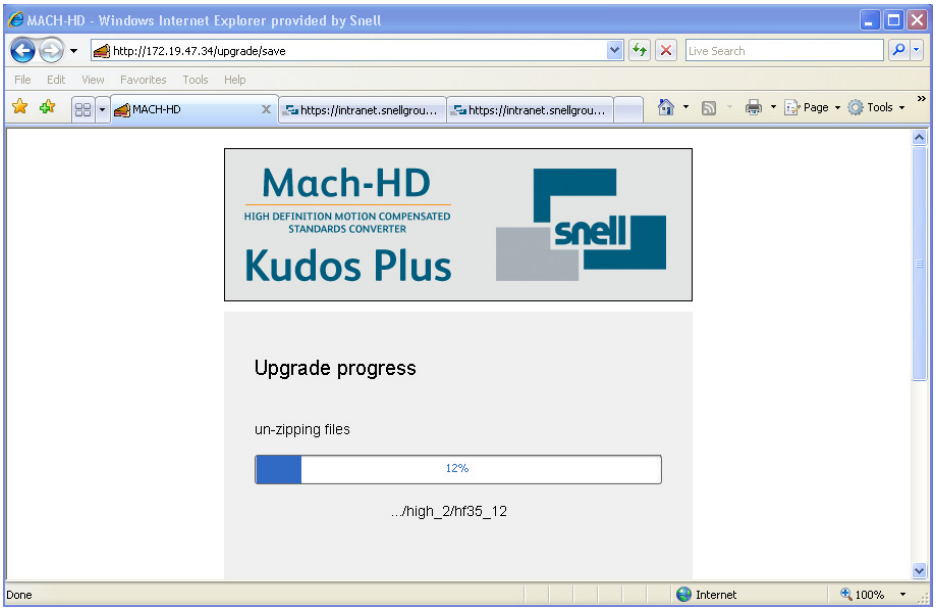
10. You should see the ‘upgrader Tab’ rotating and activity should be indicated in the Progress Bar:



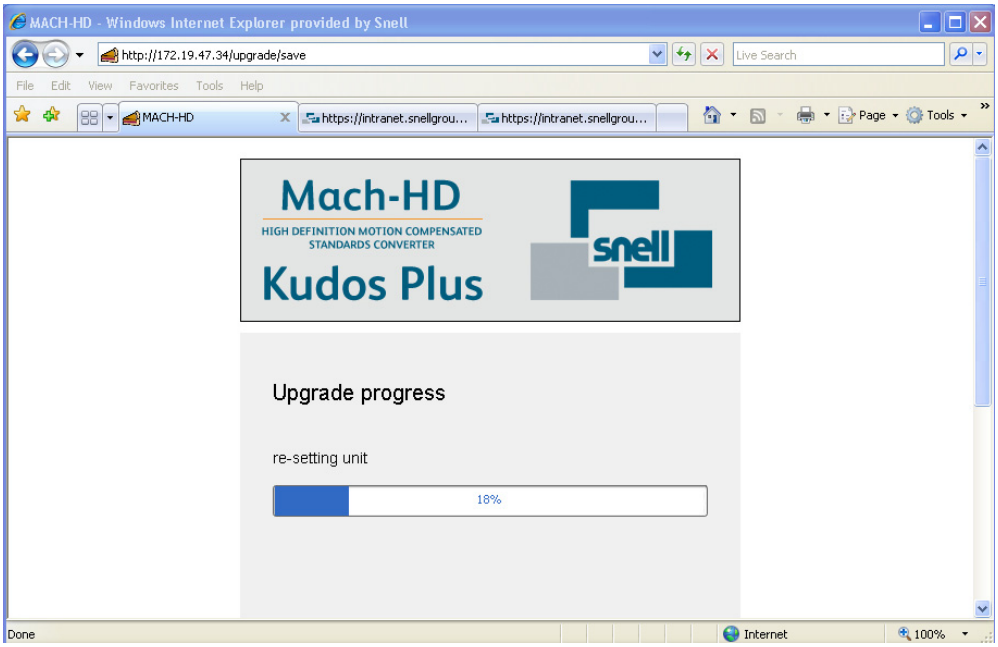
Note that the Upgrader Tab has a rotating icon

Note that the ‘progress bar’ indicates the file transfer

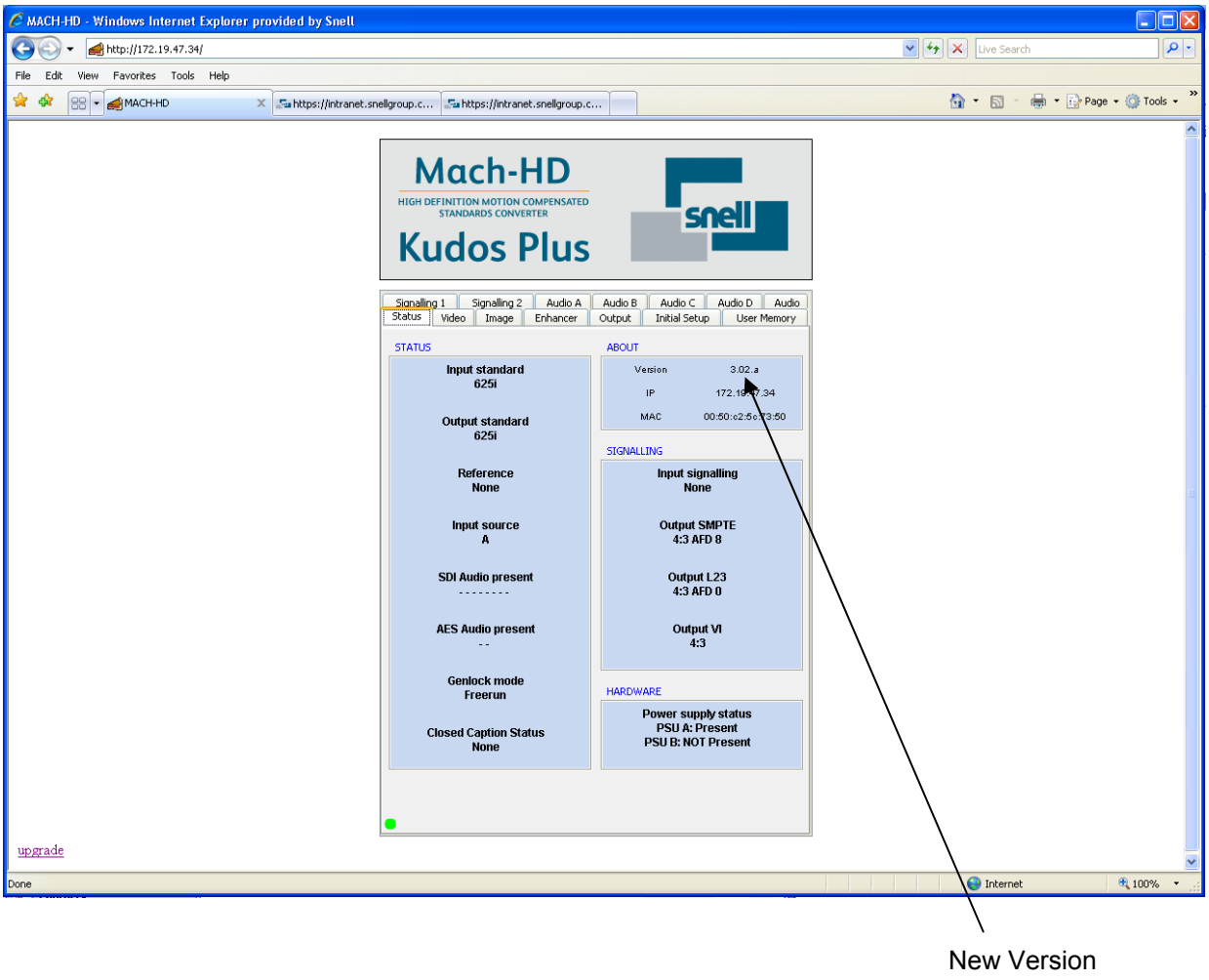
11. Once the file has uploaded to the Kudos+ unit, it will commence a self-install process. You will first see confirmation of the un-zipping process:



12. After the un-zipping process, you should see confirmation of the upgrading process:



13. Completion of the process is confirmed by the return of the Control Applet. The new version of code can be confirmed under the 'Status' tab:



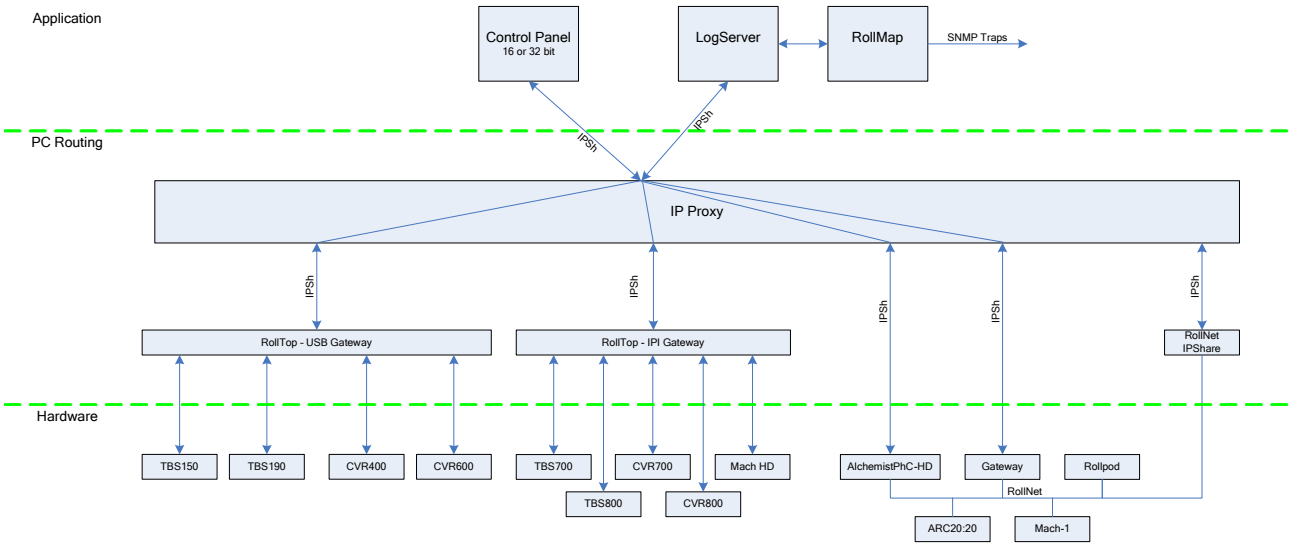
Appendix D: Kudos+ USB/IP Gateway

Overview

This document describes the USB/IP gateway software for Kudos+Plus TBS150, CVR400, TBS190, CVR600, CVR700, TBS700, CVR800, TBS800 and Mach HD products.

The USB/IP Gateway is a PC application that allows the Kudos+Plus products listed above to be integrated into a RollCall Control and Monitoring network. Once integrated, supported products can be controlled by the 16 or 32 bit Control Panel and integrated into a complex RollMap control and monitoring solution.

The diagram below illustrates how RollTop fits into the RollCall suite.



The RollTop application is available free of charge from the Snell Service department.

Please contact your local Snell Sales office for more information about the other RollCall applications and services mentioned.

Note: Kudos+Plus products that connect through RollTop – USB Gateway, or RollTop – IPI Gateway do NOT support control from RollPod, RPAN, IQSPI or IQCGPI products.

Note: Mach1 and ARC20:20 products support native RollCall control and monitoring via their ArcNet connector. Further details can be found in the relevant product user manual.

To use the USB/IP Gateway to connect to and control Kudos+Plus units, the following steps must be performed.

1. The USB/IP software must be installed. See page 81.

2. If control of a USB device (TBS150, CVR400, TBS190, CVR600) is required, the USB hardware must be set up. See page 82.
   Note: If USB control is not required, this step can be omitted.

3. The RollTop Gateway service must be started. See page 84.

4. RollCall must be configured to connect to the computer running the RollTop Gateway service. See page 85.

Only after the above configuration steps have been completed can you connect to a unit.

- To connect to a USB enabled unit (TBS150, CVR400, TBS190, CVR600), see page 86.
- To connect to an IP enabled unit (CVR700, TBS700, CVR800, TBS800, Mach HD), see page 88.

Finally, the Log Server to be used (if required) can be specified. See page 91.

Installation

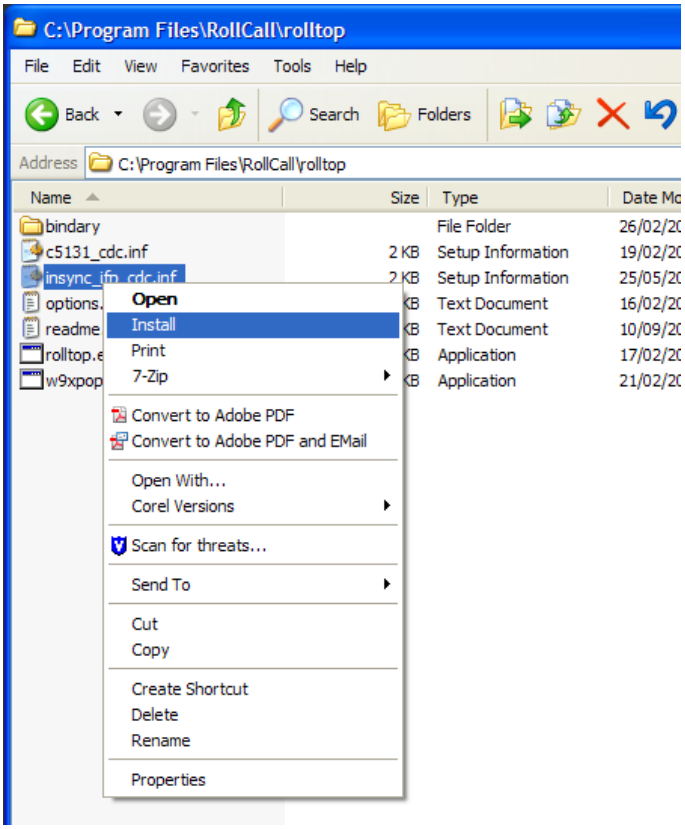
Before you can connect to a Kudos+ unit by means of the USB/IP Gateway, you must install the USB/IP Gateway software.

To install the USB/IP Gateway software:

1. Create a **rolltop** folder in the RollCall folder.
   That is, `C:\Program Files\RollCall\rolltop`

2. Unzip the contents of the provided ZIP file into this folder.

3. Right click on the insync_ifp_cdc.inf file in this folder (`C:\Program Files\RollCall\rolltop\insync_ifp_cdc.inf`), and from the menu that appears, select **Install**.



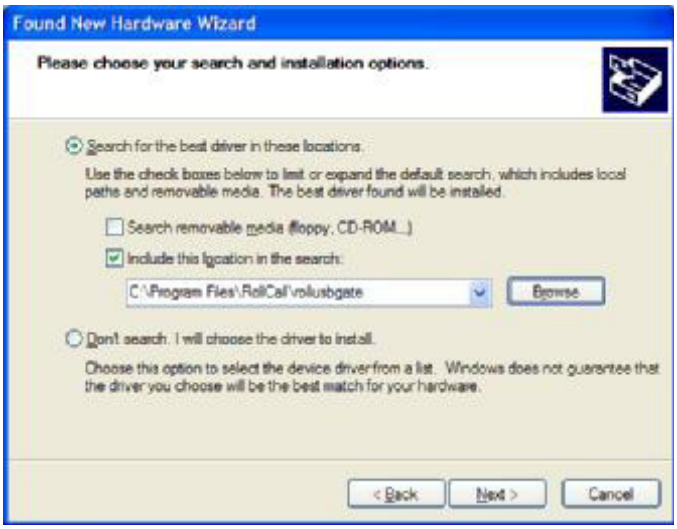
USB Setup

(Required for TBS150, CVR400, TBS190, CVR600 only)
Plug in remote USB device to control; for example, TBS190UDV or CVR600UDV.
Note: If the hardware is not found, install the drivers manually from the installation directory.

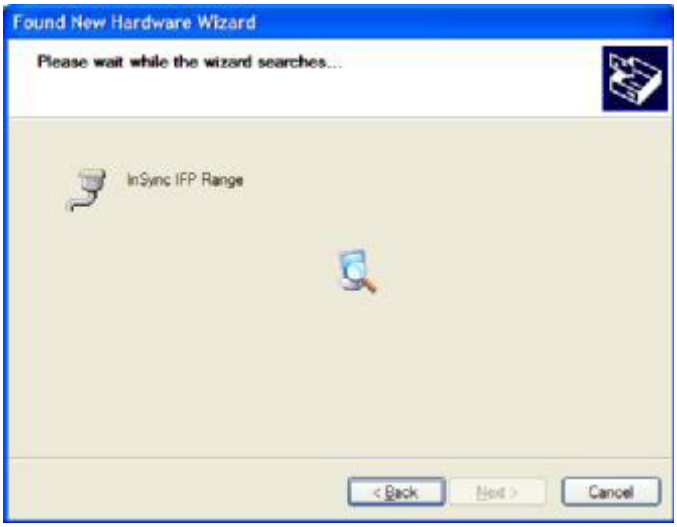
1. Select **Install from a list or specific location** and then click **Next**.

Note: Early versions of the product will be identified as AT89C5131 CDC USB to UART MGM instead of 'Insync IFP Range'.

2. Select **Include this location in the search** and browse to the RollTop folder. (`C:\Program Files\RollCall\rolltop`)



3. Wait for the new hardware wizard to search.



4. If this Hardware Installation warning appears, click **Continue Anyway**.

5. Click **Finish** to close the wizard.

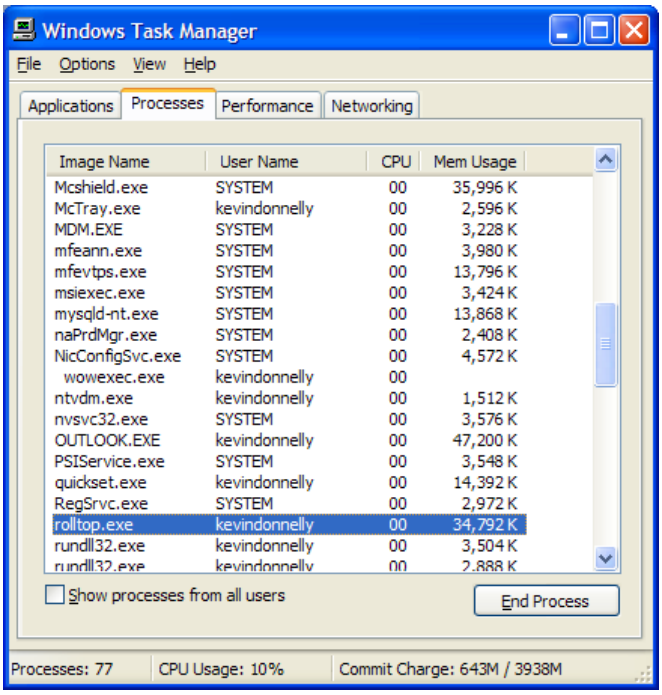
Running the RollTop Gateway

The RollTop Gateway must be started before you can connect to any units.

To run the RollTop Gateway:

1. Double-click **rolltop.exe** to start the service.
   `(C:\Program Files\RollCall\rolltop\rolltop.exe)`

2. Check in the Windows Task manager to verify that the service is running.

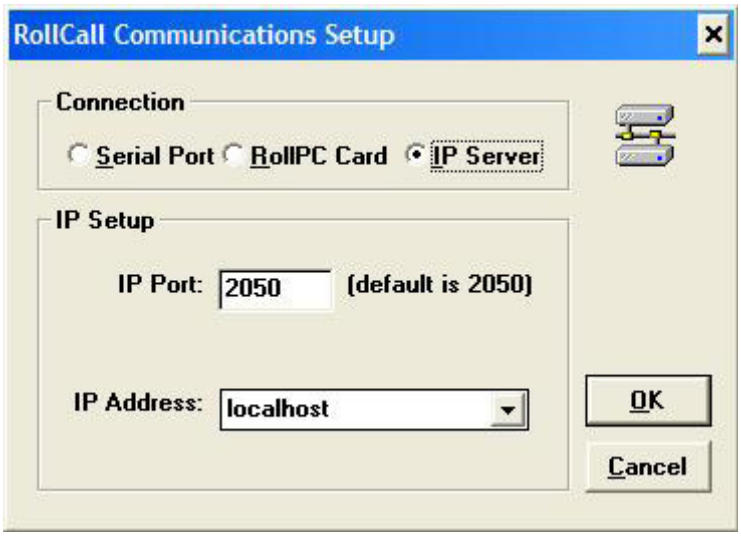


Configuring RollCall

To connect to the computer running the RollTop.exe program, RollCall needs to be configured.

Configure RollCall communications to:

- Use an **IP Server** connection
- Communicate via IP Port **2050**
- Connect to IP Address **Localhost**



Note: For setups requiring connection to other RollCall networks, the RollCall IP Proxy should be used (advanced configuration settings to be advised).

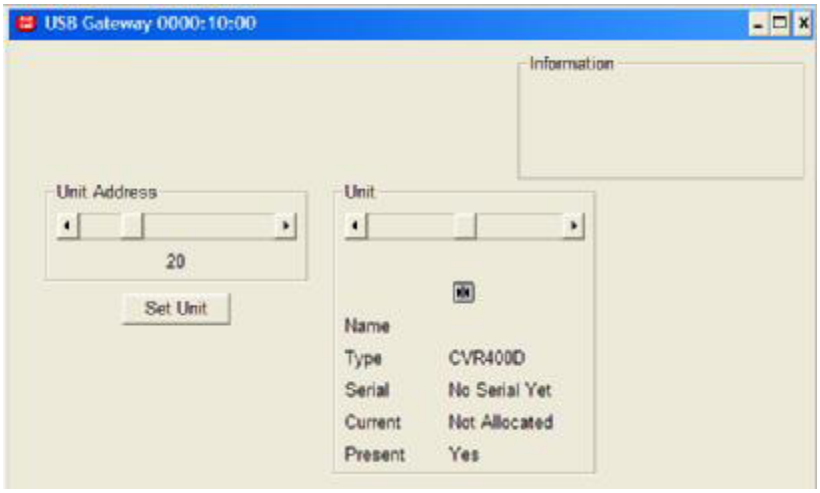
Refer to the RollCall Operator's Manual if you require further information about RollCall.

Connecting to a USB Unit

(CVR400, TBS150, TBS190, CVR600)

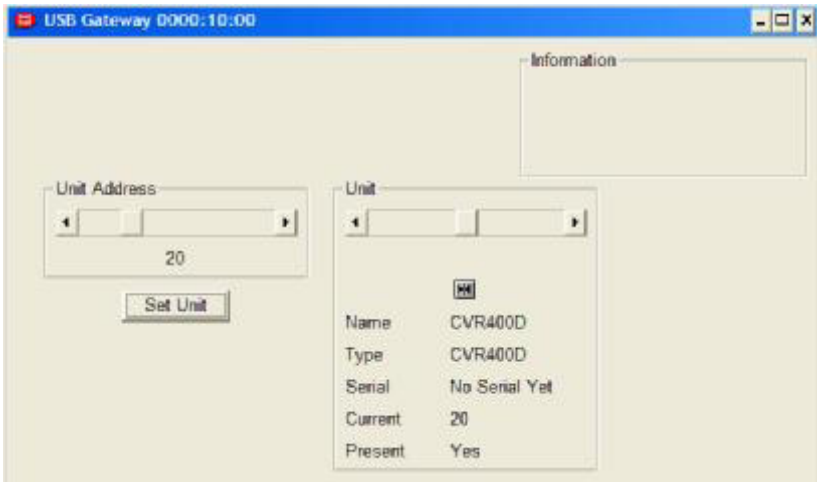
1. Open the RollCall listing and connect to the USB gateway.

2. A RollCall address must be assigned to each unit. This is done in the USB gateway template.



First, select the desired address using the **Unit Address** slider bar.

Select the desired unit from the right. Click on the left and right arrows to find the desired unit, the Name, Type and Serial number of USB controllable units are displayed as they are browsed. Where a unit has already been allocated a serial number, this is shown. Additionally, if the unit is currently connected to the USB bus, this is also indicated.
When the desired unit has been reached, click **Set Unit** and the information will be updated.

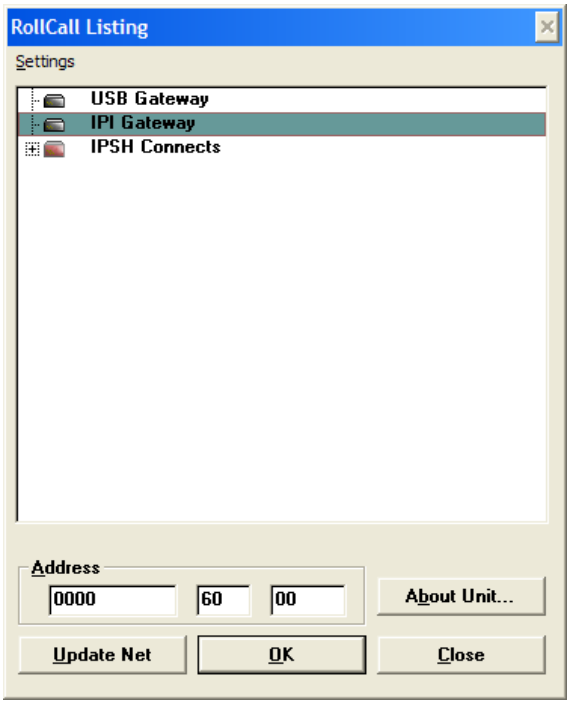


3. Re-open the RollCall listing, and the unit can now be seen. The unit can now be connected to.

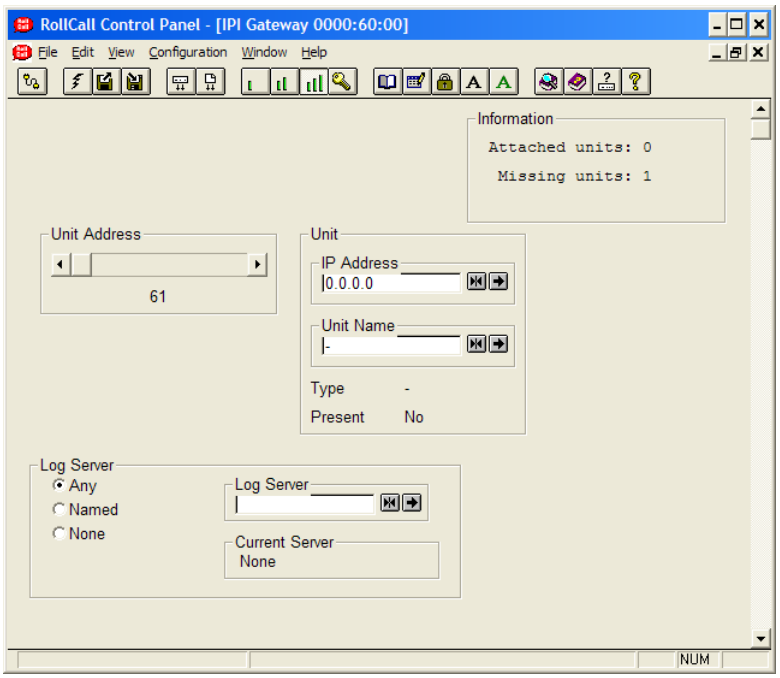
Connecting to an IP Enabled Unit

(CVR700, TBS700, CVR800, TBS800, Mach HD)

1. Open the RollCall listing and connect to the IPI Gateway.



2. A RollCall address must be assigned to each unit. This is done in the IPI Gateway template.

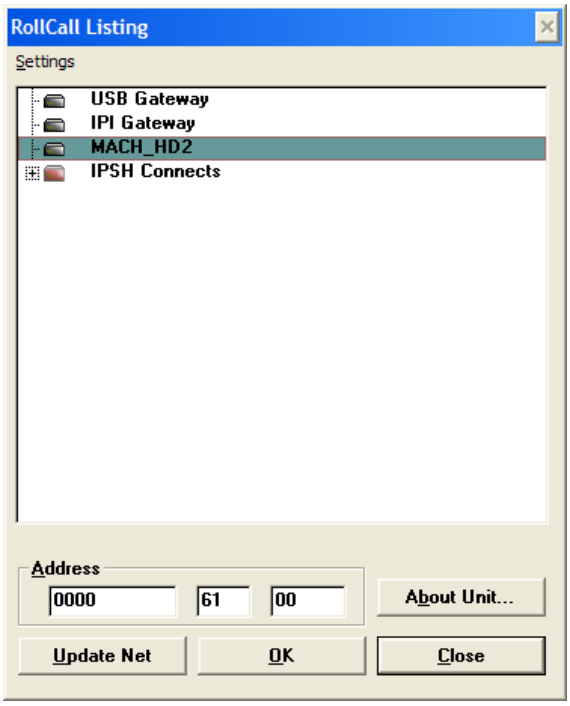


3. Using the Unit Address slider bar, select the desired address for the unit.

   In the IP Address field, type the IP address of the unit. To determine the IP address of the unit, on the unit's front panel, press the More button and then select "Current IP addr" using the scroll knob.

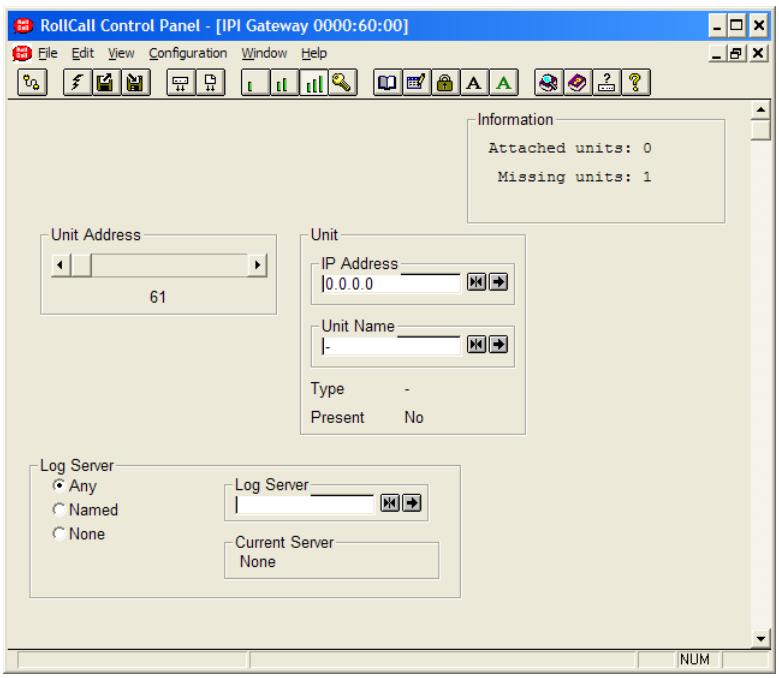
   After entering the IP Address, the arrow button next to the field will turn red. Click the arrow to confirm the change. If a unit is found at the specified IP address, this is indicated as well as its name and type. The unit name can be changed if required.

4. Re-open the RollCall listing, and the unit can now be seen. The unit can now be connected to.



Specifying a Log Server

The Log Server section on the USB Gateway and IPI Gateway templates enables the characteristics of the Log Server, if present, to be specified.



Any: When this option is selected, the Gateway will send information to any Log Server on the system.

Named: When this option is selected, the Gateway will only send log information to the Log Server specified in the **Log Server** field. Note that the name is case-sensitive.

None: When this option is selected, the Logging function will be disabled.

Current Server: This displays the name of the Log Server to which log information is being sent. If no Log Server is found on the system it will display *None*.

Trouble shooting

1.0 General Notes

1.1 It is important to perform some action in a specific order – Power up units, then run RollTop, then initiate your RollCall application.

1.2 If you unplug USB cables, ensure that you plug them back into the same PC port

1.3 RollTop may not function reliably with early revisions of some Kudos+Plus products. If your product is listed below, and you have one of the identified product revisions, please contact your local service facility for upgrade assistance.

TBS700	V1.04, V1.05, V1.06a, V2.06a
CVR700	V1.04, V1.05, V1.06a, V2.06a
Mach-HD	V1.04, V1.05, V1.06a, V2.06a

The product version can be identified from the front panel by pressing the More button and then selecting "Version" using the scroll knob.

2.0 USB device specifics

2.1 If a USB device does not re-appear after a unit has been power cycled, the following procedure should help

-- Quit your RollCall application (eg Control panel)
-- Use task manager to end the RollTop process
-- Re-run the RollTop Application
-- Re-start the RollCall application

2.2 If the above procedure does not work, it may be necessary to delete corrupt USB drivers through the PC's "Device Manager".

Start by physically disconnecting all Kudos+Plus USB devices from the PC.

If this is the first time you have used this procedure, add a new "System Variable"

Start > Control Panel > System > Advanced > Environment Variables > System Variables > New

Enter the following:
-- for Variable Name: DEVMGR_SHOW_NONPRESENT_DEVICES
-- for Variable Value: True
-- Click OK to accept

Then to clear USB device listings:

Start > Control Panel > Hardware > Device Manager > Ports (COM & LPT)

If there are any entries in the list described as "USB Device" with a yellow exclamation mark, right click over this and select "uninstall" agree to the prompt that follows.

If there are any menus like any of the following:

"AT89C5153 CDC USB to UART MGM (COM16)"
"InSync IFP Range"

Perform the uninstall procedure identified above (Right click, uninstall) Having deleted any potentially corrupt USB drivers, you will need to re-install your USB hardware as before – from the "USB Setup" step on page 5 of this document.

2.3 It is possible to verify that your USB device has installed OK by checking for an appropriate USB driver. Check the USB device listing,

Start > Control Panel > Hardware > Device Manager > Ports (COM & LPT)

If a unit is present and correctly installed, there will be an entry similar to one of the following:

"AT89C5153 CDC USB to UART MGM (COM16)"
"InSync IFP Range"

If you have more that one unit, you may see multiple devices listed.

Product Support Procedure

If you experience any technical or operational difficulties with a Snell product please do not hesitate to contact us or utilize our online form to request assistance.

There is a lot of information you can give us that will enable us to diagnose your problem swiftly. Please read the following guidelines, as these suggestions will help us to help you.

Basic Information

For Units .....Please provide the exact product Model, unit Serial Number and Software Version information.

For Cards or Modules ..Please provide the Sub-Assembly Number, card Serial Number and the Software Version information.

Basic Application

Inputs .....Please provide full details of the Input Signals being used including any references etc. and where they are being generated.

Outputs .....Please provide full details of the Output Signals required and how they are being monitored.

System .....Please provide a brief description of the system in which your Snell equipment is currently being used.

Basic Tests

Preset Unit .....Please use the Preset Unit function to return the settings back to the factory default.

RollCall .....Is your unit currently connected to a RollCall capable PC? This software is obtainable free of charge and provides a very user friendly GUI for virtually all Snell equipment - perfect for complex products, large systems or those with passive front panels.

Card Edge Info. .....What is the status of the card edge LEDs or display? These can often provide information such as power status and input detection conditions.

Internal TPG .....Many Snell products have an internal test pattern/tone generator. Please activate this to assist you with your problem analysis.

In addition to the above, please do not forget to provide us with all of the necessary contact information:

- Names
- Telephone & Fax numbers
- e-mail addresses
- Business address

Product Support Request Form

Name: *		
Company:		
Address Details: *		
Post/ZIP Code:		
Country: *		
Telephone: *		
Fax:		
Email: *		
Local Snell Center: *		
Product Name: *		
Product Type: *	Switchers (Kahuna) Video Products (i.e. Modular, Kudos Plus and Alchemist)	
Unit Serial Number: *		
Fault/Spare Part Information: * (please advise us how many units show this fault and the system layout showing all other manufacturers' products)		
*** Preferred Method of Contact:**	e-mail	
	Phone	

- **Item is required.**

Please mail to:	Snell Ltd., Southleigh Park House, Eastleigh Road, Havant, Hants, PO9 2PE. United Kingdom.	**Service Contact Information:** +44 (0) 118 921 4214 (tel) +44 (0) 118 921 4268 fax) Web: http://www.snellgroup.com/support

Manual Revision Record

Date	Version No.	Issue No.	Change	Comments
11/12/09	1	1	For software version 3.01.	First Issue.
18/12/09	1	2	Correction to Technical Profile	New Issue.
28/05/09	1	3	For software version 3.02	New Issue.
17/11/10	1	4	For software version 3.04	New Issue.