



Snell
Advanced
Media

User Manual

IQSYN50

3G/HD/SD-SDI Frame Synchronizer

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Safety Information

Explanation of Safety Symbols



- 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



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 :



- 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 :



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 changer 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



- 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



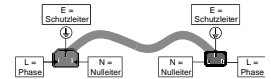
Die angeführten Service-/Reparatur-Anweisungen sind ausschließlich von qualifiziertem Service-Personal auszuführen. Um das Risiko eines lektroschocks zu reduzieren, führen Sie ausschließlich die im Benutzerhandbuch eschriebenen Anweisungen aus, es sei denn, Sie haben die entsprechende Qualifikation.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



- 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



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:

- 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:

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

- 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 får endast repareras av utbildad personal.

Säkerhetsvarningar

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 försörd från ett strömsystem som är försedd med jordanslutning (⊕) samt ha en neutral anslutning som lätt identifieras.
- Vägguttaget som strömförsörjer apparaten bör finnas i närheten samt vara lättillgänglig.

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

- Dette symbol gør brugeren opmærksom på vigtig information i den medfølgende manual.
- Dette symbol indikerer farlig spænding inden i apparatet. Ingen bruger servicebare dele i apparatet på brugerniveau. Dette apparat må kun serviceres af faglærte personer..

Sikkerhedsadvarsler

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 jordat.
- 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 lysnetudgange fra den samme fase.

Turvamerkkien selitys

- 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

Huolto-ohjeet on tarkoitettu ainoastaan alan ammattilaisille. Älä suorita laitteelle muita toimenpiteitä, kuin mitä käyttöohjeissa on neuvottu, ellei 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.

Σύμβολο de Segurança



- 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

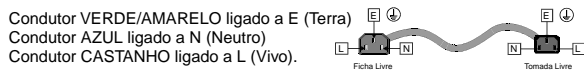


As instruções de manutenção fornecidas são para utilização de técnicos qualificados. Para reduzir o risco de choque eléctrico, não devem ser realizadas intervenções no equipamento não especificadas no manual de instalações a menos que seja efectuadas por técnicos habilitados.

- 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:



- 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



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 επεκτασιμα μέρη. Αυτή η μονάδα πρέπει να επισκευάζεται μόνο από ειδικά εκπαιδευμένο προσωπικό.

Προειδοποίηση Ασφαλείας

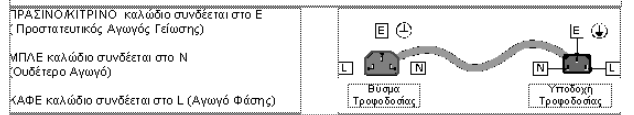


Οδηγίες επισκευής, όπου παρέχονται, αναφέρονται αποκλειστικά και μόνο σε εξειδικευμένο προσωπικό. Για να μειωθεί ο κίνδυνος ηλεκτροπληξίας, μην εκτελέτε επισκευές παρά μόνο τις συμπεριλαμβανόμενες στο εγχειρίδιο των οδηγιών, εκτός και αν έχετε τα απαραίτητα προσόντα για να το κάνετε. Όλες οι επισκευές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



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

Laser Safety

This product operates with Class 1 laser products.



Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Ventilation

Although the unit is constructed to meet normal environmental requirements, ensure that there is a free flow of air at the front, rear, and sides of the unit to dissipate the heat produced during operation. Installations should be designed to allow for this.



Do not obstruct the ventilation holes on the right-side of the unit. Damage to the equipment may result.

Safety Standards

This equipment conforms to the following standards:

EN60950-1 2006

Safety of Information Technology Equipment Including Electrical Business Equipment.

UL1419 (3rd Edition) - UL File E193966

Standard for Safety – Professional Video and Audio equipment.



EMC Standards

This equipment conforms to the following standards:

EN 55032:2012 (Class A)

Electromagnetic Compatibility of Multimedia Equipment - Emission Requirements.

EN 61000-3-2:2014 (Class A)

Limits for Harmonic Current Emissions.

EN 61000-3-3:2013

Limitation of Voltage Changes, Voltage Fluctuations and Flicker in Public Low-Voltage Supply Systems.

FCC/CFR 47:Part 15, Class A

Federal Communications Commission Rules Part 15, Subpart B, Class A.

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.



Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

EMC Performance of Cables and Connectors

SAM 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 indents which improve contact between the plug and socket shells are recommended.

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1. Introduction

1.1 Description

The IQSYN50 provides frame synchronization for HD-SDI at 3Gbit/s or 1.5 Gbit/s, or SD-SDI at 270 Mbit/s, with 32-channel embedded audio processing. The module is ideal for general incoming line applications, offering two SDI inputs, agile synchronization and flexible audio processing features.

A video proc amp provides complete control over video levels and RGB gamut legalization.

Block Diagram

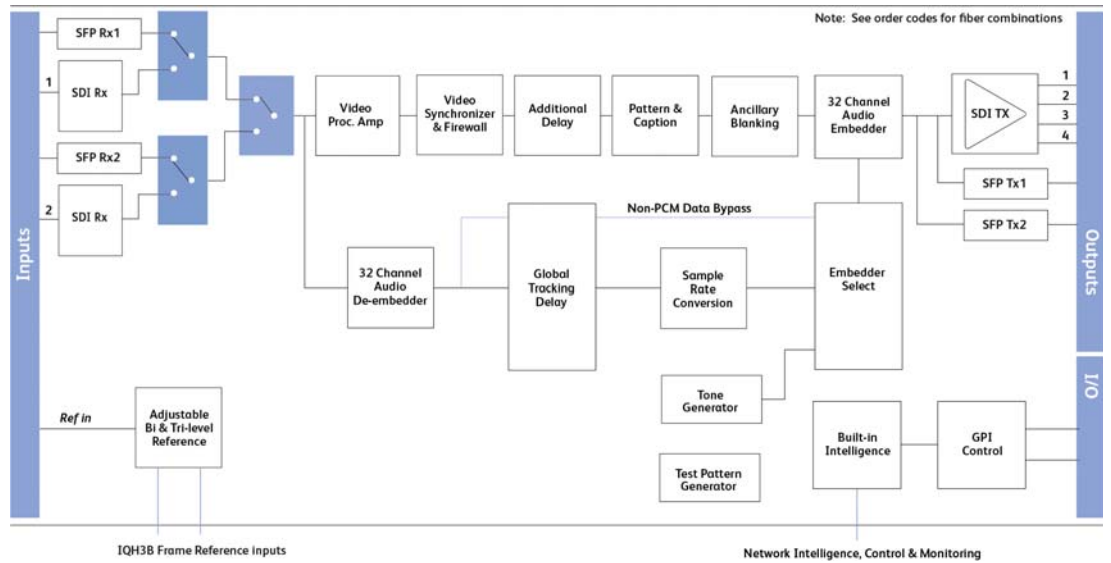


Figure 1 IQSYN5003-2B3

1.2 Order Codes

1.2.1 Enclosure and IP Interface Options

The following product order codes are covered by this manual:

- IQSYN5000-1A3** 3G/HD/SD-SDI Synchronizer. 2 inputs, 4 outputs, External and internal frame reference selection, 2 GPI/Os.
- IQSYN5000-1B3**
- IQSYN5001-1A3** 3G/HD/SD-ramSDI Synchronizer with relay input bypass. 2 inputs, 4 outputs, External and internal frame reference selection, 2 GPI/Os.
- IQSYN5001-1B3**
- IQSYN5003-2A3** 3G/HD/SD-SDI Synchronizer. 2 inputs, 4 outputs, External and internal frame reference selection, Fiber SFP Tx/Rx, 8 GPI/Os.
- IQSYN5003-2B3**

1.3 Rear Panel View

The following rear panel types are available:

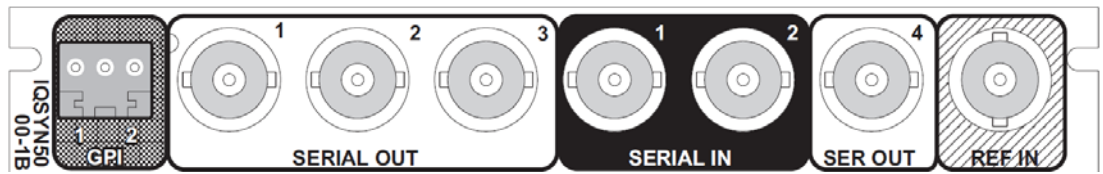


Figure 2 IQSYN5000-1B3

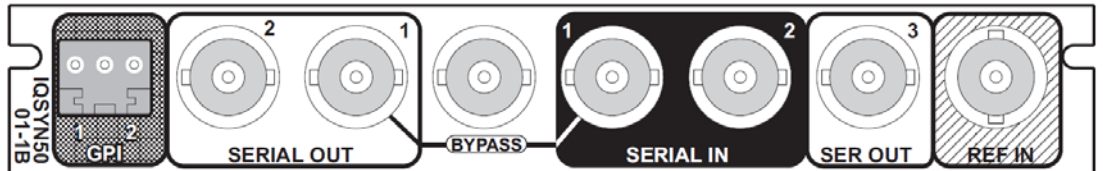


Figure 3 IQSYN5001-1B3

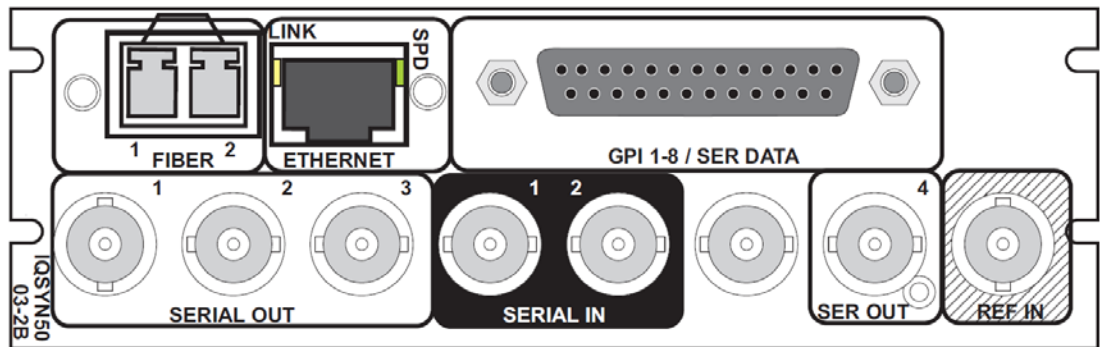


Figure 4 IQSYN5003-2B3

1.4 Feature Summary

- 3G/HD/SD-SDI synchronizer with additional video delay up to 60 (HD) or 120 (SD) frames.
- Agile, router switching-tolerant synchronizer operation with precision genlock adjustment, allowing SDI signals to be timed to pixel accuracy and with greater tolerance to mis-timed upstream SDI switching (up to +/- 10 lines adjustable), ensuring disturbance-free picture output.
- Firewall for video and processed PCM audio to provide a continuous uninterrupted output.
- Reference input capable of detecting and referencing to a bi-level or tri-level signal, and selection from the internal IQH3B/IQH4B chassis reference bus or directly from either external input.
- Connectivity: 2 SDI inputs, up to 4 SDI outputs, reference input, 8 x GPI/O, relay bypass version with input 1 bypassed to output 1 on power loss or card removal.
- Standards supported:
 - 3G-SDI to SMPTE 424M/425M level A & B compatible
 - HD-SDI to SMPTE 292M/274M/296M
 - SD-SDI to SMPTE 259M-C
 - Fiber to SMPTE 297-2006C
- Able to pass all ancillary data with independent HANC and VANC blanking control (VANC blanking is input line selectable).
- Card Edge LED status indicators and input loss detection – default output of black/pattern/freeze/mute, and input SDI CRC, EDH and ANC data checking and reporting.
- Video proc amp controls including video gain, offset, hue, RGB gamut legalization and Y/C picture position adjustment.
- Processing for up to 32 channels (at 3G-SDI) of embedded audio present on the incoming SDI stream to remove audio disturbance around the synchronizer wrap and drop points and provide tracking audio delay.
- Any group of embedded audio may be passed unchanged, processed or blanked, and handles Dolby E and PCM audio present in the same group.
- In-built test pattern generator, 2 caption generators and audio tone generator.
- 16 x user memories, save/recall/rename, and up to 8 GPI/O ports.
- Full RollCall and SNMP compatibility, with up to 70 RollTrack destinations and triggers available for detected module states including: PCM/non-PCM audio, input loss/freeze and reference loss.

1.5 Options

- Single mode fiber optic transmitter and receiver options - including a rear with an SFP HDMI output to provide a built-in local monitoring output.

1.5.1 Fiber SFP Options

FC1-13T1	Single 1310nm Tx
FC1-13T2	Dual 1310nm Tx
FC1-15T1	Single 1550nm Tx
FC1-15T2	Dual 1550nm Tx
FC1-R1	Single Rx
FC1-R2	Dual Rx

FC1-13TR	Transceiver 1310nm/Rx
FC1-HDBT2	HD-BNC Dual Tx
FC1-HDBR2	HD-BNC Dual Rx
FC1-HDMIR	HDMI Rx with 2m cable
FC1-HDMI2	HDMI Tx with 2m cable
CWDM Tx	Wavelengths available on request

Note: Fiber SFPs must be ordered in addition to the IQSYN50 module.

1.6 Enclosures

The IQSYN50 can be fitted to the enclosures shown below.

Important: Although IQ modules are interchangeable between enclosures, their rear panels are enclosure-specific. An IQH3B enclosure accepts modules with either A or B order codes. An IQH3A or IQH1A enclosure accepts modules with A order codes only.



Figure 5 IQH4B-S-P



Figure 6 IQH3B-S-0, IQH3B-S-P

Note: The IQH3B enclosure provides two internal analog reference inputs. These inputs are applicable to modules with B order codes only.



Figure 7 IQH1A-S-P



Figure 8 IQH3A-S-O, IQH3A-S-P

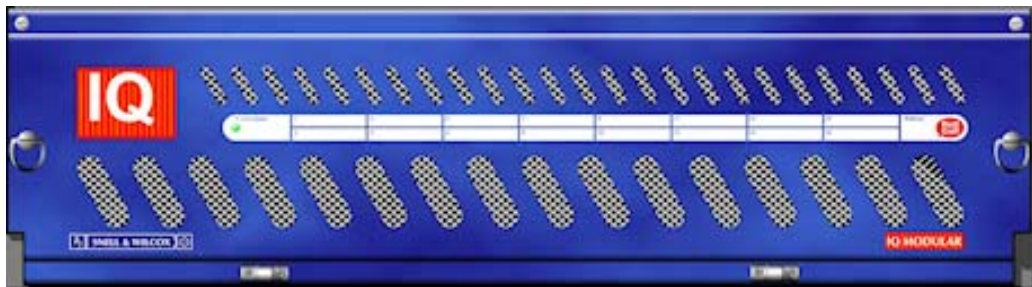


Figure 9 IQH3A-E-0, IQH3A-E-P, IQH3A-0-P

1.7 Application Notes

1.7.1 About Power Ratings

SAM IQ modules are assigned a *Power Rating* (PR). This figure represents the relative power consumption of a module.

SAM modular enclosures are also assigned PR values. This figure represents the maximum power available from the enclosure.

The combined total of all modules' PR values must not exceed the enclosure's PR value.

Note: If a module's PR value is not known, use the module's power consumption figure in watts as the PR value.

1.7.2 Power Ratings and Card Widths

Product	Width	PR
IQSYN5000-1B3	1	14.5PR
IQSYN5001-1B3	1	15PR
IQSYN5003-2B3	1	15PR

2. Technical Specification

Inputs/Outputs	
Signal Inputs	
Inputs	2
Connector/Format	BNC/75R
Conforms to	3G-SDI to SMPTE 424M/425M level A/B compatible HD-SDI to SMPTE292M/274M/296M SD-SDI to SMPTE259M-C
Input Cable Length	Up to 85m Belden 1694A @ 3 Gbit/s (Up to 65m for IQSYN5001-1A/B3) Up to 151m Belden 1694A @ 1.5 Gbit/s (Up to 121m for IQSYN5001-1A/B3) Up to 375m Belden 1694A @ 270 Mbit/s
Video Delay Frames	625i25: 0 - 120 525i29: 0 - 120 720p50/59/60: 0 - 60 720p23/24/25/29/30: 0 - 30 1080i25/29/30: 0 - 30 1080psf23/24: 0 - 30 1080p23/24/25/29/30: 0 - 30 1080p50/59/60 Level A: 0 - 30 1080p50/59/60 Level B: 0 - 14
Signal Outputs	
Outputs	Up to 4
Connector/Format	BNC/75R
Conforms to	3G-SDI to SMPTE 424M/425M level A/B compatible HD-SDI to SMPTE292M/274M/296M SD-SDI to SMPTE259M-C
Connector/Format	SFP
Conforms to	3G-SDI to SMPTE 424M/425M level A/B compatible HD-SDI to SMPTE292M/274M/296M SD-SDI to SMPTE259M-C
Control Interface	
GPIO	2 to 8
Electrical	TTL-compatible, active-low driven
Connector/Format	Standard SAM screw terminal/D-Type
Indicators	
Power	OK (Green)
CPU	OK (Green flashing)
Input Standard Detection LEDs	Lock (Green)
RollCall Features	
Status	Input and Output status

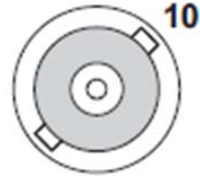
User Memories	None
Logging	Input status Input alarms Output alarms Output status
RollTrack Controls	On/off, index, source, address, command, status, sending
Setup	Versions, reset defaults, restart
Specifications	
Connector/Format	BNC Standard SAM screw terminal
Power Consumption	
Module Power Consumption	15 PR Max

3. Connections

This section describes the physical input and output connections provided by the IQSYN50.

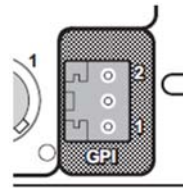
3.1 SDI I/O

12 x 3G/HD/SD-SDI interfaces provided with HD-BNC.



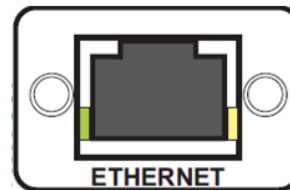
3.2 External Input/Outputs

Two general purpose GPIO connectors are provided, both using standard screw terminals.



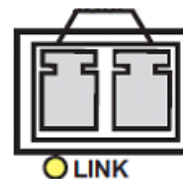
3.3 Ethernet IP Interface

RJ45 10/100/1G Ethernet.



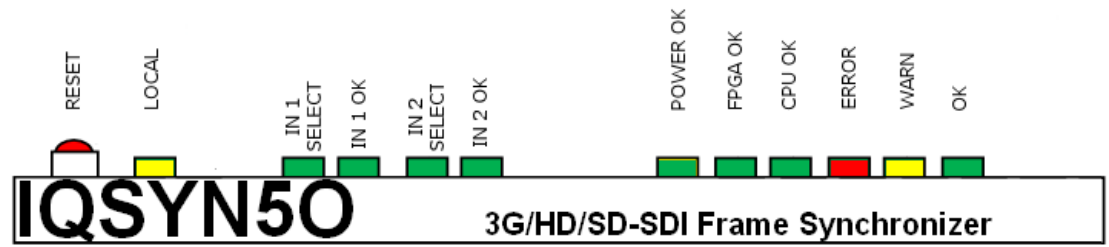
3.4 SDI SFP

SFP supporting 3G/HD/SD-SDI.



4. Card Edge LEDs


The LEDs on the edge of the IQSYN50 indicate its operating status.



LED	Color	State	Description
Input 1-2	Green	Illuminated	Input has been selected and a valid input is present.
Power	Green	Illuminated	Good power supply is present.
FPGA OK	Green	Illuminated	FPGA has been correctly programmed.
CPU OK	Green	Flashing	CPU is running.
ERROR	Red	Illuminated	Board fault condition. LED is illuminated if the module is down or is restarting.
WARN	Yellow	Illuminated	Board warning condition. LED is illuminated if one or more services are down.
OK	Green	Illuminated	Module is operating correctly.

5. RollCall Control Panel

This section contains information on using the IQSYN50 with RollCall.

For help with general use of the RollCall application, open the user manual by clicking the  button on the main RollCall toolbar.

5.1 Navigating Pages in the RollCall Template

The RollCall template has a number of pages, each of which can be selected from the list at the top left of the display area. Right-clicking anywhere on the pages will also open a page view list, allowing quick access to any of the pages.

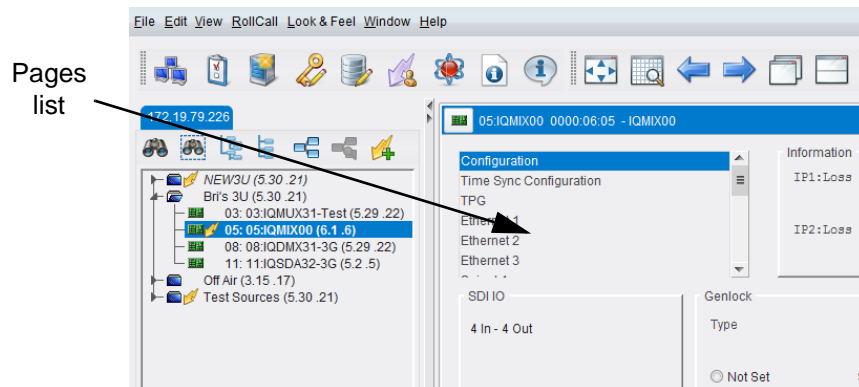


Figure 10 Template Pages

5.1.1 Template Pages

The following pages are available:

- **Summary** - see section 5.3.
- **Input n Valid** - see section 5.4.
- **Outputs** - see section 5.5.
- **Video ProcAmp** - see section 5.6.
- **Test Pattern and Caption** - see section 5.7.
- **Genlock & Delay** - see section 5.8.
- **GPIOs** - see section 5.9.
- **Ethernet** - see section 5.10.
- **VBI** - see section 5.11.
- **Setup** - see section 5.12.
- **Memory 1-16** - see section 5.13.
- **RollTrack** - see section 5.15.
- **Logging - Misc** - see section 5.16.1.
- **Logging - Input** - see section 5.16.2
- **Logging - Output** - see section 5.16.3.
- **Logging - Changeover** - see section 5.16.4.
- **Logging - Reference** - see section 5.16.5.

5.1.2 Setting Values

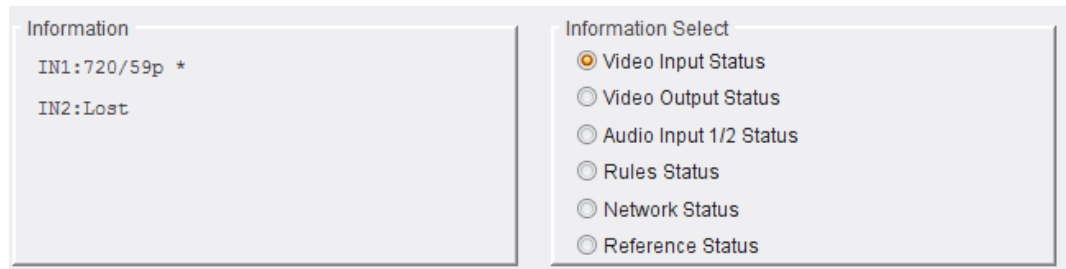
Many of the settings within the templates have values, either alpha or numeric.

When setting a value in a field, the value, whether text or a number, must be set by pressing the ENTER key, or clicking the **S Save Value** button.

Clicking an associated **P Preset Value** button returns the value to the factory default setting.

5.2 Information Display

The **Information** display pane appears at the top of each page, and shows basic information on the status of the module. The information to be displayed is selected on the **Information Select** pane to the right of the **Information** display.

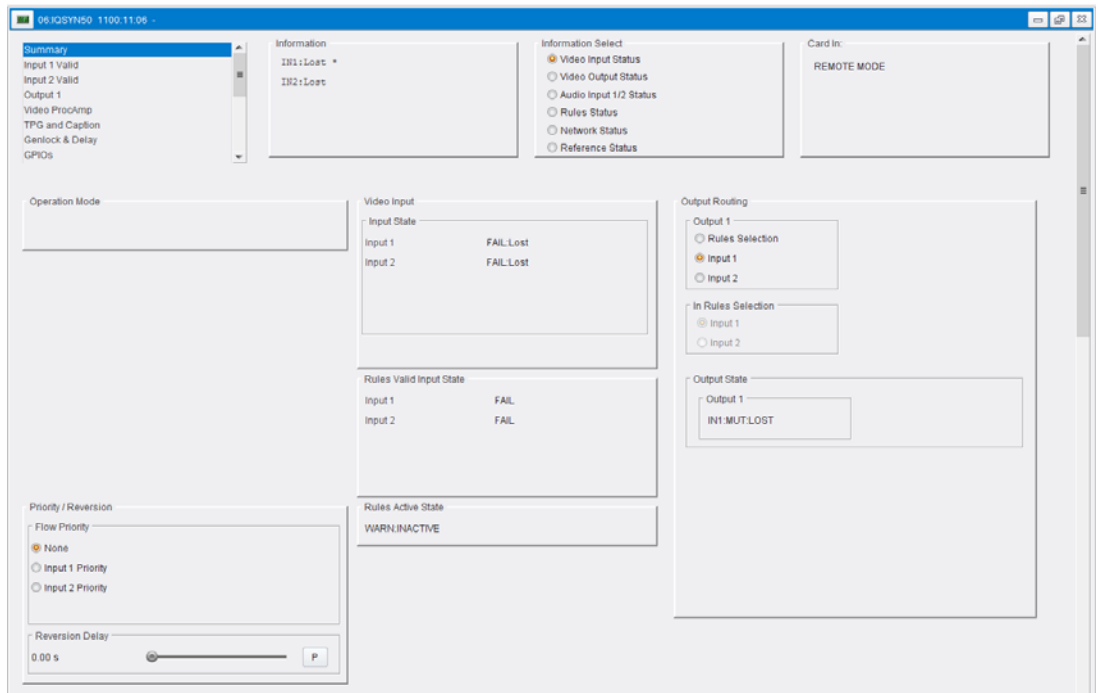


5.2.1 Selecting the Information to Display

Choose the type of information to display from the **Information Select** pane. The selected information will be displayed on the **Information** display pane.

5.3 Summary

The **Summary** page provides a general overview of the module.



The following facilities are provided:

5.3.1 Operation Mode

Not currently used.

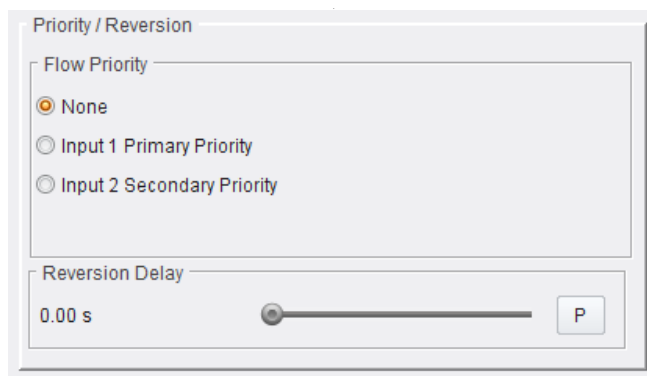
5.3.2 Input 1/2 Select

Select whether the input is via **SDI** or **SFP**. Note this is displayed only when the module is equipped with an SFP connector.

5.3.3 Priority/Reversion

5.3.3.1 Flow Priority

Allows definition of the way in which the module is to behave when an input fails.



The following options are available:

- **None** - If the current input fails, the output fails over to the next available input in the following order:
 - a. Input 1 Primary
 - b. Input 2 Secondary

It will not roll back if a failing channel recovers.
- **Input 1 Primary Priority** - If Input 1 recovers having previously failed, the output reverts to Input 1.
- **Input 2 Secondary Priority** - If Input 2 recovers having previously failed, the output reverts to Input 2.

5.3.3.2 Reversion Delay

The reversion delay sets the amount of time for which a condition must be True before reverting to the next condition. Set the slider as required.

5.3.4 Video Input

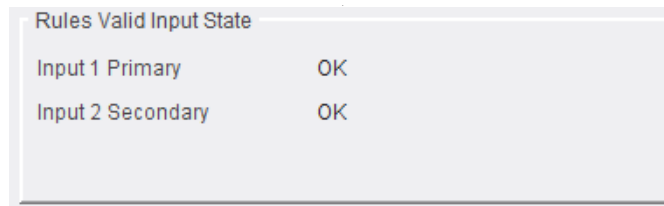
5.3.4.1 Input State

Displays current state of the video inputs.

5.3.4.2 Rules Valid Input State

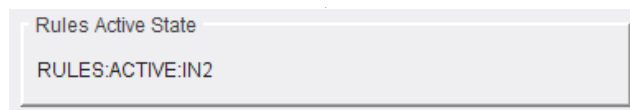
Displays the current input state.

Note: See section 5.4 for information on configuring the rules engine.



5.3.4.3 Rules Active State

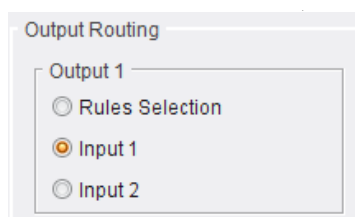
Displays status of the rules engine.



5.3.5 Output Routing

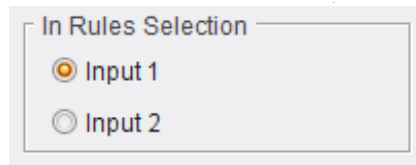
5.3.5.1 Output 1

The **Output 1** pane allows the user to select which input is presented to the output. This can be either a rules-based decision or a manual selection. Select as required.



5.3.5.2 In Rules Selection

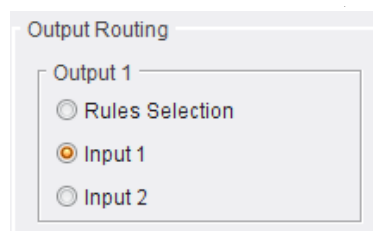
Note this pane is active only if **Rules Selection** has been selected on the **Output 1** pane (see above).



This allows selection of the primary input to be used. The other input will be switched to if errors are detected on the primary.

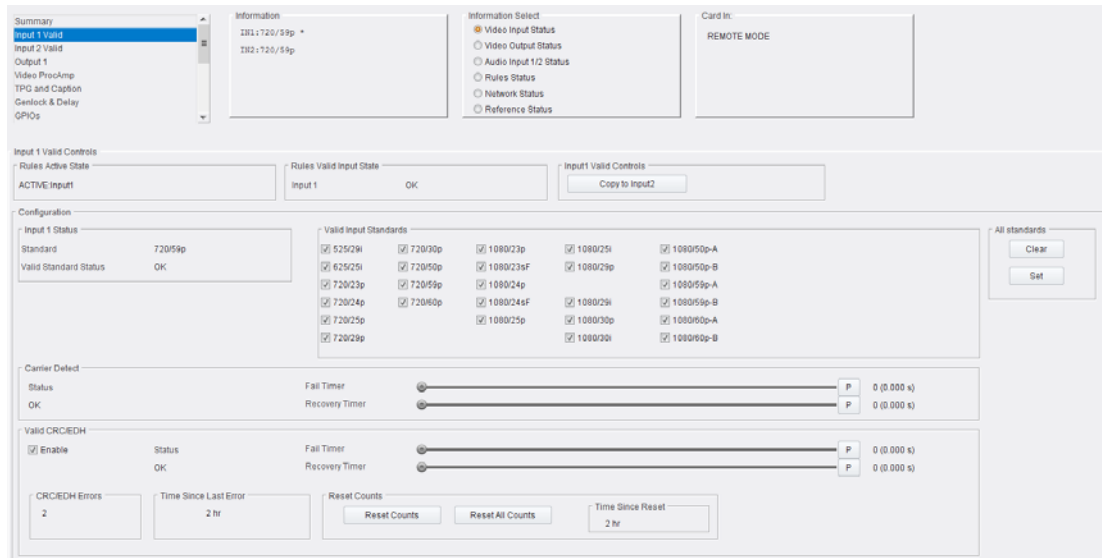
5.3.5.3 Output State

Displays the current output state.



5.4 Input n Valid

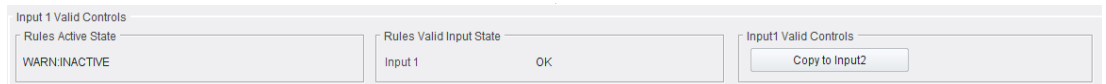
There are two **Input Valid** pages, one for each for input. These enable the criteria used by the rules engine to be defined; if input signals do not conform to what is set here, an error will be reported and the module will automatically switch to the alternative input if configured to do so.



5.4.1 Input N Valid Controls

The current rules state is reported for each of the inputs.

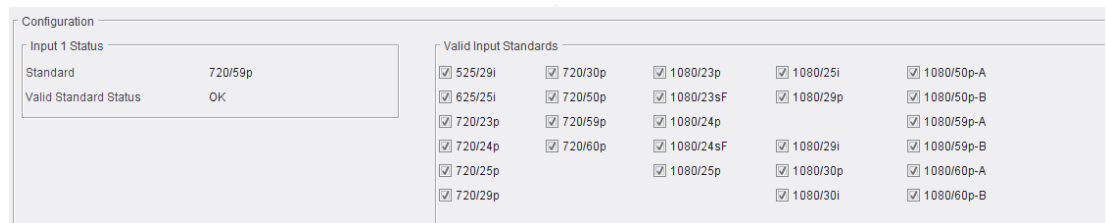
One input's settings can be copied to the other by clicking **Copy to Input n**.



5.4.2 Configuration

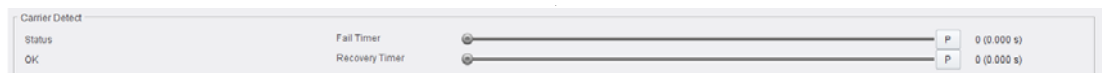
Enable **Valid Input Standards** check boxes to select the standards to be recognized as valid. The rules engine will generate an error if a standard not specified here is detected.

The information displayed here is also displayed on the **Summary** page.



5.4.3 Carrier Detect

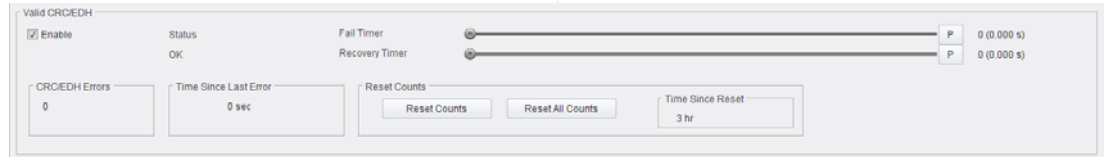
If a carrier is not detected for the period of time defined by the **Fail Timer**, a fail is reported. The error condition will be canceled when a carrier has been detected for the period defined by the **Recovery Timer**.



5.4.3.1 Valid CRC/EDH

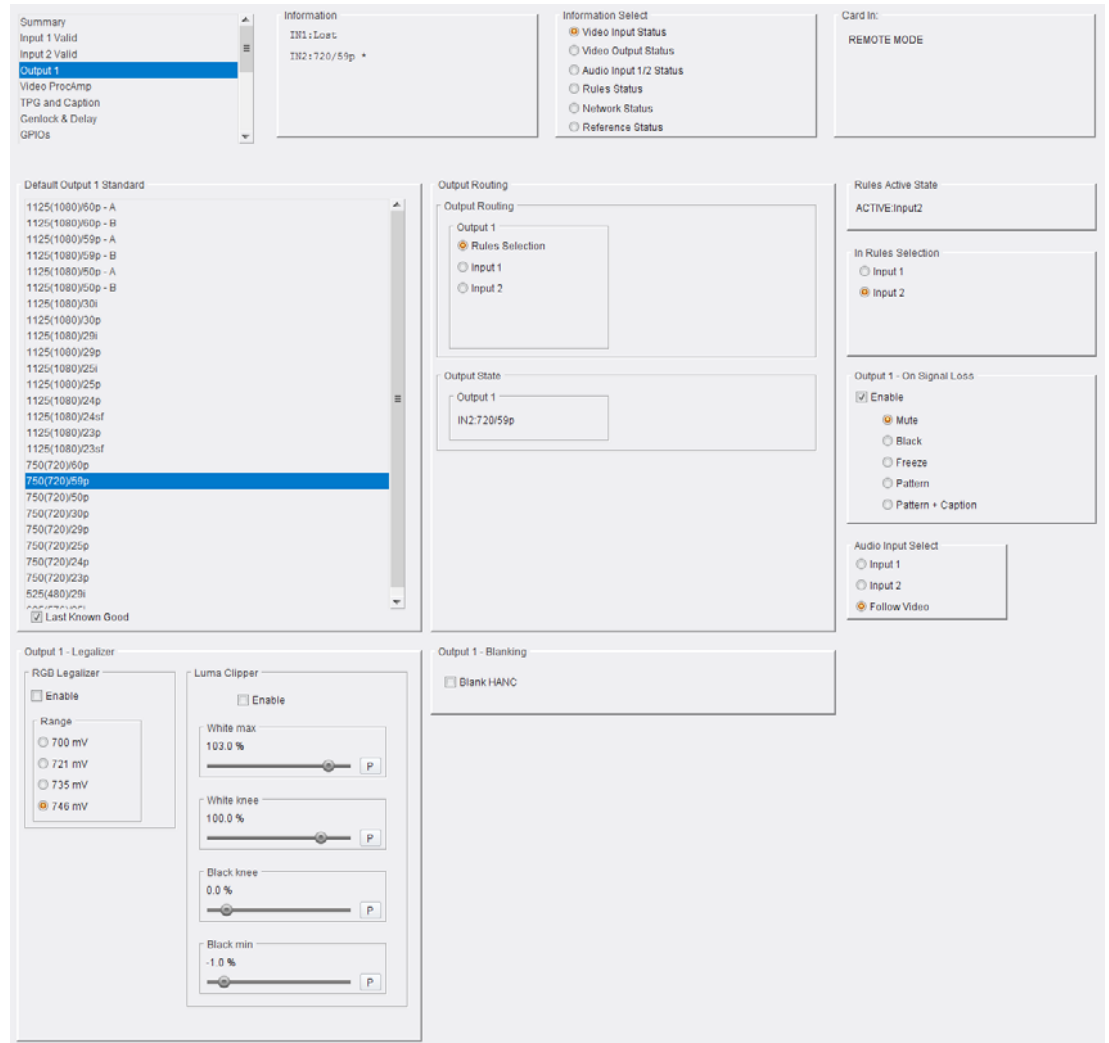
If CRC/EDH errors are received for the period of time defined by the **Fail Timer**, a fail is reported. The error condition will be canceled when CRC/EDH errors have been absent for the period defined by the **Recovery Timer**.

To clear the error count for the current input down to zero, click **Reset Counts**; to clear the error count down for both inputs, click **Reset All Counts**.



5.5 Output 1

The **Output 1** page allows the output to be configured.



5.5.1 Default Output 1 Standard

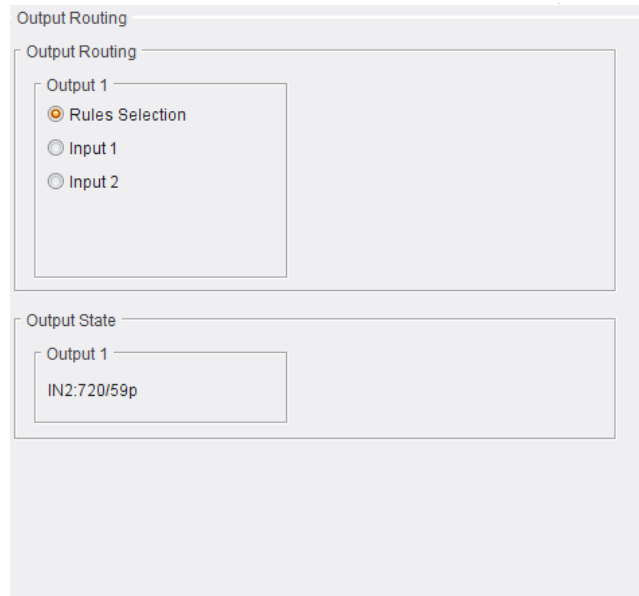
From the list, select the standard to set as the output default.

5.5.1.1 Last Known Good

If an error with an incoming signal causes the input to be switched, enabling **Last Known Good** will cause the input's standard to be set to the default specified here. Otherwise, the standard on the new input will be used.

5.5.2 Output Routing

The **Output Routing** pane allows the source for the output to be selected, and displays the current source. This information is also mirrored on the **Summary** page.



5.5.2.1 Rules Active State

Displays whether the rules engine is active, or if Input 1 or Input 2 have been specified manually.

5.5.2.2 In Rules Selection

Displays the input currently selected by the rules engine. Note this cannot be selected manually.

5.5.2.3 Output 1 - On Signal Loss

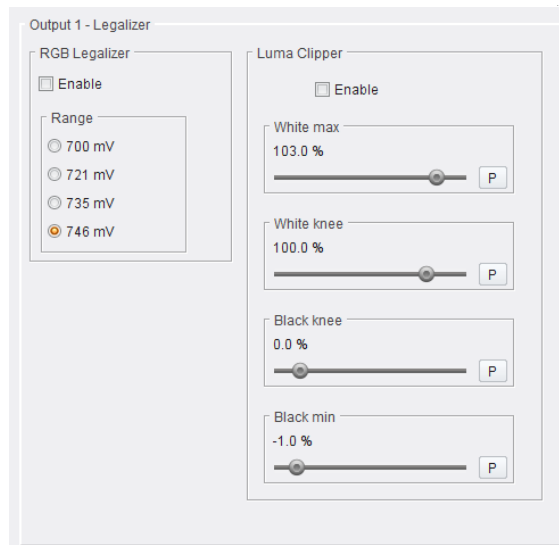
When enabled, allows what should be displayed if the output loses signal to be set. Select as required.

5.5.2.4 Audio Input Select

Allows the audio source to be defined. Specify a particular input, or select **Follow Video** to always use audio from the video source.

5.5.3 Output 1 - Legalizer

The output is legalized for both RGB and Luma.



5.5.3.1 RGB Legalizer

Illegal colors are represented by values of RGB that are outside a nominal range, typically 0 - 700mV, when converted to analog values. Illegal RGB colors are easily generated in YCbCr space because of the differences in the valid color space between RGB and YCbCr.

Upon detection of illegal RGB colors, there are a variety of techniques to bring them back into legal color space. Most legalizers will simply de-saturate the chrominance, leaving the luminance unaltered. The legalizer used by SAM is more advanced, and is able to preserve the original saturation to a much greater extent by modifying the luminance and chrominance signals simultaneously, giving the best visually subjective results.

Options are:

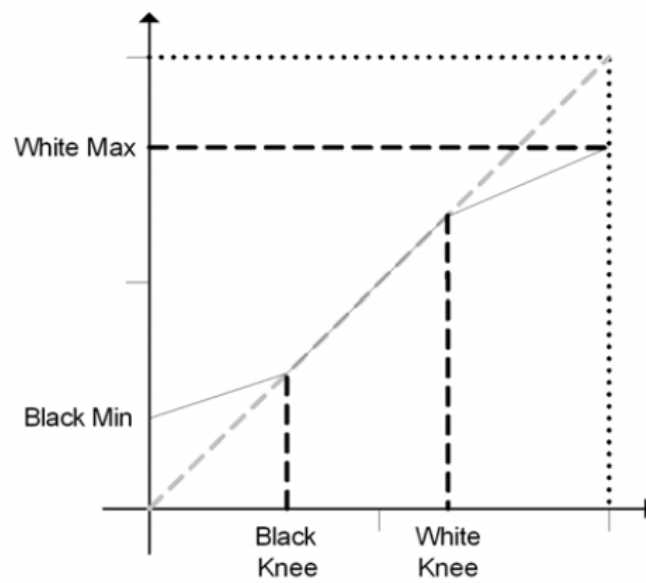
- **Off**
- **700mV:** 0mV to 700mV
- **721mV:** -21mV to 721mV
- **735mV:** -35mV to 735mV
- **746mV:** -46mV to 746mV

5.5.3.2 Luma Clipper

These controls can be used to limit the luminance of the signal at the output. Advanced **White Knee** and **Black Knee** controls are available to soften the clipper, giving a gradual transition to the limit. By default the clipper is disabled. When **Input Format** is set to 4:4:4 RGB, clipping is applied to R, G and B channels.

- **White Max:** This sets up the upper limit (hard clip point) of the clipper. The range is minimum 60% (590 digital 10-bit value) to maximum 109% (1019) with increments of 1%. The default is 103% (966).
- **White Knee:** This sets up the knee for the maximum white limit of the clipper. This can be set up to give a "soft" clip from this knee point to the hard white clip point. The range is minimum 60% (590) to maximum 109% (1019) with increments of 1%. The default is 100% (940).
- **Black Knee:** This sets up the knee for the minimum black limit of the clipper. This can be set up to give a "soft" clip from this knee point to the hard black clip point. The range is minimum -7% (4) to maximum 60% (590) with increments of 1%. The default is 0% (64).

- **Black Min:** This sets up the lower limit (hard clip point) of the clipper. The range is minimum -7% (4) to maximum 60% (590) with increments of 1%. The default is -1% (55).

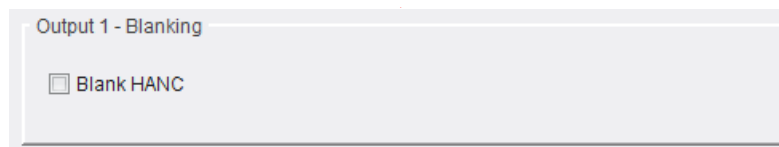


To achieve a hard white clip, set **White Max** and **White Knee** to the same value. Similarly, to achieve a hard black clip set **Black Min** and **Black Knee** to the same value.

The luma clipper can be used in combination with the 735mV legalizer selection to generate images which adhere to the EBU R103-200 specification.

5.5.4 Output 1 - Blanking

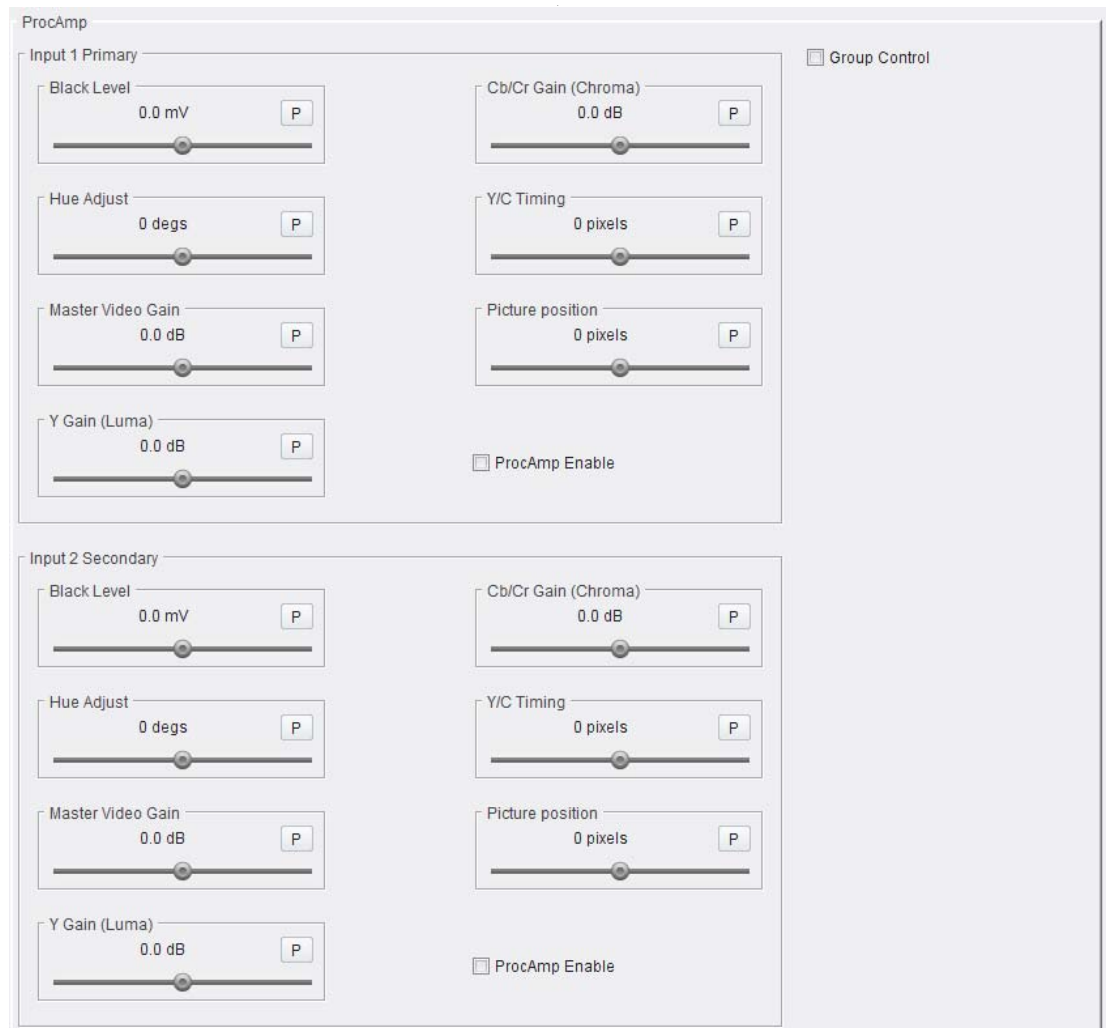
Data is passed but can be blanked for H.



Enable the check box to activate blanking.

5.6 Video ProcAmp

Each input has a ProcAmp.



To activate the ProcAmp for an input, enable the **ProcAmp Enable** check box. The ProcAmp allows the following to be adjusted:

- **Black Level:** This control allows the channel's black level to be adjusted over a range of ± 100 mV in steps of 0.8 mV. The preset value is 0.
- **Cb/Cr Gain (Chroma):** This control allows the chrominance to be adjusted over a range of ± 6 dB in steps of 0.1 dB. The preset value is 0.
- **Group Control:** When enabled, this causes adjustments made to one input to be mirrored on the other.
- **Hue Adjust:** This control allows the channel's hue to be adjusted over a range of $\pm 180^\circ$ in steps of 1° . The preset value is 0.
- **Y/C Timing:** This control allows the luma/chroma timing to be adjusted over a range of:
 - ± 8 pixels in 2 pixel steps in SD.
 - ± 16 pixels in 2 pixel steps in HD/3G.

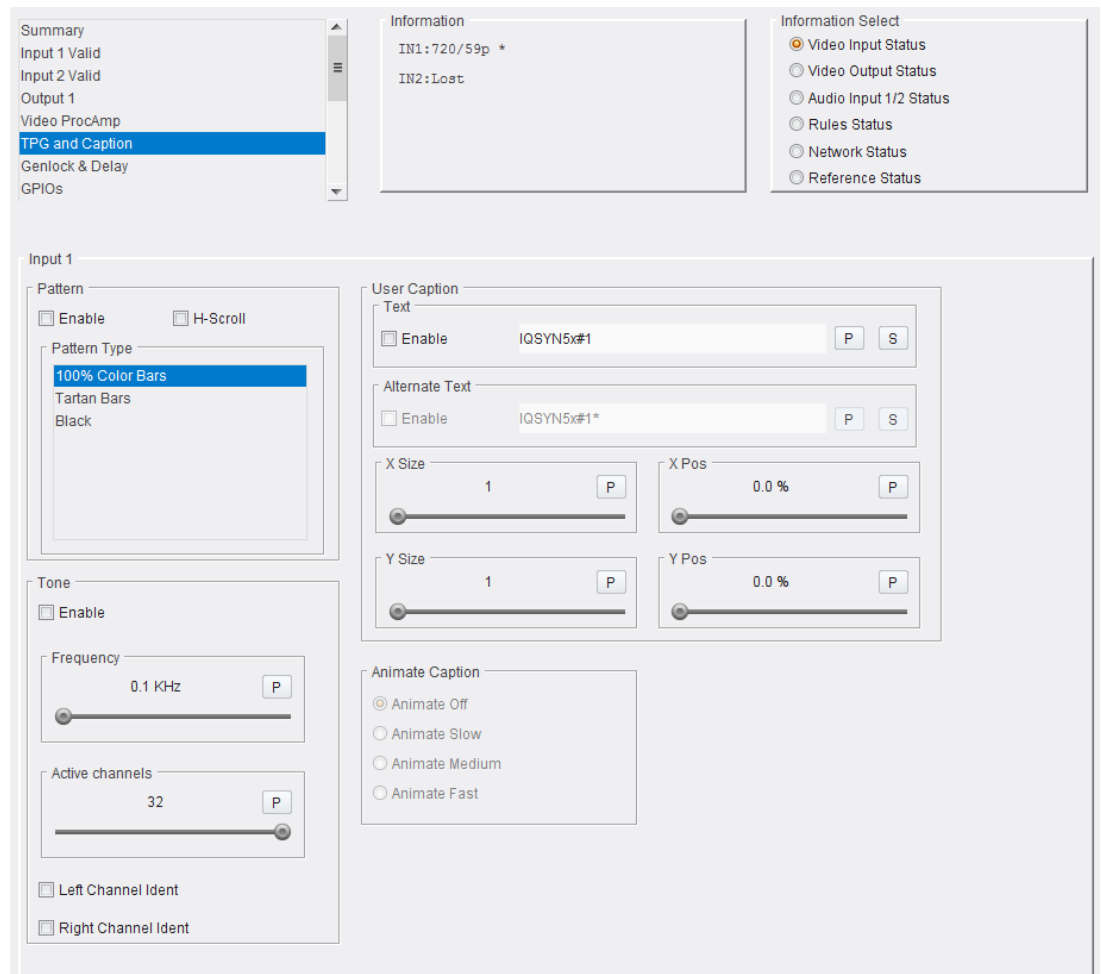
The preset value is 0.

- **Master Video Gain:** This control allows the video gain to be adjusted over a range of ± 6 dB in steps of 0.1 dB. The preset value is 0.

- **Picture Position:** This control allows the picture position to be adjusted over a range of:
 - ± 8 pixels in 2 pixel steps SD
 - ± 16 pixels in 2 pixel steps HD/3GThe preset value is 0.
- **Y Gain Luma:** This control allows the luma to be adjusted over a range of ± 6 dB in steps of 0.1 dB. The preset value is 0.

5.7 Test Pattern and Caption Generators

The Output and both of the Inputs have their own test pattern and caption generators.



Each have the following controls:

5.7.1 Pattern Enable, Pattern Type

To enable a test pattern, select an item from the **Pattern Type** list and then check the **Enable** check box.

5.7.2 H-Scroll

Enable **H-Scroll** to scroll the pattern horizontally.

5.7.3 Tone

These controls allow a tone and its frequency to be enabled and adjusted, and the number of audio channels the tone should be applied to set. Left/Right channel idents can also be set; enable the check boxes as required.

5.7.4 User Caption

These controls allow caption text, alternate text, its size and position to be defined and adjusted.

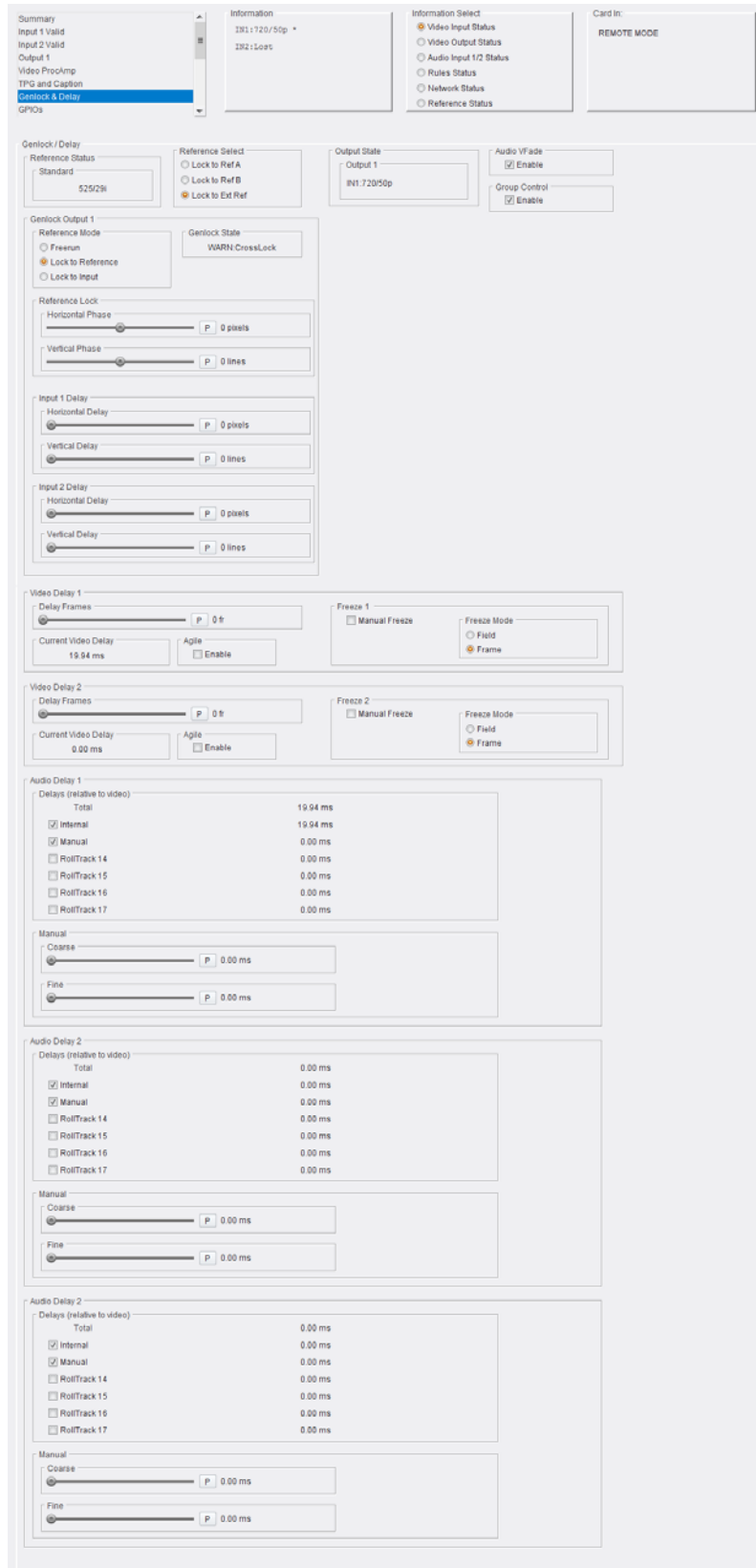
5.7.4.1 Animate Caption

When enabled, a caption will appear as white text on a black background in the lower portion of the picture. A basic ticker-tape animation may also be selected, which enables a scrolling effect from right to left. The options are:

- **Animate Off**
- **Animate Slow**
- **Animate Medium**
- **Animate Fast**

5.8 Genlock & Delay

The **Genlock & Delay** page provides independent timing controls for the inputs' video and audio.



The following controls are available from this page:

5.8.1 Genlock/Delay

The **Reference Status** and **Reference Select** panes provide control and monitoring of the reference source.

5.8.1.1 Reference Status

Displays the standard applied to the current reference.

5.8.1.2 Reference Select

Selects the reference to lock to.

5.8.1.3 Output State

Displays the current state of the output.

5.8.1.4 Audio VFade

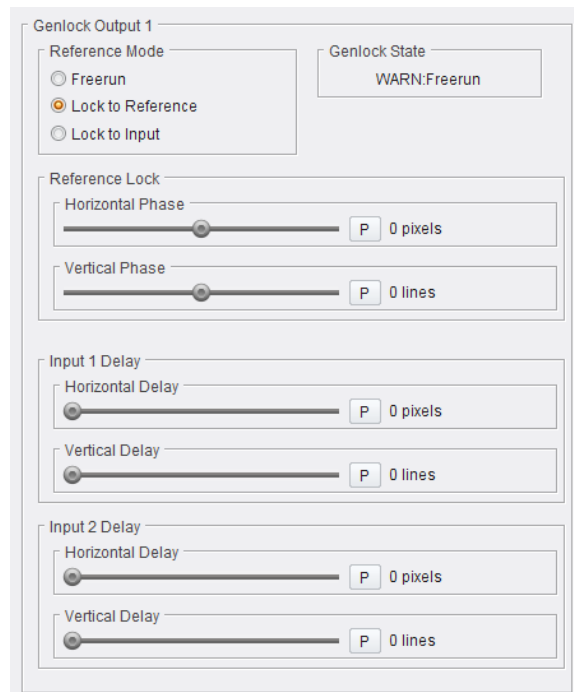
When enabled, **VFade** helps to avoid audio corruption being encountered when switching between SDI inputs 1 & 2 containing embedded audio. Default is enabled.

5.8.1.5 Group Control

When checked, the input controls are locked together and mirror one another. Enable as required.

5.8.2 Genlock Output

The **Genlock Output** controls allow the user to adjust the output timing and its reference. Horizontal and vertical delay controls are also provided for the inputs.



The following controls are available from this page:

5.8.2.1 Reference Mode

Allows selection of the mode the reference is to run in. Options are:

- **Free Run:** In this mode the unit's output is not locked to any input signal or reference source. Instead, the unit runs at the correct frame rate and synchronizes the video to it.

Frame delay adjustments can be made in this mode, but not horizontal or vertical timing adjustments.

- **Lock to Reference:** Locks to an external black (burst) reference signal, either bi-level SD or tri-level HD. Horizontal or vertical timing adjustments for correctly phasing to match other sources can be made while in this mode, and the delay can be stepped up in frame increments, up to 12 additional frames. The reference should be clean of noise and jitter to give the best possible results. A bi-level reference and tri-level reference of the correct frame rate are always acceptable.
- **Lock to Input:** Locks the output to the input.

Set as required.

5.8.2.2 Genlock State

Displays current Genlock status.

5.8.2.3 Reference Lock

This allows the module to lock to the input reference.

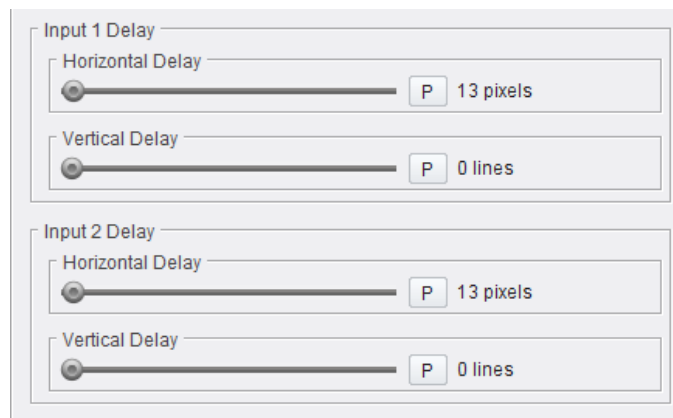
Controls available are:

- **Horizontal Phase:** Adjusts the video delay \pm Max pixels when locked to reference.
- **Vertical Phase:** Adjusts the video delay \pm 1 line when locked to reference.

Adjust as required.

5.8.2.4 Input Delay

The video for each input can be delayed or frozen. The minimum delay is 0 frames, 3 lines.

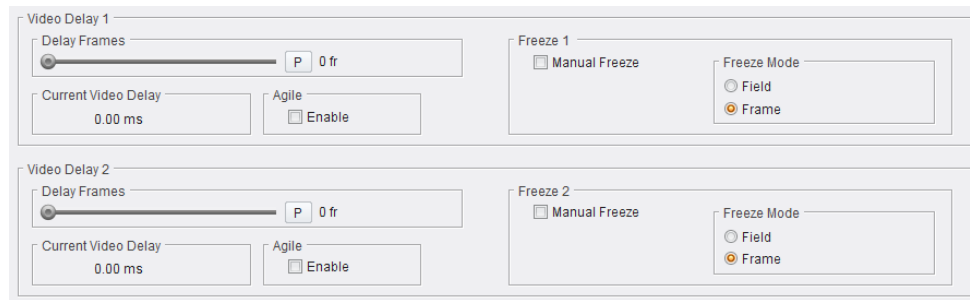


Controls available are:

- **Horizontal Delay:** Adjusts the video delay \pm Max lines when locked to input.
- **Vertical Delay:** Adjusts the video delay \pm Max lines when locked to input.

5.8.2.5 Video Delay

This allows a video delay to be set.

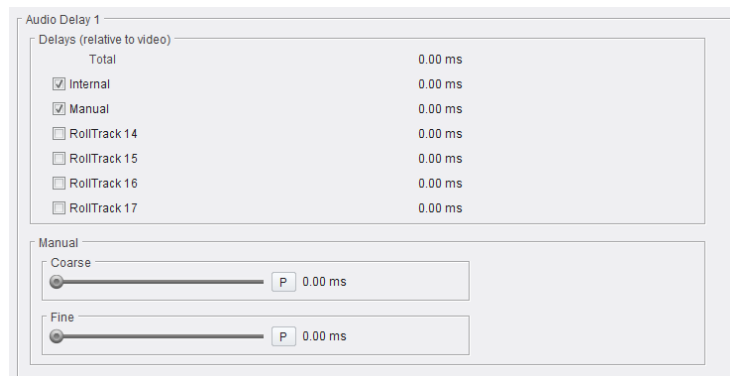


Controls available are:

- **Delay Frames:** Adjusts the video delay. The adjustment range is standards-dependent.
- **Current Video Delay:** Displays current video delay in milliseconds.
- **Agile:** Enable if Agile V-Lock is to be used. This permits correct reception of upstream switched misaligned 625/25i and 525/29i sources without picture disturbance.
- **Freeze:** Allows the video to be frozen, either at a field or a frame level. Enable the **Manual Freeze** checkbox to activate the function, then select the required **Freeze Mode**.

5.8.2.6 Audio Delay

Each input's audio can be delayed. Delay can be introduced manually, or programmed via RollTracks.



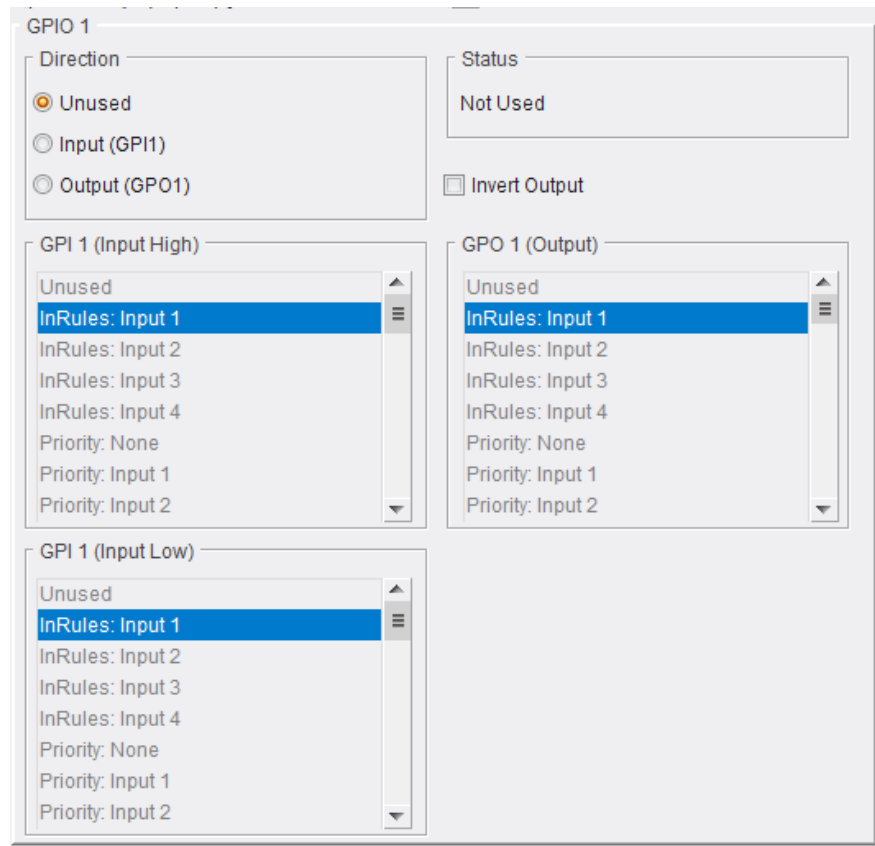
Controls available are:

- **Delays:** Select the delay to apply. This can be **Internal**, **Manual** or via a RollTrack.
 - **Internal** - This adds a factory-defined delay designed to compensate for the module's latency.
 - **Manual** - This allows the **Internal** delay to be adjusted via **Coarse** and **Fine** sliders. The combination of **Internal** and **Manual** values form the total delay.
 - **Coarse:** Adjusts the delay in 1 ms steps.
 - **Fine:** Adjusts the delay in 0.2 ms steps.
 - **RollTrack** - When a RollTrack is received, it is displayed beneath the **Internal** and **Manual** options. To use, enable the appropriate check box.

5.9 GPIOs

The **GPIOs** page provides configuration and action control for the module's GPIO ports. Up to 8 GPIO ports can be supported.

Each port has an associated GPIO pane:



Controls provided are:

- **Direction:** Allows the interface to be configured as an input or an output. Select one, and then select behaviors as required:
 - **GPI input high behavior:** Select a behavior to use if the interface has been configured as an input and is transitioning low to high.
 - **GPI input low behavior:** Select a behavior to use if the interface has been configured as an input and is transitioning high to low.
 - **GPO output trigger:** If configured as an output, the selected event causes the output to be asserted.
- **Invert Output:** Enable the check box to invert the output if required.

5.10 Ethernet 1

The **Ethernet 1** page provides controls for the IP interface.

The screenshot shows the 'Ethernet 1' configuration page. On the left is a navigation menu with 'Ethernet 1' selected. The main area is divided into three sections:

- Information:** Shows four network interfaces: IN1: 720/50p, IN2: 720/50p, IN3: 720/50p, and IN4: PAT: 720/50p:100.
- Information Select:** A list of radio buttons for selecting information to display: Video Input Status (selected), Video Output Status, Audio Input 1/2 Status, Audio Input 3/4 Status, Rules Status, and Network Status.
- Ethernet:** A table for configuring the IP interface.

	Current	NEW		
IP Address	172.19.81.202	-	P	S
Default Gateway	172.19.71.20	-	P	S
Subnet Mask	255.255.224.0	-	P	S
MAC Address	80:30:DC:52:A9:74			
Use DHCP	<input type="checkbox"/>			
- Domain:** A table for configuring domain settings.

	Current	NEW		
ID	-	-	P	S
Name	-	--	P	S
- Status:** A table showing network statistics.

	Sent	Received
Packets	-	-
Bytes	-	-
Packets		
Dropped	-	-
Bad	-	-
Capacity		
Total	Used	Free
Capacity	-	-

5.10.1 Ethernet

The **Ethernet** pane allows the setting of static IP properties or DHCP. New settings are applied only once **Restart** is clicked.

Note: the MAC address is read-only.

This close-up screenshot shows the 'Ethernet' configuration pane. It features a table for setting static IP properties or enabling DHCP. A 'Restart' button is visible on the right.

	Current	NEW		
IP Address	0.0.0.0	0.0.0.0	P	S
Default Gateway	Unknown	-	P	S
Subnet Mask	255.0.0.0	255.0.0.0	P	S
MAC Address	80:30:DC:52:97:FD			
Use DHCP	<input checked="" type="checkbox"/>			

5.10.2 Domain

Not currently used.

Domain

ID:

Device Name

Serial nr will be appended to name

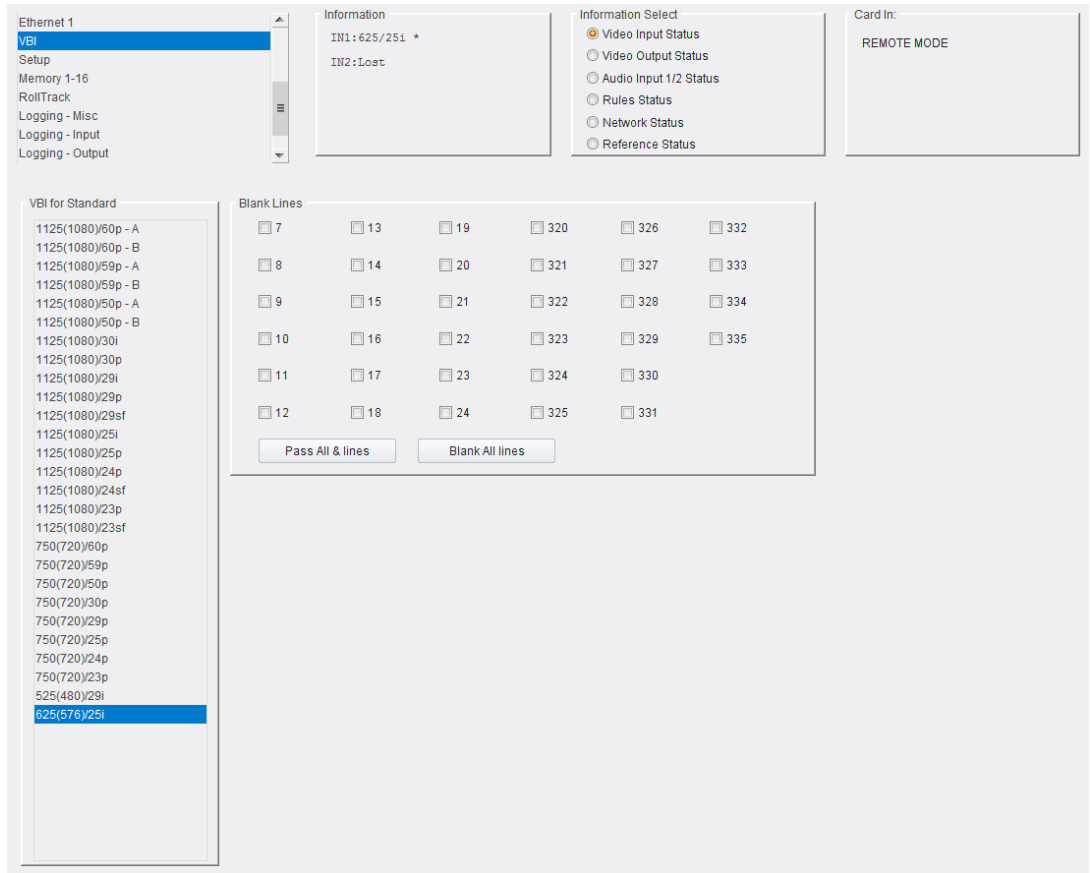
5.10.3 Status

Not currently used.

Status			
	Sent	Received	
Packets	Unknown	Unknown	
Bytes	Unknown	Unknown	
	Packets		
Dropped	Unknown		
Bad	Unknown		
	Total	Used	Free
Capacity	Unknown	Unknown	Unknown

5.11 VBI

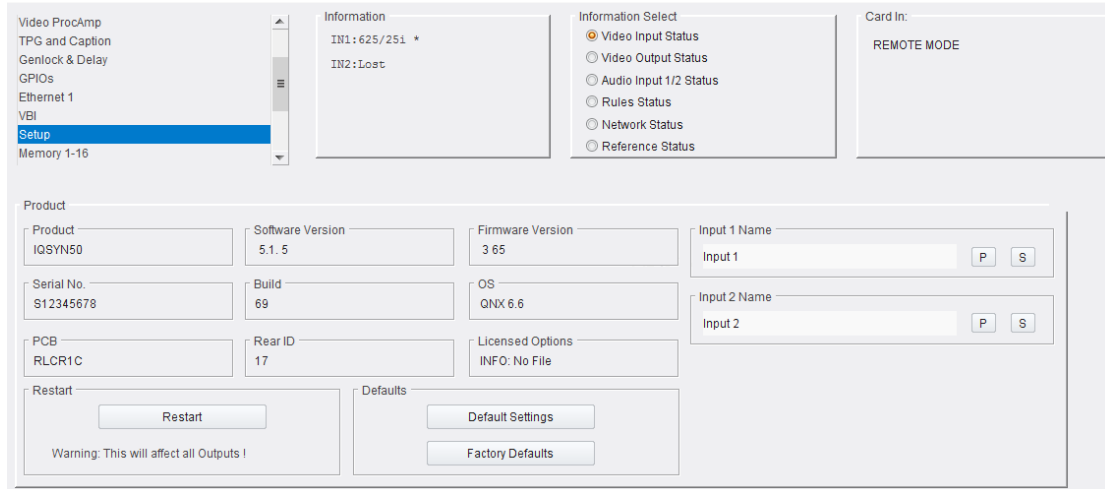
The **VBI** page enables specification of the line to be blanked for each standard.



Select the standard to set line blanking for, then enable the appropriate check boxes.

5.12 Setup

The **Setup** page displays basic details of the module. You may be asked for these if you contact SAM technical support. Input names can also be defined, and options to restart and reset to defaults are also provided.



5.12.1 Restart

Click to power-cycle the module.

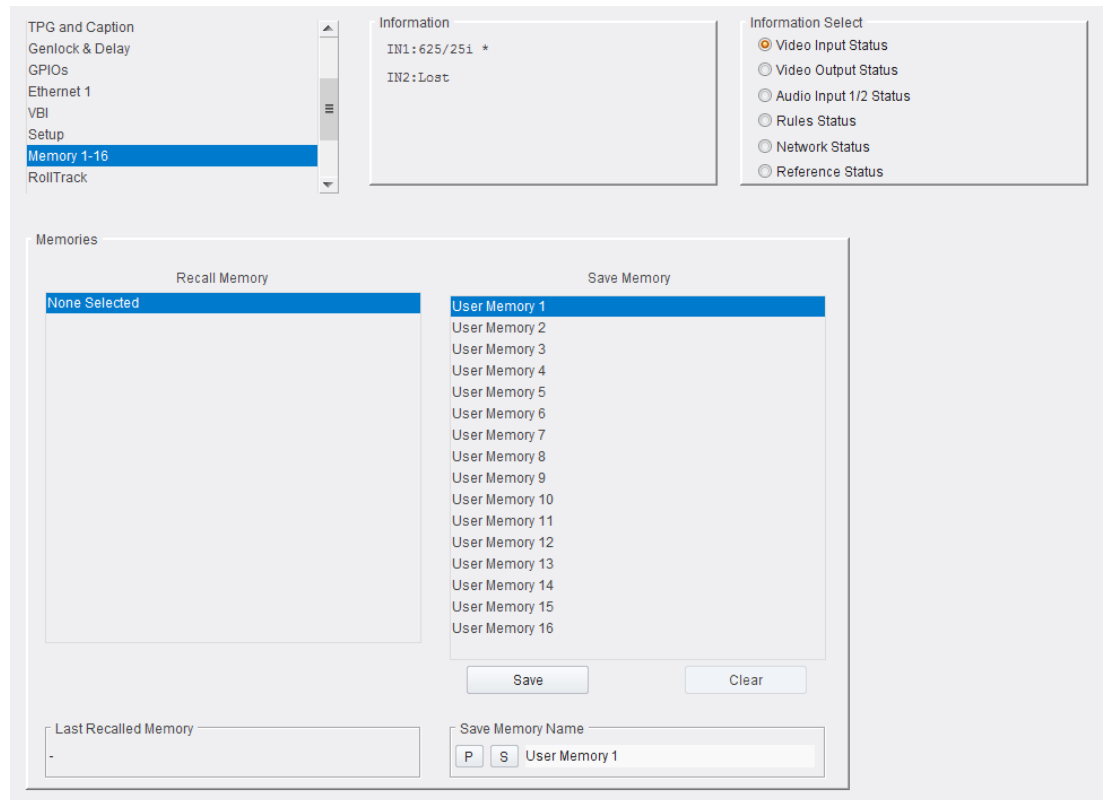
5.12.2 Defaults

The module can be to be reset to default settings. Use as required.

Option	Operation
Default Settings	All controls are reset to their default values, except for network configuration and IP addresses.
Factory Defaults	All controls are reset to their default values, including network configuration and IP addresses.

5.13 Memory 1-16

The **Memory 1-16** page enables up to 16 setups to be saved and recalled later. Default memory names can be changed to provide more meaningful descriptions.



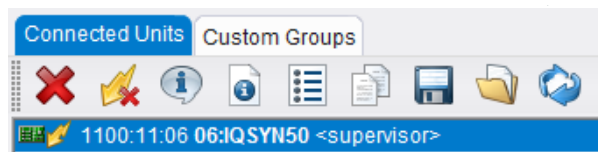
5.14 Savesets

Savesets allow the user to save predetermined RollControl product field settings to file, which can then be used to either transfer the settings to another card, or used as a backup of the settings for that card.

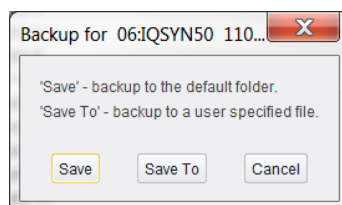
The Saveset feature is available via the RollCall Control Panel client.

5.14.1 Saving a Saveset

This is performed from the RollCall Control Panel **Connected Units** pane:




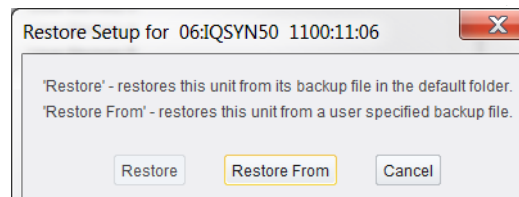
1. Click  to display the **Backup** dialog:



2. Click **Save** to save to the default folder, or **Save To** to save to a specified folder.

5.14.2 Restoring a Saveset

1. From the **Connected Units** pane, select the  icon; the **Restore** dialog is displayed:



Click **Restore** to restore from the default folder, or **Restore From** to restore from a specified folder.

5.15 RollTrack

The **RollTrack** page allows information to be sent via the RollCall network to other compatible units connected to the same network. RollTrack sources are listed on the **Source** pane.

5.15.1 Disable All

When checked, all RollTrack items are disabled.

5.15.2 Index

This slider enables up to 16 RollTrack outputs to be set up. Dragging the slider selects the RollTrack Index number, displayed below the slider. Clicking **P** selects the default preset value.

5.15.3 Source

Select the source of information to trigger the transmission of data. Clicking **P** selects the default preset value. When no source is selected, **Unused** is displayed.

5.15.4 Address

This is where the address of the selected destination unit is set. Type a destination into the text area, then click **S** to save the selection. Clicking **P** will return to the default preset destination.

A RollTrack address consists of four sets of numbers; for example, 0000:10:01*99:

- The first set (0000) is the network segment code number.
- The second set (10) is the number identifying the (enclosure/mainframe) unit.
- The third set (01) is the slot number in the unit.
- The fourth set (99) is a user-definable number that is a unique ID for the destination unit in a multi-unit system. This ensures that only the correct unit will respond to the command. If left at 00, an incorrectly fitted unit may respond inappropriately.

5.15.5 Command

This enables a command to be sent to the selected destination unit.

The command may be changed by typing a code in the text area and then selecting **S** to save the selection. Clicking **P** returns to the default preset command.

The RollTrack command consists of two sets of numbers, for example: **84:156**:

- The first number (**84**) is the actual RollTrack command.
- The second number (**156**) is the value sent with the RollTrack command.

5.15.6 RollTrack Sending

A message is displayed here when the unit is actively sending a RollTrack command.

Possible messages are:

Message	Description
No	The message is not being sent.
Yes	The message is being sent.

5.15.7 RollTrack Status

A message is displayed here to indicate the status of the currently selected RollTrack index.

Possible **RollTrack Status** messages are:

Message	Description
OK	RollTrack message sent and received OK.
Unknown	RollTrack message has been sent but it has not yet completed.
Timeout	RollTrack message sent but acknowledgement not received. This could be because the destination unit is not at the location specified.
Bad	RollTrack message has not been correctly acknowledged at the destination unit. This could be because the destination unit is not of the type specified.
Disabled	RollTrack sending is disabled.

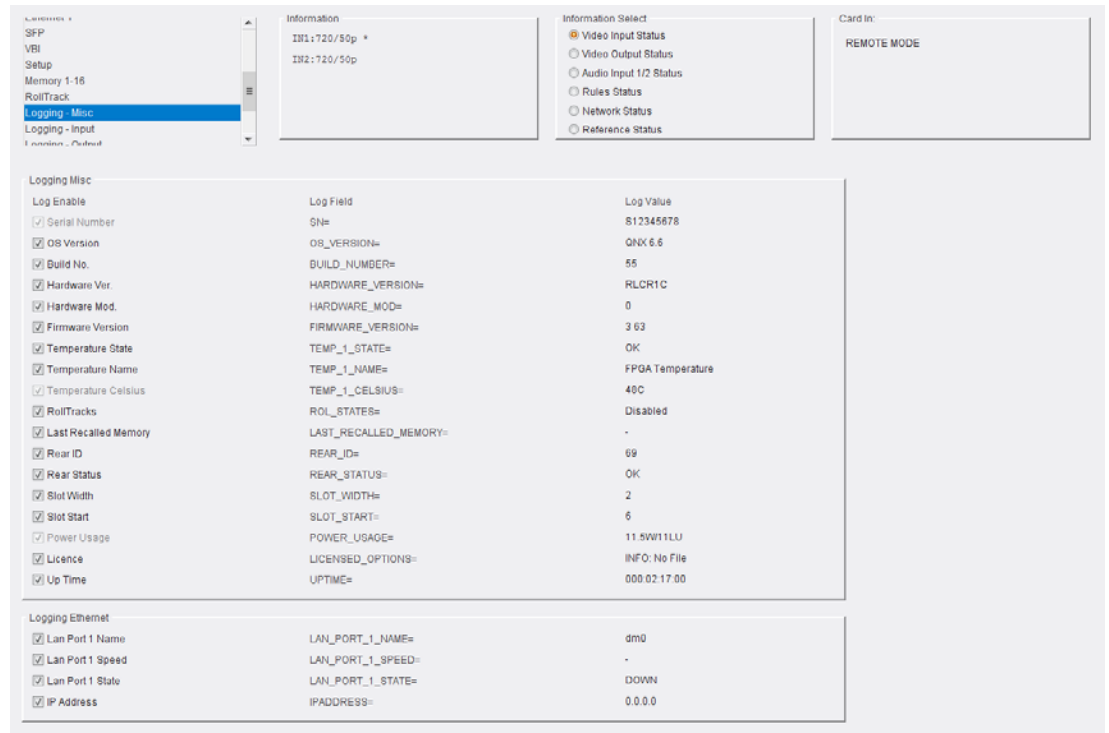
5.16 Logging

Information about several parameters can be made available to a logging device connected to the RollCall network. Each logging page comprises three columns:

- **Log Enable** - Enable the check box for each parameter to be logged.
- **Log Field** - Displays the name of the logging field.
- **Log Value** - Displays the current log value.

5.16.1 Logging Misc

The **Logging Misc** page allows information on the module's basic parameters to be logged. Enable check boxes as required.



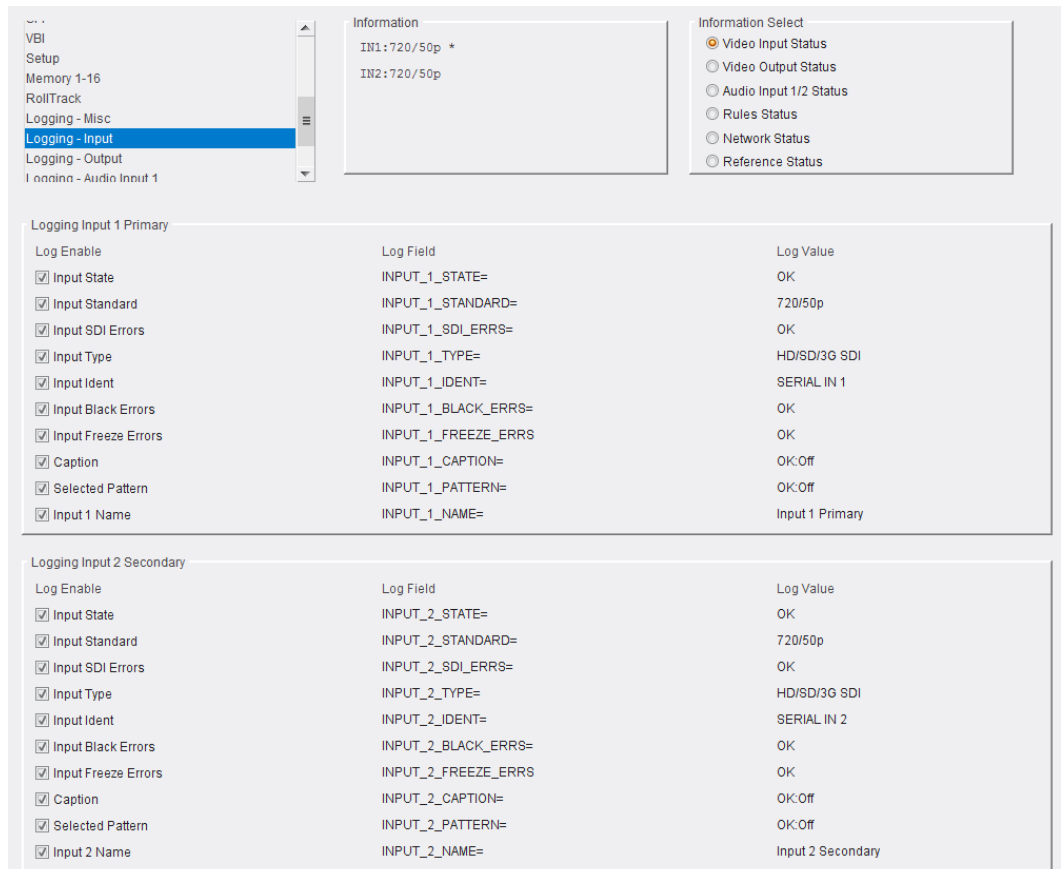
Log Field	Description
SN=	Displays the module serial number, which consists of an S followed by eight digits. Note: this cannot be deselected.
OS_VERSION=	Displays the operating system name and version. For example, KOS V115.
BUILD_NUMBER=	Displays the software build number.
HARDWARE_VERSION =	Displays the hardware version number.
HARDWARE_MOD=	Displays the hardware modification level.
FIRMWARE_VERSION=	Displays the ASI controller firmware version.

Log Field	Description
TEMP_1_STATE=	Displays current temperature status. Possible values are: <ul style="list-style-type: none"> • WARN:LOW - Low, but in tolerance • WARN:HIGH - High, but in tolerance • OK • FAIL:LOW - Low and out of tolerance • FAIL:HIGH - High and out of tolerance • WARN:DISABLED
TEMP_1_NAME=	Displays temperature sensor name.
TEMP_1_CELSIUS=	Displays current module temperature.
ROL_STATES=	Displays RollTrack state. Possible values are: <ul style="list-style-type: none"> • OK • Disabled • FAIL
LAST_RECALLED_MEMORY=	Displays the last memory to be recalled.
REAR_ID=	Displays the rear panel type number.
REAR_STATUS=	Displays the status of the rear panel.
SLOT_WIDTH=	Displays the slot width.
SLOT_START=	Displays the slot start number.
POWER_USAGE=	Displays the power rating for the module. Note this is not a live power reading, but rather a maximum rating.
LICENSED_OPTIONS=	Displays installed licenses. Possible values are: <ul style="list-style-type: none"> • SDHD • SDHD;3G • FAIL:BAD FILE • WARN:NONE • FAIL:NO FILE
UPTIME=	Displays time elapsed since the last restart, in the format <i>ddd:hh:mm:ss</i> .
LAN_PORT_N_NAME=	Displays Ethernet port name as defined by the OS.
LAN_PORT_N_SPEED=	Displays Ethernet connection speed. Possible values are: <ul style="list-style-type: none"> • 10 Mbit/s Full Duplex • 10 Mbit/s Half Duplex • 100 Mbit/s Full Duplex • 100 Mbit/s Half Duplex • 1 Gbit/s Full Duplex • No Link
LAN_PORT_N_STATE=	Displays Ethernet connection status. Possible values are: <ul style="list-style-type: none"> • Active • WARN:Inactive

Log Field	Description
IPADDRESS=	Displays the module IP address. Possible values are: <ul style="list-style-type: none"> • WARN:None • WARN:Invalid Address • <IP Address>

5.16.2 Logging - Input

The **Logging - Input** page is used to select the fields to be enabled for logging each of the four inputs.



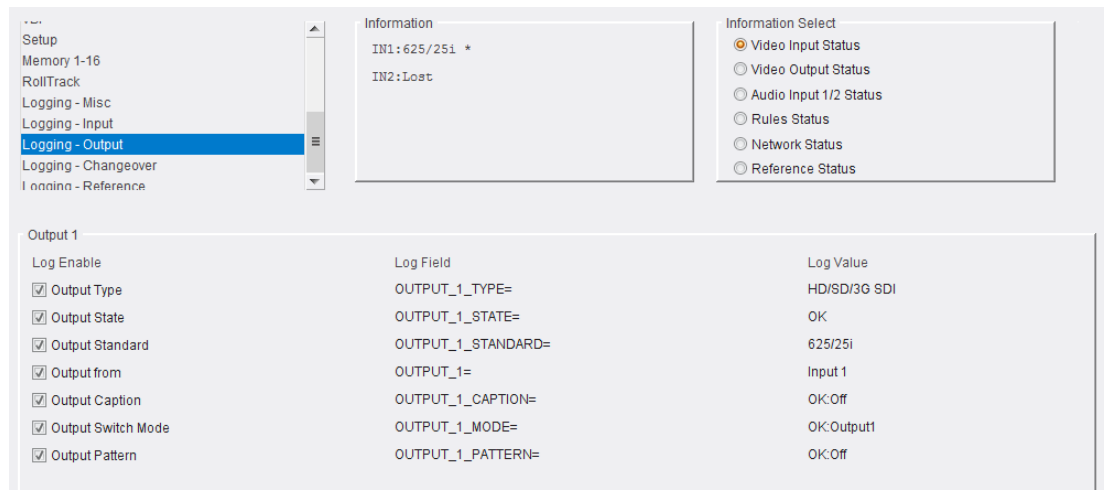
Log Field	Description
INPUT_N_STATE=	Displays current input status. Possible values are: <ul style="list-style-type: none"> • OK - Input signal good. • FAIL:Lost - Input signal not detected. • WARN:Error - Input does not match reference standard or selected standard.
INPUT_N_STANDARD =	PAL/NTSC/625 Mono/525 Mono
INPUT_N_SDI_ERRS=	SDI errors that have occurred in a one-second period. Possible values are: <ul style="list-style-type: none"> • OK • WARN

Log Field	Description
INPUT_N_TYPE=	Type of input as specified by the module's configuration. Possible values are: <ul style="list-style-type: none"> • 3G/HD/SD SDI • HD/SD SDI • HD/SD Analog • SD Analog
INPUT_N_IDENT=	Displays identifier string on the rear. Possible values are: <ul style="list-style-type: none"> • Y/C:YPbPr:COMP In • COMP In • SERIAL IN • SERIAL IN 1 • SERIAL IN 2
INPUT_N_BLACK_ERRS=	Logs the number of black errors.
INPUT_N_FREEZE_ERRS=	Logs the number of freeze errors.
INPUT_N_CAPTION=	Displays caption state. Possible values are: <ul style="list-style-type: none"> • OK • WARN
INPUT_N_PATTERN=	Logs the current test pattern for the input. Possible values are: <ul style="list-style-type: none"> • 100% Color Bars • SMPTE Bars • Tartan Bars • Pluge • Ramp • Sweep • Pulse & Bar • Burst • Black
INPUT_N_NAME=	Logs the input name as defined by the user. See section 5.12 for information on naming inputs.

Where N is the input number.

5.16.3 Logging - Output

The **Logging Output** page is used to select the fields to be enabled for logging outputs.



Log Field	Description
OUTPUT_N_TYPE=	Logs output type. Possible values are: <ul style="list-style-type: none"> • SD SDI • HD SDI • HD/SD/3G SDI
OUTPUT_N_STATE=	Logs state of the output. Possible values are: <ul style="list-style-type: none"> • OK • FAIL • WARN: Freeze • WARN: Pattern
OUTPUT_N_STANDARD=	Logs details of the output standard in this format: <Lines>(<Active>)/<Rate><i/p/sf> Where: <ul style="list-style-type: none"> • Lines = Total lines • Active = Active lines • Rate = Frame rate • I = Interlaced • P = Progressive • SF = Segmented frame
OUTPUT_N=	Logs the output source in the format INPUT N SERIAL IN . The input name is taken from the name assigned to the input.
OUTPUT_N_CAPTION=	Logs caption information. Possible values are: <ul style="list-style-type: none"> • OK - Off • WARN - On
OUTPUT_N_MODE=	Logs the output switch mode. Possible values are: <ul style="list-style-type: none"> • OK:Output1 • WARN:OP1 INn

Log Field	Description
OUTPUT_N_PATTERN=	<p>Logs test pattern information. Possible values are:</p> <ul style="list-style-type: none"> • 100% Color bars • SMPTE bars • Tartan bars • Pluge • Ramp • Sweep • Pulse & bar • Burst • Black

Where N is the input number.

5.16.4 Logging - Changeover

The **Logging-Changeover** page allows errors or events which cause a failover to be logged.

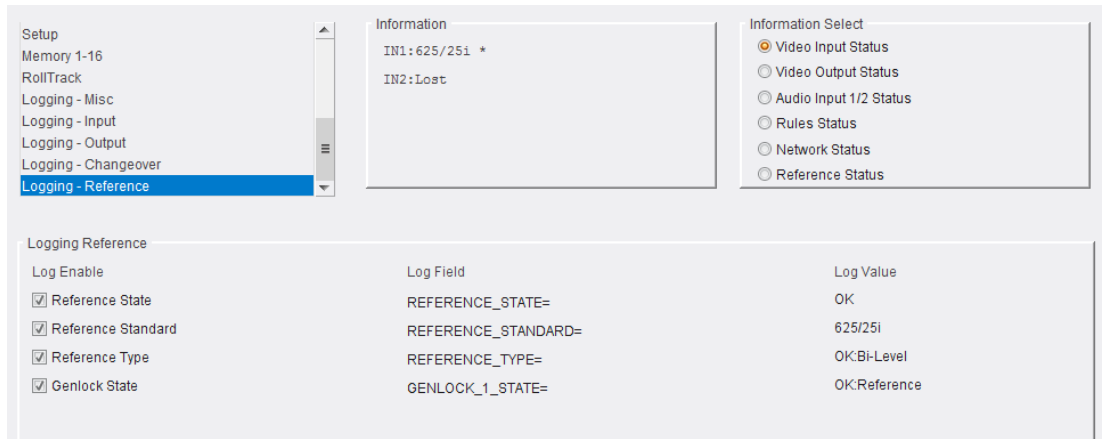
The screenshot displays the 'Logging - Changeover' configuration interface. On the left, a sidebar menu lists various settings, with 'Logging - Changeover' highlighted. The main content area is organized into several sections:

- Information:** Displays 'IN1: 625/251 *' and 'IN2: Lost'.
- Information Select:** A panel with radio buttons for selecting logging information: Video Input Status (selected), Video Output Status, Audio Input 1/2 Status, Rules Status, Network Status, and Reference Status.
- Rules Valid Input State:** A table with columns 'Log Enable', 'Log Field', and 'Log Value'. It shows 'Input 1' and 'Input 2' are enabled, with log fields 'PRIMARY_STATE=' and 'SECONDARY_STATE=' and values 'OK' and 'FAIL' respectively.
- Logging Rules:** A table with columns 'Log Enable', 'Log Field', and 'Log Value'. It shows 'Rules State' is enabled, with log field 'RULES_STATE=' and value 'WARN:INACTIVE'.
- GPIO State:** A table with columns 'Log Enable', 'Log Field', and 'Log Value'. It lists GPIO 1 State through GPIO 8 State, all of which are enabled and have a log value of 'Not Used'.

Log Field	Description
PRIMARY_STATE=	Logs the state of the primary input. Valid values are: <ul style="list-style-type: none">• OK - input signal good• FAIL - input signal not detected
SECONDARY_STATE=	Logs the state of the secondary input. Valid values are: <ul style="list-style-type: none">• OK - input signal good• FAIL - input signal not detected
RULES_STATE=	Logs the state of the rules engine. Valid values are: <ul style="list-style-type: none">• OK:ACTIVE• WARN:INACTIVE
GPIO_N_STATE=	Logs the state of the GPIOs Valid values are: <ul style="list-style-type: none">• Not Used• INPUT HIGH• OUTPUT HIGH

5.16.5 Logging - Reference

The **Logging Reference** screen is used to select the logging fields to be enabled for the reference used.



Log Field	Description
REFERENCE_STATE=	<p>Displays current state of the reference. Valid values are:</p> <ul style="list-style-type: none"> • OK:Reference • OK:Input • OK:Locked • WARN:Freerun • WARN:Not Set • FAIL:Lost
REFERENCE_STANDARD=	<p>Displays the reference standard in the format: <Lines>(<Active>)/<Rate><i/p/sf></p> <p>Where:</p> <ul style="list-style-type: none"> • Lines = Total lines • Active = Active lines • Rate = Frame rate • I = interlaced • P = Progressive • SF = Segmented Frame <p>For example: 1080/50p or 1125(1080)/25i</p>
REFERENCE_TYPE=	<p>Displays the reference type. Valid values are:</p> <ul style="list-style-type: none"> • OK:Bi-Level • OK:Tri-Level
GENLOCK_N_STATE=	<p>Displays current genlock state. Valid values are:</p> <ul style="list-style-type: none"> • OK:Reference • OK:Input • WARN:Freerun • WARN:CrossLock