

# IBU-160i - ADVANCED TIMECODE DISTRIBUTION



**16 Output Network Enabled Programmable Time Code  
Distribution Unit (100Hz - 100KHz) with Dual Redundancy**



AS9100D Certificate Number : C0210021-AS3



# IBU-160i - ADVANCED TIMECODE DISTRIBUTION

## Product Overview



The IBU-160i is a high quality, remotely programmable Timecode distribution unit (100Hz - 100 KHz ) with dual redundant hot swap PSUs. Applications for the IBU-160i include test ranges, satellite control centres, shipboard time distribution, airports, rail terminals, and any system requiring highly reliable time code distribution.

The IBU-160i base unit model has sixteen short circuit proof wide band outputs grouped as 2 banks of 8, available at the rear panel via BNC connectors, driven in response to one of two independent and isolated (Timecode A & Timecode B) signal source inputs. Each Timecode input is capable of driving all 16 outputs.

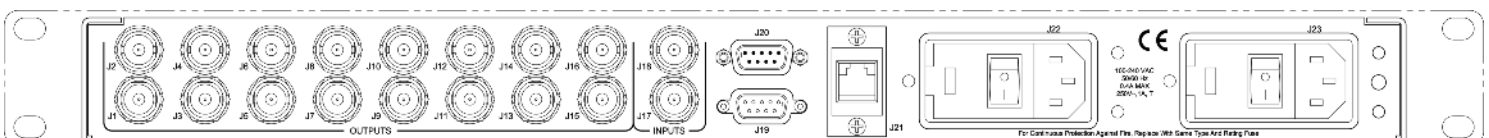
Each output has a network programmable Timecode source assignment and amplitude setting along with fully independent status checking and fault condition reporting via the SNMPv2c trap based network interface and rear panel D type connectors.

Once selected, Timecode signal sources are automatically switched over should a reference Timecode fail, while a three-position front panel switch facilitates the manual override selection of either Timecode A or Timecode B. With automatic mode selected, each output will be driven by the programmatically assigned reference.

Front panel indicators show the status of the input selection and output condition along with power status indication. Each of the sixteen outputs is continually monitored and should an output fail for any reason, then a group alarm fault indicator will illuminate and trigger a rear panel fault alarm signal that may be used by external equipment to modify the reference and output signal routing and selection.

The unit has a built in user friendly web based SNTP server interface available via an RJ45 10/100BaseT rear panel network port facilitating unit setup and subsequent system monitoring.

Key Feature Summary	
<b>Options &amp; Features</b>	
<ul style="list-style-type: none"> <li>• Network Enabled Timecode Distribution Amplifier 100Hz to 100KHz</li> <li>• Dual Isolated Timecode Inputs with Auto Fail over</li> <li>• Typical Time codes : IRIG A, B, E, G, NASA 36, XR3, AFNOR</li> <li>• Programmable per channel output amplitude (1V - 5V pk-pk)</li> <li>• SNMP v2c, HTTP, DHCP, IPv4 Protocols : RFC 1901, RFC 1905, RFC 1906, RFC 2578</li> <li>• 1U 19" rack mount</li> <li>• Dual Redundant Hot Swap Power Supplies</li> </ul>	
<b>Signals</b>	
<ul style="list-style-type: none"> <li>• 16 discrete, fault tolerant and fully monitored Timecode outputs on BNC connectors</li> <li>• Two time code signal inputs with automatic switching</li> <li>• Fault status indication and fault driven reference changeover</li> </ul>	



# IBU-160i - ADVANCED TIMECODE DISTRIBUTION

## Specifications

Specifications - IBU-160i	
Reference Time Code Inputs	Details
Connectors	2 x Rear panel BNC
Amplitude	0.5 V to 10V pk-pk - Transformer coupled and isolated
Input Impedance	600 Ohms
Time Codes	Analogue Codes in the range 100Hz - 100 KHz IRIG A, B, E, G, NASA36, XR3, AFNOR
Fault Discrete Input	
Number of inputs	2
Connector	9 Way D Type Socket
Level	TTL
Active Level	Link selectable, high or low to force reference changeover
Timecode Outputs	
Number of outputs	16 - Grouped as 1 x 16 or 2 x 8 based on input selection assignment
Connectors	BNC
Frequency (MHz)	Same as input, 100Hz - 100 KHz
Level	1.0 V to 5V pk-pk - Transformer coupled and isolated
Environmental	
Temperature	Operating : -10°C + 55°C    Storage : -40°C + 85°C
Humidity	95 % non condensing
Power	85VAC - 265VAC 50/60Hz or DC with hot swap dual redundancy < 15W
Power Options	18-36 VDC, 36-72 VDC, - 48VDC
Network Interface	
Interface	RJ45 - 10/100BaseT
Protocols	HTTP, SNMPV3, DHCP, IPV4
Console Port	
Interface	9 Way D type socket 115K Baud - 115200, N, 8, 1
Display	
Type and Function	16 Bi-Colour LEDs - Output Status and Ethernet Settings
Alarms	
Electrical	Dry relay form C contacts - Function Summary of all input/output alarms (relay)
Ethernet Network	SNMP trap - SNMPv3
Physical	
	19" Rack 1U 1.75" (H) x 7.5" (D) x 17" (W) [ 4.4 cm(H) x 19 cm (D) x 43.2 cm (W) ] Weight : 3.5 lb (1.6 Kg)
Compliance	
	CE Approved - EMC Emissions to EN55022 as EN55024 - FCC Part 15B, Class A EMC Immunity to EN50082-1 as EN61000-4-2 ESD, IEC801-3 HF Field & IEC 801-4

# Satisfied customers include..

ABB Singapore Airbus Defence & Space ASM Technologies Ltd Atkins Babcock International BAE Systems BBC BP CMC Engineering Malaysia	EDF Energy Indian Navy Jakarta Metro Leonardo Electronics Defence And Security London Stock Exchange London Underground MBDA Ltd MTRC Hong Kong National Air Traffic Services	NASA NEC Network Rail Northrop Grumman Park Air Systems Ltd Qinetiq Ltd Raytheon Systems Ltd Rockwell Automation SBS Transit Singapore Siemens Transportation	Singapore Stock Exchange Telent Technology Services Limited Teligent Thales UK Transport For London Viacom
--	---	---	---

## Sales Contacts and Global Representatives

### TFS UK Head Office

Mrs Laura Cain  
 Sales Coordinator  
 TFS, Witham, CM8 3AL, UK  
 Tel : +44 (0) 1376 514114  
 laura.cain@timefreq.com

### Europe, Middle East, Africa, Australia

Mr David Wright  
 Director of Sales, Europe, Middle East,  
 Africa, Australia  
 Tel : +44 (0) 1694 722891  
 dwright@timefreq.com

### Asia, China, India, Japan

Mr Neil Pitman  
 Director of Sales - Asia  
 China, India, Japan  
 Mobile : +44 (0) 7973 859342  
 neil.pitman@timefreq.com

<p><b>Austria, Germany &amp; Switzerland</b>  <b>Semic RF Electronic GmbH</b>                  Contact : Wolfgang Gruber                  Tel: +0049 89 614 1520                  Email: sales@semic.de                  Web : www.semic.de</p> <p><b>Australia &amp; New Zealand</b>  <b>Unitronix</b>                  Contact : Tim Marshall                  Tel: +0061 02 4977 3511                  Email: sales@unitronix.com.au                  Web : www.unitronix.com.au</p> <p><b>Brazil</b>  <b>Sigtron Instrumentos e Servicos Ltda</b>                  Contact : Eduardo Strafacci                  Tel: +0055 11 5031 7359                  Email: eduardo@sigtron.com.br                  Web : http://sigtron.com.br/</p> <p><b>China, Hong Kong &amp; Macau</b>  <b>Spectrum &amp; Master Comms. Technologies</b>                  Contact : Mr William Lai                  Tel: +852 2529 1111 / Mobile +852 9378 9271                  Email: smcthk@netvigator.com</p> <p><b>Indochina (Vietnam, Laos, Cambodia)</b>  <b>Hanova JSC</b>                  Contact : Mr Hai Le                  Tel: +84 91 351 4905                  Email: hai.le@hanova.vn                  Web : www.hanova.vn</p> <p><b>India</b>  <b>PDAC Microsystems Pvt Ltd</b>                  Contact : Mr Pradeep Dhar                  Tel: +91 40 40247626 / Mobile +91 80082 95670                  Email: pradeep@pdac.in                  Web : www.pdac.in</p> <p><b>Janus Trading Co</b>                  Contact : Mr Santosh Krishnan                  Tel: +91 124 408 6641                  Email: santosh@januscorp.in                  Web : www.januscorp.in</p> <p><b>Signowave Solutions Private Limited</b>                  Contact : Santosh Kulkarni                  Tel : +91 40 6717 2356 / Mobile : +91 70327 09060                  Email: santosh.kulkarni@signowave.com                  Web : www.signowave.com</p>	<p><b>Israel</b>  <b>IES Electronics Agencies (1986) Ltd</b>                  Contact : Avi Nataf                  Tel: +00972 37530700                  Email: info@nisko-ies.com                  Web : www.nisko-ies.com</p> <p><b>Italy</b>  <b>Millimetrica RF &amp; Microwave Components SRL</b>                  Contact : Aldo Cagno                  Tel: +0039 011 317 9910                  Email: acagno@millimetrica.it                  Web : www.millimetrica.it</p> <p><b>Japan</b>  <b>Nacelle Co Ltd</b>                  Contact : Mr Hisato Tadokoro                  Tel : +81 3 5921 5099                  Email : tadokoro@nacelle.co.jp                  Web : www.nacelle.co.jp</p> <p><b>Korea</b>  <b>ETOOB</b>                  Contact : Jaydon Lee                  Tel : +82-2-6677-3409                  Email : jaydon.lee@etooob.co.kr                  Web : www.etooob.co.kr</p> <p><b>Malaysia</b>  <b>Alam Sinergi Teknik Sdn. Bhd.</b>                  Contact : Mr HH Chew                  Tel: +60 3 7847 5925 / Mobile: +60 13 5131068                  Email: hhchew@alamsinergitekNIK.com</p> <p><b>North America : USA &amp; CANADA</b>  <b>Brandywine Communications Inc.</b>                  Tel: +1 877 367 7962 Fax: +1 714 755 0175                  Email: info@brandywinecomm.com                  Web : www.brandywinecomm.com</p> <p><b>North Africa, Mauritania, Morocco, Tunisia, Algeria, Libya, Egypt, Chad, Mali</b>  <b>ProComSat</b>                  Contact : Hussein Ait Si Selmi                  Tel: +0021321548618                  Email: hussein@procomsat.com                  Web : www.procomsat.com</p> <p><b>Spain &amp; Portugal</b>  <b>Tecnologia GPS S.A.</b>                  Contact : Jose Luis Estaban                  Tel: +34 91 323 72 30                  Email: comercial@tecnogps.es                  Web : www.tecnogps.es</p>	<p><b>Philippines</b>  <b>Imaginet International Inc</b>                  Contact : Mr Blair Duncan                  Tel: +63 2 895 9755 / Fax : +63 2 895 9766                  Email: blair@imagnet.com.ph                  Web : www.imagnet.com.ph</p> <p><b>Singapore</b>  <b>PROGRESO Networks (S) Pte Ltd</b>                  Contact : Victor Tang                  Tel: +65 6509 9600 / Mobile +65 9735 1700                  Email: victor@progreso.com.sg                  Web: www.progreso.com.sg</p> <p><b>Thailand</b>  <b>CSG Solution (Thailand) Company Ltd</b>                  Contact : Mr Chinnaret Kusathisiriphan                  Tel: +66 2 575 2971 / Mobile +66 94 951 6524                  Email: chinnaretk@csgs.co.th                  Web: www.csgs.co.th</p> <p><b>Turkey</b>  <b>Merit Elektronik</b>                  Contact : Levent Celebi                  Tel: +0090 312 472 7495                  Email: leventc@meritelektronik.com.tr                  Web : www.meritelektronik.com.tr</p> <p><b>South Africa</b>  <b>Satellite 2000 Systems International Inc</b>                  Contact : Fred Joubert                  Tel: +001 818 991 9794                  Email: sales@sat-2k.com                  Web : www.sat-2k.com</p> <p><b>U.A.E.</b>  <b>Zener Fire &amp; Security LLC</b>                  Contact : Ranjith Nambiar                  Tel: +0021321548618                  Email: ranjith@zenerfire.com                  Web : www.zenerfire.com</p>
--	--	---

**tfs Time & Frequency Solutions**

25 Eastways, Witham, Essex, CM8 3AL, UK  
 Phone +44 (0) 1376 514114 | Fax +44 (0) 1376 516116  
 Email : enquiries@timefreq.com

**brandywine communications**

153 Warner Ave, Tustin, CA 92780, USA  
 Phone +1 714 755 1050  
 Email : Info@brandywinecomm.com

Disclaimer : Brandywine & TFS are always seeking to improve our products, the information in this document only provides general indications of product capability, suitability and performance, none of which shall form any part of any contract.