Regional Backbone Blackspots Program

data sheet

RBBP Transmission Services

Nextgen Group's RBBP Transmission services are premium performance, low latency, carrier grade, transmission services ideally suited for demanding backhaul applications.

Transmission SDH

Suitable for wholesale customers requiring uncompromising quality, Nextgen Group's 'RBBP Transmission SDH' services are available with dedicated circuit switched bandwidth ranging from 50Mbit/s (VC-3) to 9600Mbit/s (VC4-64c) presented on a range of standard SDH interfaces.

Transmission Ethernet

Suitable for wholesale customers requiring transmission grade Ethernet, Nextgen Group's 'RBBP Transmission Ethernet' services offer dedicated circuit switched bandwidth between 10Mbit/s and 10Gbit/s presented on a range of standard Ethernet interfaces.

24x7 Network Monitoring

Nextgen Group's Service Management Centre provides ongoing end-to-end monitoring around the clock for both the Nextgen Group and RBBP networks. All SDH elements are actively monitored and our in-line fibre monitoring system can pinpoint fibre faults to within a couple of meters across the country. Our technicians are on call to fix the faults any time of the day or night.

Site Classifications and Pricing Zones

Prices are dependent on the type of delivery location and the particular RBBP Route. Site types are:

- Carrier Point of Interconnect (CPoI)
- Backbone Point of Interconnect (BPoI)
- Nearest Capital City (selected Data Centres)
- Sydney (selected Data Centres)

Wholesale Only

Nextgen Group's RBBP Services are offered only on the RBBP network and to the wholesale market comprising:

- Licensed Carriers
- Carriage Service Providers
- Internet Service Providers
- Broadcast Transmission Providers
- Systems Integrators
- Utilities

RBBP Transmission Services

Product	RBBP Transmission SDH	RBBP Transmission Ethernet
Interface Rates	STM-1, STM-4, STM-16, STM-64	100Mbit/s, 1000Mbit/s, 10Gbit/s
Frame structures	ITU-T G.707, VC-3's map into higher groups via TUG-3	GFP Framing of Ethernet on Virtually Concatenated SDH. (GFP-F over static VCAT VCG)
Physical Media	Single Mode Optical Fibre	Single Mode Optical Fibre
Physical Interface	SC Flat (NN presents Female)	SC Flat (NN presents Female)
Interface Type	ITU-T G.957 Interfaces: STM-1: L1.1, L1.2, STM-4: L4.1, L4.2 STM-16: L16.1, L16.2 ITU-T G.691 Interfaces: STM-64: I-64.1, S-64.2b	IEEE 802.3-2005 Interfaces: (As per IEEE802.3 subclause 1.4) 100Mbit/s: 100BASE-LX10 10Gbit/s: 10GBASE-LR
Service Rates	50Mbit/s to 10Gbit/s. Refer to specific service rate table	10Mbit/s to 10Gbit/s. Refer to specific service rate table
Interface features	Unprotected Interfaces Only	Unprotected Interfaces Only
Aggregating Interfaces	Not Available	Not Available
Latency	Optical delay plus small mapping delay	Optical delay plus small mapping delay
Jitter / Wander	Compliant with ITU-T Rec. G.825 and G.823	Not applicable
Bit Error Rate (End to End)	$< 10^{-10}$	Not applicable
Target Availability	End to End: 99.95% (Protected Services Only)	End to End: 99.95% (Protected Services Only)
Core Protection Options (where available)	Unprotected / Protected / Geographically Protected	Unprotected / Protected / Geographically Protected
Protection Switching	50ms on routes ≤ 1200km, but note that path distances may be significant.	50ms on routes ≤ 1200km, but note that path distances may be significant.
Access Protection	Unprotected	Unprotected
Commissioning standard	ITU-T M.2101	IETF RFC 2544
Customer to Provide	Rack space, 240V AC 50Hz power and cross-connects at customer sites where required.	

RBBP Transmission Ethernet Features

Service Type	Ethernet Private Line (EPL)
Ethernet Frame Structures	802.3, 802.1Q, 802.1AD
Maximum Ethernet Frame Size	9000 Octets (DA to FCS inclusive)
CE-VLAN ID Preservation	Yes
CE-VLAN CoS Preservation	Yes
Unicast Service Frame Disposition	Deliver Unconditionally
Multicast Service Frame Disposition	Deliver Unconditionally
Broadcast / Unknown Unicast Frame Disposition	Deliver Unconditionally
Layer 2 Control Protocols Processing	Tunnel All (0x01:80:C2:00:01 pause discarded)
Maximum number of EVC's per Port	1 (Single Service per Port)
Ingress Bandwidth Profile	Ingress Rate is limited by the VCG size with overheads as described in the Ethernet Service Speeds table (actual).
Ingress Bandwidth Committed Burst Size	> 50kByte
Link Pass Through (Link Loss Forwarding)	Unidirectional UNI-Status, Available on Request
Interface Configuration	Auto-Negotiate Enabled (Full Duplex, Full Rate)
Frame Loss Ratio	< 0.01% for In-Contract Traffic
Inter Frame Delay Variation	< 2ms for In-Contract Traffic

Ethernet Service Speeds

Service Rate		Interfaces Available		
Nominal Service Rate	Actual Service Rate	100BASE-LX10	1000BASE-LX/ LX10	10GBASE-LR
10 Mbit/s	5xVC12	✓	✓	
20 Mbit/s	10xVC12	✓	✓	
30 Mbit/s	15xVC12	✓	✓	
50 Mbit/s	1xVC3	✓	✓	
100 Mbit/s	2xVC3	✓	✓	
150 Mbit/s	3xVC3		✓	
150 Mbit/s	1xVC4		✓	
200 Mbit/s	4xVC3		✓	
250 Mbit/s	5xVC3		✓	
300 Mbit/s	2xVC4		✓	
450 Mbit/s	3xVC4		✓	
600 Mbit/s	4xVC4		✓	
750 Mbit/s	5xVC4		✓	
900 Mbit/s	6xVC4		✓	
1000 Mbit/s	7xVC4		✓	
2400 Mbit/s	16xVC4			✓
9600 Mbit/s	64xVC4			✓

Table of Overheads

GFP-F	8 Bytes
Ethernet Physical (L1)	20 Bytes

Note that L2-Ethernet frames are carried in GFP-F frames within the VCG payload. The achieved throughput will vary with frame size and interface.

SDH Service Speeds

Service Rate		Interfaces Available			
Nominal Service Rate	Actual Service Rate	STM-1	STM-4	STM-16	STM-64
50 Mbit/s	VC3	✓			
100 Mbit/s	2xVC3	✓			
150 Mbit/s	3xVC3	✓			
150 Mbit/s	VC4	✓	✓		
300 Mbit/s	2xVC4		✓		
450 Mbit/s	3xVC4		✓		
600 Mbit/s	4xVC4		✓		
600 Mbit/s	VC4-4c		✓	✓	
1200 Mbit/s	2xVC4-4c			✓	
1800 Mbit/s	3xVC4-4c			✓	
2400 Mbit/s	4xVC4-4c			✓	
2400 Mbit/s	VC4-16c			✓	✓
4800 Mbit/s	2xVC4-16c				✓
7200 Mbit/s	3xVC4-16c				✓
9600 Mbit/s	4xVC4-16c				✓
9600 Mbit/s	VC4-64c				✓

Table of Overheads

Protocol Bit Rate (PDU)		Payload Bit Rate (SDU)
VC12	2.240 Mbit/s	2.176 Mbit/s
VC3	48.960 Mbit/s	48.384 Mbit/s
VC4	150.336 Mbit/s	149.760 Mbit/s

Note that the service speeds available are dependent on the interfaces. Service Multiplixed interfaces are not supported by RBBP Transmission SDH services.

RBBP Transmission Services

RBBP Service Delivery Points	RBBP Network Segment – Nearest Capital City
Services on RBBP networks can be purchased: - between locations on a particular RBBP Network Segment - to selected data centres in the nearest capital city - to selected data centres in Sydney	Gerraldton – Perth
	Darwin – Brisbane or Adelaide
	Broken Hill – Adelaide or Melbourne
	Victor Harbor – Adelaide
	South West Gippsland – Melbourne