

# Preliminary

## ExcelFLEX

### PDH-SDH Consecutive Point Microwave Radio

#### Key Features

- Compact, Split Mount Architecture (1+0, 1+1, 2+0, 4+0)
- Scalable and Spectrally Efficient
- Flexible and Integrated Management
- Supports up to 1.4GBps in 4+0
- Adaptive Power, Adaptive Modulation, XPIC

#### Benefits

- Hot Standby Option
- Network Option Cards for Easy Upgrade and Expansion
- Easily Deployed and Activated
- Ring Architecture Minimizes Interruptions
- Minimizes CAPEX

#### Applications

- WiMAX and Cellular Backhaul
- Trunking Networks
- Last mile access
- Extension ring, linear and mesh



### AXXCELERA BROADBAND

Axxcelera Broadband Wireless is a data networking solutions company that is developing leading-edge technology for the deployment of broadband wireless communications over the Internet. It's ExcelFlex licensed point-to-point radios provide network connectivity in support of WiMAX network backhaul and cellular backhaul and development of new networks.

### EXCEL FLEX OVERVIEW

The ExcelFlex is a full featured microwave radio for the global telecommunications market. It consists of a Software Defined Indoor Unit (SDIDU) and Outdoor Unit (ODU). The ExcelFlex radios include a state-of-the-art single chip modem ASIC, allowing a highly integrated IDU with flexible modulation for spectral efficiency and powerful Forward-Error-Correcting schemes. The ExcelFlex is designed to support flexible payload types and data rates, as well as payload switching, in 1+0 unprotected, 2+0 east/west, 1+1 protected, and 4+0 configurations.

Advanced capabilities: The Software Defined IDU includes an integrated Crosspoint Switch that allows a total of 160 E1s (200 T1s) to be mapped from and to any of three different ports: East Modem (maximum 64E1/84T1), West Modem (maximum 64E1/84T1), and Local Front Panel (maximum 32E1/32T1). The Crosspoint Switch gives systems integrators and network designers flexibility in designing ring and linear point-to-point architecture networks.

### REASONS TO BUY EXCEL FLEX

The ExcelFlex offers volume capacity and proven performance for applications worldwide. It represents a new generation of PDH-SDH radio-relay transmission equipment. The ExcelFlex was designed to simplify product logistics and overall product life cycle costs. The field upgradeable architecture reduces capital and operating expenditures for field installation, maintenance, training, and spares while maximizing product reliability. It is ideally suited for long distance, low and medium capacity communication solutions.

The ExcelFlex Consecutive Point Architecture supports a ring/consecutive point configuration. This creates a self-healing redundancy that is more reliable than traditional point-to-point networks.

It also automatically adjusts transmit power in discrete increments in response to RF interference, simplifying deployment, network management, and enabling dense deployment.

# Preliminary

SYSTEM	6 GHz	7 GHz	8 GHz	10/11 GHz	13 GHz	15 GHz	18 GHz	23 GHz	38 GHz
Frequency Range (GHz)	5.92-7.12	7.1-7.9	7.9-8.49	10-11.7	12.75-13.35	14.4-15.40	17.7-19.7	21.2-23.6	37.0-40.0
T/R Spacings Avail. (MHz)	240, 252.04	154, 160, 161,168, 196, 245	119, 126, 208,266, 311	490, 530	266	315, 420, 475 490, 640, 644 728	1008,1010, 1200, 1232 1560,	1008, 1200, 1232	700, 1260
Modulation Type	128 QAM	256 QAM	256 QAM	256 QAM	256 QAM	256 QAM	256 QAM	256 QAM	256 QAM
Emission Bandwidth (MHz)	7-56	7-56	7-56	7-56	7-56	7-56	7-56	7-56	7-56
1.4 GBps Full Duplex Data Rate	up to 310	up to 350	up to 350	up to 350	up to 350	up to 350	up to 350	up to 350	up to 350

## SPECIFICATION SUMMARY

### Capacity Options

Payload	1-64/84 x E1/T1 + Scalable Ethernet 1-1400 Mbps Scalable Ethernet + n x E1/T1 Wayside Options: E3, GiGE, STM-1
FEC	Trellis Coded Modulation concatenated with Reed-Solomon Coding
Equalizer	Blind adaptive equalizer, DFM > 50 dB
Intermediate Frequency	350 MHz Transmit/140 MHz Receive
IF (IDU to ODU) Cable	RG-8 or LMR-400 = 256 meters
IF Cable Connector	N-Type Female (ODU)/TNC Female (IDU)
Antenna Connector	Circular/Rectangular waveguide or N-Type (depending on band)
Polarization	V or H, dependent on frequency plan
Antennal Mounting	Direct mount adapter
Protected Network System	- Tx Switching < 50 msec - Rx Switching Hitless - Rx Power Splitter Equal or Unequal Loss: 1 & 6 dB

### 100 Mbps (Sample) DATA RATE

#### TRANSMITTER

Output Power at Antenna	25 dBm
Output Power Tolerance	± 1 dBm

#### RECEIVER

Threshold at 10 <sup>-6</sup> BER	-75 dBm
Dispersive Fade Margin	50 dB

## PAYLOAD INTERFACE PARAMETERS

Physical	
- 1-64/84 x E1/T1	Full duplex 2048 kbps (E1) 1544 kbps (T1)
- Scalable Ethernet	Scalable up to 1.4 GBps
- E3/ GiGE, STM-1	Full duplex 44.736 Mbps (DS3) 34.368 Mbps (E3) 51.84 Mbps
Connector	
- STM-1, E3	BNC or Fibre
- GiGE	RJ-45 or SFP
- 14 x E1/T1	Molex DB60F
- 2 x E1/T1	RJ-48C
- Scalable Ethernet	RJ-45

## VOICE SERVICE CHANNEL

Frequency	300-3400 Hz
I/O Impedance	600 Ω
Interface	6 wire, PTT handset
Connector	RJ-45

## DATA SERVICE CHANNEL

Rate	64 kbps
Format	RS232/RS422
Connector	RJ-45

## ENVIRONMENTAL

Temperature	- IDU -5°C to +55°C (indoor unit) - ODU -33°C to +55°C (outdoor unit)
Relative Humidity	- IDU 0 to 95% non-condensing (outdoor) - ODU 100% all-weather
Altitude	- IDU/ODU 4500m

## MECHANICAL

Size	- IDU 445Wx238.5x44.5 mm (1RU) - ODU 26.7 O.D. x 8.9H cm
Weight	- IDU 3.4 kg, - ODU 4.6 kg

## ELECTRICAL

Input Voltage	-72 to -36 VDC
Power Consumption	- Nonprotected IDU: 30W, ODU: 40W - Protected IDU: 45W, ODU: 80W

## NETWORK MANAGEMENT

Support	SNMP, Fully featured MIB, Web-based GUI, Embedded HTML server, CLI
Interface	10/100Base-TX
Connector	RJ-45



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Axxcelera Broadband Wireless is certified to the ISO 9001:2000 Quality Management System standard.  
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