

**APPLICATION FOR STATION LICENSE**  
**CENTRAL FLORIDA EDUCATIONAL FOUNDATION, INC.**

**FM TRANSLATOR W275BZ**  
**CH 275D - 102.9 MHZ - 0.25 KW - DA**  
**PORT ORANGE, FLORIDA**

**December 1, 2016**

**EXHIBIT 12**  
**W275BZ Transmission System Calculations**

Effective Radiated Power: 0.25 kilowatt maximum, circularly polarized, directional

Antenna: Electronic Research, Inc., "ERI" Model 100A-1M-DA, one (1) section. The antenna is assembled, mounted and oriented at the azimuth as specified by ERI. The proof is attached as **Exhibit 11**

Power Gain 0.723 (-1.4086 dB) as determined by ERI

Transmission Line: Eupen EC5-50A (See data sheet, next page.) 286 feet, 87.2 meters, 7/8 inch foam dielectric (-0.995 dB), with two DIN connectors and one DIN EIA elbow each -0.2 dB respectably. For a total loss of -1.195 dB which equals 69.2 % total efficiency.

Required Transmitter Power Output  
To Reach Effective Radiated Power: 0.5 kilowatt (500 watts)

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Facilities Authorized: Channel 275D – 102.9 MHz as W275BZ, Port Orange, FL  
FCC ID: 142468 as authorized in BMPFT-20160205AEM

Effective Radiated Power: 0.25 kilowatt directional maximum, circular

Geographic Coordinates: North Latitude 28° 08' 12"  
West Longitude 81° 04' 41" (NAD 27)

Antenna Center of Radiation: Above Ground: 87 meters  
Above MSL: 95 meters

Antenna Structure Registration #: 1003611

Primary Station: WPOZ HD-3, 88.3 MHz / Ch. 202C, Union Park, FL

Via: "Other" (Fiber)



# DATA SHEET

## EC5-50A Cable & Connectors

Kabelwerk

**EUPEN** AG

Rev: 4/2010

cable

# EC5-50A

## 7/8" Foam-Dielectric Coaxial Cable

### CABLE

#### Construction

- **Inner conductor**
  - Material smooth copper tube
  - Diameter, in (mm) 0.37 (9.3)
- **Dielectric**
  - Material gas-injected cellular polyethylene
  - Diameter, in (mm) 0.93 (23.5)
- **Outer conductor**
  - Material corrugated copper
  - Diameter, in (mm) 0.98 (25.0)
- **Outer sheath**
  - Material black polyethylene
  - Thickness, in (mm) 0.06 (1.4)
  - Diameter, in (mm) 1.10 (28.0)

#### Mechanical Characteristics

- **Minimum bending radius**
  - a) Single bending, in (cm) 4 (10)
  - b) 15 repeated bends, in (cm) 10 (25)
- **Maximum pulling strength, lb (daN)** 330 (150)
- **Recommended temperature range**
  - Storage -94 to 185°F (-70 to +85°C)
  - Installation -40 to +140°F (-40 to +60°C)
  - Operation -67 to +185°F (-55 to +85°C)
- **Maximum length per hoisting grip, ft (m)** 230 (70)
- **Maximum hanger spacing, ft (m)** 4 (1.2)
- **Flat plate crush resistance, lb/in (kg/mm)** 79 (1.4)
- **Bending moment, lb/ft (Nm)** 8.6 (11.6)
- **Weight, lb/ft (kg/m)** 0.33 (0.50)

#### Electrical Characteristics

• <b>Characteristic impedance, (Ω)</b>	50 ± 1		
• <b>Nominal capacity, pF/ft (pF/m)</b>	23 (75)		
• <b>Relative propagation velocity, %</b>	89		
• <b>Inductance, μH/ft (μH/m)</b>	0.06 (0.187)		
• <b>DC-resistance at 20°C</b>			
- inner conductor Ω/1000 ft (Ω/km)	0.41 (1.34)		
- outer conductor Ω/1000 ft (Ω/km)	0.30 (1.0)		
• <b>RF peak voltage, (kV)</b>	2.9		
• <b>RF peak power, (kW)</b>	86		
• <b>Cut-off frequency, (GHz)</b>	5.1		
• <b>Insulation resistance, (MΩ/km)</b>	>>5000		
• <b>Attenuation and power rating</b>			
Frequency (MHz)	Attenuation at 68°F (20°C)* (dB/100ft) (dB/100 m)	Mean power rating** (kW)	
10	0.108	0.353	25.46
20	0.153	0.502	17.93
30	0.188	0.616	14.60
80	0.310	1.02	8.85
100	0.348	1.14	7.89
150	0.429	1.41	6.40
200	0.498	1.63	5.51
300	0.615	2.02	4.46
400	0.716	2.35	3.83
450	0.762	2.50	3.60
500	0.805	2.64	3.41
600	0.888	2.91	3.09
700	0.964	3.16	2.85
800	1.04	3.40	2.65
894	1.10	3.61	2.49
960	1.14	3.75	2.40
1000	1.17	3.83	2.35
1500	1.46	4.79	1.88
1700	1.56	5.13	1.75
1800	1.61	5.30	1.70
1880	1.65	5.43	1.66
2000	1.71	5.62	1.60
2170	1.79	5.88	1.53
2200	1.81	5.92	1.52
2300	1.85	6.07	1.48
2400	1.90	6.22	1.45
2500	1.94	6.37	1.41
3000	2.15	7.06	1.27
4000	2.54	8.33	1.08
6000	-	-	-

\* Nominal values

\*\* Ambient temperature = 104°F; temperature of inner conductor = 212°F;  
VSWR = 1.0; no solar loading

### CONNECTORS

#### Electrical

- **Nominal impedance, (Ω)** 50
- **Return loss @ 2.5 GHz, (dB)** -35
- **3rd order intermodulation product, (dBc)** -163
- **Temperature range** -40°F to +140°F (-40°C to +60°C)
- **Water immersion testing** IP67 & IP68
- **Materials**
  - External parts Passivated silver plated or electroless nickel plated brass
- **Outer contact** Passivated silver plated brass
- **Inner contact** Passivated silver plated Cu-Be
- **Dielectric** TXP / PTFE
- **O-rings** Silicone rubber

#### Ordering Information (Call customer service for availability.)

(Not compatible with previous generation EC5-50 cable)

- **7/16 DIN female** 7/16F50V78MA
  - **7/16 DIN male** 7/16M50V78MA
  - **Type N female** NF50V78MA
  - **Type N male** NM50V78MA
  - **Cable preparation tool** F-78
- (F-78 tool is compatible with both EC5-50 & EC5-50A cable and connectors.)

